




Davis Mechanical Systems, Inc.

January 2022

Safety Program

Policy No.	Policy Name
1	AWAIR Safety Program (Minnesota)
2	Confined Space – Construction
3	Cutting, Welding, and Hot Work
4	Electrical Safety
5	Ergonomics and Manual Lifting
6	Fall Protection
7	Fire Prevention
8	Forklift Safety
9	Hand and Powered Tools
10	Hazard Communication and Employee Right-to-Know
11	Hoisting Equipment
12	Housekeeping Policy
13	Jobsite Emergency Action Plan
14	Ladder, Aerial Lifts, and Scaffold Use Safety
15	Mobile Earth Moving Equipment
16	Near Miss Written Program
17	Personal Protective Equipment
18	Respiratory Protection Program
19	Return to Work Policy
20	Safety Committee
21	Trenching and Excavating
22	Vehicle Safety Policy

		Davis Mechanical Systems, Inc.		
Policy No. 01		Minnesota AWAIR Safety Program		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	4/1/2020

POLICY

This written AWAIR Program is available to all Davis Mechanical Systems, Inc. (Davis Mechanical) employees. Safety is everyone's responsibility. With that in mind, one of Davis Mechanical Systems, Inc. (Davis Mechanical) business philosophies is a commitment to providing our employees and customers with a safe and healthy environment in which to conduct business. Davis Mechanical has established this Safety/Loss Control Program in an effort to prevent unreasonable health and safety risks.

As an employee of Davis Mechanical you automatically accept a moral obligation to your fellow employees and to Davis Mechanical to see that equipment and operations under your care, custody, and control are carried out in a safe and efficient manner. Along with other responsibilities, safety awareness must always exist in your thinking and planning. Your compliance and cooperation in all safety activities including policy compliance, attendance at training, and reporting of unsafe conditions, is expected as a part of our employment relationship.

If you have any questions, concerns, or recommendations in regard to our Safety Program, please feel free to contact your Supervisor, the Safety Coordinator, or any other Davis Mechanical Officer.

PURPOSE

The purpose of this AWAIR Program is to promote safe and healthy work conditions based on clearly stated goals and objectives thereby to reduce the frequency and severity of accidents and illnesses, and to make this facility a safe and productive place to work.

SAFETY POLICY STATEMENT

It is the policy of Davis Mechanical Systems, Inc. to provide a safe and healthy work place for all employees and to abide by all federal, state and local regulations as they pertain to our operations. To make our approach to safety effective and uniform throughout the organization, Davis Mechanical Systems, Inc. has adopted the following safety and health program which we will actively pursue. The objective of the safety and health program is to reduce the number of accidents and injuries.

To be successful, such a program must embody the proper attitudes towards accident prevention on the part of both supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisors and employee, but also between each employee and his fellow workers. Only through such a cooperative effort can a safety record in the best interest of all be established and maintained.

As employees, you are responsible for wholehearted, genuine cooperation with all aspects of the safety and health program, including compliance with all rules and regulation and for continuously practicing safety while performing your duties. The safety coordinator, project managers and foremen have the support of management and the Safety and Health Committee in enforcing the provisions of this policy as it relates to the responsibilities assigned to them.

As time progresses, so will the safety program. It will be subject to new ideas and techniques to fit the needs of our company. Any suggestions for updating and improving our safety program are encouraged.

Sincerely,
Davis Mechanical Systems, Inc.

Jacob Helgeson President

GOALS AND OBJECTIVES

Central to our AWAIR Program are the goals and objectives that we, as an organization, have set forth for our overall safety and health programs. These goals establish the direction for our program and state what we are attempting to achieve through this program. The goals are generally challenging to reach but are possible to achieve.

Annual Goals

1. Conduct employee training on hazards specific to our jobsites.
2. Conduct safety committee meetings on a reoccurring basis.
3. Facilitate jobsite safety inspections from a qualified safety professional.

Long Term Goals

Goal:

Establish and maintain a culture that is committed to workplace safety and health.

Objectives:

1. Educate and enforce all safety rules throughout the company.
2. Continued compliance with all industry regulations.
3. Become a best-in-class safety performer.

EMPLOYEE RESPONSIBILITIES

Safety and Health Committee

- ✓ Shall comply with all occupation safety and health standards and all rules, regulations and orders pursuant to the Occupational Safety and Health Act of 1970.
- ✓ Establish rules and programs designed to promote safety.
- ✓ Review and advice on new equipment, procedures or operations of jobs as they relate to the prevention and control of accidents.
- ✓ Develop a statistical base for measuring progress toward program objectives.
- ✓ Conduct bi-monthly safety meetings and record minutes of those meetings which will present all goals established, issued and communicated to the employees.

Safety Coordinator

- ✓ Make known to all employees the established rules and programs.
- ✓ Actively enforce the Safety and Health Program. Impress upon all, the responsibility and accountability of each individual to maintain a safe work place.
- ✓ Record all violations of the Safety and Health Program.
- ✓ Provide safety training in accordance with needs and regulations.
- ✓ Instruct new employees in training program and have them sign acknowledgement form.
- ✓ Review accidents and make sure that an accident investigation report is completed (when required), investigated and corrected.
- ✓ Continually update hazardous chemical list and material safety data sheets.
- ✓ Prepare and record safety meeting minutes. Minutes of meetings will be disbursed to all committee members, project managers and foremen.
- ✓ Continually monitor the Safety and Health Program for effectiveness and compliance with federal, state and local regulation. At a minimum, update the program on an annual basis.

Project Managers

- ✓ Completely responsible for on-the-job safety and health. Carry out and actively enforce the safety and health program rules and regulations and supervise corrections made known to you by the safety coordinator.
- ✓ Require all subcontractors to observe and comply with all safety rules.
- ✓ Encourage all prime contractors to work safely.
- ✓ Provide for the protection of the public from company operations.
- ✓ Plan production so that all work will be done in compliance with established safety regulation.
- ✓ Make sure proper safety materials and protective devices are available and used and all equipment is in safe working order.
- ✓ Instruct foremen on specific safety and health procedures.
- ✓ Insure that all injuries (other than first aid) are followed up with an accident investigation report.

Job Foreman

- ✓ Carry out and actively enforce the Safety and Health Program.
- ✓ Be aware of all safety requirements and safe working practices.
- ✓ Instruct all employees performing new tasks on pre-start up training and safe working practices.
- ✓ Instruct NEW employees on safe working practices by giving a walkthrough of the jobsite and showing them the location of SDS. Aware/Right-to-Know Program and all contents, and safety equipment. Both foreman and employee should then sign the acknowledgment form given to employee from his initial training and file this with the safety coordinator.
- ✓ Install and maintain devices to protect the public from company operations.
- ✓ Make sure protective equipment and safety devices are available and used.
- ✓ Conduct weekly jobsite safety inspections using the checklist and correct all hazards, including unsafe acts and conditions, which are within the scope of your position.
- ✓ Ensure that all injuries are treated immediately and reported promptly to Paul Davis.
- ✓ Investigate all accidents and injuries (other than first aid) to determine the cause and initiate corrective action.
- ✓ Hold weekly safety toolbox meetings with employees and file with the safety coordinator.
- ✓ Review all Safety and Health Committee meeting minutes with your employees – as part of your weekly jobsite safety meetings/toolbox talks.

All Employees

- ✓ Observe and comply with all safety rules, including federal, state and local regulation.
- ✓ Work safely in such a manner as to ensure your own safety, as well as that of co-workers and others.
- ✓ Request assistance when unsure about how to perform any task safely.
- ✓ Correct unsafe acts or conditions within the scope of your position.
- ✓ Report any uncorrected unsafe acts or conditions to the jobsite foreman.
- ✓ Use and maintain all safety devices provided.
- ✓ Attend jobsite safety meetings.

Subcontractors

- ✓ All subcontractors of Davis Mechanical Systems, Inc. and their personnel are by contract subject to the policies and procedures as outlined in the Safety and Health Program while working on Davis Mechanical Systems, Inc. projects and shall be responsible to the limit of the safety laws for their acts of omission and commission.
- ✓ Shall have on site, all required OSHA standards and shall enforce all safety rules and regulation.
- ✓ Must notify all other contractors when their activities could affect the safety and health of other company employees.
- ✓ Report to controlling contractor any unsafe acts or conditions that come to your attention.

HAZARD ASSESSMENT - HAZARD IDENTIFICATION, ANALYSIS AND CONTROL

Inspections

Inspections will focus on unsafe physical conditions and unsafe work practices. These inspections will be completed on a weekly basis by the site Supervisor. Davis Mechanical will also have Safety Consultants conduct periodic jobsite inspections. During all jobsite inspections, employees working in the area will be asked if they have any safety concerns. Frequently, employees are able to point out unsafe equipment and/or conditions that may otherwise go unnoticed.

Refer to Appendix D – “Weekly Construction Site Safety Checklist” for a copy of the form.

New Equipment, Materials or Processes

Before any equipment, material, or process is purchased or implemented, a Job Hazard Analysis (JHA) should be completed. The JHA will identify any potential hazards and recommend any necessary safeguards or procedures to prevent any injuries.

Refer to Appendix A – “Job Hazard Analysis” – for a copy of the template and completed example.

Employee Hazard Notification / Safety Suggestion Forms

If an employee becomes aware of hazard or an unsafe condition, or has an idea to make a process safer, management must be informed in order to take corrective action. To document site observations, Safety Report forms are available. Employees are encouraged to complete the forms and submit them to the Safety Coordinator or their Supervisor. The Safety Committee will review all of the forms, and

will report back the plan of action. If an employee wants to report items anonymously, they do not need to include their name.

Refer to Appendix E – “Near Miss Report Form” for a copy of the form.

COMMUNICATION

While communication of safety and health issues should be a continual process, there are times when it is especially critical, including the beginning of an employee's new job assignment, whenever material or processes change, or whenever the employer notices deficiencies in safe work practices.

Training

In order for employees to work safely and comply with the safety programs, they need to know what is expected of them. All employees, including management, will be trained on all safety programs.

Company Meetings

Since it is impossible to maintain close contact with every employee on the job, the use of company meetings becomes one of the most practical and efficient methods of maintaining safety awareness. During the meeting, management will discuss any safety issues that were brought to the safety committee's attention and discuss any upcoming employee safety training.

Other Methods

Other methods that will communicate job safety and health information are the use of toolbox talks and distribution of the Safety Manual. Tool box talks are conducted weekly on each jobsite. In addition, copies of all safety programs are available to any employee to review and can be obtained from the Safety Coordinator.

COMPLIANCE

Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all employees. Supervisors and lead personnel are expected to enforce the rules fairly and uniformly.

All employees are responsible for following safe work practices, directives, policies and procedures, and assisting in maintaining a safe work environment.

The following is our system of ensuring that all workers comply with the rules and maintain a safe work environment:

- Informing workers of the provisions of our AWAIR program;
- Evaluating the safety performance of all workers;
- Recognizing employees who perform safe and healthy work practices. This recognition is accomplished by informal recognition of safe practices;
- Providing safety training to workers and re-training as needed;
- Disciplining workers for failure to comply with safe and healthy work practices. Our disciplinary measures will include, but are not limited to:
 - Verbal warning for first time or minor offenses.
 - Written warning for additional instances or major offenses.
 - If none of the above measures achieve satisfactory corrective results, and no other acceptable solution can be found, the company will have no choice but to TERMINATE employment for those who continue to jeopardize their own safety and the safety of others.

SAFETY COMMITTEE

The Safety Committee meets monthly to discuss any hazards found during safety audits, safety concerns from employees, recent near misses or accident investigation findings. The committee is comprised of employees and management. All items discussed during the meetings are shared with employees for review.

A Safety Committee Action Plan is developed and reviewed on an annual basis with specific goals and objectives. In general, the overall goal of the Safety Committee is to;

- Reduce the frequency and severity of accidents and injuries
- Educate employee on proper safety practices
- Make safety “A Walk of Life”

HAZARD CORRECTION

Unsafe or unhealthy work conditions, practices or procedures at our work locations shall be corrected in a **timely manner** based on the severity of the hazards, and according to the following criteria when observed or discovered;

- When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, we will remove all exposed workers from the area except those necessary to correct the existing condition.

SAFETY TRAINING AND INSTRUCTION

All employees, including management shall have training and instruction on general and job-specific safety and health practices. Training will be documented using a Training Sign-In Sheet. Training and instruction shall be provided as follows:

- When the AWAIR program is first established;
- To all new employees;
- To all employees given new job assignments for which training has not previously been provided;
- Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;
- Whenever Davis Mechanical becomes aware of a new or previously unrecognized hazard;
- To Supervisors to familiarize them with the safety and health hazards to which employees under their immediate direction and control may be exposed; and
- To all employees with respect to hazards specific to each employee's job assignment.

This training will include (but is not limited to):

- Explanation of our AWAIR Program, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instructions are needed.
- Availability of toilet, hand-washing, and drinking water facilities.
- Provisions for medical services and first aid, including emergency procedures.
- Proper housekeeping, such as keeping stairways and aisles clear, work areas neat and orderly, and promptly cleaning up spills.
- Prohibiting horseplay, scuffling, or other acts that adversely influence safety.
- Proper storage to prevent storing materials and good against doors, exits, or extinguishing equipment and electrical panels.
- Prevention of musculoskeletal disorders, including proper lifting techniques.
- Use of appropriate clothing, including gloves, footwear, and personal protective equipment.
- Information about chemical hazards to which employees could be exposed and other hazard communication program information.

In addition, Davis Mechanical provides specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

ACCIDENT INVESTIGATION

Policy

All accidents, regardless of the seriousness of the injury or property damage, will be thoroughly investigated by the jobsite foreman, project manager and safety coordinator. If other than basic first aid, a written investigation report will be required. Contact: Safety Coordinator – Jacob Helgeson (952) 715 – 0089.

Procedure

- The foreman will document the investigation on an accident investigation report. The accident “cause” and “corrective action taken” must be thoroughly explained on each investigation report.
- It is up to the foreman to ensure that all causes are determined and that corrective action is taken. This may require the involvement of the project manager. Thus, it is up to the foreman to establish the necessary lines of communication in order to take place and to prevent a recurrence.
- If the injury is other than basic first aid, the foreman will complete the accident investigation report with the injured employee and turn the report into the safety coordinator, Paul Davis, within 24 hours of the incident.

- It is the ultimate responsibility of the project manager to ensure that an investigation report is completed/turned in.
- In an effort to measure the progress and results of accident investigation, all project managers will be provided with a summary and analysis of all accidents and their costs on a periodic basis.
- The Safety Coordinator or the Supervisor will immediately notify the Human Resources/Office Manager of the injury utilizing the Accident Report Form (Appendix B).
- The Human Resources/Office Manager will complete the First Report of Injury and notify the Workers' Compensation Insurance Carrier of the injury within 24 hours of being notified of the injury.
- After the "First Report of Injury" is completed, the injury will be listed on the OSHA 300 log if applicable.
- The employee must return to work after receiving medical attention with a written "Report of Workability", also known as a "Return-To-Work" Form from the doctor.
- After all injured employees have been treated the "Accident Investigation" (Appendix B) will begin.

Handling non-work injuries

Not all injuries happen at work. If an employee is injured outside of work and is unable to perform their assigned job duties, the employee must notify the Safety Coordinator immediately of the injury. The employee must bring a written "Report of Workability" from the treating physician and provide it to the Safety Coordinator immediately. The Safety Coordinator will also notify Human Resources/Office Manager to determine if the company is able to provide work tasks within the injury restrictions. The report will be filed by the Human Resources/Office Manager under "Non-work related injuries".

Return to Work Program

Davis Mechanical will actively seek to return injured employees covered by workers' compensation to productive work as quickly as possible. This will be performed in cooperation with the employee's physician or health care provider and the Davis Mechanical Worker's Compensation Insurance carrier.

To accomplish this, Davis Mechanical will utilize the Report of Workability Form to document work restrictions. The Report of Workability will outline specific restrictions and the duration of those restrictions. This form must be completed by the treating physician before an injured employee returns to work.

The following are the basic steps required as part of the return to work program:

- The injured employee must provide the Safety Coordinator with a "Report of Workability" form from the treating physician. This form must be forwarded to the Human Resources/Office Manager upon receipt.
- The Safety Coordinator and Human Resources/Office Manager will discuss the work restrictions to determine the assigned job duties for the injured employee.
- Prior to the employee performing any assigned job duties, the Human Resources/Office Manager will discuss the work restrictions with the employee to ensure the employee understands the work restrictions and ability to work.
- The injured employee is responsible to follow the work restrictions outlined on the Report of Workability, and must notify their Supervisor if they are unable to perform the assigned job duties while following the work restrictions.
- The injured employee must immediately inform the Human Resources/Office Manager if the assigned job duties aggravate the injury.
- The injured employee must immediately inform the Human Resources/Office Manager of any progress or problems.
- After any follow up visit with the treating physician the injured employee must provide an updated "Report of Workability".
- Davis Mechanical will notify the Worker's Compensation Claims Adjuster if any difficulties arise. Some examples of reason to contact the claims adjuster are:
 - ✓ The employee does not return to work
 - ✓ Difficulty in identifying a job for the employee
 - ✓ Questions or concerns with the Report of Workability and/or work restrictions

OCCUPATIONAL INJSURY MANAGEMENT

Policy

In the event that there is a work-related accident, we will make sure that the injured employee is cared for and receives proper medical attention, if necessary. In addition, the accident will be investigated to

determine the causes and to ensure that corrective action is taken to prevent a recurrence. It is our desire to maintain the current workforce, therefore management supports the philosophies of “return to work” and will make every effort to accommodate an injured employee. We will encourage the injured employee to return to work as soon as he/she is medically able, either in a modified duty capacity (i.e. the job he/she had prior to the injury), or in another position that remains within the physical limitations as determined by the medical provider. Jacob Helgeson will be responsible for ensuring that all administrative procedures are followed when an injury occurs including coordinating the return to work with the foreman, the insurance carrier, injured employee and the medical provider.

Procedure

While Davis Mechanical Systems, Inc. strives to provide safe working conditions and expects employees to work in a safe manner, accidents occur from time to time. All accidents resulting in injury must be reported. Even a slight injury is potentially harmful to an employee, as well as the company. Therefore, it is necessary that all employees practice the following procedures when an injury occurs.

1. Immediately report to your foreman when an injury occurs. If the injury is life threatening, the foreman or other responsible person will call 911.
2. If the injury is not life threatening, but requires medical attention, have injury treated through your current health care provider as soon as possible.
3. Immediately after proper treatment, report your injury to Jacob Helgeson at the office.
4. A copy of your injury report (if other than basic first aid) will be given to your project manager for follow up investigation procedures.
5. At the time of injury, you may not need medical treatment. If at a later date you decide that medical treatment is necessary, advise Jacob Helgeson at the office prior to seeking treatment. You must also continue to report any lost time (when it occurs) and any job restrictions and/or restriction changes you may have throughout the course of your injury.
6. All accidents must be investigated. After any initial treatment, when calling in the injury to the office, the safety coordinator will request a written investigation report if the injury is other than basic first aid. The foreman and the injured employee will then complete the accident investigation report together. Be sure to give as much information as possible about the accident in order that a cause can be determined and corrective action taken to eliminate the hazard.
7. After the accident investigation report has been completed, the foreman will give a copy to your safety coordinator within 24 hours of the incident.
8. Unless medically unable, report to the jobsite immediately after medical, with the physician's signed medical report. This keeps Davis Mechanical Systems, Inc. informed of your medical status and notifies us as to whether or not you have any restrictions as a result of the injury. We cannot put you back to work without this report. The foreman will also turn in all doctor's reports/restrictions to the office.
9. If work restrictions are set by the treating physician, they will be reviewed with you and your foreman. If you or your foreman feels that your restrictions are not being followed, report it to the project manager. It is important that the restrictions be complied with in order to prevent an aggravation or further injury.
10. These procedures must be followed by all employees and supervisors in order to ensure a successful and rapid recovery from injury. Failure to follow the above listed procedures may jeopardize an employee's claim to worker's compensation.

WORKER'S COMPENSATION

Worker's Compensation covers the following:

- Medical care for your work injury, as long as it is reasonable and necessary.
- Wage-loss benefits for part of your lost income (there is a three calendar day waiting period before these benefits start).
- Compensation for permanent damage to or loss of function of a body part.
- Benefits to your spouse and/or dependents if you die as a result of a work injury.
- Vocational rehabilitation services if you cannot return to your pre-injury job or to your pre-injury employer due to the work injury.

JOBSITE SAFETY INSPECTIONS

Policy

The recognition and correction of accident causes is a continuing duty of the foremen while making their rounds.

Procedure

1. At the beginning of each new project and once a week thereafter, the project manager shall make a formal safety inspection of the jobsite. The inspection shall be documented on the job site safety checklist form and a copy must be sent into the safety coordinator.
2. Corrective action shall be initiated by the foreman for any hazards that are identified during the safety inspection and followed-up accordingly. The corrective action taken must be documented and a copy must be sent into the safety coordinator.

TOOLBOX MEETINGS

Policy

Safety is everyone's business, and our safety requires the active participation of management, supervisors and workers. No one group can do the job alone. Weekly safety discussions should emphasize safety awareness as much as specific hazards and procedures. The result should be more safety-conscious employees who are receptive to learning and practicing the specifics of a safe, healthy workplace. These weekly meetings should be the time to inform your employees of new rules, regulations, programs and procedures also.

Procedure

1. Toolbox meetings shall be held once weekly.
2. The meetings should be short in duration (preferably ten minutes) and under the direction of the foreman in charge.
 - a. Accidents or near accidents should be reviewed and actions to prevent recurrence discussed.
 - b. Safe ways of performing the work are good topics and all practical ideas developed need to be considered.
3. The meetings shall be documented with signatures of all who attend and a copy must be sent to the safety coordinator.
4. For those job sites where the general contractor holds toolbox meetings, the foreman does not have to hold an additional meeting. However, the foreman must still obtain documentation of what was discussed and who was in attendance from the general contractor and forward this to the safety coordinator.
5. At the time annual refresher training is to be done, foremen should hold these meetings daily and for longer periods of time (i.e. ½ hour meetings for eight days; 1-hour meeting for 4 days) to complete the annual training course. Projected time for annual training is about 4 hours.

INCIDENT INVESTIGATIONS

A properly conducted incident investigation will be of great assistance in preventing the recurrence of similar accidents.

The objective of any accident / exposure investigation will be to reach one goal, to find the "Root Cause" of the accident. This will be achieved by "Fact Finding" not "Fault Finding".

An accident is defined as:

- An unintended event that caused or could have caused (near-miss) bodily injury or property damage.

Note: This definition includes "near-misses" that do not result in injury or damage. These also need to be investigated.

In the event of an "accident" or "near-miss":

- The accident, exposure, or near-miss investigation must be completed by either the Safety Coordinator.
- If the accident resulted in a serious injury or property loss, preserve the accident scene without moving evidence. If necessary, take photographs before evidence is disturbed.
- When conducting the investigation, the purpose is not to place blame, but rather to find the root cause of the accident and to prevent a similar accident in the future.

The actual investigation must proceed as follows:

- If possible, discuss the accident with the injured person.
- Question other employees who may have witnessed the accident.

- If an unsafe condition was involved, determine what changes can be made to prevent a similar recurrence.
- All investigation forms will be reviewed by the Safety Coordinator to ensure that a complete investigation has been made.

ENFORCEMENT OF SAFETY AND HEALTH PROGRAMS

Disciplinary action is used to address and correct the concerns or issues, prevent recurrence, and appropriately set employee expectations for safety. Disciplinary action may call for any one or more of the following steps in any order – verbal warning, written warning, suspension with or without pay, or termination of employment – depending on the severity of the problem and the number of occurrences. There may be circumstances when one or more steps are bypassed. All employees of Davis Mechanical are subject to disciplinary action regardless of job position or title. Examples of safety violation would include an employee who knowingly violated the requirements of a Davis Mechanical safety policy or procedure. Employee warning notices will be kept on file, with copies given to the employee and their Supervisor.

Davis Mechanical recognizes there are certain types of employee safety violations which are serious enough to justify immediate termination without going through any progressive discipline steps.

Refer to Appendix F - "Employee Warning Notice" for a copy of the form.

OCCUPATIONAL HEALTH

Wellness

1. Participate actively in safety and health training.
2. Follow all company and OSHA health and safety rules.
3. Use material safety data sheets (M.S.D.S.) to identify chemical health hazards and precautions before using any chemical.
4. Know where to find first aid kit.
5. Know what to do or who to contact when someone becomes ill on the job.
6. Practice good personal hygiene.
7. Use assigned personal protective clothing and equipment.
8. Prevent heat stress; Get accustomed to working in heat gradually. Drink plenty of water. Take periodic breaks. Get out of the heat if you feel weak or sick.
9. Prevent cold stress; be sure to cover face, head, hands, feet or face.
10. Prevent ergonomic problems; Practice good standing and sitting postures. Shift positions periodically. Take brief breaks and stretch. Report tasks that cause strain or pain.
11. Heed your body's messages; Report any feelings of ill health at work immediately. Don't ignore even minor symptoms. Note any health problem that seems to come up repeatedly and try to identify what brings it on, or if it only occurs at work.

Bloodborne Pathogens

HIV = Human Immunodeficiency Virus may lead to AIDS.

HBV = Hepatitis B Virus may lead to LIVER AILMENTS.

1. All employees with occupational exposure must participate in a training program.
2. Treat all blood and body fluids as if they are infected.

RECORDKEEPING

Davis Mechanical maintains the following records to help us effectively implement our MN AWAIR and Injury and Illness Prevention Programs:

- Records of scheduled and periodic inspections (to identify unsafe conditions and work practices, including the names of the person(s) conducting the inspection, the unsafe conditions and the work practices that have been identified, as well as the action(s) taken to correct the identified unsafe conditions and work practices).
- Documentation of our safety and health training for each employee, including their name, training date(s), types of training and the name(s) of our training provider(s).
- First Report of Injury Forms, Worker's Compensation Documents, OSHA 300 Logs, and OSHA 300 Summaries.

WORKPLACE SAFETY PROGRAMS

The success of our workplace safety programs, as well as the personal safety of our employees depends, upon cooperation and individual effort. Management strongly supports all individual and group efforts to

improve workplace safety for all employees. By developing safer ways to work, we all benefit. If you have any questions, concerns or recommendations in regard to our safety programs, please feel free to contact the Safety Coordinator, Human Resources/Office Manager or any member of the safety committee

In addition to this document, the following Workplace Safety Programs will create a safe and healthy work environment for all employees that work at Rice Companies:

- Confined Space
- Mobile Earth Moving Equipment
- Emergency Action Plan
- Fall Protection
- Fire Prevention
- Forklift Safety
- Hazard Communication / Employee Right-To-Know
- Lockout Tagout
- Personal Protective Equipment
- Respiratory Protection
- Return to Work
- Safety Committee
- Subcontractor Management

DISCIPLINARY PROCEDURES FOR SAFETY VIOLATIONS

Policy

Your health and welfare are most important. It is the responsibility of the safety coordinator, project managers and foremen to actively enforce the safety and health program. Violations of safety rules are considered unsatisfactory job performance and will be treated accordingly. Any employee who violates the policies and procedures as outlined in the safety and health program or the safety rules and procedures as provided in the labor agreement will be subject to the following disciplinary actions:

FIRST OFFENSE: Verbal warning and instruction on proper procedure that must be followed to avoid another violation.

SECOND OFFENSE: Written warning and instruction on proper procedure that must be followed to avoid another violation.

THIRD OFFENSE: Disciplinary action that could include discharge for cause as provided in the current labor agreement.

Based on the severity of the violation, the verbal and/or written warning may be bypassed and the employee may be discharged for cause as provided in the current labor agreement.

POLICY STATEMENT OF SEXUAL HARASSMENT

Sexual harassment is illegal. Davis Mechanical Systems, Inc.'s commitment to Equal Employment Opportunity includes maintaining every employee's right to freedom from sexual harassment in the work place. This policy is intended to allow all employees to work in an environment free from all forms of sexual harassment.

Definition

Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature. It includes verbal abuse, leering, gestures, advances and pressures inviting sexual activity. Unpermitted physical contact, and rape are forms of sexual harassment. Any sex related conduct that is intimidating, hostile or offensive is considered unlawful harassment.

Employee Responsibility

- Step 1: Make sure you believe the conduct is sexual harassment and non-acceptable conduct. A charge of sexual harassment is taken very seriously. A wrongful accusation of sexual harassment can cause harm.
- Step 2: If you are able, talk to the other person. Tell him or her how you feel about the conduct and ask that it be stopped immediately.
- Step 3: If talking to the other person does not seem like a good idea to you or it has not worked, report the incident(s) to your supervisor.
- Step 4: Put it in writing. The information the company needs to investigate a claim of sexual harassment is listed on the complaint form. If no form is available, provide the information on a memo.

Company Responsibility

If an oral or written complaint of sexual harassment is received or any member of management has reason to believe that sexual harassment has occurred or is occurring:

1. Obtain a written report from the complaining employee that includes the information requested.
2. Inform the employee that an investigation will be conducted immediately. Use your best judgment to determine if intervention is immediately required to ensure that no future harassment occurs by re-assigning one or both employees, etc.

Consequences of Sexual Harassment

Any employee who is determined by the company to have engaged in sexual harassment of a fellow employee is subject to appropriate disciplinary action up to and including discharge. Such illegal conduct may also subject the harasser to criminal or civil penalties.

Examples of Prohibited Conduct

1. Unwelcome sexual advances and requests for sexual favors:
 - Attempted rape and rape are obvious forms of illegal and prohibited conduct
 - Intentional touching. Avoid unnecessary physical contact which might be considered unwelcome and offensive to your co-workers, your judgment as to the “welcomeness” of your intentional physical contact may be totally wrong.
 - Invitations to engage in sexual activity can be a form of sexual harassment, depending upon the circumstances. An important factor is whether the person to whom the invitation is extended views it as unwelcome.
2. Verbal and physical conduct of a sexual nature:
 - Verbal abuse. Offensive statements relating to sexual conduct or activity directed to or made in the presence of another employee can be a form of sexual harassment, depending on the total circumstances.
 - Written abuse. Authoring, posting or distributing offensive written statements relating to sexual conduct or activity can be a form of sexual harassment.
 - Abusive gestures that suggest or connote sexual conduct or activity can be a form of sexual harassment.
 - Photographs that depict sexual activity, nudity or partial nudity can be a form of sexual harassment and are not to be displayed in the work place. This includes “swimsuit” calendars, lingerie photos, and other such documents that some members of the workforce may find to be sexually oriented and offensive.

PROGRAM REVIEW

This AWAIR Program will be reviewed annually to determine if the goals and objectives have been achieved for the previous year and to determine if the organization is moving towards a safer and healthier workplace for all employees. Also, it will be determined if the procedures used are consistent with those described in the program, and if those procedures that are being used are effective.

If it is determined that the goals and objectives set for the previous year have been achieved, then new goals and objectives will be set for the new year to motivate the employees and management to further improve safety and health at Davis Mechanical.

If it is determined that the goals and objectives have not been achieved, then the Safety Committee needs to determine why the goals have not been achieved. If the organization is improving and moving towards the goals then a timeline will be set to reach that goal, and if neither is improving or moving slowly towards the goal, then the goal will be examined and possibly a more obtainable goal will be set.

APPENDIX A:

JOB HAZARD ANALYSIS DEVELOPMENT GUIDE AND TEMPLATE

JSA DEVELOPMENT GUIDE

WHAT IS A JSA?

A job safety analysis (JSA) is a technique used to identify the specific hazards associated with a job/task in order to reduce the potential for an incident or injury. A JSA consists of four basic steps:

- 1) Select the job/task to be analyzed
- 2) Break the job/task into individual steps
- 3) Identify the specific hazards for each step
- 4) Identify the mitigations/corrective actions for each hazard

WHAT ARE THE BENEFITS OF COMPLETING A JSA?

Once completed, an effective JSA will identify the hazards for a specific job or task. These hazards can then be mitigated to reduce the potential for an incident or injury. The JSA can also be utilized as a resource when conducting an incident investigation. In addition, the JSA can be used to supplement training for new employees.

HOW DO I CREATE AN EFFECTIVE JSA?

Start by getting the employees who perform the job involved...

- Discuss what you are going to do and why you are doing it. Explain that you are evaluating the specific job, not their individual performance. Review the job steps and potential hazards with them and get their feedback.

Fix what you find...

- To ensure credibility of the process, if you identify any uncontrolled hazards, management needs to be committed to follow through and correct them.

WHAT JOBS SHOULD A JSA BE DEVELOPED FOR?

- Jobs with the highest injury or illness rates.
- Jobs where there has been a near-miss or close call.
- Jobs with the potential to cause serious injuries or illnesses, even if there is no history of such problems.
- Jobs in which one simple, human mistake could lead to severe injury.
- Jobs that are new to your operation or have been recently changed.
- Jobs complex enough to require written instructions.

WHAT ARE SOME COMMON MISTAKES MADE WHEN DEVELOPING A JSA?

- Not engaging the frontline employees in the process. Employees doing the job are experts so it is important to get their feedback.
- Getting too specific or too detailed. Try to limit the JSA to the key steps, with the greatest risk of injury.

SAMPLE JSA – LADDER USE

STEP 1: DEFINE THE KEY JOB STEPS

KEY JOB STEPS	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
<i>List the steps required to perform the job/task in the sequence they are carried out</i>	<i>Against each job step, list the hazard(s) that could cause injury when the job/task is performed</i>	<i>List the control measure required to eliminate or minimize the potential for incident or injury arising from the potential hazard</i>
Select proper ladder		
Carry ladder to location and set up		
Climb ladder		
Take down ladder		

STEP 2: LIST THE POTENTIAL HAZARDS

KEY JOB STEPS	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
<i>List the steps required to perform the job/task in the sequence they are carried out</i>	<i>Against each job step, list the hazard(s) that could cause injury when the job/task is performed</i>	<i>List the control measure required to eliminate or minimize the potential for incident or injury arising from the potential hazard</i>
Select proper ladder	Use of incorrect ladder	
	Use of damaged ladder	
Carry ladder to location and set up	Sprains and Strains	
	Falls	
	Slip/Trip	
Climb ladder	Falls	
Take down ladder	Sprains and Strains	

STEP 3: LIST THE HAZARD CONTROL MEASURES

KEY JOB STEPS	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
1) Select ladder	Use of incorrect ladder	<ul style="list-style-type: none"> Choose the right ladder for the job: <ul style="list-style-type: none"> A step ladder is NOT a straight ladder ALWAYS use the right length ladder Pay attention to the Load Capacity, this includes weight the person as well as tools, materials, and equipment! <ul style="list-style-type: none"> Type IA- Extra Heavy Duty (300 lb), Type I - Heavy Duty (250 lb), Type II - Medium Duty (225 lb), Type III- Light Duty (200 lb)
	Use of damaged ladder	<ul style="list-style-type: none"> Inspect ladder for damage or missing components (review warning labels, locking spreader arms, damaged hinges, missing non-skid feet, etc.)
2) Carry ladder to location and set up	Injuries to self and others from losing control of ladder	<ul style="list-style-type: none"> Verify path of travel is free from obstructions and slip/trip hazards. Get a good grip before starting to walk. For long ladders, get help from second worker. Carry ladder with its feet in front of you—ready to set up. Bend knees when setting ladder on ground. Make sure the ladder is on solid, flat ground. If the footing is slippery (wet wash floor), clean up the water, and utilize 'safety feet' to firmly grip the slippery surface. Do not place the ladder on unstable platforms to gain height advantage. STEP LADDER REQUIREMENTS: <ul style="list-style-type: none"> Make sure the ladder is fully open and the spreader arms are locked. NEVER use a step ladder in the closed position, leaned against an object! The angle of the feet are not designed to be used in this position. Do not climb higher than the second step from the top (refer to warning label on the ladder). STRAIGHT/EXTENSION LADDER REQUIREMENTS <ul style="list-style-type: none"> Straight or extension ladders must be set up at a 4:1 ratio. Never use a them as a plank or scaffolding. Their strength is only intended for the vertical position. Stand no higher than where you can hold on firmly to an upper rung or rail. Once in position, secure it (either tied off at the top or another employee constantly holding the ladder at the bottom).
	Falls from ladder	<ul style="list-style-type: none"> Always face the ladder when climbing or descending. Maintain control with both hands whenever climbing or descending. Always maintain 3 points of contact! NEVER climb a ladder with tools or other objects in your hands! NEVER overreach from a ladder. If necessary, descend the ladder and reposition the ladder so reaching is not necessary.
	Slip/Trip when stepping down from ladder	<ul style="list-style-type: none"> Inspect work area for slip/trip hazards Ensure floor is clean and dry Keep access area at base of ladder clear of hoses and cords
3) Climb ladder	Falls from ladder	<ul style="list-style-type: none"> Maintain three points of contact while on the ladder. Do not climb higher than the ladder is rated for. Ladders are used for access. When working while in one place on the ladder, some form of fall protection must be provided.
4) Take down ladder	Injuries to self and others from losing control of ladder.	<ul style="list-style-type: none"> Ensure work area is clear of slip/trip hazards. Get a good grip before taking down ladder. For long ladders, get help from second worker.

DAVIS MECHANICAL		JOB SAFETY ANALYSIS (JSA)	
TASK ANALYZED:		DATE COMPLETED:	
JSA DEVELOPED BY:			
REQUIRED TRAINING:			
REQUIRED PPE:			

KEY JOB STEPS	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
<i>List the steps required to perform the job/task in the sequence they are carried out</i>	<i>Against each job step, list the hazard(s) that could cause injury when the job/task is performed</i>	<i>List the control measure required to eliminate or minimize the potential for incident or injury arising from the potential hazard</i>

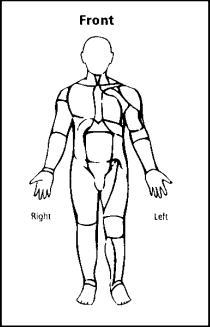
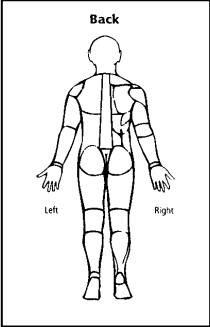
APPENDIX B:

INCIDENT INVESTIGATION REPORT

Employee Accident / Exposure Investigation Report

Supervisor should complete this report by the end of the work shift. Please print clearly.

Employee Name: _____ Department: _____
 Job title: _____ Years of experience: _____
 Date of injury/illness: _____

Hazard identification and Accident causes – Refer to Back of page for examples				
BODY PART(S) INVOLVED	LOCATION OF ACCIDENT	TYPE OF INJURY(IES)	INJURY CAUSE	EQUIPMENT INVOLVED
DESCRIBE HOW THE INCIDENT OCCURRED:				
TYPE OF INJURY AT THE TIME OF THE ACCIDENT: <input type="checkbox"/> CLASS 1 (FIRST AID) <input type="checkbox"/> Class 2 (REPORTABLE)				
<input type="checkbox"/> Class 3 (LOST TIME)				
<input type="checkbox"/> NEAR MISS <input type="checkbox"/> INCIDENT (NO INJURY) <input type="checkbox"/> INJURY		<div style="display: flex; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center; margin: 0 10px;"> MARK AREAS OF INJURY: </div> <div style="text-align: center;">  </div> </div>		
EXPECTED RETURN TO WORK DATE:				
HOW LONG ON PRESENT JOB/POSITION?				
LIGHT DUTY WORK AND MODIFIED HOURS ARE AVAILABLE ACCORDING TO DOCTOR SPECIFICATION				
Cause Analysis – Refer to BACK PAGE FOR EXAMPLES				
IMMEDIATE ACCIDENT CAUSE(S):				
ROOT ACCIDENT CAUSE(S):				
Corrective Action				
IMMEDIATE CORRECTIVE ACTION(S):		PERSON RESPONSIBLE	DATE COMPLETED	
LONG TERM CORRECTIVE ACTION(S)		PERSON RESPONSIBLE	DATE COMPLETED	

Investigator Signature(s): _____ Date: _____

Date reviewed by safety committee: _____

Guide to Complete Accident investigation

These lists are not all inclusive. Use additional descriptive information as needed.

BODY PART	LOCATION	TYPE OF INJURY	INJURY CAUSE
<ul style="list-style-type: none"> • Hand (Right or Left) • Thumb (Right or Left) • Knee (Right or Left) • Eye (Right or Left) • Shoulder (Right or Left) • Foot (Right or Left) • Head • Upper/Lower Back 	<ul style="list-style-type: none"> • Warehouse • Production • Office • Lunch Room • Trash Area • Lobby • Parking Lot – Back • Sidewalk • Restroom • Stairway 	<ul style="list-style-type: none"> • Scrape/Bruise • Strain/Sprain • Puncture • Laceration • Contusion • Burn • Chemical 	<ul style="list-style-type: none"> • Slip/Fall • Struck By • Lifting or Moving • Caught (in/on/between) • Knife/Equipment Use • Object in Eye • Repetitive/Overuse

EXAMPLES: IMMEDIATE ACCIDENT CAUSES

UNSAFE ACTS	UNSAFE CONDITIONS
<ul style="list-style-type: none"> • Using defective equipment/tools • Using equipment/tools improperly • Servicing equipment in motion • Operating equipment without training/authority • Operating equipment at improper settings • Making safety devices inoperable • Lifting improperly • Engaging in horseplay • Failing to warn co-workers of dangers • Failing to secure equipment in place • Failing to use personal protective equipment 	<ul style="list-style-type: none"> • Congestion in the workplace • Defective tools, equipment or supplies • Hazardous atmospheric conditions: <ul style="list-style-type: none"> – Gases, dusts, fumes, vapors, radiation • Excessive noise • Fire & explosion hazards • Inadequate guards or supports • Inadequate warning systems • Poor housekeeping • Poor illumination • Poor ventilation

EXAMPLES: ROOT ACCIDENT CAUSES

MANAGEMENT SYSTEM FACTORS	PERSONAL FACTORS	ENVIRONMENTAL FACTORS
<ul style="list-style-type: none"> • No safety policy • Accountability for safety not established • Lack of leadership by example • Inadequate work procedures • Inadequate training • Inadequate equipment or tool maintenance • Safety was not considered in the purchase of: <ul style="list-style-type: none"> – Supplies – Tools – Equipment – Raw materials – Services 	<ul style="list-style-type: none"> • Behavioral Factors: <ul style="list-style-type: none"> – Accident repeater – Did not follow rules – Horseplay • Experience Factors: <ul style="list-style-type: none"> – Insufficient knowledge or skills – Lack of hazard awareness – Uses unsafe practices – Language/comprehension barriers • Physical Factors: <ul style="list-style-type: none"> – Size, strength, stamina • Emotional Factors <ul style="list-style-type: none"> – Distracted/inattentive – Anger issues • Attitude Factors <ul style="list-style-type: none"> – Risk taker – Other performance issues 	<ul style="list-style-type: none"> • Facility Design: <ul style="list-style-type: none"> – Equipment layout – Electrical systems – HVAC systems – Access ways – Material handling requirements – Work process flow requirements – Illumination – Noise • Location Factors: <ul style="list-style-type: none"> – Geographic area – Terrain – Surrounding location condition – Weather conditions

APPENDIX C:

NEW EMPLOYEE SAFETY ORIENTATION CHECKLIST

New Employee Safety Orientation Checklist

The immediate Supervisor of the employee will fill out this checklist and thoroughly instruct the employee in job safety requirements. Check each item as it is covered. When the checklist is finished, both the Supervisor and employee must sign the bottom and file it in the employee's file.

1. ____ Tour the facility to acquaint the employee with the entire operation.
2. ____ Inform the employee on how his/her job is important to the company.
3. ____ Find the location of the following safety equipment or information and review:
 - ____ Fire extinguishers in each room ____ First Aid Supplies
 - ____ Emergency Numbers ____ Safety Manual Program
 - ____ Evacuation Routes and Storm Shelter ____ Lockout Devices
 - ____ Safety Data Sheets ____ OSHA Poster
 - ____ Location of Hazard Report Forms ____ Personal Protective Equipment
 - ____ Written Safety Methods & Procedures (S M & P) for the equipment
4. Instruct and/or demonstrate the proper use of following: (Use N/A if not applicable)
 - ____ Eye and Face Protection ____ Hearing Protection (if needed)
 - ____ Spill Procedures ____ Proper Lifting Techniques
 - ____ Ladder Safety ____ Fire Fighting Equipment

General operations and procedures used in specific jobs and duties.

Hazardous elements of a specific job (routes), effects of overexposure (heat, noise, chemicals, machinery).

Job Hazard(s) _____

Employee reads safety rules and programs in the safety manual before beginning assigned work.

Employee	Date	Safety Coordinator or Supervisor Date
----------	------	---------------------------------------

APPENDIX D:

SITE SAFETY CHECKLIST

DAVIS MECHANICAL

SITE SAFETY CHECKLIST

PROJECT NAME:

PROJECT LOCATION:

DATE COMPLETED:

COMPLETED BY:

QUESTION	RESPONSE	COMMENTS
ASBESTOS & LEAD: materials have been addressed prior to renovation/demolition; any suspect material discovered is verified before being disturbed.	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
DEMOLITION: dust control measures in place, floor holes/openings secured, debris contained, chutes used.	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
ELECTRICAL WIRING & EQUIPMENT: GFCI's in use, Heavy duty cords in good condition, Protected from Damage (not being driven over).	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
EXCAVATIONS Soil is classified by competent person and sloped properly (Type A Clay/Stable Rock - 3/4:1, 53 degrees, Type B Gravel/Loam - 1:1, 45 degrees, Type C Sand- 1 1/2:1, 34 degrees, no benching). Spoil Pile & Mobile Equipment 2' back from edge, @4' deep Ramp/Ladder within 25' of personnel, @5' deep protective systems in place (Slope/Bench/Box), @20' it is engineered.	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
FALL PROTECTION: Personnel exposed to a fall hazard are protected (6' trigger height) by a guardrail system, personal fall arrest system (harness/lanyard) or safety net system. See <i>Steel Erection and Scaffold</i> section for additional requirements.	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
EMERGENCY RESPONSE: First Aid/CPR available at the jobsite and/or EMS Response within 4 minutes. System in place to be able to communicate a jobsite emergency (use of air horn, etc.). Local emergency contact information available (hospital/clinic). Eye wash capable of providing 15 minutes of flushing available on site for caustic/corrosive operations (ex. portland cement).	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK	
LADDERS: in good condition, labels are legible, being used properly (Extension Ladder - secured, set up at a 4:1 ratio, and extends 3' above access point. Step Ladder - spreader bars locked, personnel not standing above the second step from the top).	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
MOBILE EARTH MOVING EQUIPMENT (MNOSHA 5207.1000): Controlling employer (GC) coordinates joint contractor safety awareness meeting to discuss how to approach equipment (visual, voice, or signal), maintaining visibility while approaching (high visibility garments), operator responsibilities, overhead and underground utilities, equipment blind spots, safe operating procedures of equipment (traveling, backing, parking, loading for transport, maintenance, and operation).	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
PERSONAL PROTECTIVE EQUIPMENT: Being worn as required (Hard Hats, Safety Glasses, High Visibility Vest, Other)?	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	
OTHER:	<input type="checkbox"/> SAFE <input type="checkbox"/> AT-RISK <input type="checkbox"/> N/A	

APPENDIX E:

NEAR MISS REPORT FORM

DAVIS MECHANICAL NEAR MISS REPORT FORM

CHECK APPROPRIATE LEVEL		
RED STOP WORK AND REPORT <input type="checkbox"/>	YELLOW USE CAUTION AND REPORT <input type="checkbox"/>	GREEN CONTINUE AND REPORT <input type="checkbox"/>
LOCATION:	TIME:	DATE:
DEPARTMENT:		CITY/STATE:
GROUND SURFACE AND WEATHER CONDITION (IF APPLICABLE):		
REPORTED BY (OPTIONAL):		
DESCRIBE NEAR MISS:		
ACTIONS TAKEN:		
ROOT CAUSE(S) – REQUIRED FOR RED:		
Supervisor REVIEW:		DATE:
WERE PICTURES TAKEN	YES:	NO:

APPENDIX F:

EMPLOYEE WARNING NOTICE

DAVIS MECHANICAL

EMPLOYEE WARNING

Employee: _____

Supervisor: _____ Date: _____

Previous Warnings Verbal Written Date: _____ By Whom _____

1st Warning _____

2nd Warning _____

3rd Warning _____

Employer Statement: _____

Employee Statement: _____


Action to be taken:
___Warning ___Probation ___Suspension ___Dismissal

Other: _____

Consequences should incident occur again: _____

I have read this warning and understand it.

_____/_____/_____
Employee Signature Date Supervisor Signature Date

		Davis Mechanical Systems, Inc.		
Policy No. 02		Confined Space - Construction		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

OBJECTIVE

The objective of this program is to maintain a safe and injury/illness free workplace while working in confined spaces on construction sites. In order to comply with the federal Occupational Safety and Health Administration (OSHA) standard, this written program has been established for Davis Mechanical Systems, Inc. (Davis Mechanical). All company projects and facilities are included and comply with this program. Copies of this written program, including a copy of the OSHA Standard, are available for review by any employee.

The primary objective of this program is to provide an overview of confined space entry program responsibilities and requirements in the role of an Entry Employer (as defined herein) when performing work on a construction site. The intent of this program is to provide Davis Mechanical (in the role of Entry Employer) with plain language guide to confined space entry for construction compliance as well as a ready access reference while on the construction site.

Davis Mechanical personnel will not perform any confined space entry activities without approval from the Safety Coordinator.

Due to the nature of the work Davis Mechanical performs, it is possible that subcontractors may be required to enter areas or spaces defined by the OSHA as “confined spaces.” This program sets forth the requirements for practices and procedures to protect employees engaged in construction activities at a worksite with one or more confined spaces.

BACKGROUND

It is critical to recognize that the Confined Space Entry Program in Construction only applies to construction operations as defined by the OSHA regulation as “construction, alteration and/or repair, including painting and decorating.” Federal OSHA Section 1910.12(a) further provides that OSHA’s construction industry standards apply “to every employment and place of employment of every employee engaged in construction work.” All other work is considered “maintenance” and when confined space entry is required when conducting maintenance, the Confined Space Entry Program for General Industry (29 CFR 1910.146) regulation applies.

(Note: All OSHA standard references are Federal OSHA standards.)

If uncertainty still exists as to the differences between the OSHA general industry standard (maintenance) and construction standard, as well as whether the work being performed is construction or maintenance, see Appendix D.

This program is intended to meet the regulatory scope of 29 CFR 1926.1201 – 1213. Exceptions to this program include (1) Construction work regulated by §1926 subpart P—Excavations. (2) Construction work regulated by §1926 subpart S—Underground Construction, Caissons, Cofferdams and Compressed Air. (3) Construction work regulated by §1926 subpart Y—Diving.

KEY DEFINITIONS (additional related definitions can be found in Appendix C)

For the purposes of this program, the following OSHA definitions related to confined space and permit-required confined space in construction shall apply:

Attendant is an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform the duties specified in §1926.1209.

Authorized entrant is an employee who is authorized by the entry supervisor to enter a permit space.

Competent Person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them.

Confined Space is defined as a space meeting all of the following conditions:

1. Is large enough and so configured that an employee can bodily enter it (any part of the body breaks the plane of the opening);
2. Has limited or restricted means for entry and exit; and
3. Is not designed for continuous occupancy.

Examples of the types of confined spaces that may be found on construction sites include, but are not necessarily limited to:

- Manholes (such as sewer, storm drain, electrical, or other utility)
- Sewers
- Storm drains
- Water mains
- Lift stations
- Tanks (such as fuel, chemical, water or other liquid, solid or gas)
- Pits (such as elevator, escalator pump, valve or other equipment)
- Bins
- Boilers
- Incinerators
- Scrubbers
- Concrete pier columns
- Transformer vaults
- Heating, ventilation, and air-conditioning (HVAC) ducts
- Precast concrete and other pre-formed manhole units
- Drilled shafts
- Enclosed beams
- Vessels
- Digesters
- Cesspools
- Silos
- Air receivers
- Sludge gates
- Air preheaters
- Transformers
- Turbines
- Chillers
- Bag houses
- Mixers/reactors
- Crawl spaces
- Attics
- Basements (before steps are installed).

Control is the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

Controlling Contractor is the employer that has overall responsibility for construction at the worksite.

Early-warning system is any method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include, but are not limited to: alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

Emergency is any occurrence (including any failure of power, hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.

Engulfment is the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, crushing, or suffocation.

Entry is the action by which any part of a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space, whether or not such action is intentional or any work activities are actually performed in the space.

Entry Employer means any employer who decides that an employee it directs will enter a permit space.

Note. An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space and OSHA will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.

Entry permit (permit) is the written or printed document that is provided by the employer who designated the space a permit space to allow and control entry into a permit space and that contains the information specified in this program.

Entry supervisor is the qualified person (such as the site supervisor, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.

Note. An entry supervisor may also serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he/she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazard is any physical hazard or hazardous atmosphere as defined herein.

Hazardous atmosphere is any atmosphere that has the potential to expose employees to the risk of death, incapacitation, asphyxiation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following conditions:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- (2) Airborne combustible dust at a concentration that meets or exceeds its LFL; Note: *This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.*
- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart D—Occupational Health and Environmental Control, or in Subpart Z—Toxic and Hazardous Substances, of applicable OSHA regulations and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, and impairment of ability to self-rescue, injury or acute illness due to its health effects is not covered by this definition.

- (5) Any other atmospheric condition that is immediately dangerous to life or health.

Note. For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, §1926.59 of applicable OSHA regulations, published information and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Host employer is the employer that owns or manages the property where the construction work is taking place.

Note: In no case will there be more than one Host Employer. If the owner of the property on which the construction activity occurs has contracted with an entity for the general management of that property and has transferred to that entity the required information, OSHA will treat the contracted management entity as the Host Employer for as long as that entity manages the property. Otherwise, OSHA will treat the owner of the property as the Host Employer.

Immediately dangerous to life or health (IDLH) is any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects. Davis Mechanical does not perform work in IDLH atmospheres.

Important Notes: Some materials—hydrogen fluoride gas and cadmium vapor, for example may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Limited or restricted means for entry or exit is a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Monitor or monitoring is the process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

Non-entry rescue occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-permit confined space is a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this subpart.

Permit-required Confined Space (Permit Entry) is a confined space (as defined above), that has one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere;
2. Contains a material that has potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by the inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; and/or
4. Contains any other recognized serious safety or health hazards.

Important Notes:

Work performed within the space, including hot work (welding, cutting, soldering, brazing, etc.), painting, applying sealants, solvent use or running gasoline or diesel powered engines can result in hazardous atmospheres in the space.

Workers should be reminded that welding fumes and chemical vapors (glue, seam sealer, etc.) can travel to other parts of a confined space. Consider these activities in the assessment of the confined space hazards

Physical hazard is an existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: explosives, mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

Prohibited condition is any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

Qualified person is one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work or the project.

Rescue is the act of retrieving and providing medical assistance to one or more employees who are in a permit space.

Ventilate or ventilation is the means of controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of §1926.57—Ventilation.

ASSIGNMENT OF RESPONSIBILITY

Typically, while performing work on a construction site, Davis Mechanical may serve in the role of an Entry Employer (versus a Host Employer or Controlling Contractor), as defined herein. In some cases, where Davis Mechanical scope of work is much broader, they may serve as the role of the Controlling Contractor. The following outlines the Assignment of Responsibilities as well as guidance and recommendations pertaining to each of these roles.

Davis Mechanical Policy: When the scale of the project is such that Host Employer does not possess confined space entry resources and the requirements of the OSHA regulation are beyond the capability of the company, contracting the confined space entry work to a qualified entity that has this capability is highly recommended to ensure the health and safety of the workers is protected.

The effectiveness of this program depends on proactive engagement and communication of jobsite management and employees. Before work begins at a jobsite, each employer must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

If any employer conducting work on a construction site decides that employees it directs will enter a permit space, that employer (Entry Employer) must have a written permit space program implemented at the jobsite. A written program, as outlined here, must be made available prior to and during entry operations for inspection by employees and their authorized representatives.

Interaction and information sharing with client facility representatives, general contractors and all related trade contractors is critical to this construction confined space process since hazards may be part of the jobs, tasks, and processes being completed by these multi-employer work environments. Clients may have confined spaces in their facilities or on active jobsite and it is important the Davis Mechanical work closely with these related organizations to identify these areas and take proper precautions.

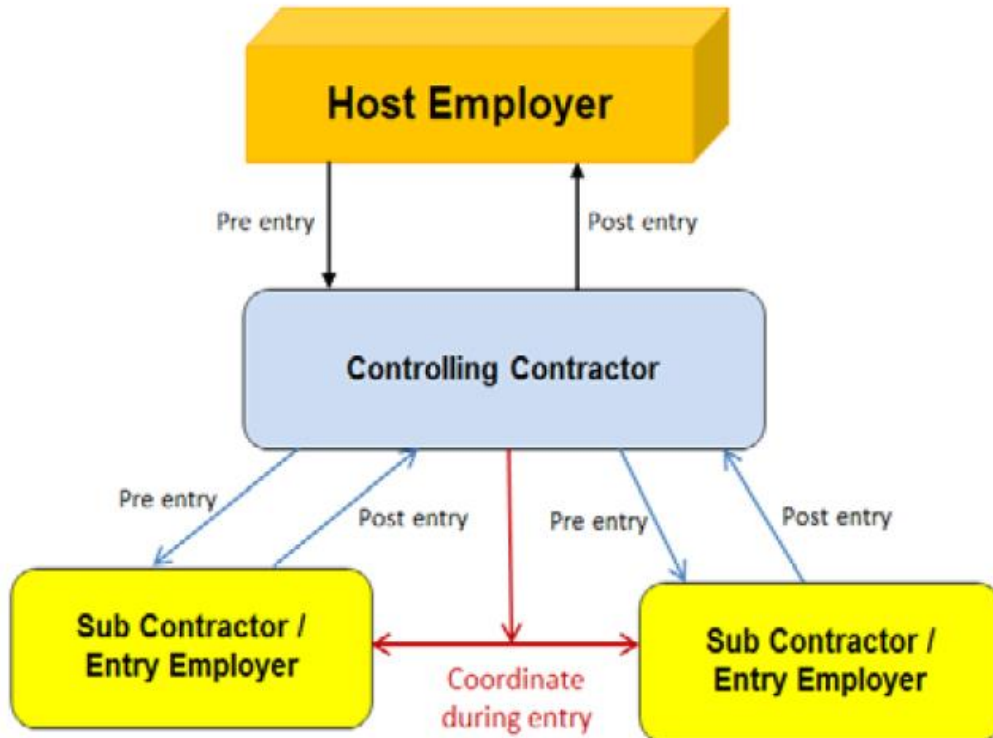
This program (and the OSHA standard) is dependent upon the Controlling Contractor, rather than the Host Employer or Entry Employer, be the primary point of contact for information about permit spaces at the work site. The Host Employer must provide information it has about permit spaces at the work site to the

Controlling Contractor, who then passes it on to the employers whose employees will enter the spaces (deemed “Entry Employers”).

Likewise, Entry Employers must give the Controlling Contractor information about their entry program and hazards they encounter in the space and the Controlling Contractor passes that information on to other Entry Employers and back to the Host Employer.

The Controlling Contractor is also responsible for making sure employers outside a space know not to create hazards in the space and that Entry Employers working in a space at the same time do not create hazards for one another’s workers.

Note: If there is no Controlling Contractor, the Host Employer or another employer will perform these duties; or if the Controlling Contractor owns or manages the property, then it is both a Controlling Contractor also serves as the Host Employer.



Before entry operations begin, the Controlling Contractor must:

- Obtain the Host Employer’s information about the permit space hazards and previous entry operations; and
- Provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:
 - Information received from the Host Employer;
 - Any additional information the Controlling Contractor has about the subjects the Host Employer is responsible for listed above; and
 - The precautions that the Host Employer, Controlling Contractor, or other Entry Employers implemented for the protection of employees in the permit spaces.

If the workplace contains one or more permit spaces or entry employers, the Host Employer responsibilities include:

- Before entry operations begin, the Host Employer must provide the following information, if it has it, to the Controlling Contractor:
- The location of each known permit space and inform exposed employees by posting signs reading “DANGER – PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER” providing sufficient notification of the existence and location of, and danger posed by each permit space.

- Inform, in a timely manner and in a manner other than posting, its employees' authorized representatives and Controlling Contractor of the existence and location of, and the danger posed by, each permit space.
- The hazards or potential hazards in each space or the reason it is a permit space; and
- Any precautions that the Host Employer or any previous Controlling Contractor or Entry Employer implemented for the protection of employees in the permit space.

The Safety Coordinator is responsible for:

- Providing oversight and technical support,
- Securing the resources necessary to implement this program;
- Ensuring that routine safety checks of work operations are performed;
- Conducting an annual review of this program;
- Updates (as needed) to ensure the effectiveness of the program; and,
- Ensuring that proper reporting and record keeping is executed.

The Entry Supervisor is the Davis Mechanical qualified person (such as the site supervisor, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for entry as required by this standard. Note: An entry supervisor may also serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Specifically, the Entry Supervisor is responsible for:

- Assessing the space prior to entry to determine if the space meets the characteristics of a permit-required confined space;
- Knowing space hazards including information on the mode of exposure, signs, or symptoms and consequences of exposure;
- Verifying emergency plans and specified entry conditions such as permits, tests, procedures, equipment, and availability of rescue services before allowing entry;
- Terminating entry and canceling permits when entry operations are complete or if a new condition exists;
- Taking appropriate measures to remove unauthorized entrants; and,
- Ensuring that entry operations remain consistent with the entry permit and acceptable entry conditions are maintained.

The Authorized Entrant is the properly trained employee who has been authorized by the Entry Supervisor to enter a permit space. Specifically, the Authorized Entrant is responsible for:

- Knowing the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure;
- Properly using equipment as required;
- Communicating with the Attendant during the entry so that the Attendant can monitor the status of the entry;
- Exiting from the permit space as soon as possible when ordered by the Attendant, when the entrant recognizes the warning signs or symptoms of exposure exists, when a prohibited condition exists, or when an automatic alarm is activated; and,
- Alert the Attendant immediately when a prohibited condition exists or when warning signs or symptoms of exposure exist.

The Attendant is an individual stationed outside one permit space who assesses the status of authorized entrants and who must perform the following duties:

- Is familiar with and understands the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Is aware of possible behavioral effects of hazard exposure in authorized entrants;
- Continuously maintains and ensures an accurate count of Authorized Entrants in the permit space;

- Remains outside the permit space during entry operations until relieved by another attendant; Note: After Attendant has been relieved by another Attendant, the relieved attendant may enter a permit space to attempt a rescue when the employer's permit space program allows attendant entry for rescue and the Attendant has been trained and equipped for rescue operations. NO Davis Mechanical EMPLOYEES WILL ASSIST IN ENTRY RESCUE. TRAINED RESCUE SERVICES WILL BE PROVIDED TO PERFORM ENTRY RESCUE.
- Communicates with authorized entrants as necessary to assess entrant status and to alert entrants of the need to evacuate the space;
- Assesses activities and conditions inside and outside the space to determine if it is safe for entrants to remain in the space and orders the Authorized Entrants to evacuate the permit space immediately under any of the following conditions:
 - A. If there is a prohibited condition;
 - B. If the behavioral effects of hazard exposure are apparent in an authorized entrant;
 - C. If there is a situation outside the space that could endanger the authorized entrants; or
 - D. If the Attendant cannot effectively and safely perform all the duties as required under this standard;
 - E. Summons rescue and other emergency services as soon as the Attendant determines that authorized entrants may need assistance to escape from permit space hazards;
- Takes the following actions when unauthorized persons' approach or enter a permit space while entry is underway:
 - A. Warns the unauthorized persons that they must stay away from the permit space;
 - B. Advises the unauthorized persons that they must exit immediately if they have entered the permit space; and
 - C. Informs the Authorized Entrants and the entry supervisor if unauthorized persons have entered the permit space;
- Performs non-entry rescues as specified by the employer's rescue procedure; and
- Performs no duties that might interfere with the Attendant's primary duty to assess and protect the Authorized Entrants.
- An attendant may not monitor more than one permit space without approval of the Safety Coordinator

GENERAL PROCEDURES

Planning Confined Space Entries in Construction

ONLY PROPERLY TRAINED EMPLOYEES ENTER CONFINED SPACES IN CONSTRUCTION. NO EMPLOYEE IS TO ENTER ANY CONFINED SPACE OR PERCEIVED CONFINED SPACE WITHOUT FIRST NOTIFYING A SUPERVISOR AND THE SUPERVISOR TAKING APPROPRIATE ACTIONS AS OUTLINED IN THIS PROGRAM.

No confined space entry shall be performed unless at least one person who has been trained and certified in basic first-aid and cardiopulmonary resuscitation (CPR) is present on-site and immediately available for the duration of the entry.

Entry Supervisor/Foreman must coordinate escape equipment and procedures, as well as rescue and emergency services, with the Responsible Person prior to executing any entry. No entry shall be conducted until appropriate rescue and/or retrieval procedures have been coordinated with the Responsible Person.

Any confined space must be properly secured and protected from hazards outside of the space prior to any entry.

All entries, regardless of the type of space, must have a qualified Attendant stationed at the opening of the space who can maintain constant communication with Entrants for the duration of the entry.

The Confined Space Entry Decision Tree (Appendix A) can be used as a guide to determine the necessary actions prior to executing any confined space entry.

The Confined Space Entry Permit (Appendix B) should be completed for every confined space entry. The level of detail required on the Confined Space Permit depends on the size and configuration of the confined space, the work conducted inside the confined space, and the types of hazards present (or potentially present).

No space shall be entered while gasoline or diesel powered engines or equipment are operating within 50 feet of the entrance to the space.

Respiratory protection shall not be used to execute any entry where levels of O₂, LEL, CO or H₂S levels are not within acceptable entry criteria.

ATMOSPHERIC TESTING IN CONSTRUCTION

Prior to any entry, atmospheric testing shall be conducted at various levels within the space, including the lowest level within the space. Atmospheric testing should be conducted using a calibrated multi-gas meter capable of measuring the following parameters:

Atmospheric Test Parameter	Acceptable Entry Criteria/Alarm Level
Oxygen (O ₂)	19.5% to 23.5%
Lower Explosive Limit (LEL)	Less than (<) 10%
Carbon Monoxide (CO)	Less than (<) 25 parts per million (ppm)
Hydrogen Sulfide (H ₂ S)	Less than (<) 10 parts per million (ppm)

The meter should be equipped with an audible alarm set to activate when measured levels are outside the range of acceptable atmospheric criteria shown above.

The atmosphere within the space must be continuously monitored unless the Entry Employer can demonstrate that equipment for continuous monitoring is not commercially available or periodic monitoring is sufficient. If continuous monitoring is used, the employer must ensure that the monitoring equipment has an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or that an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape. If continuous monitoring is not used, periodic monitoring is required. All monitoring must ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee, who enters the space, or that employee's authorized representative, must be provided with an opportunity to observe the testing required by this paragraph. Any employees, or their representatives, are entitled to request additional monitoring at any time.

If the Confined Space Entry Permit is used to document the entry, the intervals at which atmospheric tests are required must be determined prior to entry. The table below provides guidelines for determining the intervals of atmospheric testing; however, the Entry Supervisor and/or Entrant(s) must make the determination based on space, worksite characterizations, and the work to be performed within the space.

Test Interval	Guideline
Initial	Required for all entries, regardless of the type of space. Must be conducted prior to entry.
Prior to Each Entry	Required if multiple entries into the same space are required during a single shift, and no indication that more frequent testing is required. Testing must be conducted prior to each entry into the space.
Continuous	Required in all cases. Required if initial monitoring indicates any atmospheric testing parameter measured is outside the acceptable entry criteria and ventilation is required. Continuous monitoring can be conducted from outside the space or by equipping entrants with personal monitors capable of measuring all of the parameters required.

If an extension hose or tubing is required to sample the lowest level of the space, the tester must allow sufficient time for the air sample to travel through the tubing to the instrument detector, as specified in the equipment manufacturer's instruction manual.

If the Confined Space Entry Permit is used to document the entry, the frequency that tests are required, the tester's name, and the model, manufacturer, serial number and date of last calibration should be entered on the permit.

SPACE VENTILATION IN CONSTRUCTION

If atmospheric testing measures levels outside of the acceptable criteria range:

- Ventilation of the space shall be provided using a positive pressure ventilator or blower equipped with a duct long enough to reach the lowest level of the space.
- Ventilate the space for at least 15 minutes prior to retesting the atmosphere.
- Do not enter the space until atmospheric testing results are within acceptable criteria limits.

Note: An alternate procedure for permit required confined space entry (essentially by-passing most program requirements) is allowed under the OSHA regulation at §1926.1203 (e)(2) provided that certain conditions are met including:

1. All physical hazards in the space are eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere.
2. Continuous forced air ventilation is utilized to maintain safe for entry.
3. The space should have continuous monitoring unless the employer has supporting data that demonstrates continuous monitoring is unnecessary.

Only the Davis Mechanical representative (competent person), in cooperation with Davis Mechanical Management and Controlling Contractor, can make that determination.

PROCEDURES FOR ENTERING CONFINED SPACES IN CONSTRUCTION

A Confined Space Entry Permit (Appendix B) should be completed for every confined space entry.

No entry permit shall extend beyond the period of one work shift. If entries are required for multiple days, complete a separate permit for each day an entry will occur.

Prior to any entry, the Entry Supervisor and Entrant(s) determine if any of the following hazards are or could be present:

1. Continuous or potential hazardous atmosphere (also consider the type of work to be performed),
2. Engulfment hazard,
3. Entrapment hazard,
4. Other hazardous energy or residual energy.

Check the appropriate box on the Confined Space Entry Permit for all hazards that are or may be present

PROCEDURES FOR SPACES WITH NO HAZARDS:

1. If no hazards are present, check the appropriate box on the Confined Space Entry Permit. You CANNOT check the NO HAZARDS box if any work activities that can create hazards, such as hot work, painting, solvent use, or running gasoline or diesel powered engines, will be performed in the space.
2. Conduct initial atmospheric testing and record the results on the Confined Space Entry Permit.
3. If initial atmospheric testing indicates unacceptable entry conditions, the entry becomes a PERMIT ENTRY and the controls referenced below must be implemented. Enter the test results on the Confined Space Entry Permit.
4. If initial atmospheric testing indicates acceptable entry conditions, enter the test results on the Confined Space Entry Permit and all Entrants, Attendants and the Entry Supervisor sign the permit and proceed with the entry.
5. An Attendant is required for all entries into NO HAZARD spaces. The Attendant remains in constant communication with the Entrant(s).

6. At the completion of the entry or at the end of the shift, whichever is first, close the permit by entering the date and time at the bottom of the permit. Either an Entrant or the Entry Supervisor must sign the permit closure.

PROCEDURES FOR PERMIT ENTRY OF A SPACE WITH ANY HAZARD:

Before entry operations begin, the Host Employer must provide the following information, if it has it, to the Controlling Contractor:

- The location of each known permit space;
- The hazards or potential hazards in each space or the reason it is a permit space; and
- Any precautions that the Host Employer or any previous Controlling Contractor or Entry Employer implemented for the protection of employees in the permit space.

Before entry operations begin, the Controlling Contractor must:

- Obtain the Host Employer's information about the permit space hazards and previous entry operations; and
- Provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:
 - The information received from the Host Employer;
 - Any additional information the Controlling Contractor has about the subjects listed in paragraph (h)(1) of this section; and
 - The precautions that the Host Employer, Controlling Contractor, or other Entry Employers implemented for the protection of employees in the permit spaces.

Before entry operations begin, each Entry Employer must:

- Obtain all of the Controlling Contractor's information regarding permit space hazards and entry operations; and
- Inform the Controlling Contractor of the permit space program that the entry employer will follow, including any hazards likely to be confronted or created in each permit space.

The Controlling Contractor and Entry Employer(s) must coordinate entry operations when:

1. More than one entity performs permit space entry at the same time; or
2. Permit space entry is performed at the same time that any activities that could foreseeably result in a hazard in the permit space are performed.
3. If any hazards listed on the Confined Space Entry Permit are or may be present at any time during the entry, check the appropriate box(es) on the permit.
4. If any activities that would change the characterization of the space, such as hot work, painting, solvent use, or running gasoline or diesel powered engines, check the appropriate box(es) on the permit.
5. Select and check the appropriate Controls, Personal Protective Equipment, and Rescue/Retrieval Equipment required for the hazards identified on the Confined Space Entry Permit. The Entry Supervisor or Entrant verifies that all of the appropriate controls for ensuring a safe entry are available prior to entry.
6. Conduct initial atmospheric testing and record the results documented on the Confined Space Entry Permit.
7. If initial atmospheric testing indicates unacceptable entry conditions, implement space ventilation (described above). Record the test results on the permit.
8. If initial atmospheric testing indicates acceptable entry conditions, record the test results on the permit and all Entrants, Attendants and the Entry Supervisor sign the permit and proceed with the entry.
9. An Attendant is required for all entries into PERMIT ENTRY spaces.
10. The Attendant remains in constant communication with the Entrant(s).
11. At the completion of the entry or at the end of the shift, whichever is first, close the permit by entering the date and time at the bottom of the permit. Either an Entrant or the Entry Supervisor must sign the permit closure.

PROCEDURES FOR EVACUATING SPACES

Entrants must leave the space or be hoisted from the space immediately if, at any time during the entry:

1. Any of the parameters monitored are found to be outside of the acceptable criteria ranges;
2. The Entrant(s) or Attendant(s) determine that conditions present pose a risk to the Entrants;
3. The Attendant orders an evacuation of the space because:
 - An Entrant shows signs of physiological effects of hazard exposure;
 - An emergency outside the confined space exists; or,
 - The Attendant cannot effectively and safely perform his or her required duties.

At no time shall an Attendant or other person enter a confined space to affect a rescue or assist with an evacuation by entering the space unless they are appropriately qualified and have the appropriate equipment, including an atmosphere supplying respirator suitable for rescue in an atmosphere considered immediately dangerous to life and health (IDLH). **Davis Mechanical EMPLOYEES ARE NOT QUALIFIED AND WILL NOT BE ALLOWED TO PERFORM ENTRY RESCUE. QUALIFIED RESCUE SERVICES WILL BE ON SITE TO PERFORM THIS FUNCTION.**

If evacuation of a space is necessary, record the reason and time the evacuation occurred on the Confined Space Entry Permit.

DO NOT re-enter the space until the Entry Supervisor and/or the Entrant(s) verify that appropriate controls have been implemented and that all conditions are safe for re-entry. Re-establish all procedures for entry before re-entering the space, including repeating atmospheric monitoring. Record the re-entry time on the permit.

After entry operations:

- The Controlling Contractor must debrief each entity that entered a permit space regarding the permit space program followed and any hazards confronted or created in the permit space(s) during entry operations;
- The Entry Employer must inform the Controlling Contractor in a timely manner of the permit space program followed and of any hazards confronted or created in the permit space(s) during entry operations; and
- The Controlling Contractor must apprise the Host Employer of the information exchanged with the entry entities;
- If there is no Controlling Contractor present at the worksite, the requirements for, and role of, Controlling Contractors in must be fulfilled by the Host Employer or other employer who arranges to have employees of another employer perform work that involves permit space entry.

The employer must provide training to each employee whose work is affected by this program, at no cost to the employee, and ensure that the employee possesses the understanding, proficiency, knowledge, and skills necessary for the safe performance of the duties assigned under this standard.

TRAINING

Training will be provided upon assignment to and when there is a change of a position assignment where the employee may serve as Entry Supervisor, Entrant, or Attendant on a job site. Additional training shall be provided when there has been a change in the procedures referenced in this program, whenever there is a change in the permit spaces entry operations that presents a hazard about which an employee has not been previously trained and; whenever there is evidence of a deviation from the permit space entry procedures of this standard or there are inadequacies in the employee's knowledge of use of these procedures.

All Entry Supervisors, Entrants and Attendants receive the same training.

Training must address the following:

- What constitutes a permit (confined) space;
- Understanding of the hazards of permit space and the methods used to isolate, control or in other ways protect employees from these hazards;
- Countermeasures for controlling the hazards identified;
- Review of the OSHA standards and other guidelines referenced in this Program;
- Review of the procedures for confined space entries established in this Program;

- Dangers of attempting a rescue if not an authorized entrant;
- Procedures for evacuating spaces during entries; and,
- Procedures for rescue and retrieval.

Each employee who receives training should receive a certificate documenting the training. The certificate shall include the date of training and the signature of the training provider.

RECORDKEEPING

To comply with OSHA requirements for record retention and recordkeeping, the following records related to this Confined Space Entry Program are maintained:

- All Confined Space Entry Permits issued in an annual file.
- All employee training records in each employee's file.

PROGRAM REVIEW

Regular evaluation of the Confined Space Entry Program is important to its effectiveness. It is also important that the procedures and protocols accurately reflect changes in work activities and changes to current regulations and guidelines.

Review the program annually. The annual review should include the following:

- Review all permits to determine compliance with this program.
- Review any available documentation regarding space evacuations to identify "lessons learned."
- Review all confined space accidents or incidents, and update procedures to minimize the risk of those types of accidents or incidents from occurring.
- Evaluate the efficacy of the procedures specified in this program in the context of work activities, and update as necessary.

PERMIT REQUIRED CONFINED SPACE

Davis Mechanical will consult with affected employees and their authorized representatives on the development and implementation of all aspects of the permit space program. Davis Mechanical will make available all information required to be developed by this standard to each affected employee and his/her authorized representatives.

- Implement the measures necessary to prevent unauthorized entry;
- Identify and evaluate the hazards of permit spaces before employees enter them;
- Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:
 - Specifying acceptable entry conditions;
 - Providing each authorized entrant or that employee's authorized representative with the opportunity to observe any monitoring or testing of permit spaces;
 - Isolating the permit space and physical hazard(s) within the space;
 - Purging, inerting, flushing or ventilating the permit space as necessary to eliminate or control atmospheric hazards;

Note. *When an employer is unable to reduce the atmosphere below 10 percent LFL, the employer may only enter if the employer inertes the space so as to render the entire atmosphere in the space noncombustible and the employees use PPE to address any other atmospheric hazards (such as oxygen deficiency) and the employer eliminates or isolates all physical hazards in the space.*

- Determining that, in the event the ventilation system stops working, the monitoring procedures will detect an increase in atmospheric hazard levels in sufficient time for the entrants to safely exit the permit space;
 - Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;
 - Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry and ensuring that employees are not allowed to enter into, or remain in, a permit space with a hazardous atmosphere unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee; and
 - Eliminating any conditions (for example, high pressure) that could make it unsafe to remove an entrance cover.
- Provide the following equipment (specified in the OSHA standard) at no cost to each employee, maintain that equipment properly, and ensure that each employee uses that equipment properly:
 - Testing and monitoring equipment needed to comply with space ventilation requirements;
 - Ventilating equipment needed to obtain acceptable entry conditions;
 - Communications equipment including any necessary electronic communication equipment for attendants assessing entrants' status and summoning rescue;
 - Personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees;

Note: *The requirements of this part and other PPE requirements continue to apply to the use of PPE in a permit space. For example, if employees use respirators, then the respirator requirements in the OSHA standards for respiratory protection must be met.*

- Lighting equipment that is approved for the ignitable or combustible properties of the specific gas, vapor, dust, or fiber that will be present, and that is sufficient to enable employees to see well enough to work safely and to exit the space quickly in an emergency;
 - Barriers and shields;

- Equipment, such as ladders, needed for safe ingress and egress by authorized entrants;
 - Rescue and emergency equipment, except to the extent that the equipment is provided by rescue services; and
 - Any other equipment necessary for safe entry into, safe exit from, and rescue from, permit spaces.
- Evaluate permit space conditions in accordance with the following paragraphs of this section when entry operations are conducted:
- Test conditions in the permit space to determine if acceptable entry conditions exist before changes to the space's natural ventilation are made, and before entry is authorized to begin, except that, if an employer demonstrates that isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer) the employer must:
 - Perform pre-entry testing to the extent feasible before entry is authorized; and,
 - If entry is authorized, continuously monitor entry conditions in the areas where authorized entrants are working, except that employers may use periodic monitoring in accordance with the OSHA standard for monitoring an atmospheric hazard if they can demonstrate that equipment for continuously monitoring that hazard is not commonly Davis Mechanical available;
 - Provide an early-warning system that continuously monitors for non-isolated engulfment hazards. The system must alert authorized entrants and attendants in sufficient time for the authorized entrants to safely exit the space.
- Continuously monitor atmospheric hazards unless the employer can demonstrate that the equipment for continuously monitoring a hazard is not commonly Davis Mechanical available or that periodic monitoring is of sufficient frequency to ensure that the atmospheric hazard is being controlled at safe levels. If continuous monitoring is not used, periodic monitoring is required with sufficient frequency to ensure that acceptable entry conditions are being maintained during the course of entry operations;
- When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors;
- Provide each authorized entrant or that employee's authorized representative an opportunity to observe the pre-entry and any subsequent testing or monitoring of permit spaces;
- Reevaluate the permit space in the presence of any authorized entrant or that employee's authorized representative who requests that the employer conduct such reevaluation because there is some indication that the evaluation of that space may not have been adequate; and
- Immediately provide each authorized entrant or that employee's authorized representative with the results of any testing conducted in accordance with this program.
- Provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations;
 - Attendants may be assigned to more than one permit space provided the duties described in the OSHA standard can be effectively performed for each permit space.
 - Attendants may be stationed at any location outside the permit space as long as the duties described in the OSHA standard can be effectively performed for each permit space to which the attendant is assigned.
- If multiple spaces are to be assigned to a single attendant, include in the permit program the means and procedures to enable the attendant to respond to an emergency affecting one or more of those permit spaces without distraction from the attendant's responsibilities under the OSHA standard;
- Designate each person who is to have an active role (as, for example, authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space) in entry operations,

identify the duties of each such employee, and provide each such employee with the training required by the OSHA standard;

- Develop and implement procedures for summoning rescue and emergency services (including procedures for summoning emergency assistance in the event of a failed non-entry rescue) for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue;

Note: *Emergency services relied upon for rescue must be able to notify the Company immediately if rescue service becomes unavailable.*

- Develop and implement a system for the preparation, issuance, use, and cancellation of entry permits as required by this standard, including the safe termination of entry operations under both planned and emergency conditions;
- Develop and implement procedures to coordinate entry operations, in consultation with the Controlling Contractor, when employees of more than one employer are working simultaneously in a permit space or elsewhere on the jobsite where their activities could, either alone or in conjunction with the activities within a permit space, foreseeably result in a hazard within the confined space, so that employees of one employer do not endanger the employees of any other employer;
- Develop and implement procedures (such as closing off a permit space and canceling the permit) necessary for concluding the entry after entry operations have been completed;
- Review entry operations when the measures taken under the permit space program may not protect employees and revise the program to correct deficiencies found to exist before subsequent entries are authorized; and

Note: *Examples of circumstances requiring the review of the permit space program include, but are not limited to: any unauthorized entry of a permit space, the detection of a permit space hazard not covered by the permit, the detection of a condition prohibited by the permit, the occurrence of an injury or near-miss during entry, a change in the use or configuration of a permit space and employee complaints about the effectiveness of the program. This reevaluation will be done by a competent person.*

- Review the permit space program using the canceled permits retained under this program within 1 year after each entry and revise the program as necessary to ensure that employees participating in entry operations are protected from permit space hazards.

Note: *Employer may perform a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review is necessary.*

Note: *A permit-required space may only be reclassified as a non-permit-required space if the permit is properly cancelled, the completion is documented, and the space is re-evaluated after all entrants have exited the confined space. When a competent person determines that all of the below applicable requirements have been met, a space may be reclassified:*

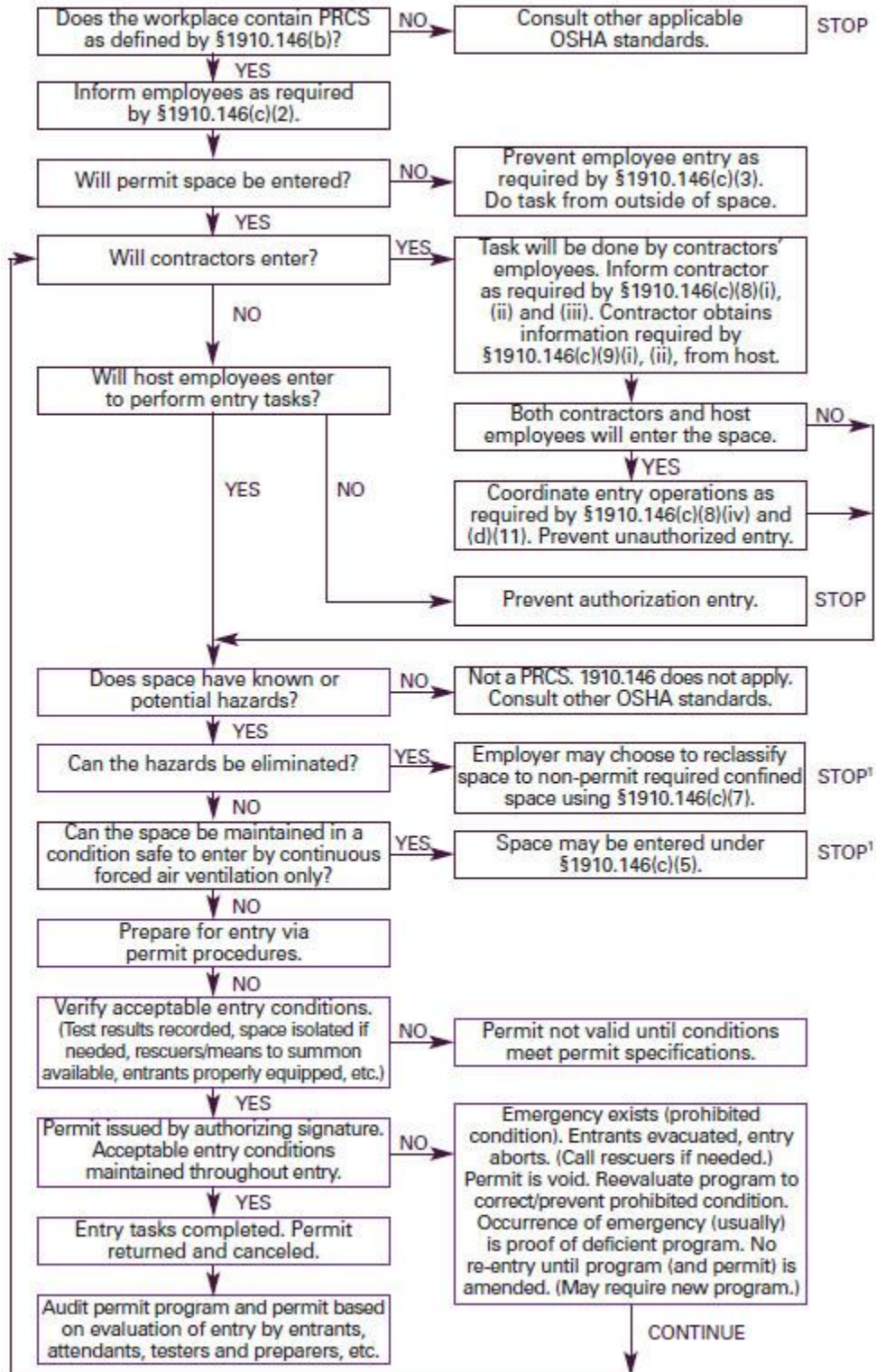
- Space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated or isolated without entry to the space;
- Testing and inspecting during that entry demonstrate that the hazards within the permit space have been eliminated or isolated;
- Forced air ventilation does not constitute elimination or isolation of hazards;
- Document the basis for determining that all hazards in a permit space have been eliminated or isolated;
- Through a certification that contains the date, the location of the space, and the signature of the person making the determination;
- If hazards arise within a permit space that has been reclassified as non-permit space, each employee in the space must exit the space. The entry employer must reevaluate the space and reclassify it as a permit space.

Note: *The permit may not exceed the time required. The permit shall be cancelled when the entry operations is completed; suspended or cancelled when conditions dictate. The permit must be fully reassessed before allowing re-entry.*

APPENDIX A

CONFINED SPACE ENTRY DECISION TREE

Permit-Required Confined Space Decision Flow Chart



¹ Spaces may have to be evacuated and reevaluated if hazards arise during entry.

Source: 29 CFR 1910.146 Appendix A.

APPENDIX B

CONFINED SPACE ENTRY PERMIT TEMPLATE

This permit must remain at job site until the entry is completed

Project Address: _____ Project No: _____
 Space Description: _____ Date: _____
 Purpose of Entry: _____ Time of Entry: _____
 Entry Supervisor: _____ Time Expires: _____
 Hazards and Controls _____ Check here if NO HAZARDS are Present: ☐

Atmospheric Hazards (check if present)		Controls Required (check if required)	
Oxygen levels below 19.5%		Initial testing (O ₂ , LEL, CO, H ₂ S)	
Oxygen levels above 23.5%		Continuous monitoring (O ₂ , LEL, CO, H ₂ S)	
Flammable/combustible gases, vapors or dust (specify):		Other testing* (specify type and duration):	
Toxic gases, vapors or dust (specify):		Ventilation – Blower w/ sufficient duct length	
Pressurized atmosphere		Air purifying respirator (circle)	
Other (specify):		Mask type: Half-face Full-face Cartridge: P100 Combo P100/organic vapor Other (specify):	
Configuration Hazard (specify):		Lines Broken-Capped or Blanked	
Engulfment Hazard (specify):		Purge-Flush and Vent	
Shock hazard/electrocution		Lockout De-energize-Tested and Verified	
Slips, trips, falls (specify):		If Early Warning System is required, is it installed and operational:	
Moving parts (specify):		Lighting (Explosion Proof)	
Connecting pipes, drains, ducts (specify):		Form of Communication (circle): Voice Radio Other:	
Biological hazard (specify):		Visual Contact with Attendant	
Other (specify):		Ground Fault Circuit Interrupter	
Person Protective Equipment (check if required)		Rescue / Retrieval (check if required)	
Safety glasses / goggles (circle one)		Full body harness	
Hearing protection		Retrieval tripod with winch	
Hard hat		Lanyard and lifeline	
Steel-toed/steel shank shoes		Coordination with Responsible Person	
		Coordination with local EMS and verify EMS is available the entire duration of the entry operation. If EMS become unavailable, require immediate notification and suspend entry operations until EMS becomes available	
Disposable coveralls (Tyvek)		SCBA available for rescue	
Shoe covers		Other (specify):	
Gloves (circle): Disposable Chemical Protective Leather		Fire Extinguisher	
Face shield			
Other (specify):			

Atmospheric Testing

Test Interval (circle): Initial Prior to Each Entry Continuous

Tester's Name: _____

	Time of Test							
	Initials of Tester							
Parameter	Acceptable Entry Criteria	Initial Test	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7
% Oxygen	19.5% to 23.5%							
% LEL*	Less than 5%							
Carbon Monoxide	Less than 25 ppm							
Hydrogen sulfide	Less than 10 ppm							

List other gases or parameters to be tested in blank fields.

Was evacuation of space required at any time? ___ YES ___ NO

If so, why? _____

Time of evacuation: _____ Time of re-entry: _____

Controls or actions taken to correct reason for evacuation: _____

Testing Instrument Used	Manufacturer	Serial No.	Date of Last Calibration

Permit Authorization

I certify that I have reviewed the permit, understand the hazards that are or may be present, and have verified that the appropriate controls have been implemented. I understand the procedures necessary to ensure safe entry. No entry can be initiated until this permit is completed and signed by all Entrants, Attendants and the Entry Supervisor.

Authorized Entrants

Name: _____ Signature: _____ Date: _____
 Name: _____ Signature: _____ Date: _____
 Name: _____ Signature: _____ Date: _____

Authorized Attendants

Name: _____ Signature: _____ Date: _____
 Name: _____ Signature: _____ Date: _____

Entry Supervisor

Name: _____ Signature: _____ Date: _____

PERMIT CLOSED AT: Date: _____ Time: _____

By: _____

APPENDIX C

ADDITIONAL DEFINITIONS APPLICABLE TO CONFINED SPACE FOR CONSTRUCTION

Acceptable entry conditions mean the conditions that must exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space.

Barrier means a physical obstruction that blocks or limits access.

Blanking or blinding means the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Double block and bleed means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Entry rescue occurs when a rescue service enters a permit space to rescue one or more employees.

Hot work means operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating).

Inerting means displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Isolate or isolation means the process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tag-out of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.

Line breaking means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Lockout means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lower flammable limit or lower explosive limit means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Oxygen deficient atmosphere means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Representative permit space means a mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

Rescue service means the personnel designated to rescue employees from permit spaces.

Retrieval system means the equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Serious physical damage means an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

Tag-out means:(1) Placement of a tag-out device on a circuit or equipment that has been de-energized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tag-out device is removed; and (2) The employer ensures that (i) tag-out provides equivalent protection to lockout, or (ii) that lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

APPENDIX D

ADDITIONAL INFORMATION RELATING TO THE OSHA CONFINED SPACE RULES AND “CONSTRUCTION” VS “MAINTENANCE”

5 KEY DIFFERENCES OF THE CONFINED SPACE ENTRY PROGRAM IN CONSTRUCTION RULE

1. More detailed provisions requiring coordinated activities when there are multiple employers at the construction worksite. This will ensure hazards are not introduced into a confined space by workers performing tasks outside the space. An example would be a generator running near the entrance of a confined space causing a buildup of carbon monoxide within the space.
2. Requiring a competent person to evaluate the work site and identify confined spaces, including permit spaces.
3. Requiring continuous atmospheric monitoring whenever possible.
4. Requiring continuous monitoring of engulfment hazards. For example, when workers are performing work in a storm sewer, a storm upstream from the workers could cause flash flooding. An electronic sensor or observer posted upstream from the work site could alert workers in the space at the first sight of the hazard, giving the workers time to evacuate the space safely.
5. Allowing for the suspension of the permit, instead of cancellation, in the event of changes from the entry conditions listed on the permit before re-entry.

In addition, OSHA has added provisions to the new rule that clarifies existing requirements in the General Industry standard. These include:

- Requiring that employers who direct workers to enter a space without using a complete permit system prevent worker's exposures to physical hazards through elimination of the hazard or isolation methods such as lockout/tagout.
- Requiring that employers who are relying on local emergency services for emergency services arrange for the responders to give the employee advance notice if they will be unable to respond for a period of time (because they are responding to another emergency, attending department wide training, etc.).
- Requiring employers to provide training in a language and vocabulary that the workers understand.

Finally, several terms have been added to the definitions for the construction rule, such as "Entry Employer" to describe the employer who directs the workers to enter a space and "entry rescue" added to clarify the differences in the types of rescue employers can use.

“CONSTRUCTION” VS “MAINTENANCE”

“Maintenance activities” have commonly been defined in dictionaries as making or keeping a structure, fixture or foundation (substrates) in proper condition in a routine, scheduled or anticipated fashion. In OSHA’s directive on the general industry confined space standard, the Agency stated that maintenance involves “keeping equipment working in its existing state, i.e., preventing its failure or decline”.

Construction work is not limited to new construction, but can include the repair of existing facilities or the replacement of structures and their components. For example, the replacement of one utility pole with a new, identical pole would be maintenance however, if it were replaced with an improved pole or equipment, it would be considered construction.

In addition, the scale and complexity of the project are also relevant. This takes into consideration concepts such as the amount of time and material required to complete the job. For example, if a steel beam in a building had deteriorated and was to be replaced with a new, but identical beam, the project would be considered a construction repair rather than maintenance because of the replacement project’s scale and complexity. If a bridge were to be stripped and repainted, that would be considered construction even if the repainting were done on a scheduled basis. Replacement of a section of limestone cladding on a building, though not necessarily a large project in terms of scale, would typically be considered construction because it is a complex task in the view of the steps involved and tools needed to do the work. The physical size of an object that is being worked on can be a factor if, because of its size, the process of removal and replacement involves significantly altering the structure or the equipment that the component is within. Therefore, if the process of removal and replacement is a large-scale project, it’s likely to be considered construction. It is not the classification of what you are working on as “equipment” or “structure” that is significant, but rather the project’s scale and complexity.


Whether the work is performed in-house or by an outside contractor is not a factor; it’s not the personnel that determines whether the work is considered maintenance or construction, but the work itself.

Note that, though the work may itself occur during a scheduled “maintenance outage,” this alone is not enough to qualify it as maintenance. For example, it is possible that work may be construction, but performed during a maintenance outage to minimize loss of productivity.

Just because a company doesn’t define itself as a construction company, doesn’t mean that the task being performed cannot be classified as construction under OSHA’s definition of the term “construction.”

Construction work verses maintenance work is a subjective area. The information above should provide guidance as it comes directly from OSHA interpretations and can be used to determine whether Confined Space for General Industry (maintenance) or Confined Spaces for Construction (construction) applies to your operations.

Bottom Line - if after this interpretation of “construction” verses “maintenance” there is still uncertainty as the definition of your operations, defer to the Confined Spaces in Construction (§1926.1201) since it is considered the more protective of the two regulations.

		Davis Mechanical Systems, Inc.		
Policy No. 03		Cutting, Welding, and Hot Work		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

Davis Mechanical Systems, Inc. (Davis Mechanical) has adopted this policy for the prevention of employee exposure to hazards resulting either directly or indirectly from "Hot Work" (welding, cutting, and brazing) in the workplace. The danger of fire exists whenever cutting, welding, brazing, or heating operations take place. Following the elements of this program ensures safe-working conditions are met by monitoring the area before and after the work has been performed.

RESPONSIBILITIES

Safety Coordinator or the Supervisor:

- Will designate areas for cutting and welding.
- Authorizes cutting and welding operations in areas not specifically designed for such processes.
- Issues a "Hot Work" Permit when and where required.
- Establishes procedures for cutting and welding based on fire potentials of the workplace.
- Ensures that cutters and welders follow daily procedures and are trained in the safe operation of equipment.
- Determines if fire and safety hazards are present in the work place.

Cutting and Welding Employees:

- Operate cutting or welding equipment safely.
- Obtain proper authorization such as work permits from the Safety Coordinator or the Supervisor, before any hot work is performed.
- Inspect equipment before use.
- Follow established cutting and welding procedures.
- Be trained on the hot work permit process and follow all hot work permit requirements.

Fire Watch:

- Must have fire extinguishers readily available.
- Be present for at least a half hour after the welding or cutting operation is completed to prevent or extinguish any fire resulting from these operations.
- Be trained in the proper use of fire extinguishers and fire prevention measures,
- Be responsible for sounding of fire alarms in the event of a fire which is not readily extinguishable.

PRE-WORK INSPECTIONS

- Before work is permitted, the area will be inspected for fire and safety hazards by the Safety Coordinator or Supervisor.
- If a problem exists, the problem must be corrected before the work may begin.
- If the area meets the requirements, authorization to proceed will be granted.
- Welding, Cutting and other hot work equipment will be inspected for defects, and tagged or removed from service if found to be deficient.
- The following conditions must be met before cutting and welding is permitted:

1. Suitable fire equipment such as extinguishers must be available for immediate use.
 2. A Fire Watch must be assigned when welding or cutting is performed in locations where a serious fire might develop.
 3. A check for adequate ventilation must be performed before any welding or cutting begins.
 4. The floor must be swept clean of combustible materials.
 5. All movable fire hazards and combustible materials must be moved out of the area where hot work will occur. If the fire hazard cannot be moved, then guards must be used to prevent the heat and sparks from coming in contact with the combustible materials.
 6. Special precautions must be taken when combustible floors, walls and ceilings are present on the work site; floors or walls have cracks exposing combustible materials; metal walls have combustible material on the other side; and/or ducts are present which may carry sparks to distant combustibles.
- Cutting and welding will not be permitted if it is unsafe to do so, some examples of unsafe conditions are:
 1. In unauthorized areas.
 2. In buildings while sprinkler protection is not working.
 3. In the presence of explosive atmospheres.
 4. In areas near the storage of large quantities of exposed readily ignitable materials.
 5. In situations where pipes or other metal fixtures have combustible covers or are in close contact with combustible material.

WORK REQUIREMENTS

- Contractors must obtain proper authorization and complete a Hot Work Permit before performing any cutting or welding. Contractors will receive a copy of this program in pre-mobilization meeting(s).
- Only authorized and trained personnel will be permitted to use cutting, welding or brazing equipment.
- Only approved apparatus (torches, regulators, pressure reduction valves, etc.) will be used.
- Cutters and welders working on platforms or scaffolds must be protected from fall hazards (guardrail system, safety net, or personal fall arrest system).
- Welders will not place welding cables or other equipment near passageways and stairways.
- Proper personal protective equipment must be worn during cutting or welding processes.
- No cutting or welding will be performed on used containers until the containers have been thoroughly cleaned to ensure that flammable or toxic materials such as greases, tars, solvents, etc., are not subject to heat.
- No smoking signs must be posted in welding area.
- Any hot work to be performed in confined spaces will conform to Permit-required Confined Space procedures as specified in the Confined Space Policy.
- Welding, cutting, or burning of metals containing lead, zinc, cadmium, mercury, beryllium, or other exotic metals, paints, coatings, or preservatives that generate hazardous fumes/gasses will require local exhaust ventilation or respiratory protection be utilized.

POST-WORK INSPECTIONS

- The Safety Coordinator, or Supervisor will check the area after the cutting and welding process to check for fire and safety hazards and to ensure proper storage of equipment.

PROPER CARE OF COMPRESSED GAS CYLINDERS

- Compressed gas cylinders will be periodically checked for defects, rusting or leaking.
- Cylinders will be handled in such a way to prevent damage. Care must be taken not to drop or strike a cylinder.
- Cylinders will be stored away from heat and properly secured in an upright position with the valve covers in place.
- Cylinders, cylinder valves coupling, regulators and hoses on welding apparatus will be kept free of oily or greasy substances.
- Regulators must be removed and valve protection caps put into place before moving.

- Cylinders will be stored away from elevators, stairs, and gangways.
- Empty cylinders must be marked and their valves closed.
- Keep in mind: Never empty a cylinder completely. This will prevent a flash back into the cylinder and contamination into the cylinder and a possible explosive mixture.

APPENDIX A

HOT WORK PERMIT

**HOT WORK PERMIT
FOR CUTTING / WELDING / SOLDERING/ HEATING**

This permit is issued and valid only for the job described below and for the date(s)
and time(s) specified. This permit **MUST** be posted at the job site.

Date(s): _____ Start Time: _____ End Time: _____

Building: _____ Floor: _____ Fire Zone: _____

Type of Work: _____

Company/Department Name: _____

Supervisor on Site: _____ Phone #: _____ Page #: _____

Company Contact: _____ Phone #: _____ Page #: _____

Fire Watch Required: _____ ½ Hour _____ 1 Hour


Approved By: _____
(Safety Coordinator or Supervisor)

SPECIAL PRECAUTIONS

- Do not perform cutting or welding work where an open flame would be dangerous. Be sure that cutting and welding equipment is not used where there is any possibility of flammable vapors being passed through openings.
- Move the work to a safe place rather than perform the work in a hazardous location. If the work cannot be moved, remove all exposed combustible materials within a 35-foot radius.
- Sweep floor clean within a 35-foot radius. Wooden floors will be covered with adequate material, where sparks or hot metal are likely to fall.
- Station a guard to warn persons who might be burned by sparks or hot slag.
- Use adequate guards and curtains/welding screens where needed. When using fire resistant blankets as a curtain ensure that no opening exists where the curtain meets the floor.
- Have a fire extinguisher available at the site where performing work. Contractors will provide their own.

Does building have an automatic fire alarm system?
Does the building fire alarm system have to be deactivated?

Yes _____ No _____
Yes _____ No _____

		Davis Mechanical Systems, Inc.		
Policy No. 04		Electrical Safety		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

POLICY

Davis Mechanical Systems, Inc. (Davis Mechanical) has developed this program in an effort to protect our employees from hazards when working with portable electrical tools on construction sites that require the use of flexible cords. Hazards are created when cords, cord connectors, receptacles, and cord- and plug-connected equipment are improperly used and maintained. Our program is designed to protect and safeguard our employees from electrical hazards and comply with relevant OSHA Standards, such as 1926.404. To that end we will:

- Implement relevant aspects of this program based on our equipment needs and job-site requirements.
- Provide appropriate equipment;
- Provide an appropriate level of training to all applicable employees.
- Comply, at minimum, with relevant OSHA standards including 1926.404.

This program will be reviewed, at minimum annually, by the Safety Coordinator. The purpose of this review is to ensure its ongoing adequacy, effectiveness and accuracy, as well as to identify any opportunities for improvement. This will include a review of all policies, programs, procedures, training records and other available written materials which pertain to the program.

SCOPE

This program applies to all Davis Mechanical employees, temporary employees whose work is directed by Davis Mechanical. For the purpose of the administration of this program, there will be no difference between Davis Mechanical employees and temporary employees. The training and communication elements of this program will be fulfilled by the Safety Coordinator.

Subcontractors (electricians, plumbers, etc.) and visitors will also be required to comply with appropriate portions of this program. This program will be communicated to contractors and visitors by the Site Supervisor.

RESPONSIBILITIES

It is the policy of Davis Mechanical that its employees and Subcontractors follow safe work practices when performing work operations that use extension cord sets and receptacles that are not part of a building or structure. Therefore, this policy outlines the safe work practices to follow to protect workers on construction sites from electrical hazards.

The Safety Coordinator will have the overall responsibility for coordinating safety and health programs in our company. Employees shall review a copy of the program. Copies of this program may be obtained from the Safety Coordinator in the corporate office and within the job-site manual. As required, a competent person(s) has been designated to implement this program.

GENERAL REQUIREMENTS

Ground fault circuit interrupters (GFCI's) are required to be used on all Davis Mechanical Systems, Inc. Project Sites that utilize 120-volt, single phase 15 and 20-ampere temporary wiring. When a GFCI cannot be used due to design or because it creates a greater hazard by interrupting power for temporary wiring methods or extension cord sets providing power to portable electric tools, then a documented Assured Equipment-Grounding Conductor Program (AEGCP) is required to be maintained and implemented.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

A GFCI is a fast-acting circuit breaker that senses small imbalances in the circuit caused by current leakage to ground and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power within as little as 1/40 of a second.

The GFCI, however, does not protect from line-to-line contact hazards—such as a worker holding two "hot" wires or a hot and a neutral wire in each hand. It protects against the most common form of electrical shock hazard—the ground fault, and protects against fires, overheating, and destruction of insulation on wiring.

GFCI's shall be used on all 120-volt, single-phase, 15- and 20- ampere receptacle outlets, which are not part of the permanent wiring of any building, which are used by Davis Mechanical employee and Project Sites. GFCI's are not required on receptacles on a two-wire single-phase portable or vehicle-mounted generator rated not more than 5kW where the circuit conductors are not part of the generator frame. All other grounded surfaces need not be protected with GFCI's.

Visual Inspection

Each GFCI, cord set, attachment, cap, plug and receptacle cord sets, and any equipment connected by cord and plug shall be visually inspected daily for external defects. Defects may include deformed or missing pins, or insulation damage.

Employees shall be instructed that each cord set, attachment cap, plug and receptacle of the cord sets, and any equipment connected by cords and plugs, must be visually inspected before each day's use for external defects, such as deformed or missing pins, insulation damage, and current test verification code numbers. Any indication of possible internal damage must be checked as well. Damaged equipment shall be taken out of service and shall not be used until the required repairs have been made. Equipment that has not been tested within 3 months must not be used.

ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM

When a GFCI cannot be used due to design or because it creates a greater hazard by interrupting power for temporary wiring methods or extension cord sets providing power to portable electric tools, then a documented Assured Equipment Grounding Conductor Program (AEGCP) is required to be maintained and implemented. AEGCP is a testing and identification procedure to verify that electrical equipment is safe to operate in regards to the electrical hazards.

When utilizing AEGCP procedures instead of GFCI's, the following procedures shall be utilized and documented.

Frequency of Testing

When utilizing the AEGCP procedures, all GFCI's, cord sets, receptacles which are not part of the permanent wiring of a structure, and cord and plug connected equipment required to be grounded shall all be tested.

The tests shall be performed:

1. Before first use;
2. Before equipment is returned to service;
3. Before equipment is used after any incident in which it was reasonable to suspect it became damaged; and
4. At intervals not to exceed 3 months.

The test method is as follows:

1. All equipment-grounding conductors shall be tested for continuity and shall be electrically continuous.
2. Each plug and attachment plug shall be tested for the correct attachment of the grounding conductor.
3. The grounding conductor shall be connected to its proper terminal.

Specific Test Methods

The method to determine the condition of the affected equipment shall be as follows:

- *Receptacles*- use receptacle tester to determine correct connection to terminals
- *Cord Sets* – first plug the cord set into a properly wired receptacle, which has been tested as above. Then, plug receptacle tester into the female cord connector of the cord set to determine both continuity of grounding conductor and correct connections to terminals.
- *Cord and Plug Connected Equipment* – use continuity tester. Connect or touch one terminal of continuity tester to the metal frame of the equipment or tool and the other terminal to the grounding prong of the attachment cap plug at the end of the cord. An audible or visual signal of the test indicates that there is continuity of the grounding conductor.

Any equipment, which does not pass the test, shall not be available for use by Davis Mechanical employees. Equipment that fails the tests shall be tagged and marked out-of- service by reading “DO NOT USE”. The equipment should be removed from service until it has been repaired and has successfully passed the re-tests.

It shall be the Supervisor's responsibility to ensure that the equipment under their control has been tested. The Foreman does have the ability of performing the respective tests in the field using appropriate testing equipment. The Safety Coordinator or his designee to ensure compliance with this program will perform random safety inspections.

Test Record

The test verification record shall be by means of a number coded marking tape on the male end of the cord or equipment to identify that it has passed the test. The number coding system shall identify the actual date (month and year) that this equipment was last tested. The first number will be the year (15=2015) and the second number will be the month (04=April). Example: 154=2015, April.

Davis Mechanical will keep record by using color-coded tape to signify the successful testing of the cord set, receptacle, plug and cord connected equipment. The color of the tape will be based upon the seasons of the year:

- **Green** - Spring (April 1 - June 30)
- **Red** - Summer (July 1 - September 31)
- **Blue** - Fall (October 1 - December 31)
- **White** - Winter (January 1 - March 31)

SAFE ELECTRICAL WORK PRACTICES

Electrical work shall only be performed by competent/c employees. It is company policy that all work on electrical circuits be performed with the circuits de-energized using proper lockout/tagout procedures. When job site conditions preclude the possibility of working on de-energized equipment the following restrictions shall be followed:

In General

- The foreman or person in charge of safety on a job site shall determine by inquiry, observation, or by electrical instruments if an energized electric power circuit, that is exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. When these conditions are encountered, the foreman or person in charge of safety shall post and maintain proper warning signs where such a circuit exists. The work site shall be advised of the location of such line, the hazards involved and protective measures to be taken.
- All de-energized parts shall be treated as if they are live and minimum safe distances will be maintained as practical to complete the job. These safe distances are outlined below in this program.
- Flammable materials must not be stored near electrical equipment.
- Where feasible our Lock Out Tag Out program will be used and followed to de-energize equipment before work is conducted. Where Lock Out Tag Out is not possible, this program and our NFPA 70E program will be used to ensure proper employee protection.
- Where portable electrical equipment is used outdoors or in damp locations, a Ground Fault Circuit Interrupter (GFCI) will be used and our GFCI program will be followed.
- All electrical equipment used shall be approved for its intended use.
- Equipment that is deemed defective will be immediately removed from service.

Underground or concealed electrical power and utility lines

- When the exact location of underground or concealed (i.e. concrete slab) electric conduits or utility lines is unknown, employees using jack-hammers, bars or other hand tools that may contact a line be provided with insulated protective gloves. When determining the location of any outside underground utilities, call Gopher State One-Call at least 48 hours before starting any excavation work. The number for Gopher State One-Call is (651) 454-0002 or (800) 252-1166.

Illumination

- Workers may not enter spaces containing exposed energized parts, unless illumination is provided that enables the workers to perform the work safely.
- Where lack of illumination or an obstruction precludes observation of the work to be performed, workers may not perform tasks near exposed energized parts. Also, workers may not reach blindly into areas that may contain energized parts.

Confined or enclosed work spaces

- When working in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the worker shall use protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Please refer to the confined space section of the safety program for additional requirements.

Conductive materials, tools and equipment

- Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. **The use of metallic tape measures is prohibited from used around energized circuits.** If an employee must handle long dimensional conductive objects (such as conduit, cable tray, gutters and ducts) in areas with exposed live parts, the employee shall utilize work practices such as the use of insulation, guarding and material handling techniques that will minimize the hazard.

Portable ladders

- Portable ladders shall have nonconductive side-rails (i.e. wood or fiberglass) if they are used where workers, or the ladder, could contact exposed energized parts.

Conductive apparel

- Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if

they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping or other insulating means.

Housekeeping duties

- Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed that will prevent electrical contact.

Work on energized equipment

- Only trained electricians may work on electric circuits, parts or equipment that has not been de-energized. Electricians that work on energized equipment must be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques (lockout/tagout), personal protective equipment, insulating and shielding materials, and insulated tools.

Overhead lines

- If work is to be performed near overhead lines, the lines shall be de-energized and grounded, or other protective measures shall be provided before work is started. If the lines are to be de-energized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to de-energize and ground them. If protective measures, such as guarding, isolating, or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.
- If the overhead lines cannot be de-energized to allow work to be completed, all unqualified employees shall maintain a safe distance (at least 10 feet) when working in an elevated position near energized overhead lines.

Passageways and open spaces

- Barriers or other means or guarding shall be provided to ensure that workspace for electrical equipment will not be used as a passageway during periods when energized parts of electrical equipment are exposed.
- Working spaces, walkways and similar locations shall be kept clear of cords so as not to create a hazard to employees.

Load ratings

- In existing installations, no changes in circuit protection shall be made to increase the load in excess of the load rating of the circuit wiring.

Fuses

- When fuses are installed or removed with one or both terminals energized, special tools insulated for the voltage shall be used.

Cords and Cables

- Worn or frayed electric cords or cables shall not be used.
- Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.
- All extension cords and power supply cords will be maintained in a safe condition.

Interlocks

- Only qualified electricians are allowed to defeat electrical safety interlocks, and then only temporarily while he or she is working on the equipment. The interlock system shall be returned to its operable condition when this work is completed.

Portable electric equipment – handling

- Portable equipment shall be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment. Flexible cords may not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.
- When an attachment plug is to be connected to a receptacle (including on a cord set), the relationship of the plug and receptacle contacts shall first be checked to ensure that they are of proper mating configurations.
- "Connecting Attachment plugs"
 - Employees' hands may not be wet when plugging and unplugging flexible cords and cord and plug connected equipment if energized equipment is involved.
 - Energized plug and receptacle connections may be handled only with insulating protective equipment if the condition of the connection could provide a conducting path to the employee's hand (if for example, a cord connector is wet from being immersed in water).

Personal Protective Equipment

- Personal protective equipment will be worn for protection from electrical shock and/or arc flash. Please refer to our NFPA 70E program for specific guidelines on the types and levels of PPE to be used when working on electrical systems.

Trained Electricians – working on or near overhead lines

- When a trained electrician is working in the vicinity of overhead lines, whether from an elevated position or on the ground, the electrician **may not approach or take any conductive object without an approved insulating handle closer to exposed energized lines than shown in the table below unless:**
 - The person is insulated from energized part (gloves with sleeves if necessary, rated for the voltage involved are considered to be insulating of the person from the energized part on which the work is performed), or
 - The energized part is insulated both from all other conductive objects at a different potential and from the person, or
 - The person is insulated from all conductive objects at a potential different from that of the energized part.
 - The safe limit approach distance will be maintained by workers working near energized high voltage electrical equipment.

TABLE S-5, APPROACH DISTANCES FOR QUALIFIED ELECTRICIANS - AC

Voltage range (phase to phase)	Minimum approach distance
300V and less	Avoid Contact
Over 300V, not over 750V	1 ft. 0 in (30.5 cm)
Over 750V, not over 2kV	1 ft. 6 in (46 cm)
Over 2kV, not over 15kV	2 ft. 0 in (61 cm)
Over 15kV, not over 37kV	3 ft. 0 in (91 cm)
Over 37kV, not over 87.5V	3 ft. 6 in (107 cm)
Over 87.5kV, not over 121kV	4 ft. 0 in (122 cm)
Over 121kV, not over 140V	4 ft. 6 in (137 cm)


Vehicular and mechanical equipment around energized lines

- Any vehicle and/or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet (305 cm) is maintained. If the voltage is higher than 50 kV, the clearance shall be increased 4 inches (10 cm) for every 10 kV over that voltage.
However, under any of the following conditions, the clearance may be reduced:
- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 feet (1.22 m). If the voltage is higher than 50 kV, the clearance shall be increased 4 inches (10 cm) for every 10 kV over that voltage.
- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of, or an attachment to, the vehicle or its raised structure, the clearance may be reduced to a distance within the designated working dimensions of the insulating barrier.

- If the equipment is an aerial lift insulated for the voltage involved, and if a qualified person performs the work, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance give in the above table.
- If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault current, which can develop within the first few feet or more outward from the grounding point.

TRAINING

All employees exposed to potentially hazardous electrical equipment will be provided with training as it pertains to their respective job assignments. This training will be conducted by a qualified individual and will assure maximum protection when working around electrical equipment.

		Davis Mechanical Systems, Inc.		
Policy No. 05		Ergonomics and Manual Lifting		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

POLICY

Davis Mechanical Systems, Inc. is firmly committed to providing employees with a safe and healthy work environment. It is a matter of company policy that all employees report symptoms relating to MSDs to their supervisor as soon as they are detected. Davis Mechanical management and affected employees will work together in evaluating ergonomics hazards and implementing solutions.

This program is designed to protect any employee of Davis Mechanical Systems, Inc. (Davis Mechanical) who may be occupationally exposed to risk factors for musculoskeletal disorders (MSDs). MSDs include, but are not limited to, such conditions as:

- Cumulative trauma disorders (CTDs)
- Repetitive motion disorders
- Repetitive strain injuries
- Overuse syndrome
- Tendonitis
- Tenosynovitis
- Epicondylitis
- Trigger finger
- Carpal tunnel syndrome (CTS)
- Sprains
- Strains
- Inflammation
- Low back injuries
- Raynaud's Syndrome (White Finger)

MANAGEMENT COMMITMENT AND EMPLOYEE INVOLVEMENT

An effective ergonomics program involves early reporting of MSDs symptoms and employee participation in evaluating risk factors and identifying controls to reduce these risk factors. When an employee reports possible symptoms relating to MSDs, prompt action will be taken to evaluate and implement control measures.

RESPONSIBILITIES

The Safety Coordinator will have overall responsibility for the ergonomics program at Davis Mechanical. Additional assistance will be provided by human resource, engineering, maintenance and other personnel as needed. The Safety Coordinator will have the authority to make necessary changes in the workplace in conjunction with management. Davis Mechanical will provide necessary resources to ensure that the program is effective. The ergonomics program will be incorporated into the existing safety program and safety committee structure. A separate ergonomics safety committee may also be developed to specifically address ergonomics related safety issues.

The Safety Coordinator will have the following responsibilities:

- Develop, implement and coordinate the ergonomics program
- Investigate employee reports of signs or symptoms of MSDs and any injuries caused by improper lifting
- Conduct assessments of manual lifting tasks, and any task where employees report signs or symptoms of MSDs
- Take remedial actions to correct ergonomics risk factors
- Examine existing company policies and practices to ensure there are no factors that discourage reporting of MSDs
- Provide employee information and training pertaining to the company's ergonomics program, proper lifting techniques, and MSD injury avoidance
- Evaluating work stations configuration and employee techniques to assess potential for MSDs
- Provide communications to employees and management concerning the company's ergonomics programs
- Evaluate and update the ergonomics program as needed
- Keep records pertaining to the program
- Provide employees with appropriate mechanical lifting equipment and other engineering controls whenever feasible.

All supervisors will actively support this ergonomics safety program and assist the Safety Coordinator in implementing this program. Responsibilities of all supervisors include:

- Immediately notifying the Safety Coordinator whenever an employee reports signs or symptoms of MSDs
- Completing an accident/incident form whenever an employee reports signs or symptoms of MSDs
- Assist the Safety Coordinator with identification and control of MSD risk factors
- Assist the Safety Coordinator with evaluating work stations configurations and employee techniques to assess potential for MSDs
- Assist the Safety Coordinator with identifying light duty jobs when employees have medical work restrictions due to MSDs
- Ensure employees working under restricted duty remain within work limitations
- Ensure employees utilize mechanical lifting equipment and other engineering controls whenever feasible.

Employee participation in the ergonomics program is critical. Employees have a unique perspective on the specific jobs they perform on a routine basis and have in depth knowledge of the specific job tasks that may involve MSDs risk factors. An employee's involvement in identifying and correcting problem jobs will enhance the acceptance of change and increase job satisfaction.

Employee responsibilities include:

- Following all company policies and procedures relating to health and safety including this ergonomics program
- Promptly reporting all signs and symptoms of MSDs to their immediate supervisor
- Assist the Safety Coordinator, supervisor and any other staff in evaluating the job function in question and in the identification of possible control measures
- Participate in the development, implementation and evaluation of the ergonomics program through the safety and/or ergonomics safety committees
- Utilize mechanical lifting equipment and other engineering controls whenever feasible.

MSD REPORTING PROCEDURES

Prompt action on MSDs at an early stage reduces the severity and cost of these injuries. All employees should promptly report any signs or symptoms of MSDs to their immediate supervisor. Reports may be written or verbal. Signs and symptoms of MSDs include:

- Painful joints
- Pain, tingling or numbness in the hands or feet
- Shooting or stabbing pains in the arms or legs
- Swelling or inflammation
- Burning sensations
- Stiffness
- Back or neck pain
- Fingers or toes turning white
- Pain in the knees, shoulders, forearms or wrist

All employees will be provided with information and training pertaining to MSDs identification and reporting procedures. New employees will be informed of the company ergonomics program and reporting procedures within 14 days of hiring. In addition, signs listing the reporting procedures will be posted throughout Davis Mechanical facilities.

HAZARD ASSESSMENT

Sign/symptom reports will be the primary means of identifying jobs for evaluation of MSDs risk factors. In addition, jobs may be evaluated by using employee discomfort surveys or due to high MSDs incidence rates in the past. An initial evaluation of the job in question using the Ergonomic Screening Tool will be performed by the Safety Coordinator, supervisors of the job in question, representative employees performing the job and any other employee who may have specialized knowledge or training that may be applicable to the situation. These could include engineering, medical, maintenance, or other staff. The screening tool will be used within 7 days of reported MSDs. Job hazard evaluations will also be conducted by outside safety professionals. Tools used in the evaluation may include the following:

- Ergonomic Screening Checklist
- Workstation Checklist
- Job Hazard Analysis (JHA)

The Safety Coordinator will decide on the specific evaluation tool that will be used in a particular situation. When evaluating jobs, the following MSD risk factors will be assessed:

- Awkward postures
- Forceful exertions / heavy lifting
- Repetitive motions
- Duration of at risk factors
- Contact stresses
- Vibration
- Heat/Cold

Evaluations will include observations, employee interviews and measurements such as forces, length, heights, frequency, duration, etc. Photographing and/or videotaping of the job may be conducted for documentation and further analysis.

HAZARD CONTROL

Control measures will be developed by the MSD assessment team under direction of the Safety Coordinator. Simple controls such as using mechanical equipment for lifting will be implemented immediately. Where mechanical equipment is not available, two person lifts will be required. Controls requiring significant financial or personnel resources will be presented to management for approval. It is anticipated that significant resources may need to be allocated in certain situations and long-term planning will need to be implemented in these situations. Short-term solutions will be implemented until the final solutions can be put in place. Control measures will not only be implemented for the employee reporting an MSD but also for other employees performing the same job which have the same MSDs risks. Control

measures will be implemented so that the MSDs risk factors are reduced to the extent feasible. Most controls will be initiated shortly after the MSDs is reported and evaluated. In all cases initial controls will be implemented within 90 days after the MSDs is reported and final controls will be implemented within 2 years.

If a MSD incident is reported in a job that has already had controls implemented, a further evaluation will be conducted. The evaluation will analyze whether controls are functioning and used properly and to see whether additional MSD hazards exist. The Safety Coordinator will track the progress of control measures and consult with employees to ensure they are effective and do not create additional hazards.

ENGINEERING CONTROLS

When feasible, engineering controls will be used before other control methods or in conjunction with other control methods. Engineering controls are the preferred means of control because they eliminate the hazards. The Safety Coordinator, supervisors, production manager, affected employees and other staff will determine to what extent engineering controls can be utilized to minimize exposure. Factors such as workplace constraints, implementation schedule, cost/benefit and production schedules will be taken into consideration when determining the most effective controls. Documentation of the effectiveness of engineering controls and cost/benefit analysis should be conducted when determining appropriate control measures. Some engineering controls include:

- Changes in workstation layout
- Changes/modifications of tools
- Modifications in the ways materials are transported or handled such as using mechanical equipment whenever feasible
- Changes in processes
- Changes in packaging
- Changes in the way tools/parts are manipulated

WORK PRACTICE CONTROLS

Work practice controls reduce MSDs risk factors through alteration of the manner in which work activities are performed. Work practice controls are based upon behavior of managers, supervisors and employees who follow proper work methods and are therefore less effective than engineering controls. Some work practice controls include:

- Development of proper work practices and procedures that are to be followed when performing a job or task
- Conditioning period for new employees
- Training in work practices that reduce MSDs risk factors

ADMINISTRATIVE CONTROLS

Administrative controls are procedures and methods that reduce MSDs risk factors by altering the way work is performed. These controls include:

- Employee rotation
- Job enlargement
- Adjusting the work pace
- Redesigning work processes
- Rest break schedules

PERSONAL PROTECTIVE EQUIPMENT

In general, personal protective equipment such as back-belts, anti-vibration gloves and wrist/hand splints and braces provide little or no control of MSDs risk factors. Studies have shown that many of these devices provide no statistical reduction in the frequency or severity of MSDs injuries. Employees may not wear the devices properly or have a false sense of security while wearing these devices and actually increase their

risk factors for a MSDs injury. It will be Davis Mechanical company policy to allow these devices to be used only if an employee's physician or medical provider directs them to be used.

MEDICAL MANAGEMENT

Davis Mechanical will provide prompt MSD management when an employee reports signs or symptoms of MSDs. When an MSD is reported, the Safety Coordinator, the employee reporting the symptoms, the employee's supervisor and other ergonomics team members will evaluate the job in question to determine if any of the risk factors for MSDs are present. If risk factors are present, control measures will be implemented. The Ergonomic Screening Checklist will be used when determining whether MSD risk factors exist. If the employee's symptoms persist, the employee should seek prompt medical evaluation. Health care providers will be responsible for determining the employee's physical capabilities and any work restrictions. Davis Mechanical is committed to providing early return to work for all injured employees. Davis Mechanical will try to provide the affected employee with temporary work that meets these work restrictions. Complete removal from work will be avoided.

As part of the medical management program, Davis Mechanical may coordinate ergonomics related activities with certain medical providers. The medical providers will be provided with tours of the facility and descriptions of job tasks, job descriptions, videotapes of jobs and other information. This information will allow the provider to become familiar with operations so they can make informed decisions pertaining to work restrictions and opportunities for restricted duty work.

Information Provided to the Health Care Professional

Medical providers will be given the following information when an employee seeks medical consultation:

- Description of the employee's job and hazards identified in the hazard analysis
- Descriptions of available jobs or temporary alternative jobs to fit the employee's capabilities during recovery

Health Care Professional Written Opinion

Medical providers will prepare a written opinion, which should contain:

- The work-related medical conditions relating to the reported MSD
- Recommended work restrictions, where necessary and any follow-up for the employee during the recovery period
- Statement that the employee has been informed of the results and any necessary restrictions

The health care provider should provide a copy of the written opinion to the employee using the Davis Mechanical Return to Work Authorization form. Information that is not related to the MSDs incident or risk factors may not be included in the opinion. Whenever an employee is working under restrictions, it will be the responsibility of the employee's supervisor to ensure that the employee's job tasks are consistent with these restrictions. The supervisor will monitor the employee and document that the employee is working within the specified restrictions each day.

EMPLOYEE INFORMATION AND TRAINING

Training is essential to an effective health and safety program. The goal of ergonomics training is to enable managers, supervisors and employees to identify aspects of job tasks that may increase a worker's risk of developing MSDs. Ergonomics training will be provided to all Davis Mechanical employees so they understand risk factors for MSDs and how to reduce these factors. Employees will also be trained to identify signs and symptoms of MSDs and how to report these injuries. Training will be conducted within 14 days of hiring and annually thereafter. Training will include:

- General ergonomics awareness
- Signs and symptoms of MSDs and importance of early reporting
- MSDs reporting procedures

- MSDs risk factors in the employee's jobs and control measures to reduce these factors
- The company's ergonomics program and the employee's role in the program
- Timetable for addressing MSD hazards
- Job Hazard Analysis

Training will primarily be conducted by in-house staff but outside experts may also be involved in the overall training program. The Safety Coordinator and any other employees involved in managing the program will have specialized training as needed.

PROGRAM EVALUATION

The Davis Mechanical ergonomics program will be evaluated annually or whenever deficiencies are noted. The program will be updated by the Safety Coordinator. Measures such as reductions in frequency and severity of MSDs, reductions in the number of MSDs hazards, etc. will be used in evaluating the program.

RECORDKEEPING

Detailed records pertaining to the ergonomics program will be maintained by the Safety Coordinator. Records will include:

- Employee reports of MSDs
- Responses to employees' reports
- Job hazard analyses
- Hazard control measures
- Ergonomics program evaluations
- Work restrictions, time off work and medical opinions
- Employee training records

Records will be kept for at least 3 years except for medical opinions, which will be kept for at least 3 years after the end of employment.

GLOSSARY

Carpal Tunnel Syndrome (CTS)- Compression of the median nerve caused by swelling of the tendons in the carpal tunnel. CTS is characterized by numbness, pain and tingling in the fingers and clumsiness and loss of grip strength.

Carpet Layers Knee- Inflammation of the knee joint caused by prolonged kneeling on a hard surface.

Cumulative Trauma Disorders (CTDs)- See Musculoskeletal Disorders

De Quervain's Disease- A musculoskeletal disorder characterized by inflammation of the tendons and their sheaths causing pain at the base of the thumb and inside wrist.

Epicondylitis- A musculoskeletal disorder characterized by swelling and pain in the tendons and muscles of the elbow. Also known as tennis elbow.

Ergonomics- The study of the interactions of humans with their work environment to achieve optimal work efficiency and well-being.

Hand-Arm Vibration Syndrome- A condition contracted after prolonged exposure to hand-arm vibration. Symptoms include tingling, numbness and blanching (turning white) of the fingers caused by loss of blood circulation.

Herniated Disc- A rupture of the cartilage disc between vertebrae.

Musculoskeletal Disorders (MSDs)- A general term for soft tissue injuries caused by overuse. Disorders of the muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels, or spinal discs. Symptoms range from numbness to tingling and pain. Conditions such as muscle strains and tears, ligament sprains, joint and tendon inflammation, pinched nerves and spinal disc degeneration are MSDs. Other medical conditions such as low back pain, tension neck syndrome, carpal tunnel syndrome, trigger finger, sciatica, epicondylitis, tendonitis, Raynaud's syndrome, hand–arm vibration syndrome and carpet layer's knee are all MSDs.

Raynaud's Syndrome- A musculoskeletal disorder involving constriction of blood vessels of the fingers caused by persistent heavy vibration such as jackhammer use in cold environments.

Repetitive Motion Disorders- See Musculoskeletal Disorders

Repetitive Strain Injuries- See Musculoskeletal Disorders

Rotator Cuff Syndrome- Inflammation of the tendons of the muscles attached to the rotator cuff area of the shoulder.

Sciatica- Inflammation of the sciatic nerve in the back of the thigh.

APPEDIX A

ERGONOMIC ASSESSMENT TOOLS AND CHECKLISTS

Ergonomic Assessment Checklist

Account: _____

Date: _____

Department/Work Area: _____

Assessment By: _____

		Body Part Associated With MSD Incident			
Risk Factors	Performing Job or Task that Involve:	Neck/ Shoulder	Hand/ Wrist/ Arm	Back/ Trunk/ Hip	Leg/ Knee/ Ankle
Repetition	(1) Repeating the same motions every few seconds or repeating a cycle of motions involving the affected body part more than twice per minute for more than 2 consecutive hours in a workday.				
	(2) Using an input device, such as a keyboard and/or mouse, in a steady manner for more than 4 hours total in a workday.				
Force	(3) Lifting more than 75 pounds at any one time; more than 55 pounds more than 10 times per day; or more than 25 pounds below the knees, above the shoulders, or at arms' length more than 25 times per day;				
	(4) Pushing/pulling with more than 20 pounds of initial force (e.g., equivalent to pushing a 65-pound box across a tile floor or pushing a shopping cart with five 40 pound bags of dog food) for more than 2 hours total per day;				
	(5) Pinching an unsupported object weighing 2 or more pounds per hand, or use of an equivalent pinching force (e.g., holding a small binder clip open) for more than 2 hours total per day;				
	(6) Gripping an unsupported object weighing 10 pounds or more per hand, or use of an equivalent gripping force (e.g., crushing the sides of an aluminum soda can with one hand), for more than 2 hours total per day.				
Awkward Postures	(7) Repeatedly raising or working with the hand(s) above the head or the elbow(s) above the shoulder(s) for more than 2 hours total per day;				
	(8) Kneeling or squatting for more than 2 hours total per day;				
	(9) Working with the back, neck or wrists bent or twisted for more than 2 hours total per day				
Contact Stress	(10) Using the hand or knee as a hammer more than 10 times per hour for more than 2 hours total per day;				
Vibration	(11) Using vibrating tools or equipment that typically have high vibration levels (such as chainsaws, jack hammers, percussive tools, riveting or chipping hammers) for more than 30 minutes total per day;				
	(12) Using tools or equipment that typically have moderate vibration levels (such as jig saws, grinders, or sanders) for more than 2 hours total per day.				

Workstation Checklist

Name: _____ Date: _____ Assessment Conducted By: _____

If employee exposure does not meet the levels indicated by the Basic Screening Tool, you may STOP HERE.

WORKING CONDITIONS	Y	N
The workstation is designed or arranged for doing VDT tasks so it allows the employee's ...		
A. Head and neck to be about upright (not bent down/back).		
B. Head, neck and trunk to face forward (not twisted).		
C. Trunk to be about perpendicular to floor (not leaning forward/backward).		
D. Shoulders and upper arms to be about perpendicular to floor (not stretched forward) and relaxed (not elevated).		
E. Upper arms and elbows to be close to body (not extended outward).		
F. Forearms, wrists, and hands to be straight and parallel to floor (not pointing up/down).		
G. Wrists and hands to be straight (not bent up/down or sideways toward little finger).		
H. Thighs to be about parallel to floor and lower legs to be about perpendicular to floor.		
I. Feet to rest flat on floor or be supported by a stable footrest.		
J. VDT tasks to be organized in a way that allows employee to vary VDT tasks with other work activities, or to take micro-breaks or recovery pauses while at the VDT workstation.		
SEATING	Y	N
The chair ...		
1. Backrest provides support for employee's lower back (lumbar area).		
2. Seat width and depth accommodate specific employee (seatpan not too big/small).		
3. Seat front does not press against the back of employee's knees and lower legs (seatpan not too long).		
4. Seat has cushioning and is rounded/ has "waterfall" front (no sharp edge).		
5. Armrests support both forearms while employee performs VDT tasks and do not interfere with movement.		
KEYBOARD/INPUT DEVICE	Y	N
The keyboard/input device is designed or arranged for doing VDT tasks so that ...		
6. Keyboard/input device platform(s) is stable and large enough to hold keyboard and input device.		
7. Input device (mouse or trackball) is located right next to keyboard so it can be operated without reaching.		
8. Input device is easy to activate and shape/size fits hand of specific employee (not too big/small).		
9. Wrists and hands do not rest on sharp or hard edge.		
MONITOR	Y	N
The monitor is designed or arranged for VDT tasks so that ...		
10. Top line of screen is at or below eye level so employee is able to read it without bending head or neck down/back. (For employees with bifocals/trifocals, see next item.)		
11. Employee with bifocals/trifocals is able to read screen without bending head or neck backward.		
12. Monitor distance allows employee to read screen without leaning head, neck or trunk forward/backward.		
13. Monitor position is directly in front of employee so employee does not have to twist head or neck.		
14. No glare (e.g., from windows, lights) is present on the screen which might cause employee to assume an awkward posture to read screen.		
WORK AREA	Y	N
The work area is designed or arranged for doing VDT tasks so that ...		
15. Thighs have clearance space between chair and VDT table/keyboard platform (thighs not trapped).		
16. Legs and feet have clearance space under VDT table so employee is able to get close enough to keyboard/input device.		
ACCESSORIES	Y	N
17. Document holder, if provided, is stable and large enough to hold documents that are used.		
18. Document holder, if provided, is placed at about the same height and distance as monitor screen so there is little head movement when employee looks from document to screen.		
19. Wrist rest, if provided, is padded and free of sharp and square edges.		

20. Wrist rest , if provided, allows employee to keep forearms, wrists and hands straight and parallel to ground when using keyboard/input device.		
21. Telephone can be used with head upright (not bent) and shoulders relaxed (not elevated) if employee does VDT tasks at the same time.		
GENERAL	Y	N
22. Workstation and equipment have sufficient adjustability so that the employee is able to be in a safe working posture and to make occasional changes in posture while performing VDT tasks.		
23. VDT Workstation, equipment and accessories are maintained in serviceable condition and function properly.		
PASSING SCORE = "YES" answer on all "working postures" items (A-J) and no more than two "NO" answers on remainder of checklist (1-23).		

REBA Employee Assessment Worksheet

Account: _____

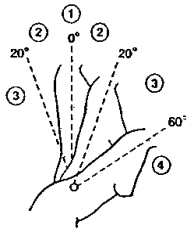
Department: _____

Date: _____

Employee: _____

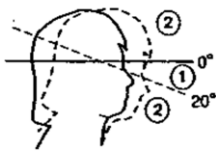
Job/Task: _____

Assessment By: _____



If twisting or side flexed: +1

Trunk
Score



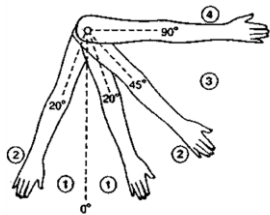
If twisting or side flexed: +1

Neck
Score:



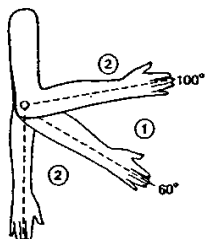
If knee(s) 30° - 60° flexion: +1
If knee(s) > 60° flexion: +2

Leg
Score:

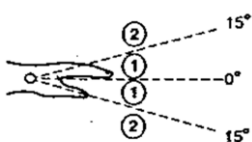


If arm abducted or rotated: +1
If shoulder raised: +1
If leaning or weight or arm is supported: -1

Upper
Arm Score :



Lower
Arm Score :



If twisted or deviated: +1

Wrist
Score :

Table A

Legs	Neck											
	1				2				3			
	1	2	3	4	1	2	3	4	1	2	3	4
Trunk 1	1	2	3	4	1	2	3	4	3	3	5	6
Trunk 2	2	3	4	5	3	4	5	6	4	5	6	7
Trunk 3	2	4	5	6	4	5	6	7	5	6	7	8
Trunk 4	3	5	6	7	5	6	7	8	6	7	8	9
Trunk 5	4	6	7	8	6	7	8	9	7	8	9	9

Table A Score:

Load/Force

0	1	2	+1
< 11 lbs.	11-22 lbs.	>22 lbs.	Shock or Rapid Force

Load/Force Score:

Total Score: Table A + Force/Load:

Table B

Wrist	Lower Arm					
	1			2		
	1	2	3	1	2	3
Up. Arm 1	1	2	2	1	2	3
Up. Arm 2	1	2	3	2	3	4
Up. Arm 3	3	4	5	4	5	5
Up. Arm 4	4	5	5	5	6	7
Up. Arm 5	6	7	8	7	8	8
Up. Arm 6	7	8	8	8	9	9

Table B Score:

Coupling

0 Good	1 Fair	2 Poor	3 Unacceptable
Well-fitting handle and mid-range power grip	Hand hold acceptable but not idea	Hand hold not acceptable although possible	Awkward, unsafe grip, no handles

Coupling Score:

Total Score: Table B + Coupling:

Description of operation:

Total Score: Table A + Force Load: _____

Total Score: Table B + Coupling: _____

Table C

Score A	Score B											
	1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	1	2	3	3	4	5	6	7	7	7
2	1	2	2	3	4	4	5	6	6	7	7	8
3	2	3	3	3	4	5	6	7	7	8	8	8
4	3	4	4	4	5	6	7	8	8	9	9	9
5	4	4	4	5	6	7	8	8	9	9	9	9
6	6	6	6	7	8	8	9	9	10	10	10	10
7	7	7	7	8	9	9	9	10	10	11	11	11
8	8	8	8	9	10	10	10	10	10	11	11	11
9	9	9	9	10	10	10	11	11	11	12	12	12
10	10	10	10	11	11	11	11	12	12	12	12	12
11	11	11	11	11	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12	12	12	12

Table C Score:

Activity Score

- +1 1 or more body parts are static for longer than 1 min.
- +1 Repeated small range actions, repeated more than 4 times per min.
- +1 Action causes rapid large range changes in posture or an unstable base

Total Activity Score:

Total REBA Score

Score Table C + Activity Score:

Suggested Changes or Improvements

1. _____

2. _____

3. _____

REBA Score


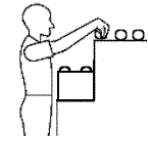
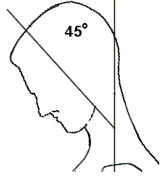

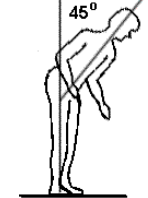


1
2-3
4-7
8-10
11-15

Risk Level

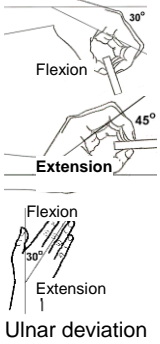

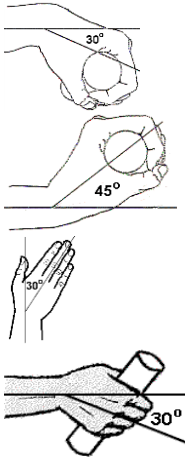
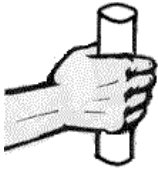
Negligible
Low
Medium
High
Very high

Action Priority

None
May be necessary
Necessary
Necessary soon
Necessary now

Awkward Posture				Check (3) here if this is a WMSD hazard
Body Part	Physical Risk Factor	Duration	Visual Aid	
Shoulders	Working with the hand(s) above the head or the elbow(s) above the shoulder(s)	More than 4 hours total per day		θ
	Repetitively raising the hand(s) above the head or the elbow(s) above the shoulder(s) more than once per minute	More than 4 hours total per day		θ
Neck	Working with the neck bent more than 45° (without support or the ability to vary posture)	More than 4 hours total per day		θ
Back	Working with the back bent forward more than 30° (without support, or the ability to vary posture)	More than 4 hours total per day		θ
	Working with the back bent forward more than 45° (without support or the ability to vary posture)	More than 2 hours total per day		θ
Knees	Squatting	More than 4 hours total per day		θ
	Kneeling	More than 4 hours total per day		θ

High Hand Force

Body Part	Physical Risk Factor	Combined with	Duration	Visual Aid
Arms, wrists, hands	Pinching an unsupported object(s) weighing 2 or more pounds per hand, or pinching with a force of 4 or more pounds per hand (comparable to pinching half a ream of paper)	Highly repetitive motion	More than 3 hours total per day	
		Wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more	More than 3 hours total per day	
		No other risk factors	More than 4 hours total per day	
	Gripping an unsupported object(s) weighing 10 or more pounds per hand, or gripping with a force of 10 pounds or more per hand (comparable to clamping light duty automotive jumper cables onto a battery)	Highly repetitive motion	More than 3 hours total per day	
		Wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more	More than 3 hours total per day	
		No other risk factors	More than 4 hours total per day	

Check (3) here if this is a WMSD hazard

θ

θ

θ

θ

θ

θ

Highly Repetitive Motion

Body Part	Physical Risk Factor	Combined with	Duration
Neck, shoulders, elbows, wrists, hands	Using the same motion with little or no variation every few seconds (excluding keying activities)	No other risk factors	More than 6 hours total per day
	Using the same motion with little or no variation every few seconds (excluding keying activities)	Wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more AND High, forceful exertions with the hand(s)	More than 2 hours total per day
	Intensive keying	Awkward posture, including wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more	More than 4 hours total per day
		No other risk factors	More than 7 hours total per day

Check (3) here if this is a WMSD hazard


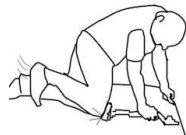
0

0

0

0

Repeated Impact

Body Part	Physical Risk Factor	Duration	Visual Aid
Hands	Using the hand (heel/base of palm) as a hammer more than once per minute	More than 2 hours total per day	
Knees	Using the knee as a hammer more than once per minute	More than 2 hours total per day	

Check (3) here if this is a WMSD hazard

0

0

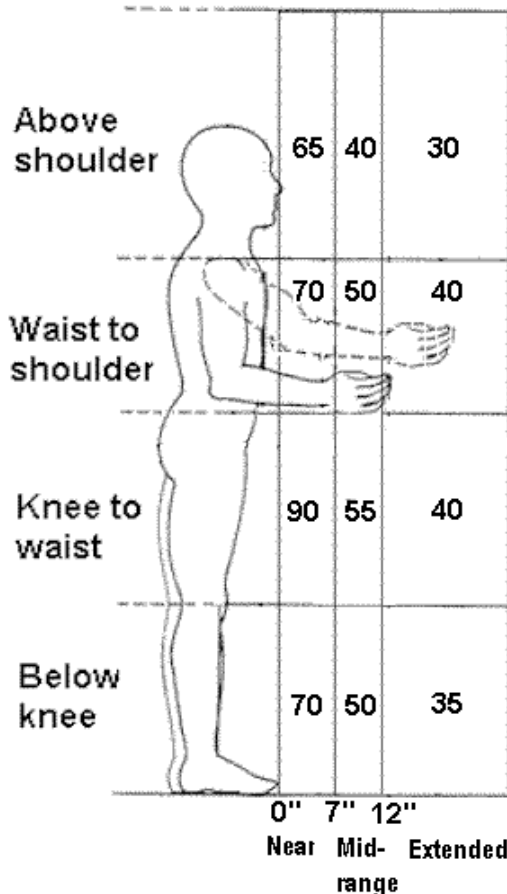
Heavy, Frequent or Awkward Lifting

This analysis only pertains if you have "caution zone jobs" where employees lift 10 lbs. or more and you have chosen the specific performance approach.

Step 1 Find out the actual weight of objects that the employee lifts.

Actual Weight = _____ lbs.

Step 2 Determine the Unadjusted Weight Limit. Where are the employee's hands when they begin to lift or lower the object? Mark that spot on the diagram below. The number in that box is the Unadjusted Weight Limit in pounds.



Unadjusted Weight Limit: _____ lbs.

Step 3

Find the Limit Reduction Modifier. Find out how many times the employee lifts per minute and the total number of hours per day spent lifting. Use this information to look up the Limit Reduction Modifier in the table below.

How many lifts per minute?	For how many hours per day?		
	1 hr or less	1 hr to 2 hrs	2 hrs or more
1 lift every 2-5 mins.	1.0	0.95	0.85
1 lift every min	0.95	0.9	0.75
2-3 lifts every min	0.9	0.85	0.65
4-5 lifts every min	0.85	0.7	0.45
6-7 lifts every min	0.75	0.5	0.25
8-9 lifts every min	0.6	0.35	0.15
10+ lifts every min	0.3	0.2	0.0

Note: For lifting done less than once every five minutes, use 1.0

Limit Reduction Modifier: _____

Step 4

Calculate the Weight Limit. Start by copying the Unadjusted Weight Limit from Step 2.

Unadjusted Weight Limit: = _____ lbs.

If the employee twists more than 45 degrees while lifting, reduce the Unadjusted Weight Limit by multiplying by 0.85. Otherwise, use the Unadjusted Weight Limit

Twisting Adjustment: = _____

Adjusted Weight Limit: = _____ lbs.

Multiply the Adjusted Weight Limit by the Limit Reduction Modifier from Step 3 to get the Weight Limit.

X

Limit Reduction Modifier: _____

Weight Limit: = _____ lbs.

Step 5

Is this a hazard? Compare the Weight Limit calculated in Step 4 with the Actual Weight lifted from Step 1. If the Actual Weight lifted is greater than the Weight Limit calculated, then the lifting is a WMSD hazard and must be reduced below the hazard level or to the degree technologically and economically feasible.

Note: If the job involves lifts of objects with a number of different weights and/or from a number of different locations, use Steps 1 through 5 above to:

1. Analyze the two worst case lifts -- the heaviest object lifted and the lift done in the most awkward posture.
2. Analyze the most commonly performed lift. In Step 3, use the frequency and duration for all of the lifting done in a typical workday.

Hand-Arm Vibration

Use the instructions below to determine if a hand-arm vibration hazard exists.

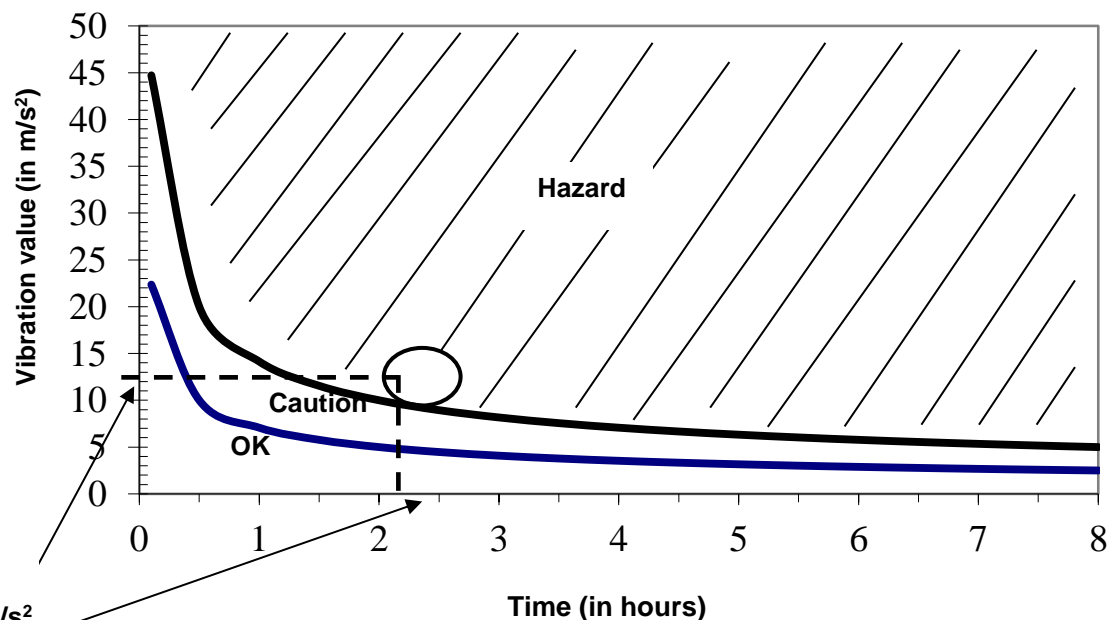
Step 1. Find the vibration value for the tool. (Get it from the manufacturer, look it up at this web site: <http://umetech.niwl.se/vibration/HAVHome.html>, or you may measure the vibration yourself). The vibration value will be in units of meters per second squared (m/s^2). On the graph below find the point on the left side that is equal to the vibration value.

Note: You can also link to this web site through the L&I WISHA Services Ergonomics web site: <http://www.lni.wa.gov/wisha/ergo>

Step 2. Find out how many total hours per day the employee is using the tool and find that point on the bottom of the graph.

Step 3. Trace a line in from each of these two points until they cross.


Step 4. If that point lies in the crosshatched "Hazard" area above the upper curve, then the vibration hazard must be reduced below the hazard level or to the degree technologically and economically feasible. If the point lies between the two curves in the "Caution" area, then the job remains as a "Caution Zone Job." If it falls in the "OK" area below the bottom curve, then no further steps are required.



Example:

An impact wrench with a vibration value of 12 m/s^2 is used for $2\frac{1}{2}$ hours total per day. The exposure level is in the Hazard area. The vibration must be reduced below the hazard level or to the degree technologically and economically feasible.

Note: The caution limit curve (bottom) is based on an 8-hour energy-equivalent frequency-weighted acceleration value of 2.5 m/s^2 . The hazard limit curve (top) is based on an 8-hour energy-equivalent frequency-weighted acceleration value of 5 m/s^2 .

 DAVIS MECHANICAL SYSTEMS		Davis Mechanical Systems, Inc.		
Policy No. 06		Fall Protection Program		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/20

PURPOSE

The objective of the Davis Mechanical Systems, Inc. (Davis Mechanical) Fall Protection Program is to make sure that employees are protected from the hazards of working at heights. This program outlines the requirements for assessment and mitigation of fall hazards.

POLICY

It is Davis Mechanical policy to protect employees from occupational injuries by implementing and enforcing safe work practices, and appointing a competent person(s) to manage the Fall Protection Program. The company will prioritize the elimination of fall protection hazards. If the hazards cannot be eliminated, then employees will be required to use personal fall protection systems.

The Davis Mechanical Fall Protection Program shall comply with the OSHA requirements. A copy of the OSHA Fall Protection Standard shall be made available to all employees, and may be obtained from the Safety Coordinator.

PROGRAM RESPONSIBILITIES

Project Manager has the following responsibilities:

1. To provide a workplace that minimizes fall protection hazards.
2. To provide ANSI complaint fall protection systems.
3. To develop a company fall protection program.
4. To designate a company Safety Coordinator.
5. To identify employees who are affected by this policy and ensure that they receive the required training.
6. To provide required protective equipment to employees.
7. To provide technical support to employees for fall protection issues.
8. To ensure the company is operating in accordance with this policy by performing periodic reviews and audits.
9. To review this safety policy for effectiveness periodically and when deficiencies are discovered.

The Safety Coordinator has the following responsibilities:

1. To coordinate or perform fall protection hazard assessments for job tasks.
2. To coordinate the acquisition of fall protection systems and equipment that meets of applicable ANSI, ASTM, or OSHA requirements.
3. To perform routine safety checks of work operations.
4. Supervise the enforcement of the company fall protection program.
5. To train employees and supervisors in recognizing fall hazards and the use of fall protection systems.
6. To maintain records of employee training, equipment issues, and fall protection systems.
7. To monitor employees to verify they are using safe work practices.
8. To investigate and document fall protection incidents.

Supervisor have the following responsibilities:

1. To make sure that all required employees have fall protection training prior to starting work.
2. To ensure that all employees utilize the proper fall protection and personal protective equipment.
3. To make sure that the employees are working in accordance with the company safety program.
4. To coordinate with management on safety issues.
5. To perform routine safety checks of work operations.
6. Supervise the enforcement of the company fall protection program.
7. To monitor employees to verify they are using safe work practices.
8. To investigate and document fall protection incidents.

Employees have the following responsibilities.

1. To complete required fall protection training before starting work.
2. Inspect fall protection equipment prior to use
3. To work in accordance with the requirements of this program.
4. To use all required fall protection and personal protective equipment.
5. To stop work immediately if any safety deficiencies are identified.
6. To immediately report any safety issues to a supervisor.

DEFINITIONS

Anchorage	A secure point of attachment for lifelines, lanyards, or deceleration devices.
Authorized Employee	A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite
Body Harness	Straps that may be secured about the person in a manner that distributes the fall-arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching the harness to other components of a personal fall arrest system.
Competent Person	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
Body Belt	Use of a body belt is not allowed on any Davis Mechanical projects.
Connector	A device that is used to couple (connect) parts of a personal fall arrest system or positioning device system together.
Controlled Access Zone	A work area designated and clearly marked in which certain types of work (such as overhand bricklaying) may take place without the use of conventional fall protection systems (guardrail, personal arrest, or safety net) to protect the employees working in the zone.
Deceleration Device	Any mechanism, such as a rope, grab, rip stitch lanyard, specially-woven lanyard, tearing lanyard, deforming lanyard, or automatic Self-retracting lifeline/lanyard, which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limits the energy imposed on an employee during fall arrest.
Deceleration Distance	The additional vertical distance a falling person travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which a deceleration device begins to operate.
Guardrail System	A barrier erected to prevent employees from falling to lower levels.
Hole	A void or gap two (2) inches (5.1 centimeters) or more in the least dimension in a floor, roof, or other walking/working surface.
Lanyard	A flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the full body harness to a deceleration device, lifeline, or anchorage.

Leading Edge	The edge of a floor, roof, or formwork for a floor or other walking/working surface (such as a deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed.
Lifeline	A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), that serves as a means for connecting other components of a personal fall arrest system to an anchorage.
Low Slope Roof	A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).
Opening	A gap or void 30 inches (76 centimeters) or more high and 18 inches (46 centimeters) or more wide, in a wall or partition through which employees can fall to a lower level.
Personal Fall Arrest System	A system including but not limited to an anchorage, connectors, and a body harness used to arrest an employee in a fall from a working level.
Positioning Device System	A system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning backwards.
Qualified Employee	One who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project
Rope Grab	An anchorage device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to prevent a fall.
Safety Monitoring System	A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.
Self-Retracting Lifeline or Lanyard	A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under minimal tension during normal employee movement and which, after onset of a fall, automatically locks the drum and arrests the fall.
Snaphook	A connector consisting of a hook-shaped member with a normally closed keeper, or a similar arrangement, which may be opened to permit the hook to receive an object and, when released automatically, closes to retain the object.
Steep Roof	A roof having a slope greater than 4 in 12 (vertical to horizontal).
Toe Board	A low protective barrier that prevents material and equipment from falling to lower levels and which protects personnel from falling.
Unprotected Side and Edges	Any side or edge (except at entrances to points of access) of a walking/working surface (e.g., floor, roof, ramp, or runway) where there is no wall or guardrail system at least 39 inches (1 meter) high.
Walking/Working Surfaces	Any surface, whether horizontal or vertical, on which an employee walks or works, including but not limited to floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel. Does not include ladders, vehicles, or trailers on which employees must be located to perform their work duties.
Warning Line Systems	A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge and which designates an area in which roofing work may take place without the use of guardrail, personal fall arrest system, or safety net systems to protect employees in the area.

SITE SPECIFIC FALL PROTECTION PLAN

On all Davis Mechanical project sites, a qualified person will assess the workplace for potential fall hazards. The project will be evaluated and fall hazards determined. This inspection will be documented, and a complete list of fall hazards and protective measures will be maintained using the Site Specific Fall Protection Plan located in the Appendices. Davis Mechanical will follow the fall protection hierarchy of controls when recommending solutions for fall protection hazards.

For tasks not identified in this procedure a written Fall Protection Hazard Assessment shall be developed and approved by the Safety Coordinator.

FALL PROTECTION HIERARCHY

Solutions for fall protection hazards will be determined in the following order and priority:

1. Eliminate the fall hazard.
 - a. Perform work on the ground.
 - b. Engineer out the hazard, by installing guardrails or moving the equipment to the ground.
2. Use of Fall Restraint Systems.
 - a. Use positioning lanyards to prevent personnel from reaching the fall hazard.
3. Use of Personal Fall Arrest Systems
 - a. Use of personal fall arrest systems.
 - b. Development of a rescue plan.

If adequate fall protection cannot be provided, then the work will not be performed. Use of methods other than those specified above must be approved by the Safety Coordinator (see Alternative Fall Protection Plan below).

WORK THAT REQUIRES FALL PROTECTION

As a general rule, any construction work that occurs six or more feet above a lower level must involve the use of fall protection. In general industry, work that occurs four or more feet above a lower level requires fall protection. Employees must also use fall protection if there is a danger of falling into hazardous equipment.

A supervisor competent in the use of fall protection shall evaluate the worksite(s) and determine the specific type(s) of fall protection to be used in the following situations. For tasks not identified below a written Fall Protection Hazard Assessment shall be developed and approved by the Safety Coordinator. For tasks where implementation of conventional fall protection is impractical and increases the hazards to employees, an alternative Fall Protection Plan will be developed. Use of an alternative Fall Protection Plan requires the approval of the Safety Coordinator.

Hoist Areas

Guardrail systems or personal fall arrest systems will be used in hoist areas when an employee may fall six (6) feet or more. If guardrail systems must be removed for hoisting, employees are required to use personal fall arrest systems.

Holes

Covers or guardrail systems shall be erected around holes (including skylights) that are six (6) feet or more above lower levels. If covers or guardrail systems must be removed, employees are required to use personal fall arrest systems.

Leading Edges

Guardrail systems, safety net systems, or personal fall arrest systems shall be used when employees are constructing a leading edge that is six (6) feet or more above lower levels. An alternative Fall Protection Plan shall be used if the Safety Coordinator determines that the implementation of conventional fall protection systems is infeasible or creates a greater hazard to employees. Safety Coordinator shall follow the guidelines of [29 CFR 1926, Subpart M, Appendix E](#) in the development of alternative Fall Protection Plans for leading edge work.

WALL OPENINGS

Guardrail systems, safety net systems, or a personal fall arrest system will be provided to employees working on, at, above, or near wall openings when the outside bottom edge of the wall opening is six (6) feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface.

RAMPS, RUNWAYS, AND OTHER WALKWAYS

Employees using ramps, runways, and other walkways six (6) feet or more above the lower level shall be protected by guardrail systems.

ALTERNATIVE FALL PROTECTION PLAN

An Alternative Fall Protection Plan shall be developed by a qualified person if the Safety Coordinator determines that the implementation of conventional fall protection systems are infeasible or create a greater hazard to employees engaged in leading edge work, or residential construction work. All alternative Fall Protection Plans will adhere to the following guidelines:

1. Be written specific to the particular jobsite needs;
2. Include explanation of how conventional fall protection is infeasible or creates a greater hazard to employees (if applicable);
3. Explain what alternative fall protection will be used for each task;
4. Be maintained in writing at the jobsite and,
5. Meet the requirements of [29 CFR 1926.502\(k\)](#).

TYPES OF FALL PROTECTION SYSTEMS

Covers

1. All covers shall be secured to prevent accidental displacement.
2. Covers shall be color-coded or bear the markings "HOLE" or "COVER".
3. Covers located in roadways shall be able to support twice the axle load of the largest vehicle that might cross them.
4. Covers shall be able to support twice the weight of employees, equipment, and materials that might cross them.

Guardrail Systems

Guardrail systems shall be erected at unprotected edges, ramps, runways, or holes where it is determined that erecting such systems will not cause an increased hazard to employees. The following specifications will be followed in the erection of guardrail systems. Toprails shall be:

1. At least ¼ inch in diameter (steel or plastic banding is unacceptable).
2. Flagged every six (6) feet or less with a high visibility material if a wire top rope is used.
3. Inspected as frequently as necessary to ensure strength and stability.
4. Forty-two (42) inches (plus or minus three (3) inches) above the walking/working level.
5. Adjusted to accommodate the height of stilts, if they are in use.

Midrails, screens, mesh, intermediate vertical members (every 8 feet), and solid panels shall be erected in accordance with the OSHA Fall Protection Standard.

The guardrails must be surfaced to prevent injury to employees from punctures, abrasion, or lacerations.

Gates or removable guardrail sections shall be placed across openings of hoisting areas or holes when they are not in use to prevent access.

Personal Fall Arrest Systems

Personal fall arrest systems shall be issued to and used by employees as determined by the Safety Coordinator and may consist of anchorage, connectors, body harness, deceleration device, lifeline, or suitable combinations. Personal fall arrest systems shall:

1. Limit the maximum arresting force to 1800 pounds.
2. Be rigged so an employee cannot free fall more than six feet or contact any lower level.
3. Bring an employee to a complete stop and limit the maximum deceleration distance traveled to three and a half (3 ½) feet.
4. Be strong enough to withstand twice the potential impact energy of an employee free falling six (6) feet (or the free fall distance permitted by the system, whichever is less).
5. Be inspected prior to each use for damage and deterioration.
6. Be removed from service if any damaged components are detected.
7. Meet the design requirements of the OSHA Fall Protection standard.

All components of a fall arrest system shall meet the specifications of the OSHA Fall Protection Standard, and shall be used in accordance with the manufacturer's instructions.

1. The use of non-locking snaphooks is prohibited.
2. Dee-rings and locking snaphooks shall:
 - a. have a minimum tensile strength of 5000 pounds; and
 - b. be proof-tested to a minimum tensile load of 3600 pounds without cracking, breaking, or suffering permanent deformation.

Lifelines shall be:

1. Designed, installed, and used under the supervision of a competent fall protection supervisor.
2. Protected against cuts and abrasions.
3. Equipped with horizontal lifeline connection devices capable of locking in both directions on the lifeline when used on suspended scaffolds or similar work platforms that have horizontal lifelines that may become vertical lifelines.
4. Able to maintain a safety factor of at least 2.

Self-retracting lifelines and lanyards must have wire ropes or straps (webbing) made of synthetic fibers, and shall:

1. Sustain a minimum tensile load of 3600 pounds if they automatically limit free fall distance to two (2) feet.
2. Sustain a minimum tensile load of 5000 pounds (includes rip stitch, tearing, and deforming lanyards).

Anchorage must support at least 5000 pounds per person attached and shall be:

1. Designed, installed, and used under the supervision of a competent fall protection supervisor.
2. Capable of supporting twice the weight expected to be imposed on it.
3. Independent of any anchorage used to support or suspend platforms.

Positioning Device and Fall Restraint Systems

Positioning Device and Fall Restraint systems shall be set up so that an employee cannot fall, and shall be secured to an anchorage capable of supporting twice the potential impact load or 3000 pounds, whichever is greater. Positioning Device and Fall Restraint systems will not be used for fall arrest. Requirements for snaphooks, dee-rings, and other connectors are the same as detailed in this Program for fall arrest systems.

Safety Net Systems

1. Safety net systems must be installed no more than 30 feet below the walking/working surface with sufficient clearance to prevent contact with the surface below, and shall be installed with sufficient vertical and horizontal distances as described in the OSHA Fall Protection Standard.
2. All nets shall be inspected at least once a week for wear, damage, or deterioration. Defective nets shall be removed from use and replaced with acceptable nets.

3. All nets shall be in compliance with mesh, mesh crossing, border rope, connection specifications, and drop tests as described in the OSHA Fall Protection Standard.
4. When nets are used on bridges, the potential fall area from the walking/working surface shall remain unobstructed.
5. Objects that have fallen into safety nets shall be removed as soon as possible and at least before the next working shift.

Warning Line Systems

Warning line systems consisting of supporting stanchions and ropes, wires, or chains shall be erected around all sides of roof work areas. Warning lines establish a boundary on a roof work area that can only be crossed by personnel when additional precautions are taken to protect personnel from the fall hazard. The following items are required for warning line systems.

1. Lines shall be flagged at no more than six (6) foot intervals with high-visibility materials.
2. The lowest point of the line (including sag) shall be between 34 and 39 inches from the walking/working surface.
3. Stanchions of warning line systems shall be capable of resisting at least 16 pounds of force.
4. Ropes, wires, or chains must have a minimum tensile strength of 500 pounds.
5. Warning lines shall be constructed per the following criteria:
 - a. **For Non-Roofing Work:** Warning line systems shall be erected at least fifteen (15) feet from the edge. All personnel will be notified of the fall hazard and the need to remain behind the warning line. Any personnel who access the area beyond the warning line must be protected from the fall hazard by using one of the approved methods (Guardrail System, Personal Fall Arrest System or Safety Net System)

CONTROLLED ACCESS ZONES

A Controlled Access Zone is an area in which certain work (e.g., overhand bricklaying, steel erection leading edge work, or precast concrete erection) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems, and access to the zone is controlled. Controlled Access Zones will not be utilized by Davis Mechanical personnel.

EXCAVATIONS

Fall protection will be provided to employees working at the edge of an excavation with a vertical wall that is six (6) feet or deeper. Employees in these areas are required to use the fall protection systems as designated in this program.

1. Excavations with a vertical wall six (6) feet or deeper shall be protected by guardrail systems, fences, barricades, or covers.
2. Walkways that allow employees to cross over an excavation that is six (6) feet or deeper shall be equipped with guardrail systems.

PROTECTION FROM FALLING OBJECTS

When guardrail systems are in use, the openings shall be small enough to prevent potential passage of falling objects. The following procedures must be followed by all employees to prevent hazards associated with falling objects.

1. No materials (except masonry and mortar) shall be stored within four (4) feet of working edges.
2. Excess debris shall be removed regularly to keep work areas clear.
3. During roofing work, materials and equipment shall be stored no less than six (6) feet from the roof edge unless guardrails are erected at the edge.
4. Stacked materials must be stable and self-supporting.
5. Canopies shall be strong enough to prevent penetration by falling objects.
6. Toe boards erected along the edges of overhead walking/working surfaces shall be:
 - a. Capable of withstanding a force of at least 50 pounds; and
 - b. Solid with a minimum of three and a half (3 ½) inches tall and no more than one quarter (1/4) inch clearance above the walking/working surface.

7. If equipment and materials must be piled higher than the toeboard it must be staged four feet back from the edge, or screening must be erected above the toeboard.

INSPECTION, MAINTENANCE & STORAGE

As with all protective equipment, the equipment is only protective when it is functioning properly. The same holds true for fall protection equipment. Fall protection equipment must be visually inspected by the user prior to each use and bi-annually by a competent person to ensure the equipment is in good working order and ready for use (see Appendix A: Equipment Inspection Templates).

Fall protection equipment must be inspected to ensure the equipment is properly functioning. Manufacturer's recommendations must be followed for inspection, maintenance and storage of fall protection equipment.

If a fall arrest system is used to control a fall, affected components of the system must be taken out of service and inspected to ensure they are in functional condition. Some components, such as the shock absorbing lanyard or retractable lifeline, must be returned to the manufacturer for recertification following their use in a fall situation.

Soiled or contaminated body wear (harnesses) can be cleaned in warm water using a mild soap and scrub cloth. The equipment must be thoroughly rinsed with fresh water following any detergent cleaning. Other fall protection equipment can be surface cleaned with water. Harsh chemicals should never be used to clean the fall protection equipment. Upon the completion of cleaning, the equipment must be allowed to dry thoroughly and placed in a clean and dry location to allow for proper storage.

Labels must be visible and legible on all fall protection equipment. If not, they must be removed from service, regardless of equipment condition.

RESCUE PLANS

Every jobsite must have a documented rescue method that provides prompt rescue in the event a fall occurs. The rescue method(s) will be documented on the Site Specific Fall Protection Plan (see Appendix B). There are several options for providing prompt rescue for a worker who has sustained a fall:

Self Rescue

Self rescue is typically the safest and most efficient method of rescue. If the person working at heights has properly selected and used his or her fall protection equipment, 90% of workers will be able to perform a self rescue, which includes the following steps:

1. Climbing back up to the level from which they fell (from a few inches to 2-3 (feet).
2. The fallen worker will return to the floor or ground to be evaluated for possible medical Aid as required.
3. Remove all components of fall arrest system impacted by the fall event from service and documenting (bag and tag) the components with name, date and activity. Return the equipment to the Safety Coordinator

Assisted Self Rescue (with a portable rope/web ladder)

Another means of performing a fully Assisted Rescue is to use lower a rope/web ladder to the fallen employee under the following guidelines:

1. A rescuer will access the area where the employee fell (provided they are able to be protected from a fall using a PFAS) and make sure there is a second fall protection device, such as a shock absorbing lanyard or self-retracting lifeline available for the fallen worker.
2. The portable rope/web ladder will be secured to an anchor point and lowered to the fallen worker.
3. The rescuer will attach the second lanyard or self-retracting lifeline to the fallen worker.
4. The fallen worker will climb up the rope/web ladder to the level from which they fell.
5. Disconnect the rescued worker from the impacted fall arrest equipment.

6. The fallen worker will return to the floor or ground to be evaluated for possible medical Aid as required.
7. Remove all components of fall arrest system impacted by the fall event from service and documenting (bag and tag) the components with name, date and activity. Return the equipment to the Safety Coordinator

Assisted Self Rescue (with an aerial lift)

Another means of performing a fully Assisted Rescue is to use an aerial lift (scissor lift, articulating boom lift, forklift/personnel platform) under the following guidelines:

1. A rescuer will get into the aerial lift and make sure there is a second fall protection device, such as a shock absorbing lanyard or self-retracting lifeline available for the fallen worker.
2. The aerial lift must be maneuvered into position (raised up underneath the fallen worker) so that the rescuer can perform the rescue.
3. Attach the second lanyard or self-retracting lifeline in the aerial lift to the fallen worker.
4. Disconnect the rescued worker from the impacted fall arrest equipment.
5. Lower the worker to the ground and provide medical aid as required
6. Remove all components of fall arrest system impacted by the fall event from service and documenting (bag and tag) the components with name, date and activity. Return the equipment to the Safety Coordinator

Emergency Services Rescue

If a Davis Mechanical project site will be unable to provide self-rescue, or assisted self-rescue and intends to rely upon emergency services for rescue, the following considerations must be met:

1. Emergency Services must be contacted in advance of the project to verify they have the capabilities to provide rescue.
2. Emergency Services be able to reach the location of a fallen worker in a timely manner.
3. Emergency Services must be on duty the entire time work is being performed.
4. Emergency Services must have the training and equipment to reach the worker at height.
5. Emergency Services must have sufficient backup capacity to provide assistance even if there is another emergency.
6. Emergency Services must be informed on the hazards of suspension trauma.

USE OF OTHER METHODS OF RESCUE REQUIRES APPROVAL OF THE SAFETY COORDINATOR.

ACCIDENT INVESTIGATIONS

All incidents that result in injury to workers, as well as near misses, regardless of their nature, shall be reported and investigated (including incidents involving falls). Investigations shall be conducted by a competent fall protection supervisor and the safety committee. The investigation will occur within 24 hours after an incident to identify the cause and means of prevention to eliminate the risk of reoccurrence.

In the event of such an incident, the Fall Protection Program (and alternative Fall Protection Plans, if in place) shall be reevaluated by the Safety Coordinator to determine if additional practices, procedures, or training are necessary to prevent similar future incidents.

TRAINING

All employees who may be exposed to fall hazards are required to receive training on how to recognize such hazards, and how to minimize their exposure to them. Employees shall receive training as part of their new hire orientation, and before they are required to work in areas where fall hazards exist.

A record of employees who have received training and training dates shall be maintained by the Safety Coordinator. Training of employees shall include:

1. Nature of the fall hazards employees may be exposed to.
2. Correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems.
3. Use and operation of controlled access zones, guardrails, personal fall arrest systems, safety nets, warning lines, and safety monitoring systems.
4. Limitations of the use of mechanical equipment during roofing work on low-slope roofs (if applicable).
5. Correct procedures for equipment and materials handling, and storage and erection of overhead protection.
6. Role of each employee in alternative Fall Protection Plans (if used).
7. Requirements of the OSHA Fall Protection Standard, 29 CFR 1926, Subpart M.
8. Davis Mechanical requirements for reporting incidents that cause injury to an employee.

Additional training shall be provided on an annual basis, when employee behavior indicates re-training is needed, or as needed when changes are made to this Fall Protection Program, an alternative Fall Protection Plan, or the OSHA Fall Protection Standard.

PROGRAM EVALUATION

Any changes to the Fall Protection Program (and alternative Fall Protection Plans, if in place) shall be approved by the Safety Coordinator, and shall be reviewed by a qualified person as the job progresses to determine additional practices, procedures or training needs necessary to prevent fall injuries. The program will be reviewed annually and after every fall. Affected employees shall be notified of all procedure changes, and trained if necessary. A copy of this plan, and any additional alternative Fall Protection Plans, shall be available electronically at each job site.

APPENDIX A:

**FALL PROTECTION EQUIPMENT INSPECTION
TEMPLATES**

Full Body Harness Inspection Checklist / Log

Harness Model: _____ Manufacture Date: _____
 Serial Number: _____ Lot Number: _____ Purchase Date: _____
 Comments: _____

General Factors	Accepted / Rejected	Supportive Details or Comments
Hardware: (Includes D-Rings, buckles, keepers, and back pads) Inspect for damage, distortion, sharp edges, burrs, cracks, and corrosion.	<input type="checkbox"/> Accepted <div style="text-align: center;">Rejected</div> <input type="checkbox"/>	_____ _____ _____
Webbing: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling, and discoloration.	<input type="checkbox"/> Accepted <div style="text-align: center;">Rejected</div> <input type="checkbox"/>	_____ _____ _____
Stitching: Inspect for pulled or cut stitches.	<input type="checkbox"/> Accepted <div style="text-align: center;">Rejected</div> <input type="checkbox"/>	_____ _____ _____
Labels: Inspect, make certain all labels are securely held in place and legible.	<input type="checkbox"/> Accepted <div style="text-align: center;">Rejected</div> <input type="checkbox"/>	_____ _____ _____
Inspection Tag: Initial and Date the inspection tag	<input type="checkbox"/> Accepted <div style="text-align: center;">Rejected</div> <input type="checkbox"/>	_____ _____ _____
Other:	<input type="checkbox"/> Accepted <div style="text-align: center;">Rejected</div> <input type="checkbox"/>	_____ _____ _____
<div style="display: flex; justify-content: space-between;"> <div> Overall Disposition Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> Inspected by: _____ (Print Name) </div> <div> Date Inspected: _____ </div> </div>		

Lanyards Inspection Checklist / Log

Lanyard Model: _____ Manufacture Date: _____
 Serial Number: _____ Lot Number: _____ Purchase Date: _____
 Comments: _____

General Factors	Accepted / Rejected	Supportive Details or Comments
Hardware: (Includes snap hooks, carabiners, adjusters, keepers, thimbles, and D-Rings,) Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion, and proper operation.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Webbing: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling, and discoloration.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Stitching: Inspect for pulled or cut stitches.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Synthetic Rope: Inspect for pulled or cut yarns, burns, abrasion, knots, excessive soiling, and discoloration.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Wire Rope: Inspect for broken wires, corrosion, kinks, and separation of strands.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Energy Absorbing Component: Inspect for elongation, tears, and excessive soiling.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Labels: Inspect, make certain all labels are securely held in place and legible.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Inspection Tag: Initial and Date the inspection tag	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____ _____
Other:	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____ _____
Overall Disposition Accepted <input type="checkbox"/> Rejected <input type="checkbox"/>		
Inspected by: _____ Date Inspected: _____ (Print Name)		

Tie-Off Adaptors / Hooks / Carabiners Inspection Checklist / Log

Tie-Off Adaptor Model: _____ Manufacture Date: _____

Serial Number: _____ Lot Number: _____ Purchase Date: _____

Comments: _____

General Factors	Accepted / Rejected	Supportive Details or Comments
Hardware: (Includes D-Rings,) Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion, and proper operation.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Webbing: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling, and discoloration.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Stitching: Inspect for pulled or cut stitches.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Labels: Inspect, make certain all labels are securely held in place and legible.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Physical Damage: Inspect for distortion, sharp edges, burrs, cracks, deformities, and locking operation.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Excessive Corrosion: Inspect for corrosion which effects the operation and/or strength.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Markings: Inspect, make certain marking(s) are legible.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Inspection Tag: Initial and Date the inspection tag	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Other:	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
<div style="display: flex; justify-content: space-between;"> <div> Overall Disposition Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> </div> <div style="text-align: right;"> Inspected by: _____ Date Inspected: _____ (Print Name) </div> </div>		

Anchorage Devices Inspection Checklist / Log

Anchor Plate Model: _____ Manufacture Date: _____

Serial Number: _____ Lot Number: _____ Purchase Date: _____

Comments: _____

General Factors	Accepted / Rejected	Supportive Details or Comments
Physical Damage: Inspect for cracks, sharp edges, burrs, and deformities.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Excessive Corrosion: Inspect for corrosion which effects the operation and/or strength.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Fasteners: Inspect for corrosion, tightness, damage, and distortion. If welded, inspect for weld or corrosion, cracks and damage.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Markings: Inspect, make certain marking(s) are legible.	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____
Inspection Tag: Initial and Date the inspection tag	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____ _____
Other:	<input type="checkbox"/> Accepted Rejected <input type="checkbox"/>	_____ _____ _____
<div>Overall Disposition Accepted <input type="checkbox"/> Rejected <input type="checkbox"/></div> <div>Inspected by: _____ Date Inspected: _____ (Print Name)</div>		

Self-Retracting Lifelines Inspection Checklist / Log

Self-Retracting Lifeline Model: _____ Manufacture Date: _____
 Serial Number: _____ Lot Number: _____ Purchase Date: _____
 Comments: _____

General Factors	Accepted / Rejected	Supportive Details or Comments
Impact indicator: Inspect indicator for activation (rupture of red stitching, elongated indicator, etc.)	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Screws / Fasteners: Inspect for damage, and make certain all screws and fasteners are tight.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Housing: Inspect for distortion, cracks and other damage. Inspect anchoring loop for distortion and damage.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Lifeline: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration, broken wires (See impact indicator).	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Locking Action: Inspect for proper lock-up of brake mechanism.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Retraction / Extension: Inspect spring tension by pulling lifeline out fully and allowing it to retract fully (No slack).	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Hooks / Carabiners: Inspect for physical damage, corrosion, proper operation, and, markings (See separate checklist/log for hooks and carabiners).	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Labels: Inspect, make certain all labels are securely held in place and legible.	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Inspection Tag: Initial and Date the inspection tag	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
Other:	<input type="checkbox"/> Accepted <div style="display: flex; justify-content: space-around;"> Rejected <input type="checkbox"/> </div>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>
<div style="display: flex; justify-content: space-between;"> <div> Overall Disposition Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> </div> <div> Inspected by: _____ Date Inspected: _____ <div style="text-align: center;">(Print Name)</div> </div> </div>		

APPENDIX B:

**SITE SPECIFIC FALL
PROTECTION PLAN**

SITE SPECIFIC FALL PROTECTION PLAN

DAVIS MECHANICAL SYSTEMS, INC.:	JOB FOREMAN/SUPERVISOR:
JOB NAME:	PHONE NUMBER:
JOB ADDRESS:	CITY:
	DATE:

2. FALL HAZARDS IN THE WORK AREA

(INCLUDE LOCATIONS WORK WILL BE PERFORMED)

<input type="checkbox"/>	OPENINGS BETWEEN FLOORS AND ROOF - OVER 2" NEED TO BE COVERED, LABELED, AND SECURED <i>Location:</i>	<input type="checkbox"/>	DOOR OPENINGS – over 6ft in elevation and a fall hazard is present need to be protected. <i>Location:</i>
<input type="checkbox"/>	STAIRWELLS – Guard rails and grip able hand rail provided at each stair <i>Location:</i>	<input type="checkbox"/>	WINDOW OPENINGS - Under 39" A.F.F. need to be protected. <i>Location:</i>
<input type="checkbox"/>	LEADING EDGES – Warning line installed 6FT FROM LEADING EDGE for roofing installation and 15FT for all other contractors. <i>Location:</i>	<input type="checkbox"/>	SCAFFOLDING – over 4:1 ratio needs to be tied back to the building. 6" min/12" maximum overlaps on planks. Guard rail system in place. Determine who the competent person is. <i>Location:</i>
<input type="checkbox"/>	EXCAVATIONS – All excavations need to be protected from vehicle and foot traffic. <i>Location:</i>	<input type="checkbox"/>	LADDERS – set up at a 4:1 tied off on the top and secured at the bottom <i>Location:</i>

OTHER FALL HAZARDS IN THE WORK PLACE:

3. METHOD OF FALL ARREST OR FALL RESTRAINT

<input type="checkbox"/>	FULL BODY HARNESS – must be inspected before each use. <i>Location:</i>
<input type="checkbox"/>	LANDYARD - must be inspected before each use. <i>Location:</i>
<input type="checkbox"/>	LIFE LINE - must be inspected before each use. <i>Location:</i>
<input type="checkbox"/>	ROPE GRAB - must be inspected before each use. <i>Location:</i>
<input type="checkbox"/>	RAKE RAILS - must be inspected before each use. <i>Location:</i>
<input type="checkbox"/>	ANCHOR POINTS – must be rated for 5000lbs <i>Location:</i>
<input type="checkbox"/>	SAFETY NETS <i>Location:</i>

<input type="checkbox"/>	DROP LINE - must be inspected before each use for imperfections <i>Location</i>
<input type="checkbox"/>	RETRACTABLE - must be inspected before each use. <i>Location</i>
<input type="checkbox"/>	GUARD RAILS – Rated for 200lbs /Top rail at 42"/mid rail at 21" / toe kick 4" tall <i>Location:</i>
<input type="checkbox"/>	ROOF JACKS W/ RAILS <i>Location:</i>
<input type="checkbox"/>	WARNING LINES – Minimum of 6ft set back from the leading edge for roofing installation. 15ft for all other work. <i>Location:</i>
<input type="checkbox"/>	SAFETY MONITOR – Use of a Safety Monitor Requires Safety Coordinator Approval
<input type="checkbox"/>	NAME OF MONITOR _____

LIST OTHER TYPES OF SYSTEMS IF APPLICABLE

4. METHOD OF RESCUE

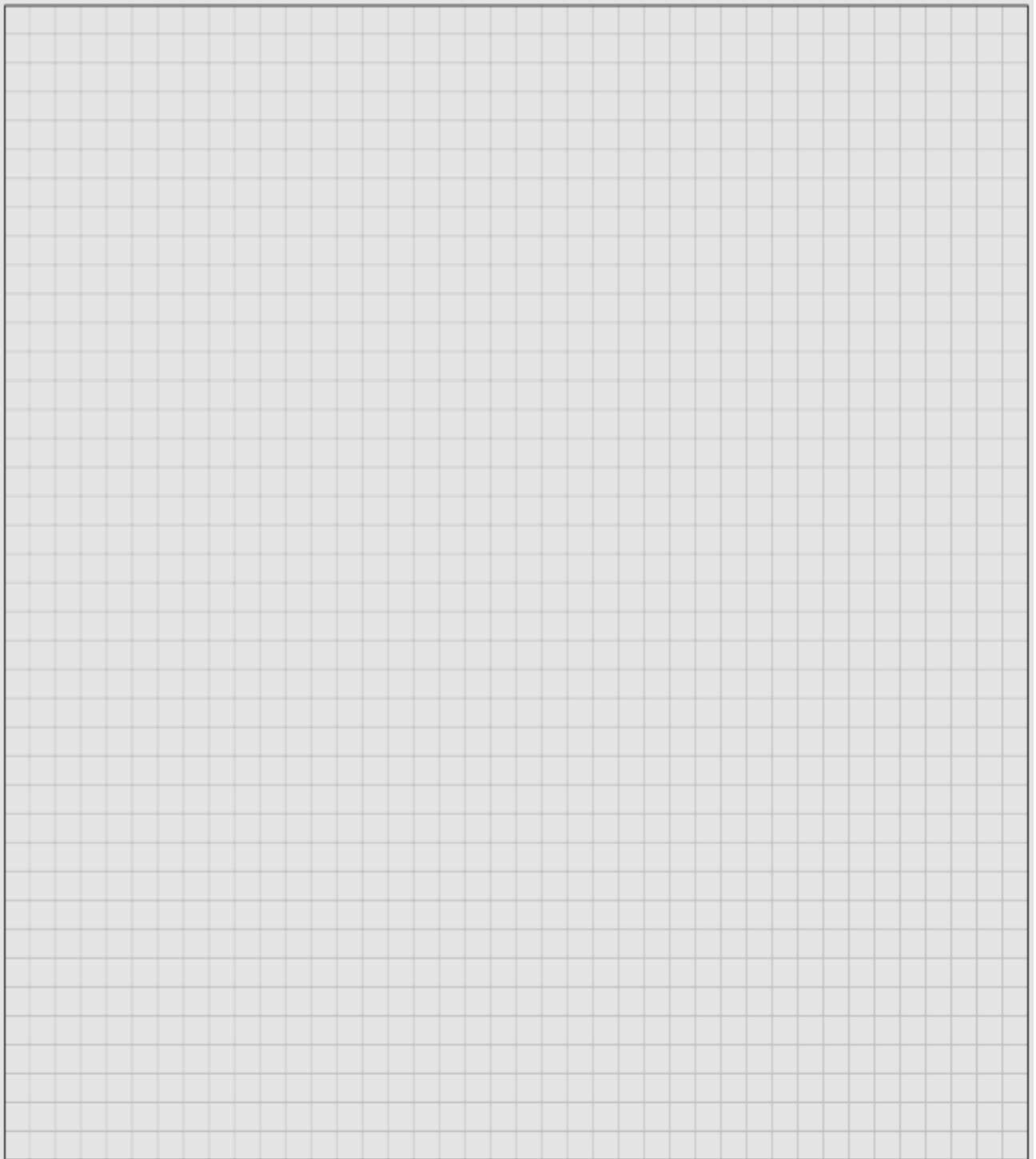
(Identify the method of rescue and provide additional comments below)

<input type="checkbox"/>	SELF RESCUE Based on location of anchor point and limited fall distance, personnel will be able to climb back onto the work surface they fall from.	<input type="checkbox"/>	ASSISTED SELF RESCUE WITH AN AERIAL LIFT Personnel will use an aerial lift (scissor lift, articulating boom lift, forklift/personnel platform) to perform the rescue. Verify the aerial lift can reach the work area before selecting this method.
<input type="checkbox"/>	ASSISTED SELF RESCUE WITH A ROPE/WEB LADDER Personnel will access the area above and lower a use lower a rope/web ladder to the fallen employee. All personnel must maintain 100% tie off during this process. Verify rope/web ladder is on site and there is a suitable anchor point/anchorage connector in the work area.	<input type="checkbox"/>	EMERGENCY SERVICES If personnel are unable to perform Self Rescue or provide Assisted Self Rescue, emergency services will be relied upon for rescue. Emergency services must be notified in advance, and the means/methods of rescue verified.
<input type="checkbox"/>	OTHER: <i>USE OF OTHER METHODS OF RESCUE REQUIRES APPROVAL OF THE SAFETY COORDINATOR.</i>		

COMMENTS:

5. ROOF AND/OR FLOOR DIAGRAM

(Include locations of guard rails, warning lines, anchor points and access points)



6. WORKER ACKNOWLEDGEMENT SIGN-OFF SHEET


By signing below, I acknowledge I have reviewed the fall protection requirements and procedures for this site with my supervisor and understand my roles and responsibilities.

Name: (please print)	Signature:	Date:
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Foreman/Supervisor: _____ Date: _____

Project Supervisor: _____ Date: _____

Prior to permitting employees into areas where fall hazards exist, all employees must be trained regarding the proper use of fall protection devices and systems. Inspection of fall protection devices and systems must be made prior to use.

		Davis Mechanical Systems, Inc.		
Policy No. 07		Fire Prevention and Control		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/20

OBJECTIVES

It is the responsibility of all Davis Mechanical Systems, Inc. (Davis Mechanical) employees to prevent any type of fire on Davis Mechanical projects. Below is a list of general items to take into consideration to accomplish this objective:

- No smoking inside of any building. Properly extinguish cigarettes when outside.
- Do not have an open flame around any type of chemical, paint, solvent or flammable.
- Make sure all torches are extinguished when not in use.
- Do not put any type of hot object in trashcans.
- Do not perform welding around combustible material.
- Have a fire extinguisher in near proximity when performing welding or other hot work operation.
- Flammable liquids will be stored in approved flammable liquid storage cabinets.
- All oily/solvent covered rags will be kept in an approved fire resistant covered container until they are removed from the worksite or building.
- Only approved containers and portable tanks will be used for the storage and handling of flammable and combustible liquids.

COLOR	FUEL
Red	Gasoline
Blue	Kerosene
Green	Fuel Oil
Yellow	Diesel Fuel

TRAINING AND EDUCATION

- Personnel required to utilize fire extinguishers will undergo initial training and annual refresher training.
- Training will be addressed through classroom and hands-on instruction and will include the elements of this written program, which includes:
 - The basic sources of fire and various ways of stopping the combustion process. Fire is a chemical reaction that occurs when fuel, oxygen and an ignition source combine. Fire extinguishers work by removing one or more of these sources, with different extinguishers working in different ways.
 - The types (classes) of fires and the extinguishers that should be used in each situation.
 - Assessing and measuring fire risks. Portable fire extinguishers are designed for incipient stage firefighting; employees will be familiar with how to properly assess a fire situation. Considerations used in making a "fight or flight" assessment include the size and location of the fire; levels of heat, smoke or fumes; and the availability of sufficient egress routes.
 - Ensure employees understand how the proper use and limitations of fire extinguishers and the PASS method.

FIRE PREVENTION / PROTECTION ON CONSTRUCTION SITES

- A fire extinguisher with a 2A rating must be kept within 100 feet travel distance.
- At least one fire extinguisher must be provided on each floor. On multistory buildings a fire extinguisher must be provided adjacent to the stairway.
- At least one fire extinguisher must be provided for every 3,000 square feet of floor area.

- A fire extinguisher must be rated at least 10B and located within 50 feet wherever 5 gallons of flammable or combustible liquid or 5 pounds of flammable gas are being used on the jobsite.











MAINTENANCE OF FIRE EQUIPMENT AND SYSTEMS

To adequately ensure our fire suppression equipment is ready for use, we will implement the following preventative measures:

- Davis Mechanical personnel will conduct monthly inspections of fire extinguishers.
- A third party vendor will perform annual checks on portable fire extinguishers.

Fires are classified by the type of fuel they burn. In order for a fire extinguisher to properly extinguish a fire, you must first classify the type of fire, and then select the proper extinguisher.

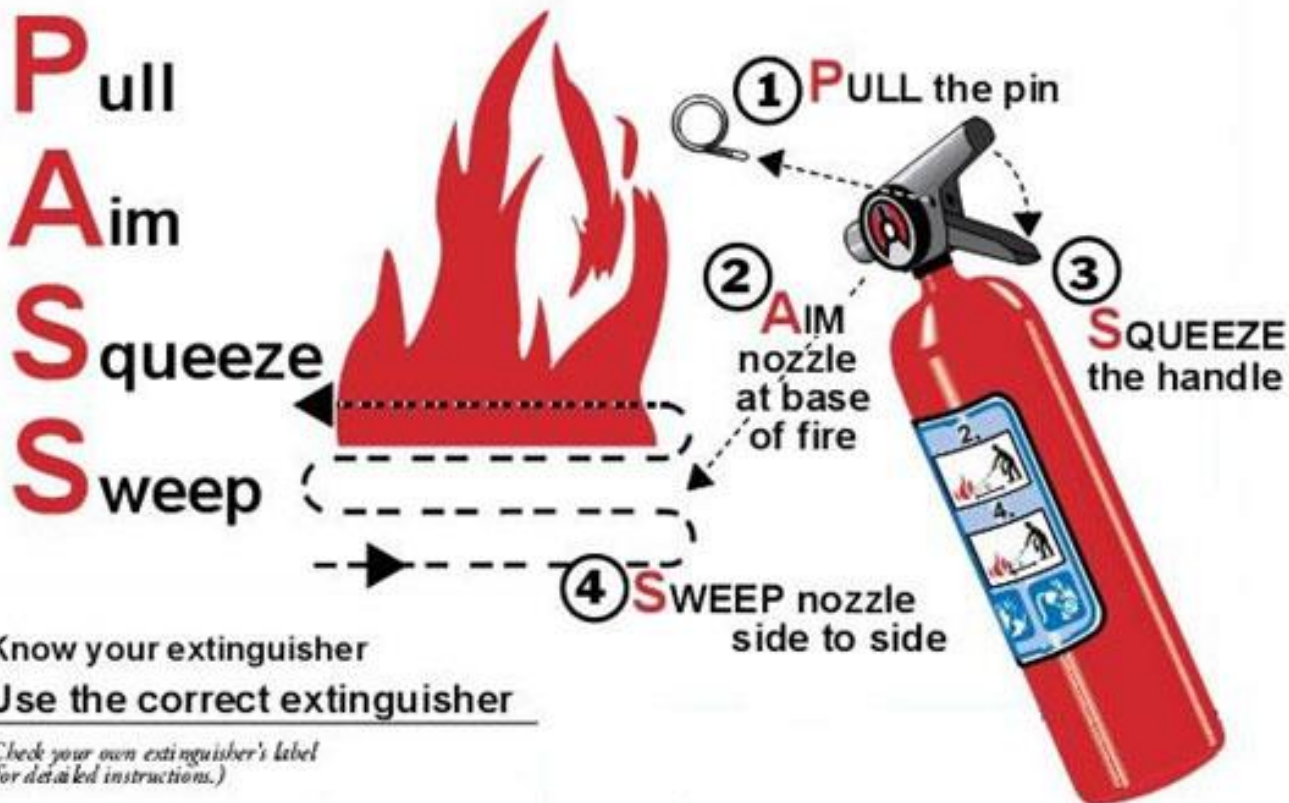
Newer fire extinguishers use a picture/labeling system to designate the types of fires they are to be used on. Older fire extinguishers are labeled with colored geometrical shapes with letter designations. Both of these types of labels are shown below with the description of the different classes of extinguishers.

CLASS OF FIRE	TYPES OF FIRE	EXTINGUISHER SYMBOLS	
		RATING SYMBOL	PICTURE SYMBOL
A Ordinary Combustibles	Wood Paper Rubber Plastic		
B Flammable Liquids	Liquids Greases Gases		
C Electrical Equipment	Energized Electrical Equipment		
D Combustible Metals	Magnesium Zinc Calcium Titanium Lithium		
K Cooking Media	Vegetable Oils Animal Oils Fats / Lards		

WHEN USING A FIRE EXTINGUISHER, FOLLOW THE 'PASS' METHOD


- **PULL** the pin at the top of the extinguisher that keeps the handle from being accidentally pressed.
- **AIM** the nozzle toward the base of the fire. Stand approximately 8 feet away from the fire.
- **SQUEEZE** the handle to discharge the extinguisher. If you release the handle, the discharge will stop.
- **SWEEP** the nozzle back and forth at the base of the fire. After the fire appears to be out, watch it carefully since it may re-ignite!

To operate an extinguisher:



GUIDELINES TO CONSIDER WHEN ATTEMPTING EXTINGUISHING A FIRE

- When the fire is first identified, let everyone know!
- Be certain that you will not endanger yourself or others when attempting to put out a fire. Do not back yourself into a corner. Always leave an exit to your back in case the fire grows out of control.
- Never fight a fire if you don't know what is burning. Even if you have an ABC extinguisher, there may be something in the fire that is going to explode or produce highly toxic smoke.
- Never fight a fire if the fire is spreading rapidly beyond the spot where it started. The time to use an extinguisher is in the incipient, or beginning, stages of a fire. If the fire is already spreading quickly, it is best to simply evacuate the building, closing doors and windows behind you as you leave.
- Never fight a fire if you might inhale toxic smoke. If the fire is producing large amounts of smoke that you would have to breathe in order to fight it, it is best not to try.
- Never fight a fire if your instincts tell you not to. If you are uncomfortable with the situation for any reason, just let the fire department do their job.

		Davis Mechanical Systems, Inc.		
Policy No. 08		Forklifts / Powered Industrial Trucks		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

Davis Mechanical Systems, Inc. (Davis Mechanical) employees will follow our client's safety programs, where none exist, this program will apply. This Safety Program is designed to ensure that employees are properly trained to operate and inspect Forklifts.

TRAINING

Employees who have been trained on the Davis Mechanical Forklift Program and deemed competent will be allowed to operate a forklift. Training must be conducted initially prior to operating a forklift. Employees will also be required to be re-evaluated at least once every three (3) years. Mandatory refresher training will be conducted when the operator has had an accident, is found to be operating the forklift in an unsafe manner, a different type of forklift is introduced, and when changes in conditions occur.

Training content will include load capacity, instructions, distances, refueling, ramps, visibility, inspections, balancer and counterbalances. Only qualified, knowledgeable, and experienced Forklift Instructors will be permitted to conduct Forklift Training. Forklift Operators will receive two types of training:

1. Classroom: Training includes:
 - PowerPoint presentation
 - Practical Training
 - Employee written exam
2. Demonstration/Review: The instructor or a competent forklift operator will perform a key point hands on demonstration.
3. Behind the wheel Evaluation: Each operator will be evaluated as to their skills to drive a forklift safely. If they cannot pass the evaluation additional hands-on training will be needed.

FORKLIFT OPERATION

- Only trained and authorized employees shall be permitted to operate forklifts.
- Operators must have a valid state driver's license if the forklift will be operated on a public roadway.
- Operators must have and use seat belts if the forklift is equipped with roll over protection.
- Do not drive a forklift up to anyone who is standing in front of a fixed object.
- Arms and legs must be kept out of the mast uprights and inside the running lines of the truck at all times.
- Driver needs to assure that no one walks near or under a raised load.
- Normally forklifts are not designed for a second person to ride. We strongly recommend that riders not be allowed under any conditions.
- Good judgment should be used to maintain a safe distance when operating forklifts on ramps, and docks.
- Floors of trucks and trailers should be checked for breaks/weaknesses before they are driven onto.
- Drivers need to know that there is sufficient headroom under sprinklers, lights, pipes, etc.
- Overhead guards are to protect against falling objects; (small packages, boxes etc.), normally the overhead guard will not withstand the impact of a falling capacity load.
- A load backrest extension shall be used whenever possible to minimize the chance of the load falling rearward.
- When a forklift is equipped with a personnel lift basket, the following procedure must be followed:
 - Vertical and horizontal controls must be located in the lift carriage.

- The controls in the lift basket must have the capability of shutting off power to the forklift.
- The personnel lift basket must be secured to the lift carriage. The lift basket must have a seven-foot backrest, a 42-inch top rail, and a center rail.
- Protection from falling objects where necessary.
- Fall protection equipment such as lanyards and harnesses should be used.

UNATTENDED TRUCKS

A forklift is considered unattended when:

- Operator is 25 feet or more away from the forklift but still in his/her view.
- When the operator is over 25 feet from the forklift, even if it is within view.
- Regardless of the distance, whenever the operator leaves the forklift and it is not in his/her view.

If the operator is within 25 feet of the forklift, it must have:

- The forks lowered to the floor
- The controls neutralized
- The brakes set

When leaving a forklift unattended:

- The load (or forks if empty) must be lowered to the floor
- The controls neutralized
- The power shut off
- The brakes set
- The wheels blocked and turned if parked on an incline.

When parking a LPG truck, shut off the service valve and let the engine run out of fuel.

TRAVELING

When traveling:

- All traffic regulations shall be observed (i.e. stop signs, slow for intersections, plant speed limits, etc.).
- Right of way yielded to pedestrians.
- Right of way yielded to ambulances, fire trucks, or emergency vehicles.
- Whether in a building or outside do not pass other vehicles traveling in the same direction.
- Maintain at least three truck lengths when traveling behind another forklift.
- Slow down and sound horn at cross aisles and other locations where vision is obscured.
- If the load obscures forward view, travel with the load trailing. Look in the direction of travel.
- Railroad tracks shall be crossed diagonally whenever possible. No parking closer than eight feet from the center of railroad tracks.
- Grades will be ascended and descended slowly. On grades in excess of 10%, loaded trucks shall be driven with the load upgrade, which will require backing the forklift when encountering downgrade surfaces.
- Forklifts will be driven in a manner and speed that permits them to be stopped safely.
- Stunt driving and horseplay is not permitted.
- Slow down for wet/slippery floors.
- Verify that Dock boards, bridge plates, wheel chocks, and supports shall be in place prior to loading/unloading. Their rated capacity should not be exceeded.
- Avoid running over loose objects on the roadway.
- Extended forks should be used with caution. The load center remains the same with or without the extended fork.

LOADING

- Only stable or safely arranged loads shall be handled. Caution shall be used for loads that are not centered.

- Loads must not exceed the rated capacity of the forklift.
- Multiple-tiered loads shall be within the capacity of the forklift.
- The forks shall be placed under the load as far as possible, and the mast tilted backward to stabilize the load for traveling.
- Extreme caution must be used when tilting tiered loads forward or backward.
- While loading and unloading trucks, trailers, and railroad cars, their brakes must be set and wheel chocks or wheel stops must be used.
- Fixed jacks are necessary if the trailer is not coupled to the truck.

CHARGING AND CHANGING BATTERIES

- Batteries should be changed/charged in an area designed for that purpose.
 - Out of the way
 - Well ventilated
 - Away from flammable producing materials
 - Eye and body rinse station located in the area
- Depending on the weight of the batteries, a conveyor, overhead hoist or equivalent material handling equipment may be necessary for handling batteries.
- Trucks must be properly positioned with the brakes set during changing/charging operations.
- Tools and other metallic items should be kept away from the top of uncovered batteries. A direct short across the battery posts can cause severe arcing and/or an explosion.
- If charging the battery while it is still in the truck, the battery compartment must be left open to prevent heat and hydrogen gas from building up.
- Distilled water or pure tap water should be used for bringing the electrolyte up to the correct level before charging.
- Open flames cannot be used when checking electrolyte nor should they or any type of electrical arc or spark producing material be used in the area.
- Check vent caps for proper venting.
- Be sure that the battery charger is turned off before connecting it to the battery and then turn it on.
- Make sure chargers are properly set to avoid over/under charging.
- Assure that reinstalled batteries are properly positioned and secured in place.
- Do not smoke because flammable gases may be produced during procedure.
- A cycle charge is normally based on the duty charge. If a battery is used for eight hours, it will typically require eight hours to return to full charge.

FUELING INTERNAL COMBUSTION POWERED TRUCKS

- Designated area away from sources of ignition sources
- Clean up any spills

FOR LPG

- Wear gloves to prevent any LPG from freezing your skin.
- Make sure tank is properly in place with both straps attached.
- Store tanks in an upright position whether they are empty/full.
- When parked at night, close the service valve.
- Area should include:
 - No smoking sign
 - Turn off engine sign
 - Fire extinguisher
 - Spill and clean up materials

MAINTENANCE

- Forklifts must be inspected before use on each shift.

- Any forklift not in safe operating condition shall be removed from service until it is repaired.
 - Examples: Leak in the fuel system, leak in the transmission, brakes not operating correctly, cracks in the curve of the forks or in the forklift frame, etc.
- Authorized personnel must make all repairs.
- Repairs to fuel and ignition systems shall be conducted only in locations designated for that purpose.
- When making repairs to the electrical systems, the battery must be disconnected.
- Replacement parts must be the same as the original parts.
- Trucks must not be altered unless manufacturer's written approval is obtained. (i.e. adding extra counter weight).
- Water mufflers shall be filled daily.
- Forklifts must be kept in a clean condition, free from lint and excess oil and grease.
- Maintenance records will be kept.

CARBON MONOXIDE MONITORING:

1. Whenever forklifts are operated indoors air monitoring must be conducted quarterly to ensure the levels are below the permissible exposure level.
2. The employer must monitor the tailpipe exhaust of forklifts in a regular maintenance program to ensure that exhaust gas does not contain more than 1% for propane fueled or 2% for gasoline powered measured at idle and three-fourths throttle during final engine tuning.

FORKLIFT DATA PLATE

- The data plate lists:
 - Model number
 - Serial number
 - Any type of attachment (i.e. special grab forks)
- Illustration provides
 - Load capacity, listed under "LBS"
 - The horizontal load center, given in inches under "A"
 - The maximum lift height, in inches, listed under "B"
 - The vertical load center, in inches, listed under "C"
- On electric forklifts, approximate weight is truck weight less battery weight. The second approximate wt. entry is the weight of an electric truck with the maximum battery weight.
- The other entries are:
 - The maximum and minimum battery weights
 - The amp-hour capacity the battery must provide for truck operation.
 - The voltage required by the truck, listed under "VOLTS".

Always make sure the data plate is on the truck not only for OSHA but you must know the load capacity, battery weight, and load center of any truck you operate.

- You must know the weight of your truck before entering elevators, railroad cars, or trailers.
- Mechanics must know the type and model truck to get correct parts.
- Any battery used must be the correct weight for safety and the correct voltage to prevent damage to the truck and/or loads.
- There are two types of tires:
 - Solid rubber – work well on paved surface only
 - Pneumatic – can operate on paved and non-paved surfaces.

INSPECTION

A Daily, or before each work shift, Inspection will be conducted before operating the forklift. Forklifts with safety deficiencies will not be used until repairs have been made.

Visual Checks: tire condition, head and taillights, warning lights, hour meter, other gauges and instruments, obvious damage and leaks, engine oil level, transmission oil level, radiator water level, fuel level, battery plug connection, battery discharge indicator (needle should indicate in green area).

Operational Checks: horn, steering, service brakes, parking brakes, hydraulic brakes, seat belt, battery load test (watch battery indicator while holding tilt level on full back tilt).

ELEVEN DIFFERENT TYPES OF FORKLIFTS

- **D** = Diesel Powered
- **DS** = Diesel Powered with additional safeguards to the exhaust, fuel, and electrical system.
- **DY** = Diesel Powered with all of the DS requirements but do not have any electrical equipment.
- **E** = Electrical Powered with minimum acceptable safeguards against fire hazards.
- **ES** = Electrical Powered with all of the E requirements and additional safeguards against fire hazards.
- **EE** = Electrical Powered with all of the E and ES requirements and all electrical equipment is completely enclosed.
- **EX** = Electrical Powered with the electrical fittings designed and assembled so the truck can operate in flammable vapors or dust atmospheres.
- **G** = Gas Powered with minimum acceptable safeguards.
- **GS** = Gasoline Powered with additional safeguards to the exhaust, fuel, and electrical systems.
- **LP** = Liquefied Petroleum gas with minimum safeguards.
- **LPS** = Liquefied Petroleum gas with additional safeguards to the exhaust, fuel, and electrical system

CARBON MONOXIDE MONITORING

Internal combustion engine powered industrial trucks

The employer shall monitor environmental exposure of employees to carbon monoxide whenever internal combustion engine powered industrial trucks are operated indoors to ensure that carbon monoxide levels do not exceed 35 Parts per million (PPM) in Minnesota. The air monitoring shall be done at least quarterly and represent exposures during a day of highest usage in the areas where employee carbon monoxide exposure is most likely.

Tailpipe exhaust gas analysis

The employer shall ensure that powered industrial truck engine exhaust gases do not contain more than one percent carbon monoxide for propane fueled trucks or two percent carbon monoxide for gasoline fueled trucks measured at idle and at three-fourths throttle during final engine tuning in a regular maintenance program.

CARBON MONOXIDE TESTING PROCEDURE

Use the following procedure and documentation form when conducting Carbon Monoxide personal or area monitoring. One (1) CO monitoring tube, and one (1) tube holder is needed for each person being monitored.

Monitoring directions:

- 1) Insert tube into holder so that red dot at narrow area is directly over the hinged area of tube holder.
- 2) Point tube holder away from body, place thumbs on each side of hinge, and snap tube in half.



- 3) Carefully remove both tube sections from holder.
- 4) Re-insert longer tube section into holder (tube arrow towards holder clip), and adjust so that broken end is just inside tube holder end. Safely discard short section of tube.
- 5) Attach tube holder as close to breathing zone as possible (shirt collar) for personal monitoring. Ensure that open tube end is not obstructed.
- 6) Record **"Start Time"** below.
- 7) Sample for a minimum of 1 hour, and a maximum of 8 hours. Sampling for as close to 8 hours is recommended.
- 8) After sampling, record **"Stop Time"** below.
- 9) Read the indicating layer of tube (total length discoloration of tube), and record in **"Indicator Tube Reading After Sampling"** below.
- 10) Calculate Carbon Monoxide concentration using the following formula:

$$\text{CO concentration mL/m}^3 \text{ (ppm)} = \frac{\text{Indicator tube reading}}{\text{Duration of measurement (in hours)}}$$

- 11) Record **"Concentration Level"** below, and compare to **Permissible Exposure Limit of 35 ppm**.
- 12) When complete, file the completed Testing Procedure Results for future reference. Keep tube holder for future monitoring and safely discard tube parts.

Company: _____ Area: _____

Employee name: _____ Position: _____

Type of sample: Breathing zone (personal) ☐ Area (workplace, non-employee) ☐

Sampled by: _____ Sample #: _____ Date: _____

Operation(s) monitored: _____

Start time: _____ Stop time: _____

Indicator tube reading after sampling: _____ ppm

Carbon monoxide exposure concentration: _____ mL/m³ (ppm)

Remarks, Actions taken, etc.: _____

**INDUSTRIAL TRUCK DRIVING PERMIT
EMPLOYEE COPY**

COMPANY _____
EMPLOYEE _____
NUMBER _____
IS AUTHORIZED TO OPERATE
☐ SIT DOWN FORKLIFT
☐ ORDER PICKER, HIGH LIFT
☐ OTHER _____
RESTRICTIONS _____
☐ GLASSES
☐ HEARING AID
☐ NONE
DATE ISSUED _____
EXPIRES _____
ISSUING AUTHORITY _____

*3 yr. recommended. See your employer before expiration date expires.

**INDUSTRIAL TRUCK DRIVING PERMIT
EMPLOYEE FILE COPY**

EMPLOYEE _____
NUMBER _____ SHIFT _____
TEST DATE _____
DATE PERMIT ISSUED _____
EXPIRES _____
RESTRICTIONS _____

STATE DRIVERS _____
LICENSE NUMBER _____

FORKLIFT EXAM
True/False and Multiple Choice

Name _____

Date _____

1. T F An operator of a forklift should never drive up to employees that are standing in front of a fixed object.
2. T F Trucks and trailers must have only one rear wheel blocked or restrained by other mechanical means when being boarded by a rider-type forklift.
3. T F Employees should inspect the landing gear of semi-trailers to make sure it will hold the weight of the forklift.
4. T F The best method for crossing railroad tracks and other uneven surfaces is diagonally.
When following another forklift, you should maintain at least two forklift lengths.
5. T F When operating a forklift on a public roadway, you must have a valid state driver's license.
6. T F
7. T F Operators will check all safety devices (brakes, horn, steering, parking brake, upright operations, oil or fuel leaks) on a weekly basis.
8. T F When coming down a grade or ramp, your load should be trailing you.
9. T F When loading, the load should be tilted and cradled against the back rest.
10. T F Other employees should be at a safe distance away from the forklift when you are stacking material.
11. T F Maintain a safe distance from the edge of ramps and platforms.
12. T F When parked on an incline, forklift wheels do not need to be blocked and turned.
Seat belts only have to be used when traveling on uneven surfaces.
13. T F The forklift can be left running when refueling if is located away from ignition sources.

Multiple Choice

14. In checking your forklift, you find the power steering system squeals as soon as you turn it. You should:
 - a. Add fluid to the reservoir.
 - b. Notify your supervisor.
 - c. Operate the forklift and see if the noise goes away.
15. If mechanical trouble develops, you should:
 - a. Fix it yourself, if minor in nature
 - b. Drive until repairs can be made
 - c. Report the trouble to your supervisor
16. You can exceed the rated capacity of the forklift:
 - a. By adding additional counter weight with written approval from the manufacturer
 - b. If your supervisor tells you to
 - c. If it's only for a short time period
17. As a driver, it is:
 - a. Your responsibility to watch for pedestrians
 - b. Their responsibility to watch for you
 - c. Management's responsibility to keep employees out of forklift work areas
18. Forks on empty parked trucks must always be:
 - a. Two inches from the floor
 - b. Four inches from the floor
 - c. On the floor
19. When operating a forklift on a public road, you should:
 - a. Assume traffic will avoid you
 - b. Obey the rules as though you were in a car
 - c. Drive backwards so you can see the cars behind you

FORKLIFT EXAM (ANSWER SHEET)
True/False and Multiple Choice

1. **I** F An operator of a forklift should never drive up to employees that are standing in front of a fixed object.
2. T **F** Trucks and trailers must have only one rear wheel blocked or restrained by other mechanical means when being boarded by a rider-type forklift.
3. **I** F Employees should inspect the landing gear of semi-trailers to make sure it will hold the weight of the forklift.
4. **I** F The best method for crossing railroad tracks and other uneven surfaces is diagonally.
When following another forklift, you should maintain at least two forklift lengths.
5. T **F** When operating a forklift on a public roadway, you must have a valid state driver's license.
6. **I** F
7. T **F** Operators will check all safety devices (brakes, horn, steering, parking brake, upright operations, oil or fuel leaks) on a weekly basis.
8. T F When coming down a grade or ramp, your load should be trailing you.
9. F F When loading, the load should be tilted and cradled against the backrest.
10. **I** F Other employees should be at a safe distance away from the forklift when you are stacking material.
11. **I** F Maintain a safe distance from the edge of ramps and platforms.
12. T **F** When parked on an incline, forklift wheels do not need to be blocked and turned.
Seat belts only have to be used when traveling on uneven surfaces.
13. T **F** The forklift can be left running when refueling if it is located away from ignition sources.

Multiple Choice

14. In checking your forklift, you find the power steering system squeals as soon as you turn it. You should:
 - a. Add fluid to the reservoir.
 - b.** Notify your supervisor.
 - c. Operate the forklift and see if the noise goes away.
15. If mechanical trouble develops, you should:
 - a. Fix it yourself, if minor in nature
 - b. Drive until repairs can be made
 - c.** Report the trouble to your supervisor
16. You can exceed the rated capacity of the forklift:
 - a.** By adding additional counter weight with written approval from the manufacturer
 - b. If your supervisor tells you to
 - c. If it's only for a short time period
17. As a driver, it is:
 - a.** Your responsibility to watch for pedestrians
 - b. Their responsibility to watch for you
 - c. Management's responsibility to keep employees out of forklift work areas
18. Forks on empty parked trucks must always be:
 - a. Two inches from the floor
 - b. Four inches from the floor
 - c.** On the floor
19. When operating a forklift on a public road, you should:
 - a. Assume traffic will avoid you
 - b.** Obey the rules as though you were in a car
 - c. Drive backwards so you can see the cars behind you

FORKLIFT TRUCK OPERATOR PERFORMANCE TEST

Operators Name: _____
Instructors Name: _____

Date: _____

1. Ability to perform pre-operation checklist.

Uses inspection sheet adequately _____ Failed to use inspection sheet _____

2. Use of controls: (understands proper technique and proper direction of movement of controls to get desired action).

- | | | |
|--|-----------|----------|
| a. Clutch Operation | Yes _____ | No _____ |
| b. Tilt Control | Yes _____ | No _____ |
| c. Lift Control | Yes _____ | No _____ |
| d. Side Shifter Control (Not applicable) | Yes _____ | No _____ |
| e. Steering Techniques | Yes _____ | No _____ |
| f. Does the Operator Set the Brake when leaving the truck? | Yes _____ | No _____ |
| g. Use of Service Brake | Yes _____ | No _____ |
| h. Use of Parking Brake | Yes _____ | No _____ |
| i. Use of Seat Belts | Yes _____ | No _____ |

3. Maneuvering skills:

- | | | | |
|---|------------------|----------------------|------------|
| a. Smooth starting and stopping | Acceptable _____ | Needs Practice _____ | Poor _____ |
| b. Turns – FORWARD & REVERSE | | Yes _____ | No _____ |
| c. Proper speed | | Yes _____ | No _____ |
| d. Alert – looks in the direction of travel | | Yes _____ | No _____ |
| e. Forks carried low | | Yes _____ | No _____ |
| f. Steers clear of obstacles | | Yes _____ | No _____ |

4. Selecting the load:

- | | | |
|--------------------------------------|-----------|----------|
| a. Proper capacity for truck | Yes _____ | No _____ |
| b. Proper size load for visibility | Yes _____ | No _____ |
| c. Load cradled against the backrest | Yes _____ | No _____ |
| d. Carries load low | Yes _____ | No _____ |

5. Driving with load:

- | | | |
|--|-----------|----------|
| a. Handles load carefully to prevent product damage | Yes _____ | No _____ |
| b. Steers clear of other employees | Yes _____ | No _____ |
| c. Drives at an acceptable speed | Yes _____ | No _____ |
| d. Smooth start and stopping | Yes _____ | No _____ |
| e. Drives with load upgrade when traveling up grades that are in excess of 10% | Yes _____ | No _____ |
| f. Backs the loaded forklift down grades that are in excess of 10% | Yes _____ | No _____ |

6. Stacking:

- | | | |
|---|-----------|----------|
| a. Approaches load squarely | Yes _____ | No _____ |
| b. Lifts load appropriately | Yes _____ | No _____ |
| c. Deposits load safely | Yes _____ | No _____ |
| d. Lowers load to an acceptable level before moving | Yes _____ | No _____ |


7. Dock Safety:

- | | | |
|--|-----------|----------|
| a. Checks bridge plates before traveling | Yes _____ | No _____ |
| b. Uses trailer wheel chocks | Yes _____ | No _____ |
| c. Checks trailer floor for defects | Yes _____ | No _____ |

8. Miscellaneous:

- a. _____ Yes _____ No _____

A copy must be retained in the company safety training record.

		Davis Mechanical Systems, Inc.		
Policy No. 09		Hand and Powered Tools		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

It is the policy of the Davis Mechanical Systems, Inc. (Davis Mechanical) to provide a standard and guidance to prevent injury to personnel by establishing the minimum specifications and requirements for the inspection, safe use, and maintenance of all hand and power tools and similar equipment.

This program will be reviewed, at minimum annually, by the Safety Coordinator. The purpose of this review is to ensure its ongoing adequacy, effectiveness and accuracy, as well as to identify any opportunities for improvement. This will include a review of all policies, programs, procedures, training records and other available written materials which pertain to the program.

Participation by all employees, including management, is essential to the success of any workplace safety program. Compliance with this program is required.

SCOPE

To be effective, each type of hand and power tools and similar equipment must be properly maintained and inspected. This program is designed to detail the use, guarding, blade exposures, anchoring of machinery, switches, personal protective equipment and specific requirements for all hand and power tools and similar equipment.

This program applies to temporary employees ("temps," seasonal help) and other such "nonemployees" whose work is directed by our personnel. For the purpose of the administration of this program, there will be no difference between our employees and temporary employees. The training and communication elements of this program will be fulfilled by the Safety Coordinator.

Contractors (electricians, plumbers, etc.) and visitors will also be required to comply with appropriate portions of this program. This program will be communicated to contractors and visitors by the Supervisor/Safety Coordinator.

GENERAL REQUIREMENTS

Condition of Tools

All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition. The use of any machinery, tool, material, or equipment which is not in compliance with any applicable requirement of this part is prohibited. Such machine, tool, material, or equipment shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation. Appropriate personal protective equipment (PPE) is required whenever operating hand and/or power tools as recommended by the manufacturer, including but not limited to safety glasses, gloves, work boots.

GUARDING

When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use. Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating or moving parts of equipment shall be guarded if such parts are exposed to contact by employees or otherwise create a hazard. Guarding shall meet the requirements as set forth in American National Standards Institute, B15.1-1953 (R1958), Safety Code for Mechanical Power-Transmission Apparatus.

One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks. Examples of guarding methods are – barrier guards, two-hand tripping devices, electronic safety devices, etc.

Point of Operation Guarding

Point of operation is the area on a machine where work is actually performed upon the material being processed. The point of operation of machines, whose operation exposes an employee to injury, shall be guarded. The guarding device shall be in conformity with any appropriate standards therefore, or, in the absence of applicable specific standards, shall be so designed and constructed as to prevent the operator from having any part of his body in the danger zone during the operating cycle.

Special hand tools for placing and removing material shall be such as to permit easy handling of material without the operator placing a hand in the danger zone. Such tools shall not be in lieu of other guarding required by this section, but can only be used to supplement protection provided.

The following are some of the machines which usually require point of operation guarding:

- Guillotine cutters.
- Shears.
- Alligator shears.
- Powered presses.
- Milling machines.
- Power saws.
- Jointers.
- Portable power tools.
- Forming rolls and calendars.

Exposure of Blades

When the periphery of the blades of a fan is less than 7 feet (2.128 m) above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than 1/2 inch (1.27 cm).

Anchoring Fixed Machinery

Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

Guarding of Abrasive Wheel Machinery - Exposure Adjustment

Safety guards of the types described in paragraphs of this section, where the operator stands in front of the opening, shall be constructed so that the peripheral protecting member can be adjusted to the constantly decreasing diameter of the wheel. The maximum angular exposure above the horizontal plane of the wheel spindle as specified in paragraphs of this section shall never be exceeded, and the distance between the wheel periphery and the adjustable tongue or the end of the peripheral member at the top shall never exceed 1/4 inch (0.635 cm).

Bench and Floor Stands

The angular exposure of the grinding wheel periphery and sides for safety guards used on machines known as bench and floor stands should not exceed 90 degrees or one-fourth of the periphery. This exposure shall begin at a point not more than 65 degrees above the horizontal plane of the wheel spindle.

Whenever the nature of the work requires contact with the wheel below the horizontal plane of the spindle, the exposure shall not exceed 125 degrees.

Cylindrical Grinders

The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on cylindrical grinding machines shall not exceed 180 degrees. This exposure shall begin at a point not more than 65 degrees above the horizontal plane of the wheel spindle.

Personal Protective Equipment

Employees using hand and power tools and exposed to hazards of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazard. All personal protective equipment shall meet the requirements and be maintained according to Subparts D and E of this part.

Switches

All hand-held powered platen sanders, grinders with wheels 2-inch diameter or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jigsaws with blade shanks one-fourth of an inch wide or less may be equipped with only a positive "on-off" control.

All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders, belt sanders, reciprocating saws, saber saws, and other similar operating powered tools shall be equipped with a momentary contact "on-off" control and may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

All other hand-held powered tools, such as circular saws, chain saws, and percussion tools without positive accessory holding means, shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

HAND TOOLS

General

- Davis Mechanical shall not issue or permit the use of unsafe hand tools.
- Wrenches, including adjustable, pipe, end, and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.
- Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.
- The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

ELECTRIC POWER-OPERATED TOOLS

General

- Electric power operated tools shall either be of the approved double-insulated type or grounded in accordance with Subpart K of this part. The use of electric cords for hoisting or lowering tools shall not be permitted.

PNEUMATIC TOOLS

General

- Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.

- Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
- All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 p.s.i. pressure at the tool shall have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.
- Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment which meets the requirements of Subpart E of this part. The 30 p.s.i. requirement does not apply for concrete form, mill scale and similar cleaning purposes.
- The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- The use of hoses for hoisting or lowering tools shall not be permitted.
- All hoses exceeding 1/2-inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
- Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 pounds or more per square inch) shall be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released.
- In lieu of the above, a diffuser nut which will prevent high pressure, high velocity release, while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection, shall be provided.
- "Abrasive blast cleaning nozzles." The blast cleaning nozzles shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.

FUEL POWERED TOOLS

General

- All fuel powered tools shall be stopped while being refueled, serviced, or maintained, and fuel shall be transported, handled, and stored in accordance with Subpart F of this part.
- When fuel powered tools are used in enclosed spaces, atmospheric monitoring must be performed to verify atmospheric conditions (Use of a gas monitor to measure for carbon monoxide, etc.). Consideration should also be given to using alternate means such as hydraulic powered tools or hand tools.

HYDRAULIC POWERED TOOLS

General

- The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings shall not be exceeded.

POWDER-ACTUATED TOOLS

General

- Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.
- The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
- Any tool found not in proper working order, or that develops a defect during use, shall be immediately removed from service and not used until properly repaired

- Personal protective equipment shall be in accordance with all OSHA requirements of this part.
- Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.
- Loaded tools shall not be left unattended.
- Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.
- Driving into materials easily penetrated shall be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying projectile hazard on the other side.
- No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.
- Tools shall not be used in an explosive or flammable atmosphere.
- All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

GRINDING AND ABRASIVE WHEEL MACHINERY

Power

- All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation.

Guarding

- Grinding machines shall be equipped with safety guards in conformance with the requirements of American National Standards Institute, B7.1-1970, Safety Code for the Use, Care and Protection of Abrasive Wheels, and paragraph (d) of this section.
- "Guarding design." The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard, except:
 - Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted; and
 - The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

Use of Abrasive Wheels

- Floor stand and bench mounted abrasive wheels, used for external grinding, shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90 degrees, except that when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 125 degrees. In either case, the exposure shall begin not more than 65 degrees above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.
- Floor and bench-mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Such work rests shall be kept at a distance not to exceed one-eighth inch from the surface of the wheel.
- Cup type wheels used for external grinding shall be protected by either a revolving cup guard or a band type guard in accordance with the provisions of the American National Standards Institute, B7.1-1970 Safety Code for the Use, Care, and Protection of Abrasive Wheels. All other portable abrasive wheels used for external grinding, shall be provided with safety guards (protection hoods) that meet the following requirements;
 - Mounted as to maintain proper alignment with the wheel,
 - The guard and its fastenings shall be of sufficient strength to retain fragments of the wheel in case of accidental breakage.
 - The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180 degrees

- Portable abrasive wheels used for internal grinding shall be provided with safety flanges (protection flanges) meeting the following requirements:
 - Used only with wheels designed to fit the flanges, and
 - Designed and installed to ensure that the pieces of the wheel will be retained in case of accidental breakage.
- All abrasive wheels shall be closely inspected and ring-tested before mounting to ensure that they are free from cracks or defects.
- Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.
- All employees using abrasive wheels shall be protected by eye protection equipment in accordance with the requirements of Subpart E of this part, except when adequate eye protection is afforded by eye shields which are permanently attached to the bench or floor stand.

Other Requirements

- All abrasive wheels and tools used by employees shall meet other applicable requirements of American National Standards Institute, B7.1-1970, Safety Code for the Use, Care and Protection of Abrasive Wheels.

Work Rests

- On offhand grinding machines, work rests shall be used to support the work. They shall be of rigid construction and designed to be adjustable to compensate for wheel wear. Work rests shall be kept adjusted closely to the wheel with a maximum opening of 1/8 inch (0.3175 cm) to prevent the work from being jammed between the wheel and the rest, which may cause wheel breakage. The work rest shall be securely clamped after each adjustment. The adjustment shall not be made with the wheel in motion.

WOOD WORKING TOOLS

Disconnect Switches

- All fixed power driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off position.

Speeds

- The operating speed shall be etched or otherwise permanently marked on all circular saws over 20 inches in diameter or operating at over 10,000 peripheral feet per minute. Any saw so marked shall not be operated at a speed other than that marked on the blade. When a marked saw is re-tensioned for a different speed, the marking shall be corrected to show the new speed.

Self-Feed

- Automatic feeding devices shall be installed on machines whenever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points.

Guarding

- All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

Radial Saws

- The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters, broken saw teeth, etc., and will

defect sawdust away from the operator. The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection possible for the operation being performed.

Hand-Fed Crosscut Table Saws

- Each circular crosscut table saw shall be guarded by a hood which shall meet all the requirements of this section for hoods for circular rip saws.

Hand-Fed Ripsaws

- Each circular hand-fed rip saw shall be guarded by a hood which shall completely enclose the portion of the saw above the table and that portion of the saw above the material being cut. The hood and mounting shall be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut but it shall not offer any considerable resistance to insertion of material to saw or to passage of the material being sawed. The hood shall be made of adequate strength to resist blows and strains incidental to reasonable operation, adjusting, and handling, and shall be so designed as to protect the operator from flying splinters and broken saw teeth. It shall be made of material that is soft enough so that it will be unlikely cause tooth breakage. the hood shall be so mounted as to insure that its operation will be positive, reliable, and in true alignment with the saw; and the mounting shall be adequate in strength to resist any reasonable side thrust or other force tending to throw it out of line.

JACKS - LEVER AND RATCHET, SCREW, AND HYDRAULIC

General Requirements

- The manufacturer's rated capacity shall be legibly marked on all jacks and shall not be exceeded.
- All jacks shall have a positive stop to prevent over travel.

Blocking

- When it is necessary to provide a firm foundation, the base of the jack shall be blocked or cribbed. Where there is a possibility of slippage of the metal cap of the jack, a wood block shall be placed between the cap and the load.

Operation and Maintenance

- After the load has been raised, it shall be cribbed, blocked, or otherwise secured at once.
- Hydraulic jacks exposed to freezing temperatures shall be supplied with adequate antifreeze liquid.
- All jacks shall be properly lubricated at regular intervals.
- Each jack shall be thoroughly inspected at times which depend upon the service conditions. Inspections shall be not less frequent than the following:
 - For constant or intermittent use at one locality, once every 6 months,
 - For jacks sent out of shop for special work, when sent out and when returned,
 - For a jack subjected to abnormal load or shock, immediately before and immediately thereafter.
- Repair or replacement parts shall be examined for possible defects.
- Jacks which are out of order shall be tagged accordingly, and shall not be used until repairs are made.

AIR RECEIVERS

General Requirements

This section applies to compressed air receivers, and other equipment used in providing and utilizing compressed air for performing operations such as cleaning, drilling, hoisting, and chipping. On the other hand, however, this section does not deal with the special problems created by using compressed air to convey materials nor the problems created when men work in compressed air as in tunnels and caissons. This section is not intended to apply to compressed air machinery and equipment used on transportation vehicles such as steam railroad cars, electric railway cars, and automotive equipment.

New and Existing Equipment

- All new air receivers installed after the effective date of these regulations shall be constructed in accordance with the 1968 edition of the A.S.M.E. Boiler and Pressure Vessel Code Section VIII.
- All safety valves used shall be constructed, installed and maintained in accordance with the A.S.M.E. Boiler and Pressure Vessel Code, Section VIII Edition 1968.

Installation and Equipment Requirements

- Air receivers shall be so installed that all drains, handholes, and manholes therein are easily accessible. Under no circumstances shall an air receiver be buried underground or located in an inaccessible place.

Drains and Traps

- A drain pipe and valve shall be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver.


Gages and Valves

- Every air receiver shall be equipped with an indicating pressure gage (so located as to be readily visible) and with one or more spring-loaded safety valves. The total relieving capacity of such safety valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.
- No valve of any type shall be placed between the air receiver and its safety valve or valves.
- Safety appliances, such as safety valves, indicating devices and controlling devices, shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means, including the elements.
- All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.

SILICA HAZARDS

Crystalline silica is a common mineral found in many naturally occurring and man-made materials used at construction sites. Materials like sand, concrete, brick, block, stone and mortar contain crystalline silica.

Where use of Hand and Powered Tools can create a respirable crystalline silica hazard, ensure the requirements of the ***Davis Mechanical Silica Program and Exposure Control Plan*** is followed.

 DAVIS MECHANICAL SYSTEMS		Davis Mechanical Systems, Inc.		
Policy No. 10		Hazard Communication and Employee Right to Know		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

Purpose

Davis Mechanical Systems, Inc. (Davis Mechanical) is dedicated to providing to our employees a safe and healthy work environment. In order to provide that work environment to our employees, this and other workplace safety programs have been established.

The purpose of this Employee Hazard Communication / Right-to-Know program is to educate the employees of the hazardous substances, physical and infectious agents that may endanger their health and well-being while at work. With proper education and training, employees will be able to properly protect themselves from those hazards, thereby reducing injuries.

This Workplace Safety Program has been written to provide all Davis Mechanical employees with the necessary information about the dangers associated with hazardous substances, harmful physical agents and infectious agents that are present in the workplace.

Participation by all employees, including Project Manager, is essential to the success of any workplace safety program. Compliance with this program is required.

Background

Chemicals, through the different steps from their production to their handling, transport and use, may be a real danger for human health and the environment. People of any ages, from children to elderly, using many different languages and alphabets, belonging to various social conditions, including illiterates, are daily confronted to dangerous products (chemicals, pesticides, etc.)

To face this danger, and given the reality of the extensive global trade in chemicals and the need to develop national programs to ensure their safe use, transport and disposal, it was recognized that an internationally-harmonized approach to classification and labeling would provide the foundation for such programs. Once countries have consistent and appropriate information on the chemicals they import or produce in their own countries, the infrastructure to control chemical exposures and protect people and the environment can be established in a comprehensive manner.

The new system, which was called "Globally Harmonized System of Classification and Labeling of Chemicals (GHS)", addresses classification of chemicals by types of hazard and proposes harmonized hazard communication elements, including labels and safety data sheets. It aims at ensuring that information on physical hazards and toxicity from chemicals is available in order to enhance the protection of human health and the environment during the handling, transport and use of these chemicals. The GHS also provides a basis for harmonization of rules and regulations on chemicals at national, regional and worldwide level, an important factor also for trade facilitation.

Responsibilities

Safety Coordinator

- Review this program annually
- Update this program as necessary
- Compile a list of all hazardous materials used and their corresponding Safety Data Sheets
- Compile a list of all harmful physical agents present and their corresponding reference materials
- Ensure all containers used are properly labeled
- Ensure all employees are aware of this written Workplace Safety Program
- Coordinate & Arrange Employee Training
- Actively listen to employees about concerns related to hazardous substances

Supervisor/Foreman

- Ensure employees are working safely with hazardous substances
- Demonstrating to employees importance of safety by acting safely when handling or working with hazardous substances
- Actively listen to employees about concerns related to hazardous substances

Project Manager

- Ensure employees have the proper resources to work safely when handling hazardous substances
- Provide Employee & Safety Committee resources to ensure implementation of this program
- Actively listen to employees about concerns related to hazardous substances

Employees

- All employees are responsible to learn and implement the Hazard Communication / Employee Right-to-Know training they received into their daily work routine.
- All employees are expected to use the safety equipment supplied to them when procedures require the use of such equipment.
- It is the responsibility of employee to ask questions pertaining to this Hazard Communication / Employee Right-to-Know program or any other questions pertaining to hazardous substances.

Hazardous Substances

The Safety Coordinator will develop a "[Hazardous Substance List](#)". The Hazardous Substance List, identifies each hazardous substance, which where the substance may be found and the corresponding Safety Data Sheet number. The Hazardous Substance List will be updated as necessary.

The "[Hazardous Substance List](#)" is located at the beginning of our Safety Data Sheet Book, which is located on each jobsite and in our main office.

The Safety Coordinator or Foreman will ensure all containers, hazardous or non-hazardous, are properly labeled and updated as necessary.

✓ Original Container

Manufacturer's container labels should be left on the containers if possible and must list, at a minimum, the following:

- Product identifier - what is the chemical
- Supplier identification - where does the chemical come from
- Pictograms - a symbol that tells the hazards
- Signal words - explains danger level
- Hazard statement - what kind of harm could the substance cause
- Precautionary statement - what do we need to be safe

When the product is received, if the label is missing or any necessary information is missing, then the shipment may be refused until a new label is obtained.

✓ Secondary Container

If a substance is transferred from the manufacturer's container into a new container, the new container must have a label affixed to it. The label must contain the following information:

- Product identity
- Appropriate hazard warnings; Health, Flammability and Reactivity information

✓ **Immediate-use Containers**

Containers which an employee fills and remains under their control and are emptied during the same work shift, do not need to be labeled.

[Appendix D - "The basic parts of a GHS compliant label"](#)

Harmful Physical Agents

The Safety Coordinator will ensure that Harmful Physical Agents at a level that may be expected exceed the permissible exposure limit or applicable action level are posted with the name of the physical agent and the appropriate hazard warning(s).

[Appendix E - "Examples of Harmful Physical Agent Warning Labels"](#)

Common physical agents may include:

- Noise
- Ionizing Radiation and Non-Ionizing Radiation
- Heat
- Cold
- UV Radiation
- Laser
- Vibration

Infectious Agents

Infectious Agents are micro-organisms known as BloodBorne Pathogens such as Hepatitis C and Hthat may be in a person's blood or other potentially infectious material(OPIM). Universal Precautions must be taken when responding to an injured employee where blood or OPIM is present. Consider all blood and OPIM to be contaminated and protect yourself through the use of PPE to avoid contact.

Refer to the Davis Mechanical First Aid and BloodBorne Pathogen Program for further information.

Safety Data Sheets

Material Safety Data Sheets (MSDS) have been redefined as Safety Data Sheets (SDS) under Global Harmonized System (GHS) and remain the backbone of Hazard Communication Standard & Employee Right To Know Rule.

Safety Data Sheets provide important product facts that are often not included on the container label. The Safety Coordinator will procure and keep SDS for hazardous substances. SDS will be readily available to employees.

How Safety Data Sheets will be obtained:

- The Safety Coordinator will either contact the manufacturer by phone or obtain from the manufacturer's website.

The Safety Data Sheets will be maintained at the main office. Copies will be readily available to all employees.

Products no longer used – The MSDS and SDS will be archived and kept for 30 years from the date last used.

Safety Data Sheets are presented in a 16 section format with a required ordering of sections. The sections, in order, are as follows:

1) Identification

- Identification of the substance
 - ✓ GHS identifier
 - ✓ Other unique identifiers
- Supplier's details
 - ✓ Name, full address and phone number(s)
- Emergency phone number

2) Hazard(s) Identification

- Classification of the hazardous substance
- GHS labels
- Precautionary Statements
- Other hazards which do not result in classification

3) Composition/Ingredient Information

- Substances
 - ✓ Chemical identity
 - ✓ Common name, synonym of the substance
 - ✓ CAS number and other unique identifiers
 - ✓ Impurities and stabilizing additives
 - ✓ Mixtures (for all hazardous ingredients): Chemical identity
 - ✓ Identification number
 - ✓ Concentration range

4) First-Aid Measures

- Description
- Most important symptoms / effects, acute and delayed
- If needed, indication of:
 - ✓ Immediate medical attention
 - ✓ Special treatment

5) Fire-Fighting Measures

- Suitable extinguishing media
- Specific hazards arising from the chemical
- Special protective equipment and precautions for fire-fighters

6) Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures
- Environmental precautions
- Methods and materials for containment and cleaning up

7) Handling and Storage

- Precautions for safe handling
- Conditions for safe storage (including incompatibilities)

8) Exposure Control / Personal Protection

- Control parameters
- Appropriate engineering controls
- Individual protection measures, including personal protective equipment (PPE)

9) Physical & Chemical Properties

- Appearance
- Odor
- Odor threshold
- pH
- Melting point / freezing point
- Evaporation rate
- Initial boiling point and boiling range
- Flash point
- Flammability (solid, gas)
- Upper / lower flammability or explosive limits
- Vapor pressure

- Vapor density
- Relative density
- Solubility
- Auto-ignition temperature
- Decomposition temperature
- Viscosity

10) Stability & Reactivity

- Reactivity
- Chemical stability
- Possibility of hazardous reactions
- Conditions to avoid
- Incompatible materials
- Hazard decomposition products

11) Toxicological Information

- Provide data for all the health hazards covered by the GHS.
- If data for any of those hazards is not available, they should be listed on the SDS with a statement that data is not available.
- Information on the likely routes of exposure;
- Symptoms related to the physical, chemical and toxicological characteristics;
- Delayed and immediate effects and chronic effects from short or long term exposure;
- Numerical measures of toxicity (such as ATE)
- Interactive effects
- Where specific chemical data are not available
- Mixtures
- Mixture versus ingredient information
- Other relevant information

12) Ecological Information

- Toxicity
- Persistence and degradability
- Bio-accumulative potential
- Mobility in soil
- Other adverse effects

13) Disposal Considerations

- Disposal methods

14) Transport Information

- UN Number
- UN Proper Shipping Name
- Transport hazard classes
- Packing group, if applicable
- Environmental hazards
- Special precautions for user
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15) Regulatory Information










- Regulatory information not provided elsewhere in the SDS
- Safety, health and environmental regulations specific for the chemical in question

16) Other Information

- Date of preparation of the latest version of the SDS
Clear indication of the changes made to the previous revision
- Key / legend to abbreviations and acronyms used in the SDS
- Key literature references and sources for data used to compile the SDS

GHS Pictograms





Hazard pictograms are one of the key elements for the labeling of containers under GHS. The following are the label pictograms:

GHS Pictograms and Hazard Classes		
		
<ul style="list-style-type: none">▪ Oxidizers	<ul style="list-style-type: none">▪ Flammables▪ Self Reactives▪ Pyrophorics▪ Self-Heating▪ Emits Flammable Gas▪ Organic Peroxides	<ul style="list-style-type: none">▪ Explosives▪ Self Reactives▪ Organic Peroxides
		
<ul style="list-style-type: none">▪ Acute toxicity (severe)	<ul style="list-style-type: none">▪ Corrosives	<ul style="list-style-type: none">▪ Gases Under Pressure
		
<ul style="list-style-type: none">▪ Carcinogen▪ Respiratory Sensitizer▪ Reproductive Toxicity▪ Target Organ Toxicity▪ Mutagenicity▪ Aspiration Toxicity	<ul style="list-style-type: none">▪ Environmental Toxicity	<ul style="list-style-type: none">▪ Irritant▪ Dermal Sensitizer▪ Acute toxicity (harmful)▪ Narcotic Effects▪ Respiratory Tract▪ Irritation

GHS Hazard Categories

Chemical Hazard Categories will be rated 1 – 5 with 1 being the worst and 5 being the least hazardous.

The GHS Categories are also associated with Signal Words and Hazard Statements to better describe the hazard.

ACUTE ORAL TOXICITY - Annex 1					
	Category 1	Category 2	Category 3	Category 4	Category 5
LD ₅₀	≤ 5 mg/kg	> 5 < 50 mg/kg	≥ 50 < 300 mg/kg	≥ 300 < 2000 mg/kg	≥ 2000 < 5000 mg/kg
Pictogram					No symbol
Signal word	Danger	Danger	Danger	Warning	Warning
Hazard statement	Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed	May be harmful if swallowed

Signal Words

The Signal Word indicates the relative degree of severity of a hazard. The signal words used in the Globally Harmonized System are DANGER and WARNING.

“DANGER” for the more severe hazards, and “WARNING” for the less severe hazards.



Signal Words are standardized and assigned to the hazard categories within endpoints. Some lower level hazard categories do not use signal words. Only one signal word corresponding to the class of the most severe hazard should be used on a label.

Hazard Statements

Standard phrases assigned to a hazard class and category that describe the nature of the hazard.

Precautionary Statements

Precautionary information supplements the hazard information by briefly providing measures to be taken to minimize or prevent adverse effects from physical, health or environmental hazards.

Product Identifier (Ingredient Disclosure)

A product identifier should be used on a GHS label and it should match the product identifier used on the SDS.

Hazard Reduction

Whenever feasible, Davis Mechanical will find less hazardous products and/or processes in place of more hazardous products and/or processes. The Safety Coordinator will be consulted whenever the use of a new product or process is to be considered.

Non-Routine Tasks

At times, some employees will be required to perform tasks involving hazardous materials or harmful physical agents which have not been covered in their training. Prior to starting to work with such products or processes, the affected employees will receive instructions about the hazards involved with the new task. The training will include:

- Specific chemical and/or physical agent hazard associated with the task
- Protective equipment and/or safety measures that are required to do task
- Precautions or procedures to follow in order to reduce or avoid exposure

Personal Protective Equipment

Any special personal protective equipment (PPE) required for safely handling a hazardous substance, harmful physical agent or an infectious agent will be provided at no expense to the employees.

Any PPE that is bought by an employee from an outside vendor and brought onto the company property MUST be evaluated by the Operations Manager prior to using the PPE to ensure that it will adequately protect the employee from the potential work hazards.

Contract Labor

Project Manager will provide information to contract labor employees pertaining to the hazards that they may be exposed to while working at this facility, (the written Davis Mechanical Hazard Communication / Employee Right-to-Know Program, chemical inventory list, where to find SDS's, etc.).

Multi-Employer Worksite

Project Manager will inform contractors who will have their employees working at this facility of the hazards their employees may be exposed to while working on site.

If a contractor brings in hazardous materials into the facility the contractor must provide the appropriate hazard information to Project Manager of Davis Mechanical prior to starting so that the affected employees can be informed of the new hazard(s). If the affected employees need to be trained Safety Coordinator will train those affected employees.

Right to Refuse To Work

Under the Minnesota Employee Right-to-Know Act, *"Employees have the right to refuse to work in conditions they believe may be imminently dangerous to their lives or health. Employees will not be punished in any way for any legitimate refusals to work because of dangerous conditions."*

If any employee believes that the conditions are imminently dangerous, the following procedures must be followed:

- The employee(s) must notify their Supervisor/Foreman and ask that the issue be corrected.
- Until the issue is corrected, their Supervisor/Foreman may assign employee(s) to another task.
- If their Supervisor/Foreman denies the employee's request, the employee should bring the issue to Project Manager's attention.

If Project Manager does not respond to the employee's request, as a last resort the employee has the right to contact OSHA. OSHA may send out an investigator to look into the safety hazards.

Training

All employees, who have the potential of exposure to hazardous substances or harmful physical agents in their work areas, will receive Hazard Communication / Employee Right-to-Know training.

Training will be conducted at the following intervals:

- New employees prior to starting work - (New Employee Safety Orientation).
- The employee is transferred to a new work area - (training will be specific to that work area).
- Prior to the introduction of a new hazardous substance or harmful physical agent in their work area. Training will be specific to the new hazard(s).
- During annual refresher training.

Training Content

- A summary of this written Hazard Communication / Employee Right-to-Know Workplace Safety Program.
- The chemical & physical properties of hazardous substances and methods that can be used to detect the presence or release of chemicals (including chemicals in unlabeled pipes).
- The physical hazards of hazardous substances (examples: potential for fire, explosion, etc.).
- The name of the chemical or agent and the level, if established, at which exposure to the hazard has been restricted according to MN OSHA standards or if no standard has been adopted, according to guidelines established by competent professional groups (American Conference of Governmental Industrial Hygienist (ACGIH), National Institute of Occupational Safety & Health

(NIOSH), American National Standard Institute (ANSI), American Society for Testing & Materials (ASTM), etc.).

- The health hazards, including signs and symptoms, associated with exposure to hazardous substances, harmful physical agents, & infectious agents.
- The procedures to protect against those hazards (i.e. use and maintenance of personal protective equipment, agents and infectious agents, and any medical condition known to be aggravated by exposure to these hazards)
- The work procedures to follow to assure protection when cleaning up incidental spills and leaks of hazardous chemicals.
- Where Safety Data Sheets (SDS) are located and how copies may be obtained.
- How to read and interpret Safety Data Sheets.
- How to read and interpret the information on labels including the GHS label, pictograms, signal words, hazard statement and precautionary statement.
- Procedures to protect against hazardous substances, harmful physical agents, & infectious agents in the workplace.

Training Documentation

- All Hazard Communication / Employee Right-to-Know training will be documented and kept by the Safety Coordinator for a minimum of three years.
- Training will be documented on a Sign In Sheet with the following information:
 - Date of the training.
 - The name of the person who conducted the training.
 - The names of the employees who completed the training, and their signatures.
 - A brief summary or outline of the information that was covered in the training session.

Program Review

An annual review will be conducted by Project Manager. In addition, the program will be modified as needed after:

- A change in the Hazard Communication / Minnesota Employee Right-to-Know standard that will require modifications or changes to written Hazard Communication / Employee Right-to-Know program.
- The introduction of a new hazardous substance or harmful physical agent in the workplace. The detection of an error or deficiency in the program, or when deemed necessary by Project Manager to improve the program.

APPENDIX A:

NEW HAZARDOUS SUBSTANCE SDS ACKNOWLEDGEMENT

New Hazardous Substance SDS Acknowledgement Form

Name of Substance	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

Manufacturer's Name

Date substance arrived

Date SDS was provided

This chemical may have health effects or other hazardous properties not covered during your initial Hazard Communication / Employee Right-to-Know training, because of your use of this substance, you are asked to read the attached Safety Data Sheet to understand the hazards and/or health effects associated with the substance named above.

If you have any questions or concerns or the proper use of this substance consult with Safety Coordinator.

Upon reviewing the Safety Data Sheet (SDS), employees must sign and date this form.

Print Name

Signature

[illegible]

APPENDIX B:
HAZARDOUS SUBSTANCES LIST

[illegible][illegible][illegible][illegible][illegible]

**APPENDIX C:
PHYSICAL HAZARDS LIST**

Physical Hazards List

*These listed hazardous substances can be found in departments marked with an X
This list is current as of – 1/23/2020*

Department 1
Department 2
Department 3

Physical Hazards

[illegible]

APPENDIX D:

THE BASIC PARTS OF A GHS COMPLIANT LABEL

The Basic Parts of A GHS-Compliant Label

1 → **n-Propyl Alcohol**

UN No. 1274
CAS No. 71-23-8

2 → **DANGER**

3 → Highly flammable liquid and vapor. Causes serious eye damage.
May cause drowsiness and dizziness.

4 → Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.

Fill Weight: 18.65 lbs. Lot Number: B56754434
Gross Weight: 20 lbs. Fill Date: 6/21/2013
Expiration Date: 6/21/2020

5 → Acme Chemical Company • 711 Roadrunner St. • Chicago, IL 60601 USA • www.acmechem.com • 123-444-5567


6 → 

See SDS for further information.

1. **Product Identifier** - Should match the product identifier on the Safety Data Sheet.
2. **Signal Word** - Either use "Danger" (severe) or "Warning" (less severe)
3. **Hazard Statements** - A phrase assigned to a hazard class that describes the nature of the product's hazards
4. **Precautionary Statements** - Describes recommended measures to minimize or prevent adverse effects resulting from exposure.
5. **Supplier Identification** - The name, address and telephone number of the manufacturer or supplier.
6. **Pictograms** - Graphical symbols intended to convey specific hazard information visually.

**APPENDIX E:
EXAMPLES OF HARMFUL
PHYSICAL AGENTS LABELS**



 DAVIS MECHANICAL SYSTEMS		Davis Mechanical Systems, Inc.		
Policy No. 11		Hoisting Equipment		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

The purpose of this program is to establish procedure for proper material handling using the hoisting equipment at Davis Mechanical Systems, Inc. It applies to all company employees who use hoisting equipment in any capacity.

DEFINITIONS

Overloading: Exceeding the rated capacity of hoisting equipment.

Two Blocking: The contact point of the hoist block or hook assembly with the boom tip that causes loss of load or block.

Pinch Point: Accessible areas of the hoist (pulleys, etc.) Where clothes fingers, etc. can get caught and pulled into.

Moving Parts: Unguarded moving parts of the hoist.

Unsafe Hooks: Lifting hooks that do not have latches (mousings) or have damaged and or defective latch or hook.

Obstruction of Vision: When the operator, rigger, or signalers vision is blocked.

Cable Kinking: Cable is sometimes damaged during work circumstances or may be otherwise abused by improper handling, creating kinks and bends.

Side Pull: The lateral forces imposed upon a boom when the load line is tensioned to either the right or left of the boom causes side pull.

Qualified Inspector: An individual who is knowledgeable in the requirements for inspecting and operating hoisting equipment.

RESPONSIBILITIES

Safety Coordinator:

- Ensuring all employees using hoisting equipment are properly trained.
- Ensuring inspections are performed and documented.

Supervisor/Foreman:

- Ensuring that only authorized employees use the hoisting equipment in their department.
- Ensuring that any defective equipment is removed from service until repaired or replaced.

Employees:

- Complying with the company's Hoisting Equipment Program.

- Performing inspections on a daily basis as part of the regular operating procedures of the hoist.

Maintenance:

- Performing complete inspections on all hoisting equipment at least monthly.
- Repairing any deficiencies found.
- Documenting the inspections and repair work performed.

RECORDKEEPING

Inspections record keeping

The OSHA Standard requires that accurate records of inspections be kept, including any defects found and what follow-up on the findings was completed.

Training record keeping

The OSHA Standard also requires that you keep accurate records of all training activities. This calls for keeping a record of all of the following:

- Participant's name
- The training received
- Date of training
- Instructor's name

HOIST SAFETY

Choosing the right hoist

Choose the proper hoist for the job. This is the first step in ensuring hoist safety. Select a hoist capacity that exceeds the anticipated load to be lifted.

The following factors must be taken into consideration when selecting the proper hoist for the job.

- The type of application the hoist will be used for. Will you be lifting or pulling your load?
- The size and type of load. Choose hoists with overload devices, if available, for added protection.
- The type of attachments, such as hooks and chain slings that may be used.
- The duty cycle or period of use.
- The necessary mechanical and electrical data for installation and operation.
 - The hoist operator is to be aware of the hoist's rated capacity. Hoist capacities should not be exceeded.
 - *Remember*, all manually operated hoists are designed to be operated by one person only. *Two people pulling on the hand chain will easily exceed the rated hand pull force and overload the hoist.* Many hoists feature load-limiting devices to guard against overloads. However, an operator should always know the load and stay within the hoist's rated lifting capacity. You are dangerously overloading if you exceed the rated hand pull on manually operated hoists.

USING THE HOIST PROPERLY

Always read the instruction manual before using any hoist. The manufacturer's manual will provide specific installation, operating, and maintenance information. Regardless of the type of hoist used, follow these few simple rules.

- Be sure the hoist is solidly connected to the uppermost part of the support hook seat.
- The hoist and load chain are to be in a straight line. Center the hoist over the load. Never operate a hoist if the hoist frame is in contact with another object.
- Hook the load securely. Always seat the load in the hook seat. Do not tip load the hook. Tip loading may open the throat of the hook and permit the load to slip over the hook tip.
- Do not load the hook latch. Remember, the latch is not to support the load, but is provided as an

- aid during hook-up to retain slack chain and slings.
- Do not use the load chain as a sling. Such usage damages the chain, makes the hoists upper and lower limit device ineffective, and defeats the swivel effect of the lower hook.
- Do not operate with the hoist resting against any object. Lift the load gently and do not jerk it.

HOIST CARE

Proper care and maintenance are additional steps in ensuring hoist safety. Each operator should be familiar with the servicing and maintenance requirements of the hoist.

Cleaning

Hoists should be kept clean and free of dust, dirt, moisture, and etc. that may affect the operation or safety of the equipment. Store all hand chain hoists in a hanging position, in a clean area, when not in use.

Lubrication

Lubrication is a must for load chain and wire ropes and adds additional life. Follow lubrication instructions in your manual.

Repairs and Part Replacement

If a hoist needs repair, employees should remove it from service and then contact their Supervisor/Foreman. Employees should never attempt to add or repair hoist load chains by welding the load chain links. If a replacement chain is required, be sure you have the right chain for the hoists. Never attempt to substitute a different load chain. Two pieces of load chain may look identical, but be entirely different. Order load chains by make, model, and manufacturer. Use only manufacturer supplied repair parts. Parts may look similar, but may not be of the same material or strength.

Testing

All hoists should be subjected to a rated load test after maintenance or repairs have been performed. Carefully operate the hoist by lowering and raising a test load slightly. Follow test instructions contained in the hoist manual.

INSPECTIONS

Initial inspection

Before initial use, all new and altered cranes shall be inspected to ensure compliance.

Frequent inspections – recommended to be conducted daily by the operator.

The frequent inspections should include a visual observation for defects during the actual operation of the hoist. Any deficiency noted that constitutes a safety hazard, will be corrected before placing the unit in service or continuing use of the equipment.

- All functional operating mechanisms for maladjustment interfering with proper operation.
- Lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems for deterioration or leakage.
- Hooks for deformation or cracks
- Any hooks with cracks, more than 15 percent in excess of normal throat opening, or m be removed from service.
- All functional operating mechanisms for excessive wear of components.
- Rope reeving for noncompliance with manufacturer's recommendations.

Periodic inspections

Inspections of the crane will be performed at least monthly per the manufacturer's manual as outlines below.

All deficiencies that constitute a safety hazard will be corrected before placing the unit in service. These may include the following:

- Deformed, cracked, or corroded members.
- Loose bolts or rivets

- Cracked or worn sheaves and drums
- Worn, cracked, or distorted parts such as pins, bearings shaft gears, rollers, and locking and clamping devices.
- Excessive wear on brake system parts, linings, pawls and ratchets.
- Load, wind, and other indicators over their full range, for any significant inaccuracies.
- Electric or other power plants for improper performance or noncompliance with applicable safety requirements.
- Excessive wear of chain drive sprockets and excessive chain stretch.
- Electrical apparatus for signs of pitting or any deterioration of controller contacts, limit switches, and push button stations.

Hoists not in regular use

- A hoist that has been idle for one month or more, but less than six months, will be given an inspection conforming with applicable requirements before being placed in service.
- A hoist that has been idle for over six months will be given a complete inspection conforming with applicable requirements before being placed in service.
- Standby hoists will be inspected at least semiannually in accordance with applicable requirement.

Adjustments and Repairs

Any condition disclosed by the inspections will be corrected before operation of the hoist is resumed. Only designated, qualified personnel will do adjustments and repairs. Adjustment will be maintained to ensure correct functioning of all components, such as the following:

- All Functional operating mechanisms
- Limit switches
- Control systems
- Brakes
- Power plants

Repairs or Replacements will be provided promptly before resumed operation, including any deficiencies such as:

- Hooks showing defects will be discarded
- Load attachment chains and rope slings showing defects
- All critical parts that are cracked, broken, bent, or excessively worn
- Pendant control stations will be kept clean and function labels kept legible

After adjustments repairs have been made, the hoist will not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

HOIST HOOK SAFETY DEVICES

Safety latches or mousings will be provided on all hooks used on hoists that lift or travel with loads attached. This includes the hook used to attach the hoist to the rail, trolley, or structure (MN requirement).

SYNTHETIC SLINGS, CHAINS, AND WIRE ROPES

The following is a list of the requirements that apply in the use of all slings. Specific requirements applicable to each individual type of sling are outlined below.

Whenever any sling is used the following practice must be observed:

- Slings that are damaged or defective must not be used.
- Slings must not be shortened with knots or bolts or other makeshift devices.
- Sling legs must not be chinked.
- Slings must not be loaded in excess of their rated capacities.
- Slings used in a basket hitch must have the loads balanced to prevent slippage.
- Slings must be securely attached to their loads.
- Slings must be padded or protected from the sharp edges of their loads.

- Suspended loads must be kept clear of all obstructions.
- All employees must be kept clear of loads about to be lifted and of suspended loads.
- Hands or fingers must not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- A sling must not be pulled from under a load when the load is resting on the sling.
- Slings must be stored in a location to prevent damage and/or decay.

Inspections

The sling and all fastenings and attachments will be inspected for damage or defects on a regular basis. Additional inspections will be performed during sling use where service conditions warrant. Damaged or defective slings will be immediately removed from service.

Alloy chain slings

- Alloy chain slings must have a permanently affixed, durable identification tag. The tag should state size, grade, rated capacity and reach of the sling.
- The chain sling end attachments will be inspected for any signs of wear, stretching, or deformation.
- A chain sling with a worn or damaged master link, coupling link, or any other component will be removed from service. Slings shall also be removed from service if hooks are cracked, have been opened more than 15% of the normal throat opening, or twisted more than 10 degrees from the plane of the unbent hook.
- Stretching on a multiple leg chain sling is a frequently found defect. Hanging the sling on a crane hook and raising the sling will check it. All legs of the sling should be of equal length. If not, the sling is defective and will be repaired or replaced.

APPENDIX A:

MONTHLY HOIST INSPECTION REPORT

Monthly Hoist Inspection Report

Hoist Number: _____

Inspection Date: _____

Inspector's Name: _____

	Initial the proper status	
	<u>"OK"</u>	<u>"Needs Attention"</u>
<u>Functional Mechanisms</u>		
Push button pendant	_____	_____
Return spring (Mousing clip)	_____	_____
Speed Steps	_____	_____
Upper Limit Switch	_____	_____
Hoist Brake	_____	_____
Directional Controls	_____	_____
<u>Hooks</u>		
Any deformation or cracks	_____	_____
Has throat opening increased more Than 15% over normal size	_____	_____
Is hook twisted more than 10%	_____	_____
<u>Hoisting Cable and Reeving</u>		
Broken wires	_____	_____
Crushed	_____	_____
Stretched	_____	_____
Twisted	_____	_____
Kinked	_____	_____
Excessive Wear	_____	_____
Is cable following drum grooves	_____	_____
<u>Hoisting Chain and Connections</u>		
Excessive wear	_____	_____
Twist	_____	_____
Distorted Links	_____	_____
Stretch beyond Mfg. Recommendations	_____	_____

Comments:

APPENDIX B:

HOIST INSPECTION CHECKLIST

Hoist Inspection Checklist

Hoist Number: _____

Inspection Date: _____

Inspector's Name: _____

The Inspector will place their initials next to each inspection item shown to identify that the hoist is "OK". Comments or maintenance notes should be recorded on the lines below.

Inspecting hand chain hoists

_____ Check the full length of chain for worn, gouged, twisted, and distorted links and foreign material. Do not operate the hoist if there are any damaged chain links. Note that it may be necessary to clean the chain so that nicks, wear and other indications can be seen.

_____ Be sure the load chain is properly lubricated and free of dirt and foreign material.

_____ Make a load test by lifting and lowering a load slightly. Listen for unusual sounds and make certain that hoist operation is smooth. Brakes should hold without slipping.

_____ Follow inspection schedules as recommended in the OEM hoist manual

Inspecting Hoist Components of All Hand and Electric Hoists

Hoist inspection isn't limited to checking the chain or wire rope. You also need to inspect hooks, brakes and other integral components.

_____ Inspect hooks to see that they swivel properly and are not bent, worn or enlarged beyond normal throat openings.

_____ If the hook latch does not engage the throat opening of the hook, the hook should be replaced and the hoist should be taken out of service until the repair is made.

_____ Look for corrosion and any obvious damage.

_____ Inspect the brake. Hand powered hoists should be checked for evidence of slippage under load. Motor brakes should be checked for their ability to stop the motor quickly and for proper adjustment. Make certain that a brake check has been performed by raising a test load slightly off the ground prior to placing the hoist in service.

_____ Make certain that load chain and wire rope are properly lubricated.

_____ Make certain the load chain and wire rope are reeved properly. Consult the hoist OEM manual for reeving information.

If you find or suspect a deficiency, be sure the hoist is tagged and taken out of service until repairs are made. Never, under any circumstances, operate a malfunctioning hoist.

APPENDIX C:

**HOISTING EQUIPMENT SAFETY QUIZ AND
ANSWER SHEET**

Hoisting Equipment Safety Quiz

Name: _____

Date: _____


Please circle the correct answer for the following questions:

1. When performing the daily equipment inspection, it is recommended that you begin:
 - a. systematically from the bottom up
 - b. systematically from the top down
 - c. in no particular order
 - d. in a convenient area
2. Before using the equipment, you should make sure tools or other items are:
 - a. within easy reach
 - b. stored according to size
 - c. not left on the crane or load
 - d. strapped to the load
3. During the inspection, if you find any equipment which is damaged, broke, or not ready for use, you should:
 - a. note it on the checklist
 - b. put a "Do Not Use" tag on it
 - c. notify your supervisor
 - d. all of the above
4. Hooks that are twisted out of shape must not be used because:
 - a. they can snag nearby workers
 - b. bent hooks can damage synthetic slings
 - c. it is difficult to store a bent hook
 - d. a twisted hook has probably been damaged
5. The upper limit switch is designated to:
 - a. warn the operator when the load is too heavy
 - b. prevent shock loading
 - c. keep the running block from being raised too high
 - d. act as a backup operating control
6. Synthetic web slings should be inspected:
 - a. One a year
 - b. Visually and manually
 - c. Only by your supervisor
 - d. In the coolest part of the day
7. When inspecting wire rope slings, check for:
 - a. abrasions, kinks
 - b. heat damage, corrosion
 - c. rust
 - d. all of the above
8. Loss of metal on alloy chain slings can be caused by:
 - a. exposure to corrosive chemicals
 - b. using the chain more than 3 years
 - c. improper load positioning
 - d. improper storage

9. Before lifting a load, you should make sure all the equipment is rated for the load.
T F
10. It is important to position the hoist system over the load, because it is easier to see the hook.
T F
11. Sudden starts and stop are called shock loading.
T F
12. Always move the load from behind
T F
13. Riders are allowed on the load or crane after special training.
T F
14. Once a load has been moved, the running clock is raised to that no one will hit his or her head.
T F
15. If you notice damage occurring to equipment during your shift, let the next shift operator find and report the problem during his or her inspection.
T F

Hoisting Equipment Safety Quiz – Answer Sheet

1. b
2. c
3. d
4. d
5. c
6. b
7. d
8. a
9. T
10. F
11. T
12. T
13. F
14. T
15. F

		Davis Mechanical Systems, Inc.		
Policy No. 12		Housekeeping Policy		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

POLICY

It is the policy of Davis Mechanical Systems, Inc. that all personnel keep their area, along with the surrounding areas, free of obstructions.

Employees may not block access to emergency equipment, showers, eyewashes, electrical panels, fire extinguishers, and exits. Maintain a clear three-foot access area to these items for direct access during an emergency.

Employees will keep all work areas clear and free of clutter; paying special attention to aisles, hallways, and stairs.


Employees will label all hazardous substances with the identity of the contents and the hazards those contents present to users in accordance with our Right-To-Know / Hazard Communication Safety Program.

No hazardous substances are to be stored in aisles, stairwells, on the floor, or in hallways/walkways.

Employees will return all hazardous substances to their assigned storage areas at the end of each work shift.

Employees will aid in cleaning all work surfaces and floors on a regular basis. Special attention may be required for equipment or processes; Proper housekeeping may require following manufactures recommendations and or our Lock Out Tag Out program.

Employees will not store pallets on edge or upright; Always store pallets in designated areas and flat and not stacked more than 6 feet tall (this will help reduce the fire load in any one given area).

		Davis Mechanical Systems, Inc.		
Policy No. 13		Jobsite Emergency Action Plan		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PROJECT NAME:		
PROJECT ADDRESS:		
EMERGENCY ASSEMBLY POINT:		
EMERGENCY CONTACT INFORMATION		
JOBSITE EMERGENCY COORDINATOR:	Site Foreman / General Manager	
POLICE:	911	
FIRE:	911	
POISON CONTROL:	911	
OTHER:		

**IN THE EVENT OF AN EMERGENCY, FIRST CALL 911 THEN
NOTIFY THE JOBSITE EMERGENCY COORDINATOR**

FIRE EMERGENCY

When a fire is discovered:

- Activate the nearest fire alarm (if installed).
- Notify the local Fire Department by calling 911
- Notify the site Emergency Coordinator.

Fight the fire ONLY if:

- The Fire Department has already been notified.
- The fire is in its incipient stage, meaning it is small and is not spreading to other areas.
- Escaping the area is possible by backing up to the nearest exit.
- You have a fire extinguisher and have been trained to use it.

Jobsite evacuation due to fire:

- In the event the jobsite must be evacuated, the Jobsite Emergency Coordinator will notify personnel by sounding three (3) one-second blasts of an air horn.
- All personnel will be required to proceed to the emergency assembly point.
- Subcontractor supervisors will provide the Emergency Coordinator an accurate head count of personnel and notify the emergency coordinator of any personnel who are unaccounted for.
- Emergency services personnel will be notified of any personnel who are unaccounted for to determine a rescue method to locate missing personnel.

MEDICAL TREATMENT

Minor Injury or Illness

- Notify the Jobsite Emergency Coordinator. Jobsite Emergency Coordinator will summon the First Aid Attendant.

- Follow the First Aid Attendant's instructions and provide as much information as possible.
- Ensure that your Supervisor is informed that you have reported to the First Aid Attendant.

Medical Emergency

- In the event of a medical emergency Call 911 and follow the dispatcher's directions
- As soon as possible, notify the Jobsite Emergency Coordinator.
- The Emergency Coordinator will dispatch personnel on the project site who are trained in First Aid/CPR to provide the required assistance prior to the arrival of the professional medical help (provide first aid assistance only if trained and qualified.
 - Ensure the accident scene is safe and that there is no further danger to you or the injured person.
 - Do not move the injured person unless there is a high risk of further injury and it is safe for you to do so.
 - Keep calm and do not leave the injured worker unattended.
 - Be prepared to assist when directed by the First Aid Attendant
- The Emergency Coordinator will direct personnel to meet emergency services at the jobsite entrance and direct them to the accident scene.
- For non-emergency medical assistance, refer to the postings in the jobsite trailer of the nearest medical treatment providers.
- The following on-site personnel are trained to provide First Aid/CPR:

NAME:	COMPANY:	CONTACT INFORMATION:

LOCATION OF NEAREST AED:	
---------------------------------	--

FALL PROTECTION RESCUE

- In the event someone on the jobsite utilizing a personal fall arrest system (PFAS) has fallen from an elevated work surface, they are suspended in a full body harness, and are unable to self-rescue, immediately notify the Jobsite Emergency Coordinator.
 - Prompt rescue is critical; suspension trauma is a serious medical condition that can lead to unconsciousness, injury or death. Suspension trauma can be fatal in as little as 30 minutes.
 - To reduce the potential of suspension trauma, all personnel should utilize a personal fall arrest system (PFAS) equipped with suspension trauma straps.
- The Jobsite Emergency Coordinator will determine the appropriate rescue method. Based upon the jobsite configuration, and areas where PFAS will be utilized, the following rescue methods will be utilized (check all that apply):

<input type="checkbox"/>	SELF-RESCUE Based on location of anchor point and limited fall distance, personnel will be able to climb back onto the work surface they fall from.
<input type="checkbox"/>	ASSISTED SELF RESCUE WITH A ROPE/WEB LADDER Personnel will access the area above and lower a rope/web ladder to the fallen employee. All personnel must maintain 100% tie off during this process. Verify rope/web ladder is on site and there is a suitable anchor point/anchorage connector in the work area.
<input type="checkbox"/>	ASSISTED SELF RESCUE WITH AN AERIAL LIFT Personnel will use an aerial lift (scissor lift, articulating boom lift, forklift/personnel platform) to perform the rescue. Verify the aerial lift can reach the work area before selecting this method.

<input type="checkbox"/>	EMERGENCY SERVICES If personnel are unable to perform Self Rescue or provide Assisted Self Rescue, emergency services will be relied upon for rescue. Emergency services must be coordinated in advance, and the means/methods of rescue verified.
<input type="checkbox"/>	OTHER (Explain):

The following on-site personnel are trained to provide assisted self-rescue:

NAME:	COMPANY:	CONTACT INFORMATION:

SEVERE WEATHER (LIGHTNING, HAIL, HIGH WINDS, TORRENTIAL RAIN, TORNADO):

When a severe weather warning is issued by sirens or other means the Emergency Coordinator will notify personnel on the jobsite whether to muster in place, or proceed to the nearest on-site or off-site severe weather shelter. This decision will be made based upon the type of the severe weather threat to the jobsite. Due to the nature of construction work, there may not be an appropriate severe weather shelter location on the project site, or the location may change as the project progresses. Personnel may need to evacuate to an off-site severe weather shelter location.

When determining severe weather shelter locations, consider the following:

- Small interior rooms on the lowest floor and without windows,
- Hallways on the lowest floor away from doors and windows, and
- Rooms constructed with reinforced concrete, brick, or block with no windows.
- Stay away from outside walls and windows.

Jobsite evacuation due severe weather:

- In the event of an imminent threat where the jobsite will be impacted by Severe Weather, the Emergency Coordinator will notify personnel by sounding three (3) one-second blasts of an air horn.
- All personnel will be required to proceed to the primary assembly point which is located at the jobsite trailer.
- The Emergency Coordinator will direct personnel to the appropriate on-site or off-site severe weather shelter.


SEVERE WEATHER SHELTER LOCATIONS	
Update this list as appropriate locations area created or removed from the project site.	
ON-SITE LOCATIONS	OFF-SITE LOCATIONS

CONFINED SPACE RESCUE

- No confined space entry activities will be performed on this project site. Should confined space entry be required, a separate meeting and specific plan will be developed to address emergency response and rescue options.

EXCAVATION CAVE-IN RESCUE

- All occupied excavation must have protective systems in place (sloping/shoring/shielding) as required by OSHA regulations. Properly installed protective systems will eliminate the potential for a cave-in hazard.

		Davis Mechanical Systems, Inc.		
Policy No. 14		Ladder, Aerial Lifts, and Scaffold Use Policy		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

Davis Mechanical Systems, Inc. (Davis Mechanical) is dedicated to providing a safe and healthy work environment. In order to provide that environment for our employees, we have established this Aerial Lift, Scissor Lift, Scaffold, and Ladder Policy.

The purpose is to provide guidelines for maximum protection for employees against falls from elevations.

SCOPE

This program applies to all company employees who engage in the use of Aerial Lifts, Scissor Lifts and Scaffold use activities on all Davis Mechanical project locations.

AERIAL LIFTS & SCISSOR LIFTS

- Only authorized personnel will be allowed to operate aerial lifts and scissor lifts on Davis Mechanical project sites.
- Never exceed the load limit of the aerial lift or scissor lift (includes weight of personnel, tools, and equipment).
- Before utilizing an aerial lift and/or scissor lift:
 - Verify all audible and/or visual alarms are functioning prior to operating the aerial lift or scissor lift (lights, back up alarms, etc.).
 - Verify that all of the lift controls and associated equipment including emergency stop buttons are functioning.
- A Personal Fall Arrest System (PFAS) must be worn when working from an elevated work platform (boom or basket). The point of attachment must be the anchor point provided by the manufacturer. Personnel should not attach lanyards to adjacent poles, structures or equipment while they are working from the aerial lift.
 - A PFAS is not required when operating a Scissor Lift provided:
 - Guardrails are in place
 - Door or chain is closed
 - You stay on the floor and do not exit the lift
- Personnel should not move an aerial lift while the boom is in an elevated working position and the operator is inside of the lift platform. When in an elevated position it may be difficult to see obstructions, personnel and/or floor holes.
- Never modify the equipment unless written approval has been received by the manufacturer.
- Always stand firmly on the floor, never stand on the guardrails.
- Always use on a stable level surface.
- Have a clear path of travel. Check for debris, holes, electrical equipment, workers, etc.
- Move lift slowly.
- Know the equipment and its limitations.
- Remove key when not in use, so unauthorized employees cannot use it.
- Maintain a clearance of at least 10 feet from overhead power lines.

SCAFFOLDS

The following safe practices are important for the prevention of accidents and serious injury when working on scaffolds at Davis Mechanical project locations:


- Before starting work on a scaffold, a competent person must perform a daily inspection. The inspection must determine that:
 - Handrails, toeboards, and decking are in place;
 - All wheels are locked on movable scaffolds;
 - Locking pins are in place at each joint.
- Wear properly tied off harnesses when working on a ladder jack scaffold more than 10 feet above the ground.
- Do not change or removed scaffold members unless approved by management.
- Do not ride on a rolling scaffold when it is being moved. Remove or secure all tools and material on the deck before moving.
- Do not climb on, or work from any scaffold handrail, midrail or brace member. Use a built-in, attachable, or portable ladder or stair unit to access the working platform.
- All scaffolds must be erected level and plumb on a firm foundation. Always use baseplates or casters. Use mudsills on a soft foundation.
- Scaffold must be tied off or stabilized with outriggers when the height of the scaffold is greater than four times the minimum base dimension. Scaffolds must be tied off every 30 feet horizontally.
- Adjusting or leveling screws should not be used on scaffolds equipped with wheels. Adjusting screws should not be extended more than 12 inches of thread.
- Check for safe working loads on all scaffolds, and do not exceed.
- Rolling scaffold should only be used on level, smooth surfaces, or the wheels must be contained in wooden or channel iron runners. Watch overhead clearance when moving.
- Do not alter and scaffold member by welding, burring, cutting, drilling, or bending.
- Do not attach rigging from scaffold handrails, midrails, or braces.
- Patented metal scaffolding parts and sections made by one manufacturer should not be mixed with those of a different manufacturer.

LADDERS

Improper use and care of ladders may result in accidents and serious injury. Frequent causes of ladder accidents include unsafe climbing and descending; ladder not secured; using a broken ladder; and over-reaching from the ladder. All ladders utilized on Davis Mechanical project locations must meet minimum OSHA/ANSI specifications.

- Always inspect the ladder before use. Ladders must also be inspected after any event that may have caused damage to the ladder (such as being dropped, or tipping over).
- When setting up a straight or extension ladder, use the following procedures to avoid injury:
 - Tag and remove any ladder that fails inspection from service.
 - Brace the base of the ladder against a stationary object so it cannot slip. Get help if you need it;
 - Grasp the top rung with both hands;
 - Raise the top end over your head and walk toward the base of the ladder, moving hands to grasp the rungs in the center to maintain stability;
 - When the ladder is erect, move it to the desired location and lean it forward against the resting point;
 - Footing should be firm and level. Precautions should be taken to secure the ladder if slippery conditions exist;
 - Extension or straight ladders used to reach an elevation platform or roof should extend at least 36 inches above the landing;
 - A straight ladder should be placed so there is one foot at the base for every four feet of length to the top support (i.e. 4 feet out for 16 feet elevation)
 - When adjusting an extension ladder, be sure the locking device is fully secured and hooked over the rungs before using the ladder.
- Only use the ladder for the purpose which it was designed (a step ladder is not a straight ladder, etc.)
- Do not exceed the ladders load limit (include weight of person, tools, and equipment).
- All extension ladders should be tied, blocked, or otherwise secured to prevent movement.

- Ladders should not be located in front of doors unless the door is blocked open, locked, or guarded.
- Keep rungs and steps of ladders free from grease, oil, paint, snow, ice, mud or other slippery surfaces.
- For a stepladder, be sure it is fully open and spreaders locked before using. Never climb higher than the step below the top of the stepladder. Never “walk” a stepladder while standing on it.
- Both hands must be free when climbing or descending. Material should be hoisted to the work level.
- Face ladders when going up or down.
- Do not over-reach when on a straight or extension ladder. Move the ladder if the work is too far.
- Never stand on the top three rungs of a straight ladder.
- Two or more persons should not work on a ladder unless the ladder is specifically designed for this use.
- Ladders should never be used for braces, skids or gangways.
- Wood ladders should not be painted except the top step of stepladders may be painted to indicate that it is not to be stepped on. Wood ladders should be treated regularly a clear wood preservative.
- Aluminum or wet wood ladders should not be used near open wiring since they are excellent conductors of electricity.

		Davis Mechanical Systems, Inc.		
Policy No. 15		Mobile Earth-moving Equipment Requirements		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

1. SCOPE

This policy identifies minimum safety requirements for the safe operation of mobile earth-moving equipment used on Davis Mechanical Systems, Inc. (Davis Mechanical) project sites. This equipment includes, earth moving, building, or road construction or demolition, including, but not limited to, bulldozers, motor graders, scrapers, loaders, skid-steer loaders, compaction equipment, backhoes, end dumps, side dumps, and dump trucks.

This policy pertains to operators of the equipment and exposed employees, including, but not limited to, grade checkers, grade persons, rod persons, stake hops, stake jumpers, and blue toppers working in the area.

The following safety concerns must be communicated with all affected operators, drivers, and persons on the ground nearby.

- Safe work procedures on how to approach equipment while idling or “in use” including:
 - Visual, voice, or signal communication that shall be made with the operator prior to approaching.
 - Maintaining visibility to the operator while approaching the equipment
 - Operator responsibilities such as placing the transmission in neutral, setting the parking brake, and indicating that it is safe to approach.
- Discuss where the operator’s blind spots are at on the various types of equipment being used. See Appendix A for additional Blind Spot Diagrams for common construction equipment.
- Discuss Instructions for equipment operators regarding daily equipment inspections, and checking the area around the equipment for a clear path prior to beginning operation.
- Discuss Safe operating procedures of equipment including traveling, backing, parking, loading for transport, etc.
- Discuss Safe work procedures when working around or adjacent to overhead or underground utilities
- Discuss Additional hazards that could be created by changing conditions.

2. TRAINING REQUIREMENTS

- 2.1. Mobile earth-moving equipment operators and all other employees working on the ground exposed to mobile earth-moving equipment shall be trained in the safe work procedures pertaining to mobile earth-moving equipment and in the recognition of unsafe or hazardous conditions.
- 2.2. Training programs shall be developed and instructed by competent individuals who have knowledge, training, experience, and the demonstrated ability to identify existing and predictable hazards related to the subject matter.

- 2.3. Employees shall be trained initially before beginning work that exposes them to mobile earth-moving equipment. Employee training records shall be retained by the employer for the duration of the project.
- 2.4. Training programs must include the following elements:
- 2.4.1. safe work procedures on how to approach mobile earth-moving equipment, whether in use or idling, including:
- visual, voice, or signal communication that shall be made with the operator prior to approaching earth-moving equipment;
 - maintaining one's visibility to the operator while approaching the equipment; and
 - operator responsibilities, such as placing the transmission in neutral, setting the parking brake, and indicating that it is safe to approach the equipment;
- 2.4.2. Identification of the operator's blind spots on various earth-moving equipment used;
- 2.4.3. Instruction for mobile earth-moving equipment operators in conducting daily equipment inspections according to the manufacturer's recommendations, and checking the area around the equipment for a clear path prior to beginning operation;
- 2.4.4. Safe operating procedures of equipment, including traveling, backing, parking, loading for transport, maintenance, and operation;
- 2.4.5. Safe work procedures when working around or adjacent to overhead utilities ([OSHA 1926.600\(a\)\(6\)](#)):
- When working or being moved in the vicinity of power lines or energized transmitters maintain the following minimum clearance (except where electrical distribution and transmission lines have been de-energized and visibly grounded at point of work or where insulating barriers have been installed):
 - For lines rated 50 kV or below, minimum clearance shall be 10 feet;
 - For lines rated over 50 kV, minimum clearance shall be 10 feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than 10 feet;
 - In transit, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kV, and 10 feet for voltages over 50 kV, up to and including 345 kV, and 16 feet for voltages up to and including 750 kV;
 - A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;
 - Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded;
- 2.4.6. Safe work procedures when working around or adjacent to underground utilities ([OSHA 1926.651\(b\)](#)):
1. The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.
- 2.4.7. Additional hazards that could be created by changing conditions.

3. HIGH VISIBILITY PERSONAL PROTECTIVE EQUIPMENT

- 3.1. Each employee working on the ground who is exposed to mobile earth-moving equipment shall be provided with and required to wear a high visibility warning vest or other high visibility garments (Performance Class 2 garment or greater as specified by ANSI/ISEA Standard 107-2004).

4. EQUIPMENT REQUIREMENTS

- 4.1. All mobile earth-moving equipment or compacting equipment which has an obstructed view to the rear that is to be used in reverse gear must be equipped with a reverse signal alarm distinguishable

from the surrounding noise level, or an employee signals that it is safe to do so ([OSHA 1926.602\(a\)\(9\)](#)).

- 4.2. When mobile earth-moving equipment is operated during times of darkness or low light conditions, the equipment, if designed to function equally in both forward and reverse directions, such as compaction equipment, bulldozers, motor graders, loaders, and skid-steer loaders, shall be equipped with at least two headlights for forward travel and adequate rear lights for reverse travel unless other adequate lighting is provided.

5. Contractor Responsibility

- 5.1. If the mobile earth-moving equipment contractor exposes other contractor's employees to the hazard of mobile earth-moving equipment, the controlling employer, such as general contractor or construction manager, for the project shall coordinate a joint contractor-employee safety awareness meeting between contractors and employees on site. Discussion elements for employee awareness training can be found in the Training Requirements Section above. See *Appendix A: Mobile Earth-Moving Equipment Safety Talk* for additional information.
- 5.2. The employee safety awareness meeting shall be documented, identifying when the meeting was held and who attended, including a brief summary of what was reviewed. Documentation shall be retained for the duration of the project.

6. Electrical work

- 6.1. For work within the flash protection boundary as defined by NFPA 70E, high visibility garments constructed of material that complies with NFPA 70E may be worn.

APPENDIX A:

MOBILE EARTH-MOVING EQUIPMENT SAFETY TALK

MOBILE EARTH-MOVING EQUIPMENT HAZARDS (MNOSHA 5207.1000)

Earth moving, building, road construction and demolition projects cannot be completed without the use of heavy earth-moving equipment such as; bulldozers, motor graders, scrapers, loaders, skid-steer loaders, compaction equipment, backhoes, end dumps, side dumps, and dump trucks. However, mobile earth-moving equipment can pose a serious risk to nearby workers, especially when the operator cannot see them. Working safely around mobile earth-moving equipment is a shared responsibility between both the operator and the worker on the ground. By following the safe work practices identified below, you can help reduce the risk of injury when working around mobile earthmoving equipment.

How should you approach mobile earth-moving equipment?

Avoid approaching the equipment unless absolutely necessary. The operator has limited visibility, with numerous blind spots around the equipment where they cannot see at all (see Figure 1). If you must approach mobile earth-moving equipment, follow these guidelines:

- Ensure you are aware of all mobile earth-moving equipment in operation around the jobsite.
- Always wear an appropriate high visibility warning vest or other high visibility garments (minimum of ANSI/ISEA Performance Class 2)
- Ensure the operator can see you (use visual, voice or signal communication) and always maintain visibility to the operator.
- If you need to speak with the operator, or get close to the equipment follow these additional steps: ensure the operator has come to a complete stop, placed the equipment in neutral, set the parking brake and indicated to you that it is safe to approach.

Are there specific safety requirements for equipment?

At a minimum, all mobile-earthmoving equipment must be equipped with the following:

- Audible back-up alarms which are distinguishable from the surrounding noise levels.
- Suitable lights to allow safe operation in times of darkness or low light (minimum requirements are 2 headlights for forward travel and adequate rear lights)

What should equipment operators do to ensure they can safely operate their mobile earth-moving equipment?

- Review travel paths and work areas to ensure workers and other hazards will be clear of the equipment.
- Conduct daily equipment inspections in accordance with the manufacturer's recommendations.
- Verify the audible alarms, lights and any other safety features are functioning prior to use.
- Know the safe work procedures for working around or adjacent to overhead or underground utilities.

What should you do if you see issues or have questions?

- If you see something, say something! Report concerns to your Supervisor or the Superintendent on the jobsite.

What if there are multiple contractors and multiple personnel working on the jobsite?

Everyone on the jobsite needs to be made aware of the potential hazards of mobile earth-moving equipment. The controlling employer (on multi-contractor jobsites this would be the general contractor or construction manager) must coordinate a joint contractor-employee safety awareness meeting between the contractors and employees on site to review the hazards of mobile earth moving equipment.

Vehicles Causing the Most Backover Fatalities 2005-2010*

Dump Truck	67
Semi/Tractor Trailer	40
Truck	30
Forklift	21
Garbage Truck	20
Pick-up Truck	16

*OSHA Integrated Management Information System data

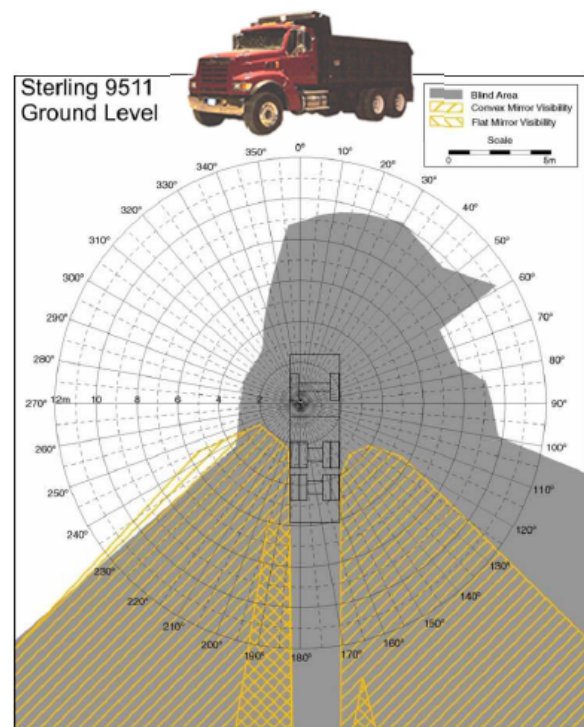


FIGURE 1: NIOSH Blind Spot Diagram for a Dump Truck. Operator is unable to see an object at ground level in the grey shaded areas. Additional diagrams on NIOSH website:

<https://www.cdc.gov/niosh/topics/highwayworkzones/bad/imagelookup.html>

APPENDIX B:

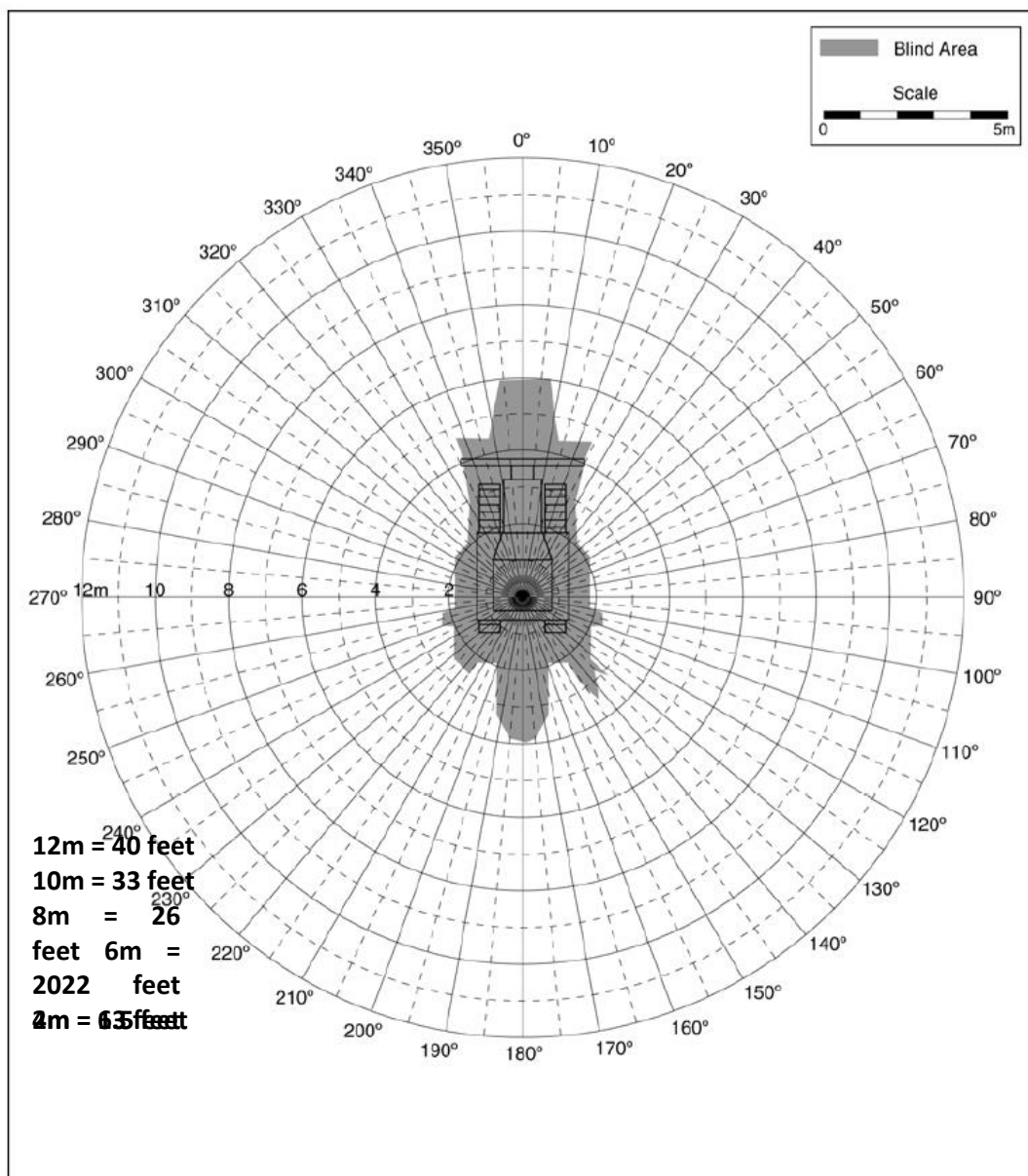
BLIND SPOT DIAGRAMS

For additional blind spot diagrams for construction vehicles refer to the NIOSH website:

<https://www.cdc.gov/niosh/topics/highwayworkzones/bad/imagelookup.html>

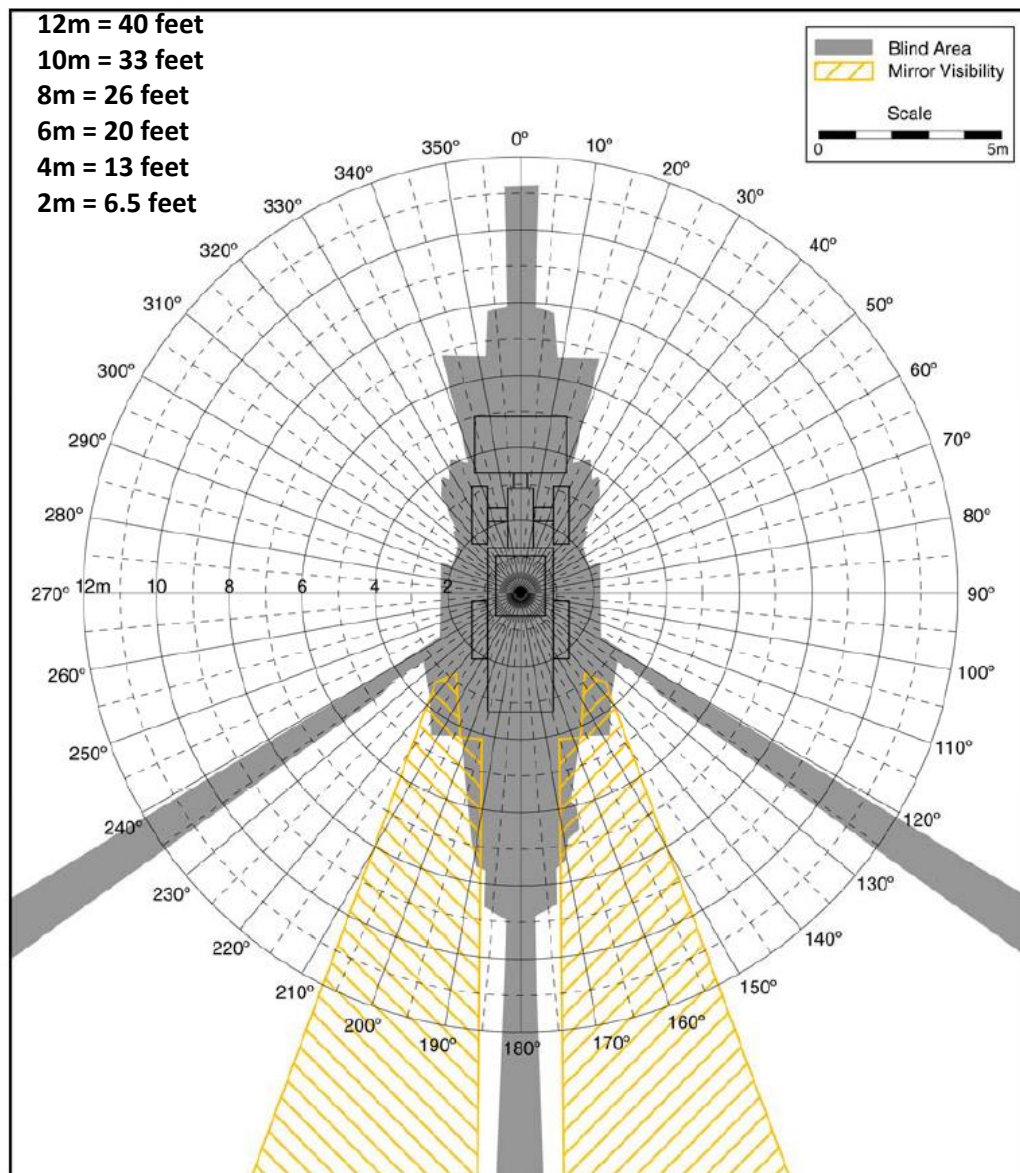
BULLDOZER BLIND AREA DIAGRAM – VISIBILITY OF AN OBJECT AT A HEIGHT OF 3 FEET

Dozer (Manufacturer and Model)	John Deere 700H
GVW	25,800 lb
Serial #	T0700HX906617
Machine Dimensions	10' wide (blade) 14' 11" long
Operator Enclosure	Closed ROPS
Attachments	10' wide, 3'11" high Power Angle & Tilt Blade
Other Information	None
Measurement Technique	Physical



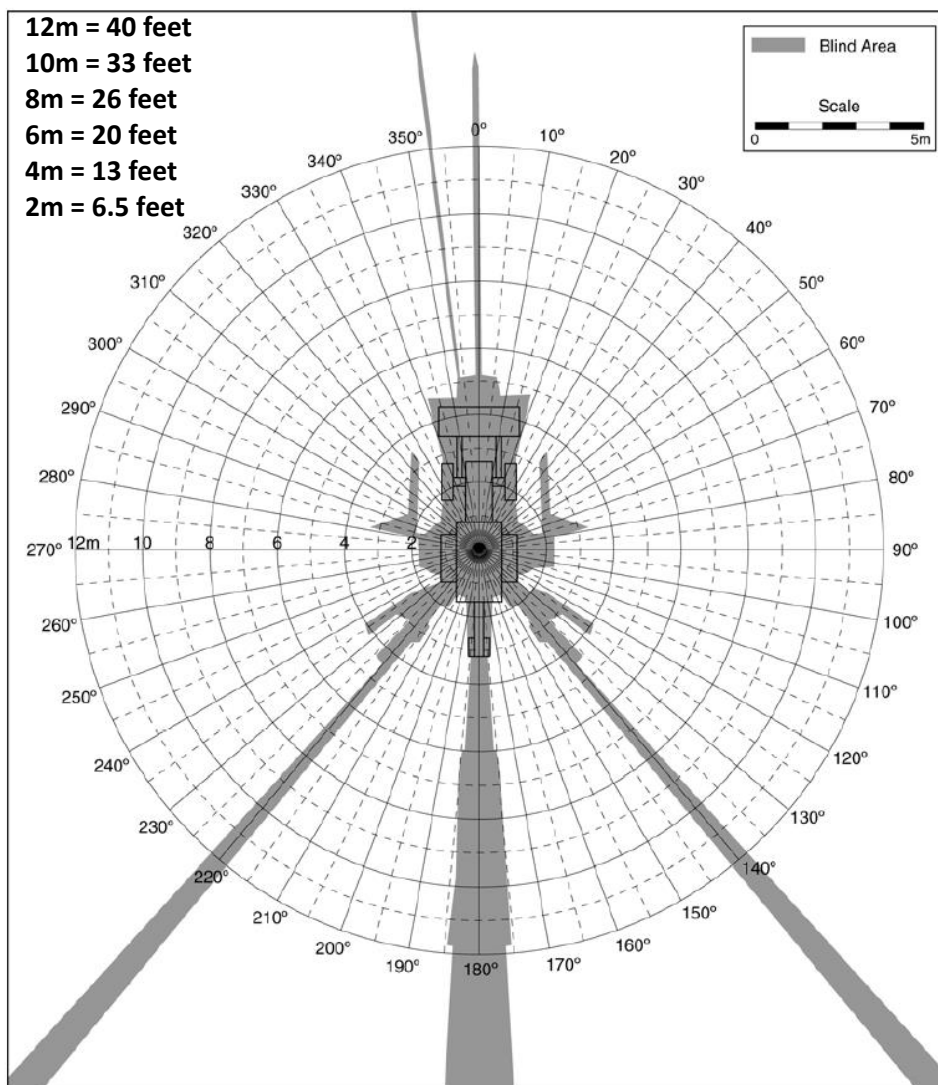
LOADER BLIND AREA DIAGRAM – VISIBILITY OF AN OBJECT AT A HEIGHT OF 3 FEET

Loader (Manufacturer and Model)	Volvo L110E
GVW	40,000 lbs
Serial #	L110EV60054
Machine Dimensions	9' 5" wide (bucket) 26' 3" long
Operator Enclosure	Closed ROPS
Attachments	None
Other Information	None
Measurement Technique	Physical



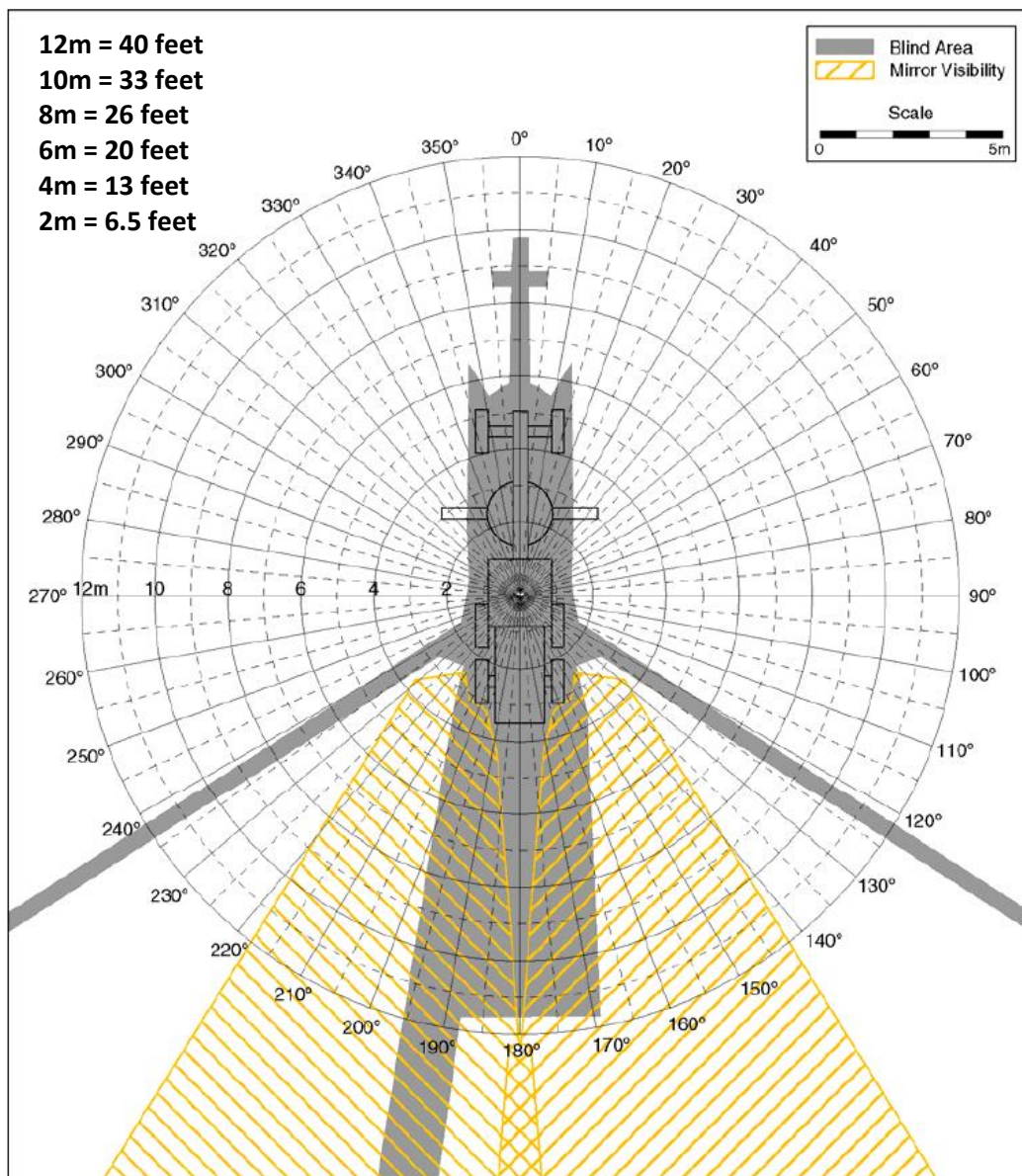
BACKHOE BLIND AREA DIAGRAM – VISIBILITY OF AN OBJECT AT A HEIGHT OF 3 FEET

BHLoader (Manufacturer and Model)	John Deere 310SG
GVW	13,500 lb
Serial #	T0310SG919009
Machine Dimensions	7' 2" wide (bucket) 23' 6" long
Operator Enclosure	Closed ROPS
Attachments	None
Other Information	None
Measurement Technique	Physical



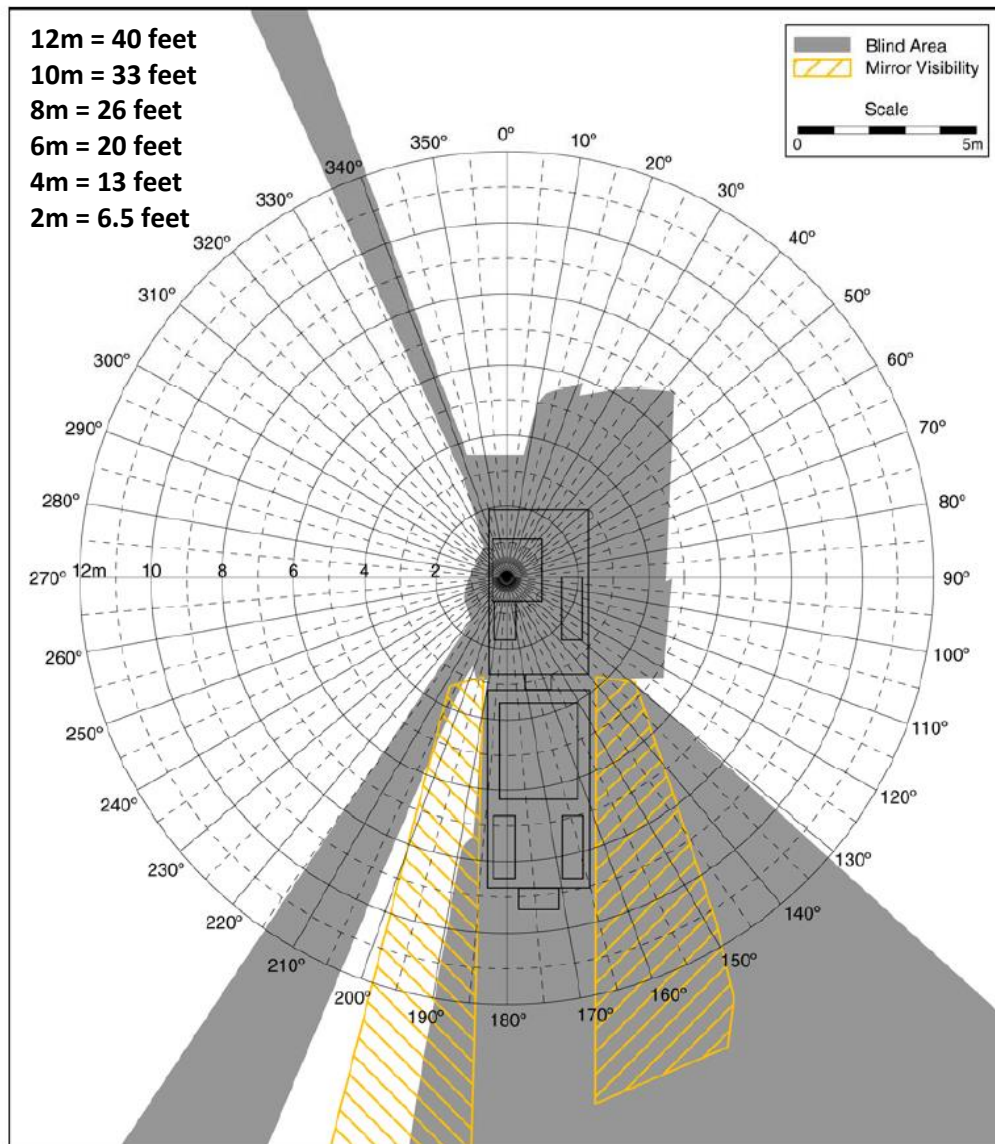
GRADER BLIND AREA DIAGRAM – VISIBILITY OF AN OBJECT AT A HEIGHT OF 3 FEET


Grader (Manufacturer and Model)	John Deere 772 CH
GVW	31,750 lb
Serial #	DW772CH582732
Machine Dimensions	14' wide (blade) 28' 3" long
Operator Enclosure	Closed ROPS
Attachments	5 tooth ripper
Other Information	None
Measurement Technique	Physical



SCRAPER BLIND AREA DIAGRAM – VISIBILITY OF AN OBJECT AT A HEIGHT OF 3 FEET

Scraper (Manufacturer and Model)	John Deere 862B
GVW	49,100 lb
Serial #	T0862BX744910
Machine Dimensions	9' 5" wide(cutting edge) 36' 8" long
Operator Enclosure	Closed ROPS
Attachments	None
Other Information	None
Measurement Technique	Physical



		Davis Mechanical Systems, Inc.		
Policy No. 16		Near Miss Written Program		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

POLICY

The purpose of this program is to assist in implementing a near miss program. This program will apply to all Davis Mechanical Systems, Inc. locations.

WHAT IS A NEAR MISS?

A Near Miss is an unplanned event that did not result in injury, illness, or damage – but had the potential to do so. Only a fortunate break in the chain of events prevented an injury, fatality or damage; in other words, a miss that was nonetheless very near. A faulty process or management system invariably is the root cause for the increased risk that leads to the near miss and should be the focus of improvement. Other familiar terms for these events are a “close call,” a “narrow escape,” or in the case of moving objects, “near collision” or a “near hit.”

HOW DO NEAR MISS REPORTING SYSTEMS PREVENT FUTURE INCIDENTS?

Many safety activities are reactive and not proactive, and some organizations wait for losses to occur before taking steps to prevent a recurrence. Near miss incidents often precede loss producing events but may be overlooked as there was no harm (no injury, damage or loss).

An organization may not have a reporting culture where employees are encouraged to report these close calls. Thus, many opportunities to prevent the incidents are lost. History has shown repeatedly that most loss producing events (incidents), both serious and catastrophic, were preceded by warnings or near miss incidents. Recognizing and reporting near miss incidents can significantly improve worker safety and enhance an organization’s safety culture.

RESPONSIBILITIES

Upper Management

- Support the near miss program.
- Provide resources to take corrective actions of near misses that are reported.

Program Administrator / Safety Coordinator

- Set up the near miss reporting system.
- Ensure tracking of items to completion.
- Review the near misses identified at the safety committee meeting and ensure corrective actions have been identified and assigned for follow-up.

Safety Committee

- Review the near misses at the safety committee meetings.

Supervisors

- Support employees that report near misses.
- Do not dismiss any near miss report.
- Do not retaliate or reprimand any employee that reports a near miss.

Employees

- Report near misses as they occur.

BEST PRACTICES IN ESTABLISHING A NEAR MISS REPORTING SYSTEM

- Leadership must establish a reporting culture reinforcing that every opportunity to identify and control hazards, reduce risk and prevent harmful incidents must be acted on.
- The reporting system needs to be non-punitive and, if desired by the person reporting, anonymous.
- Investigate near miss incidents to identify the root cause and the weaknesses in the system that resulted in the circumstances that led to the near miss.
- Use investigation results to improve safety systems, hazard control, risk reduction, and lessons learned. All of these represent opportunity for training, feedback on performance and a commitment to continuous improvement.
- Near miss reporting is vitally important to preventing serious, fatal and catastrophic incidents that are less frequent but far more harmful than other incidents.
- Make the reporting process easy, consider setting up an email account i.e. Safety@organzaiton.com
- Make the forms available to employees in easily accessible areas of the facility or electronically.
- Also ensure to provide the forms in all the necessary languages of your organization.

KEY POINTS

- Incidents occur every day at the workplace that could result in a serious injury or damage.
- A near-miss program may help prevent future incidents.
- One problem that companies must overcome is employee's fear of being blamed after reporting a near miss.
- Employers need to make the process of reporting a near miss as easy as possible.

WHY SHOULD EMPLOYEES IMPLEMENT NEAR MISS REPORTING SYSTEMS?

Near miss reporting systems:

- Capture sufficient data for statistical analysis, correlation studies, trending, and performance measurement (improvement over baseline).
- Provide convenient opportunity for "employee participation," a basic component of a successful safety management system.
- Create an open culture whereby everyone shares and contributes in a responsible manner to their own safety and that of their fellow workers.
- Can be considered to be a leading indicator of performance used in balance with other leading and lagging measures of performance.

HOW CAN EMPLOYEES ENCOURAGE WORKERS TO PARTICIPATE IN NEAR MISS REPORTING?

- Create a policy and procedure that is communicated to all employees with the backing of senior management.
- Promote a culture of reporting with the support and help of all managers and supervisors.
- Educate employees on the reason why near miss reporting is a necessity, the important role that they play, and the process for reporting.
- Ensure that the near miss reporting process is easy to understand and use.
- Continue to communicate on the importance of near miss reporting encouraging the participation of all employees.
- Use the near miss reporting as a leading indicator and report back to the organization on the positive steps taken to improve workplace safety.
- Reinforce with employees that near miss reporting is non-punitive.
- Consider incentives that encourage reporting and enhance the culture. (Incentives that have the potential to discourage reporting must be avoided.)
 - An example of a good incentive is one that recognizes the participation of workers in the recognition and reporting of hazards. This activity helps to enhance a reporting culture, engage workers in meaningful safety activities, and continue a process of risk reduction.

- An example of a poor incentive is one that recognizes supervisory and management performance based on outcome OSHA recordable rates. This type of incentive has been shown to suppress reporting and can lead to punitive actions that further undermine safety efforts.
- Include training for new employees as a part of their orientation.
- Celebrate the success and value of the near miss reporting process with all employees

NEAR MISS FORM

The near miss form is attached to this program is to be used to identify near misses when they occur. The employee fills out the necessary information and it is turned in to the coordinator of the near miss program or their supervisor. These forms should be reviewed at the committee meeting and corrective action should be taken.

The form uses an easy to understand Red, Yellow, Green color scheme. The colors are defined as:

Red – Stop Work & Report – this is an event that could lead a serious injury or fatality if not corrected immediately. Stop work & do not continue until the hazard has been removed from the work area. Example: item fell off of overhead crane, no one was under the object but serious injury or death could have occurred under the correct conditions.

Yellow – Use Caution & Report – this is an event that could lead to moderate injury or damage if not corrected. Employees should be cautious of the hazard(s) identified. It is suggested that the hazard is discussed with all employees involved in the process to ensure all employees are aware of the hazard and temporary measures to be put in place until the corrective action can be implemented. Example: item fell off shelving no one was injured but they could have been.

Green – Continue & Report – this is an event that may cause minor injury or damage if not corrected. Employees should be cautious of the hazard(s) identified. The near miss should be reported and corrective action should be followed up with in the immediate future. Example: Damaged guard on a piece of equipment where only a scratch would happen if an employee came in contact.

APPENDIX A:

NEAR MISS REPORT

NEAR MISS REPORT

CHECK APPROPRIATE LEVEL

RED
STOP WORK AND
REPORT

☐

YELLOW
USE CAUTION AND
REPORT

☐

GREEN
CONTINUE AND REPORT

☐

LOCATION:

TIME:

DATE:

DEPARTMENT:

CITY/STATE:

GROUND SURFACE AND WEATHER CONDITION (IF APPLICABLE):

REPORTED BY (OPTIONAL):

DESCRIBE NEAR MISS:

ACTIONS TAKEN:

ROOT CAUSE(S) – REQUIRED FOR RED:


SUPERVISOR REVIEW:

DATE:

WERE PICTURES TAKEN

YES:

NO:

		David Mechanical Systems, Inc.		
Policy No. 17		Personal Protective Equipment Policy		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

The purpose of the Personal Protective Equipment (PPE) Program is to identify hazards that require the use of PPE and the proper type of equipment to be used. The proper selection, use and maintenance of PPE can help protect David Mechanical Systems, Inc. (David Mechanical) employees from the risk of injury by creating a barrier against workplace hazards. Personal protective equipment is not a substitute for good engineering controls. Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required, and that such use will lessen the likelihood of occupational injury and/or illness.

SCOPE

This program applies to all David Mechanical Systems, Inc. (David Mechanical) employees who are required to use PPE. The program addresses only minimum requirements of eye, face, head, foot, hand and dermal protection. Separate programs exist for respiratory and hearing protection, since the need for participation in these programs is established through industrial hygiene monitoring.

RESPONSIBILITIES

Management is responsible for the overall development, implementation, and administration of the Personal Protective Equipment Program. This includes:

- Ensuring the workplace hazard assessments are conducted to determine the presence of hazards that necessitate the use of PPE.
- Providing appropriate PPE and making it available to employees.
- Ensuring all employees receive proper training on the selection, use and maintenance of PPE.

The **Safety Coordinator** is responsible for the development, implementation, and administration of the Personal Protective Equipment Program. This includes:

- Conducting workplace assessments to identify hazards and types of PPE that would protect employees from those hazards.
- Conducting periodic workplace reassessments as requested by supervisors and/or as determined by management.
- Maintaining records of hazard assessments.
- Providing training and technical assistance to supervisors on the proper use, care, and cleaning of approved PPE.
- Providing or coordinating employee training on the selection, use and maintenance of PPE.
- Periodically reevaluating the suitability of previously selected PPE.
- Reviewing, updating, and evaluating the overall effectiveness of the PPE Program.

Foremen/Supervisors have the primary responsibility for implementation of the PPE Program in their work area. This involves:

- Ensuring employees are provided and using appropriate PPE.
- Ensuring employees are trained on the proper use, care, and cleaning of PPE.
- Assisting the Safety Coordinator in identifying and evaluating hazards and necessary PPE.
- Notifying management and Safety Coordinator when new hazards are introduced or when

- processes are added or changed.
- Ensuring defective or damaged equipment is immediately replaced.
- Ensuring any employee-owned PPE is adequate and properly maintained.
- Contact the Safety Coordinator if there are any questions in regards to PPE use.

Employees, as users, are responsible for following the requirements of the PPE Program. This involves:

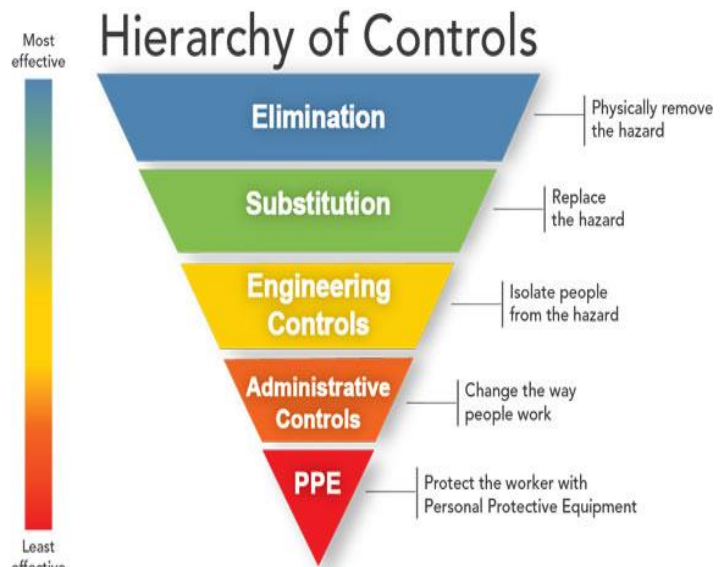
- Wearing the PPE as required.
- Attending required training sessions.
- Informing their supervisor of the need to repair or replace PPE.
 - Informing their supervisor if they intend to utilize any employee-owned PPE.

HAZARD ASSESSMENT AND EQUIPMENT SELECTION

Although not specifically required by the OSHA Construction Standard, hazard assessments should be conducted for all work areas so the proper protective equipment can be selected if needed.

Based upon the hierarchy of controls, use of PPE is a last resort. Personal protective equipment alone should not be relied upon to provide protection against hazards but should be used in conjunction with engineering controls, administrative controls, and procedural controls. It is the responsibility of the Safety Coordinator and the area Foreman/Supervisor to complete one form for each work area.

Once the hazards of a workplace have been identified, management will determine the suitability of the PPE currently available. New or additional PPE will be selected by management to ensure the level of protection is adequate to protect employees from identified hazards. Care will be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards will be provided or recommended for purchase.



PROTECTIVE DEVICES

All PPE will be of safe design and construction for the work to be performed and will be maintained in a sanitary and reliable condition. Only those items of protective clothing and equipment that meet ANSI (American National Standards Institute) or NIOSH (National Institute of Safety & Health) standards will be accepted for use.

Careful consideration will be given to comfort and fit in order to ensure the PPE will be used. Protective devices are generally available in a variety of sizes. Care will be taken to ensure the right size is selected.

Eye and Face Protection

Prevention of eye injuries requires all persons who may be in eye hazard areas wear protective eyewear. This includes employees, visitors, contractors, or others passing through an identified eye hazard area. A sufficient quantity of eye protection will be provided for visitors entering areas where eye protection is required. If personnel wear "non-safety" prescription glasses, they will be provided a suitable eye protector to wear over them. OSHA regulations require each affected employee who wears prescription lenses while engaged in operations involving eye hazards to wear eye protection that either incorporates the prescription into its design or wear eye protection over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

Suitable protectors will be used when employees are exposed to hazards from flying particles, chemical liquids, gases or vapors, or potentially injurious light radiation.

- Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment.
- Side protectors will be used when there is a hazard from flying objects.
- Goggles and face shields will be used when there is a hazard from chemical splash.
- Face shields will only be worn over primary eye protection (safety glasses or goggles).
- For those employees who wear prescription lenses, eye protectors will either incorporate the prescription in the design or will fit properly over the prescription lenses.
- Protectors will be marked to identify the manufacturer.
- Equipment fitted with appropriate filter lenses will be used to protect against light radiation. Tinted or shaded lenses are not considered filter lenses unless they are marked or identified as such.

Emergency eyewash facilities, meeting the requirements of ANSI Z358.1, will be provided in all areas where the eyes of an employee will be exposed to corrosive materials. All emergency eyewash facilities will be located where they are easily accessible in an emergency.

Safety Glasses or Safety Goggles will be worn on the construction sites when drilling overhead or when operations present potential eye or face injury.

Employees involved in welding operation must wear a welding shield or goggles with the proper filter lenses or plates for the proper shade number.

Foot Protection

Safety shoes will be worn where identified during the hazard assessment of each particular work area.

- Safety shoes or boots, with impact protection, are required to be worn in work areas where carrying or handling materials such as packages, objects, parts or heavy loads, which could be dropped; and for other activities where objects might fall onto the feet.
- Safety shoes or boots, with compression protection, are required for work activities involving skid trucks (manual materials handling cars) or other activities in which materials or equipment could potentially roll over the feet of an employee.
- Safety shoes or boots, with puncture protection, are required where sharp objects such as nails, wire, tacks, screws, large staples, or scrap metal that can be stepped on by employees.

Sturdy work boots with ankle support will be worn on all job-sites. Tennis shoes are not allowed.

Hand Protection

Suitable gloves will be worn when hazards from chemicals, cuts, lacerations, abrasions, punctures, burns, or harmful temperature extremes are present. Glove selection will be based on performance characteristics of the gloves, conditions, duration of use, and hazards present.

In selecting gloves for use during chemical exposure the first consideration will be the exact nature of substances encountered. Read the instructions and warnings found on chemical containers and/or Material Safety Data Sheets (MSDS) prior to working with any chemical. Recommended glove types are usually listed in the section for personal protective equipment.

Leather gloves should be worn general work activities. When handling sharp objects, cut resistant gloves should be worn (ANSI or EN rating of 3 or greater).

Head Protection

Hard Hats will be worn on all construction sites where they are required by the general contractor or where there is a potential head injury hazard e.g. where there are people working above.

Hearing Protection

Hearing protection will be worn whenever operating hand powered tools in excess of 85 dB.

Respiratory Protection

Respiratory protection is required when performing a Silica Table 1 task where respirator use is required (see Silica program for specific information). Respirators can also be worn on a voluntary basis, refer to the respiratory protection program for additional details.

Other

High Visibility:

- Employees working near moving vehicles will wear vests designed to reflect light and make them more visible. When working in Minnesota around earth moving equipment, ANSI Class II vests will be worn.

General Clothing

- Shirts and long pants must be worn on each job site.

CLEANING AND MAINTENANCE

All PPE will be kept clean and properly maintained. Cleaning is particularly important for eye and face protection because dirty or fogged lenses can impair vision. PPE should be inspected, cleaned, and maintained at regular intervals so the PPE provides the requisite protection. Personal protective equipment should not be shared between employees until it has been properly cleaned and sanitized. PPE will be distributed for individual use whenever possible.

TRAINING

Any employee who is required to wear PPE will receive training in the proper use and care of the PPE. Initial training will be provided as it is issued. Periodic retraining will be offered to employees and Foremen/Supervisors as needed. Training will include the following subjects:

- When it is necessary for PPE to be worn.
- What PPE is necessary?
- How to properly don, doff, adjust, and wear PPE.
- The limitations of PPE.
- The proper care, maintenance, useful life, and disposal of the PPE.

After completion of the training employees will be required to demonstrate they understand the components of the Personal Protective Equipment Program and how to use PPE properly, or they will be retrained.

RECORDKEEPING

Written records will be kept with the names of the persons trained, the type of training provided, and the dates when training occurred. Training records will be maintained on each employee a minimum of 3 years. The Hazard Assessment Certification Forms for each work area will be reviewed and updated periodically.

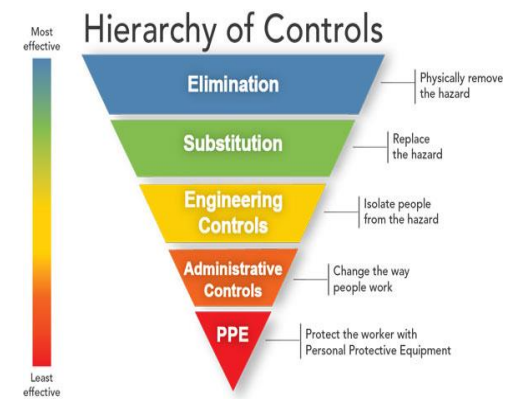
APPENDIX A

HAZARD ASSESSMENT TEMPLATE

PERSONAL PROTECTIVE EQUIPMENT (PPE) HAZARD ASSESSMENT INSTRUCTIONS

Although not specifically required by the OSHA Construction Standard, hazard assessments should be conducted for all work areas so the proper protective equipment can be selected if needed.

Based on the hierarchy of controls, PPE is a last resort. Personal protective equipment alone should not be relied upon to provide protection against hazards but should be used in conjunction with engineering controls, administrative controls, and procedural controls. This document addresses eye, face, head, hand, foot, torso, respiratory, noise, and fall protection.



GENERAL GUIDELINES AND INSTRUCTIONS

The PPE Hazard Assessment can be conducted for an area, a job category or for an individual. The evaluator shall include their name, department being assessed, and the date.

Step 1: Inform employees of the process:

- Affected employees from each work area that is being assessed should be involved in the process. Discuss the reasons for the survey and the procedures being used for the assessment. Review the job procedures, potential hazards and the PPE currently in use.

Step 2: Review data:

- Reports of work-related injuries or illnesses, near-miss events and reported safety concerns are sources of data that can provide helpful information for assessing hazards.

Step 3: Conduct a walk-through survey:

- The purpose of the survey is to identify sources of hazards to employees. Observe the following: layout of the workplace, location of the employees, work operations, hazards and places where PPE is currently used including the device and reason for use. Using the form, check the type of hazard(s) present within each section. Consideration should be given to
 1. Impact (falling/flying objects)
 2. Penetration (sharp objects piercing foot/hand)
 3. Compression (roll-over or pinching objects)
 4. Chemical exposure (inhalation, ingestion, skin contact, eye contact or injection)
 5. Temperature extremes (heat/cold)
 6. Dust/flying debris (grinding, chipping, sanding, etc.)
 7. Fall (slip/trip, scaffolds, elevated work)
 8. Radiation (non-ionizing: UV/IR/light, welding, brazing, cutting, boilers, etc.)
 9. Noise (mechanical rooms, machines, power tools, equipment, etc.)
 10. Electrical (shock, short circuit, arcing, static)

Step 4: Select PPE:

- After considering and/or planning for other controls, select the PPE which provides at least the minimum level of protection required to protect employees from the hazards. Using the form, note the appropriate PPE in the required PPE box.

Step 5: Make Document Accessible:

- Once completed, signed and dated, store the form either electronically or as a hard copy in a location easily accessible to employees and inspectors.






Step 6: Revise Protocol:




- Update protocols with the new or modified PPE requirements if applicable.


Step 7: Reassess the workplace as necessary by identifying and evaluating:

1. New equipment and processes
2. Accident records
3. Suitability of previously selected PPE

PPE HAZARD ASSESSMENT FORM

TASK/DESCRIPTION		DATE							
JOB TITLE		LOCATION							
HAND HAZARDS 	<p>Hand injury can be caused by: work with chemicals or acids, exposure to cut or abrasion hazards (for example, during demolition, renovation, woodworking, or food service preparation), work with very hot or cold objects or materials, and exposure to sharps.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Hazards</th> <th style="width: 33%;">Description</th> <th style="width: 33%;">Required PPE</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Cut/Puncture/Abrasion <input type="checkbox"/> Electric shock Other: </td> <td></td> <td></td> </tr> </tbody> </table>			Hazards	Description	Required PPE	<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Cut/Puncture/Abrasion <input type="checkbox"/> Electric shock Other:		
Hazards	Description	Required PPE							
<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Cut/Puncture/Abrasion <input type="checkbox"/> Electric shock Other:									
BODY HAZARDS 	<p>Injury of the body (torso, arms, or legs) can occur during: exposure to chemicals, acids, or other hazardous materials; abrasive blasting; welding, cutting, or brazing; chipping, sanding, or grinding; use of chainsaws or similar equipment; and work around electrical arcs.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Hazards</th> <th style="width: 33%;">Description</th> <th style="width: 33%;">Required PPE</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Cut/Puncture/Abrasion <input type="checkbox"/> Electric shock Other: </td> <td></td> <td></td> </tr> </tbody> </table>			Hazards	Description	Required PPE	<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Cut/Puncture/Abrasion <input type="checkbox"/> Electric shock Other:		
Hazards	Description	Required PPE							
<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Cut/Puncture/Abrasion <input type="checkbox"/> Electric shock Other:									
FALL HAZARDS 	<p>Personnel may be exposed to fall hazards when performing work on a surface with an unprotected side or edge that is 6 feet or more above a lower level, or 10 feet or more on scaffolds. Fall protection may also be required when using vehicle man lifts, elevated platforms, tree trimming, performing work on poles, roofs, or fixed ladders.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Hazards</th> <th style="width: 33%;">Description</th> <th style="width: 33%;">Required PPE</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> Fall Hazard Other: </td> <td></td> <td></td> </tr> </tbody> </table>			Hazards	Description	Required PPE	<input type="checkbox"/> Fall Hazard Other:		
Hazards	Description	Required PPE							
<input type="checkbox"/> Fall Hazard Other:									
NOISE HAZARDS 	<p>Personnel may be exposed to noise hazards when working in mechanical rooms; machining; grinding; sanding; cage washing; dish washing; working around pneumatic equipment, grounds equipment, generators, chillers, motors, saws, jackhammers, or similar equipment.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Hazards</th> <th style="width: 33%;">Description</th> <th style="width: 33%;">Required PPE</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> Power Tools <input type="checkbox"/> Powder Actuated Tools Other: </td> <td></td> <td></td> </tr> </tbody> </table>			Hazards	Description	Required PPE	<input type="checkbox"/> Power Tools <input type="checkbox"/> Powder Actuated Tools Other:		
Hazards	Description	Required PPE							
<input type="checkbox"/> Power Tools <input type="checkbox"/> Powder Actuated Tools Other:									
RESPIRATORY HAZARDS 	<p>Personnel may be exposed to respiratory hazards that require the use of respirators: during emergency response, when using certain chemicals outside of a chemical fume hood; when working with hazardous powders; when entering fume hood plenums, when working with animals; when applying paints or chemicals in confined spaces; when welding, cutting, or brazing on certain metals; and when disturbing asbestos, lead, silica, or other particulate hazards.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Hazards</th> <th style="width: 33%;">Description</th> <th style="width: 33%;">Required PPE</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> Chemicals <input type="checkbox"/> Particulate/Dust/Fume Other: </td> <td></td> <td></td> </tr> </tbody> </table>			Hazards	Description	Required PPE	<input type="checkbox"/> Chemicals <input type="checkbox"/> Particulate/Dust/Fume Other:		
Hazards	Description	Required PPE							
<input type="checkbox"/> Chemicals <input type="checkbox"/> Particulate/Dust/Fume Other:									

EYE HAZARDS 	Tasks that can cause eye injury include: working with chemicals or acids; UV lights; chipping, sanding, or grinding; welding; furnace operations; and metal and wood working.		
	<i>Hazards</i>	<i>Description</i>	<i>Required PPE</i>
	<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Dust/Flying Debris <input type="checkbox"/> UV/IR Radiation Other:		
HEAD/NECK/FACE HAZARDS 	Tasks that can cause head/neck/face injury include: working below other workers who are using tools or materials that could fall, working on energized electrical equipment or utilities, and working in trenches or confined spaces.		
	<i>Hazards</i>	<i>Description</i>	<i>Required PPE</i>
	<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Dust/Flying Debris <input type="checkbox"/> Falling objects <input type="checkbox"/> UV/IR Radiation Other:		
FOOT HAZARDS 	Tasks that can cause foot injury include: exposure to chemicals or acids, welding or cutting, materials handling, renovation or construction, and electrical work.		
	<i>Hazards</i>	<i>Description</i>	<i>Required PPE</i>
	<input type="checkbox"/> Chemicals <input type="checkbox"/> Heat/Cold <input type="checkbox"/> Impact/Compression <input type="checkbox"/> Puncture <input type="checkbox"/> Slippery/Wet Surfaces Other:		
I certify that the above PPE Hazard Assessment was performed to the best of my knowledge and ability.			
EVALUATION DATE			
EVALUATOR NAME			
EVALUATOR TITLE			
EVALUATOR SIGNATURE			

		Davis Mechanical Systems, Inc.		
Policy No. 18		Respiratory Protection Program		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

Davis Mechanical Systems, Inc. (Davis Mechanical) has determined that employees involved in tasks where they are potentially exposed to respirable crystalline silica may be required to wear a respirator as described below.

Engineering controls, such as ventilation are the first line of defense at Davis Mechanical; however, engineering controls are not always feasible. In these situations, respirators and other protective equipment must be used.

SCOPE AND APPLICATION

This program applies to all employees who are required to wear respirators during normal work operations. All employees engaged in certain processes or tasks (as outlined in the table below) must be enrolled in this program.

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be provided by the company.

Table 1: Voluntary and Required Use

Respirator Required	Process

RESPONSIBILITIES

Safety Coordinator

The Safety Coordinator is responsible for administering the respiratory protection program. Duties of the Safety Coordinator include:

- Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- Selection of respiratory protection options.
- Arranging for and/or conducting training.
- Maintaining records required by the program.
- Updating written program, as needed.

- Ensuring that employees have received appropriate training, fit testing, and annual medical evaluation.
- Ensuring the availability of appropriate respirators and accessories.
- Ensuring that respirators fit well and do not cause discomfort.

Supervisor/Foreman

- Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- Ensuring proper storage and maintenance of respiratory protection equipment.
- Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.

Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
- Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
- Inform their supervisor or the Safety Coordinator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program

RESPIRATOR SELECTION PROCEDURES

The appropriate respirator will be selected based upon the respiratory hazard to which the employee will be exposed. Only respirators approved by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

MEDICAL QUESTIONNAIRE

Employees who are required to wear respirators must complete a Medical Questionnaire Form which will be evaluated by a physician/Occupational Medicine clinic before you are permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing to fill out the medical questionnaire will not be allowed to work in an area requiring respirator use. A licensed physician will complete medical evaluations if needed based on the information provided on your questionnaire.

Davis Mechanical will utilize the following on-line resource for completing the medical questionnaire:

- <http://www.respexam.com/>

Medical evaluation procedures are as follows:

- The medical evaluation will be conducted using the questionnaire provided on-line at <http://www.respexam.com/>
- The Safety Coordinator will provide a copy of this questionnaire to all employees requiring medical evaluations.
- To the extent feasible, the company will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
- All affected employees will be given a copy of the medical questionnaire to fill out, along with a stamped and addressed envelope for mailing the questionnaire to the company physician. Employees will be permitted to fill out the questionnaire on company time.

- Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary physician reviewing the questionnaire.
- All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
- After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:
- Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
- The physician or supervisor informs the Safety Coordinator that the employee needs to be reevaluated;
- Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation;
- A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

A list of Davis Mechanical employees currently included in medical surveillance is available upon request. All examinations and questionnaires are to remain confidential between the employee and the physician.

FIT TESTING

Fit testing is required for employees wearing Air Purifying Respirators for exposure to potentially harmful substances. Employees who are required to wear half mask respirators will be fit tested:

- Prior to being allowed to wear the respirator
- Annually
- When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with various sizes of respirators so that they may find an optimal fit as required.

The Safety Coordinator will be responsible for conducting fit tests following the OSHA approved Protocol in [Appendix \(A\) of the OSHA Respiratory Protection Standard](#).

GENERAL USE PROCEDURES

- Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
- All employees shall conduct user seal checks each time that they wear their respirator. Employees shall use either the positive or negative pressure check (depending on which test works best for them).
- All employees shall be permitted to leave the work area to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding their ability to work, change filters or cartridges, replace parts, or to inspect respirator if it stops functioning as intended. Employees should notify their supervisor before leaving the area and inform them of any deficiencies with their respirator.
- Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.
- In some cases, Davis Mechanical may provide respirators for use on a voluntary basis. Voluntary use is only permitted when the amount of a potentially hazardous substance does not exceed the limits set by applicable OSHA standards. Any employee that chooses to wear a respirator on a voluntary use basis is required to complete the Voluntary Use Form located in Appendix A.

RESPIRATOR MALFUNCTION

Air Purifying Respirator Malfunction:

For any malfunction of a respirator (e.g., such as breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended, and go to the designated safe area to maintain the respirator. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

CLEANING

Respirators are to be regularly cleaned and disinfected using disinfectant wipes. Respirators issued for the exclusive use of an employee shall be cleaned and disinfected after each day of use on the job.

The following procedure is to be used when cleaning and disinfecting respirators:

- Disassemble respirator, removing any filters, canisters, or cartridges.
- Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents.
- Rinse completely in clean warm water.
- Wipe the respirator with disinfectant wipes (Benzalkonium Chloride) to kill germs.
- Air dry the respirator in a clean area.
- Reassemble the respirator and replace any defective parts.
- Place in a clean, dry plastic bag or other air tight container.

Note: The Safety Coordinator will ensure an adequate supply of appropriate cleaning and disinfecting material in respirator storage container. If supplies are low, employees should contact their Supervisor who will inform the Safety Coordinator.

MAINTENANCE

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use.

No components will be replaced or repairs made beyond those recommended by the manufacturer.

The following checklist will be used when inspecting respirators:

- Facepiece: cracks, tears, or holes. Facemask distortion, cracked or loose lenses/faceshield
- Headstraps: breaks or tears, broken buckles
- Valves: residue or dirt, cracks or tears in valve material
- Filters/Cartridges: approval designation, gaskets, cracks or dents in housing, proper cartridge for hazard

Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respirator facepiece to prevent any eye or skin irritation, to replace the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the facepiece or if they detect any other damage to the respirator or its components.

CHANGE SCHEDULES

Employees wearing air purifying respirators shall change the cartridges on their respirators as recommended by the manufacturer.

STORAGE

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations (including filtering facepiece respirators). Each employee will clean and inspect their own respirator in accordance with the provisions of this program and will store their respirator in plastic containers. Each employee will have his/her name on the container, and that container will only be used to store that employee's respirator. Once a disposable filtering facepiece respirator is no longer needed, the straps will be removed and it will be disposed of properly.

A replacement supply of respirators and respirator components (cartridges) will be stored in the following locations:

- Davis Mechanical's corporate office
- Jobsite trailer and/or gang box (as required)

DEFECTIVE RESPIRATORS

Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor. Supervisors will give all defective respirators to the Safety Coordinator. The Safety Coordinator will decide whether to:

- Temporarily take the respirator out of service until it can be repaired
- Perform a simple fix on the spot such as replacing a headstrap
- Dispose of the respirator due to an irreparable problem or defect

When a respirator is damaged or broken, the employee will be given a replacement of similar make, model, and size.

TRAINING

The Safety Coordinator will provide training to respirator users and their supervisors on the contents of the Davis Mechanical Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection standard. Workers will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees that must wear respirators. The training course will cover the following topics:

- Davis Mechanical Respiratory Protection Program
- Respiratory hazards encountered at Davis Mechanical and their health effects
- Proper selection and use of respirators
- Limitations of respirators
- Respirator donning and user seal (fit) checks
- Fit testing
- Emergency use procedures
- Maintenance and storage
- Medical signs and symptoms limiting the effective use of respirators

Employees will be retrained annually or as needed. Employees must demonstrate their understanding of the topics covered in the training through hands-on demonstration the respirator use. Respirator training will be documented by the Safety Coordinator, and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

PROGRAM EVALUATION

Management will conduct periodic evaluations of the jobsite to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators, site inspections, etc.

Problems identified with the Respiratory Protection Program will be promptly corrected by management.

DOCUMENTATION AND RECORDKEEPING

A written copy of this is kept in the Safety Coordinator's office and is available to all employees who wish to review it. Also maintained in the Safety Coordinator's office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The Safety Coordinator will also maintain copies of the medical records for all employees covered under the respirator program. The completed medical questionnaire and the physician's documented findings are confidential and will remain with the physician. The company will only retain the physician's written recommendation regarding each employee's ability to wear a respirator.

APPENDIX A: VOLUNTARY RESPIRATOR USE FORM

Voluntary Respirator Use Form

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

The following steps are required:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke. Nor will it protect against low levels of oxygen.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

By signing below, I acknowledge that my wearing of a respirator at Davis Mechanical for the work task noted is voluntarily. I also acknowledge that I understand the contents of this form and that I will comply with the requirements. I further acknowledge that I have read any manufacturer's instructions available and that I have received instructions for properly fitting the respirator that I have chosen to wear and keeping clean/obtaining an unused one.

Respirator brand and model: _____

Work task: _____

Employee Printed Name _____ Date _____

Employee Signature _____ Manager Signature _____

This document is intended to comply with the requirements of [29 CFR 1910.134 App D](#)

Voluntary use of a half-face negative pressure cartridge respirator also requires a respirator medical evaluation. Voluntary use of a filtering face piece respirator does not require a respirator medical evaluation.

APPENDIX B:

RESPIRATOR INFORMATION

3M FILTERING FACEPIECE RESPIRATORS

Helping You Wear it Right

Wearing Your Filtering Facepiece Respirator

1



Place the respirator over your nose and mouth. Be sure the metal nose clip is on top. With models 8210 or 07048, pre-stretch the straps before wearing.

2



Pull the top strap over your head until it rests on the crown of your head above your ears.

3



Pull the bottom strap over your head until it rests just below your ears.

4



Using both hands starting at the top, mold the metal nose clip around your nose to achieve a secure seal.



Filtering Facepiece
Valved Respirator

Filtering Facepiece
Non-Valved Respirator

Check the Seal of Your Filtering Facepiece Respirator Each Time You Don the Respirator.



Positive Pressure User Seal Check

For Non-Valved Respirators

Place both hands completely over the respirator and *exhale*. The respirator should bulge slightly. If air leaks between

the face and faceseal of the respirator, reposition it and readjust the nose clip for a more secure seal. If you cannot achieve a proper seal, **do not** enter the contaminated area. See your supervisor.



Negative Pressure User Seal Check

For Valved Respirators

Place both hands over the respirator and *inhale* sharply. The respirator should collapse slightly. If air leaks between the


face and faceseal of the respirator, reposition it and readjust the nose clip for a more secure seal. If you cannot achieve a proper seal, **do not** enter the contaminated area. See your supervisor.

	WARNING
Respiratory Products	
These respirators help protect against certain airborne contaminants. Before use, the wearer must read and understand the <i>User Instructions</i> provided as a part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards 294.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. Misuse may result in sickness or death. For proper use, see packaging instructions, supervisor, or call 3M OH&ESD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.	

General Offices
3M Center
St. Paul, MN 55144-1000

Please recycle. Printed in U.S.A.
© 3M 2012. All rights reserved.
70-0707-9706-6



 DAVIS MECHANICAL SYSTEMS		Davis Mechanical Systems, Inc.		
Policy No. 19		Return to Work Policy		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

POLICY

Davis Mechanical Systems, Inc. supports the practice of bringing injured employees back to work, as soon as they are medically able, to a position in our organization compatible with any physical restrictions they may have. We believe this practice serves the best interests of our employees and organization.

The prompt return of injured employees to positions within their medical restrictions will minimize the impact of work-related injuries. Coming back to work early helps employees remain functional as they recover while providing our organization with the valuable use of employees' talents. It also helps control workers' compensation costs.

If you are injured at work, report the injury to your supervisor immediately – no matter how minor the injury is. Your supervisor will report it to our organization's workers' compensation claims coordinator within 24 hours. Any questions concerning workers' compensation should be directed to this individual.

Claims Coordinator _____ **Phone** _____

Your Supervisor and/or Human Resources Department will help arrange for medical treatment following an injury. Prompt, quality medical treatment can be assured through the use of our primary care clinic.

Clinic _____ **Phone** _____

Current positions may be modified to fit the medical limitations of injured employees by modifying workstations, altering specific tasks or working reduced hours. If this is not possible, temporary transitional jobs may be made available either with your department or through a temporary assignment with another department.

Examples of these transitional jobs or tasks include:

This return-to-work program is an important part of our organization's commitment to manage work-related injuries in a way that's best for our employees and for this organization.

APPENDIX A:

EMPLOYEE EXPECTATIONS LETTER

Date

Dear *Employee*,

Davis Mechanical Systems, Inc. strives to return its employees who are injured on-the-job to full-duty work as soon as they're medically able. We can provide temporary modified work that fits within your medical restrictions. Based on your current restrictions of _____ we are able to accommodate you in a transitional position. Ultimately, our goal is to help you heal and get you back to your regular job.

We expect you to report to work _____ *through* _____. Your shift begins at ____ *am* and ends at ____ *pm*. Depending on availability of work, this may change; however, this change will be informed to you by your Supervisor, (*supervisor name*). You will be paid (*\$/hour*). The job duties that are within your restrictions include _____ plus any additional responsibilities that may be assigned that are within your restrictions. We care about your safety and well-being. You understand that you are to notify your immediate supervisor if you are experiencing any problems in performance of any duties within your restrictions.

It is your responsibility to:

- Keep your Supervisor informed of your medical progress. Your Supervisor will expect to hear from you within one (1) working day following each doctor appointment.
- Provide your Supervisor with medical slips from each doctor's visit. If the doctor does not issue you a medical slip, you must request one.
- Keep all scheduled appointments and follow the doctor's recommendations and restrictions, both at work and at home.
- Doctor or physical therapy appointments should be scheduled outside working hours if possible. If not possible, notification should be given to_____.
- Work within the restrictions provided by the treating physician. If you are asked to perform duties outside of your restrictions, please inform _____.

We anticipate that will report to work on _____ at _____.

Please return this form to your employer by () indicating whether you will be returning to work.

<input type="checkbox"/>
<input type="checkbox"/>

I accept the position

I do not accept the position

Please call me with any questions or concerns.

Sincerely,

(*Name*)

Phone Number

Email

APPENDIX B:

LETTER TO TREATING PHYSICIAN

To: *Treating physician*

Re: *Davis Mechanical Systems, Inc.*
Injured Employee Name
Date of Injury:

Davis Mechanical Systems, Inc. provides light duty / modified duty work to our employees who become injured. We strive to return injured employees to work as soon as they are medically able, and within their medical restrictions, with the goal of helping them heal and return to their regular jobs.

Current positions can be modified to accommodate the medical limitations of injured employees by altering specific tasks, reducing work hours or modifying workstations and equipment. If this is not possible, we'll make transitional jobs available elsewhere within the company.

(I.E.: Currently, we can provide light duty work for up to 8 hours a day, 5 days a week that involves working in the shop, (one-handed duty) (sedentary) (alternate sitting/standing). The job duties entail...Wages will be...)

If you have any questions about the modified work to accommodate employee's restrictions, please call Human Resources at (Phone Number). Thank you for working with us to help our employee return to work as quickly as possible.

Sincerely,

(Name)
Davis Mechanical Systems, Inc.
Address
City, State Zip
(T)
(F)
Email

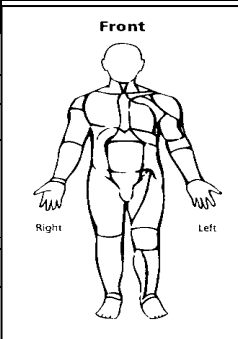
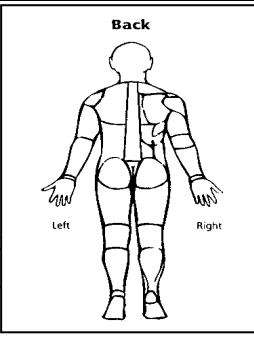
APPENDIX C:

**EMPLOYEE ACCIDENT INVESTIGATION
REPORT**

Department Manager, employee, and a First Responder complete this report by the end of the work shift. Please print clearly. Use complete, descriptive sentences.

Completed by Supervisor Name: _____

Employee information				TODAY'S DATE:	
LAST NAME	FIRST NAME	M.I.	BIRTH DATE HIRE DATE	SOCIAL SECURITY # <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	
ADDRESS			PHONE	DEPARTMENT	WITNESS NAME(S):
INJURY/INCIDENT DATE	TIME OF INJURY <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.	NAME OF PHYSICIAN/HEALTH CARE PROVIDER			
DATE INCIDENT/INJURY REPORTED		IF YOU DO NOT WISH TO RECEIVE MEDICAL TREATMENT AT THIS TIME, PLEASE SIGN:			

hazard identification and accident causes – Refer to Back of page for examples				
BODY PART(S) INVOLVED	LOCATION OF ACCIDENT	TYPE OF INJURY(IES)	INJURY CAUSE	EQUIPMENT INVOLVED
DESCRIBE HOW THE INCIDENT OCCURRED:				
TYPE OF INJURY AT THE TIME OF THE ACCIDENT – CLASS 1 (FIRST AID) Class 2 (REPORTABLE ACCIDENT) Class 3 (LOST TIME)				
IF EMPLOYEE RECEIVED MEDICAL ATTENTION LIST CLINIC NAME, DOCTOR NAME, and/or HOSPITAL NAME				
NEAR MISS	INCIDENT (NO INJURY)	INJURY		
EXPECTED RETURN TO WORK DATE:				
HOURS WORKED BEFORE ACCIDENT – THAT DAY, THAT WEEK				
HOW LONG ON PRESENT JOB/POSITION?				
LIGHT DUTY WORK AND MODIFIED HOURS ARE AVAILABLE ACCORDING TO DOCTOR SPECIFICATION				
Cause Analysis – refer to BACK PAGE FOR EXAMPLES				
IMMEDIATE ACCIDENT CAUSE(S):				
ROOT ACCIDENT CAUSE(S):				
EMPLOYEE SIGNATURE:				DATE

Corrective Action		
IMMEDIATE CORRECTIVE ACTION(S):	PERSON RESPONSIBLE	DATE COMPLETED
LONG TERM CORRECTIVE ACTION(S)	PERSON RESPONSIBLE	DATE COMPLETED

EMPLOYEE SIGNATURE: _____ DATE: _____

Guide to Complete Accident investigation

These lists are not all inclusive. Use additional descriptive information as needed.

BODY PART	LOCATION	TYPE OF INJURY	INJURY CAUSE
<ul style="list-style-type: none"> Hand (Right or Left) Thumb (Right or Left) Knee (Right or Left) Eye (Right or Left) Shoulder (Right or Left) Foot (Right or Left) Face Head Nose Neck Upper Back Lower Back 	<ul style="list-style-type: none"> Warehouse Production Office Lunch Room Trash Area Lobby Parking Lot – Back Parking Lot - Front Sidewalk Restroom Stairway Dining 	<ul style="list-style-type: none"> Scrape/Bruise Strain/Sprain Puncture Laceration Confusion Burn Chemical 	<ul style="list-style-type: none"> Slip/Fall Struck By Lifting or Moving Caught (in/on/between) Knife/Equipment Use Object in Eye Repetitive/Overuse

examples: IMMEDIATE ACCIDENT CAUSES

UNSAFE acts	UNSAFE conditions
<ul style="list-style-type: none"> Using defective equipment/tools Using equipment/tools improperly Working under the influence of drugs or alcohol Servicing equipment in motion Operating equipment without training/authority Operating equipment at improper settings Making safety devices inoperable Lifting improperly Engaging in horseplay Failing to warn co-workers of dangers Failing to secure equipment in place Failing to use personal protective equipment 	<ul style="list-style-type: none"> Congestion in the workplace Defective tools, equipment or supplies Hazardous atmospheric conditions: <ul style="list-style-type: none"> Gases, dusts, fumes, vapors, radiation Excessive noise Fire & explosion hazards Inadequate guards or supports Inadequate warning systems Poor housekeeping Poor illumination Poor ventilation

examples: Root Accident Causes

Management system factors	personal factors	environmental factors
<ul style="list-style-type: none"> No safety policy Accountability for safety not established Lack of leadership by example Inadequate work procedures Inadequate training Inadequate equipment or tool maintenance Safety was not considered in the purchase of: <ul style="list-style-type: none"> Supplies Tools Equipment Raw materials Services 	<ul style="list-style-type: none"> Behavioral Factors: <ul style="list-style-type: none"> Accident repeater Did not follow rules Horseplay Experience Factors: <ul style="list-style-type: none"> Insufficient knowledge Inadequate skills Lack of hazard awareness Uses unsafe practices Less than 6 months exp. Language or other comprehension barriers Physical Factors: <ul style="list-style-type: none"> Size Strength Stamina Emotional Factors <ul style="list-style-type: none"> Distracted/inattentive Anger issues Attitude Factors <ul style="list-style-type: none"> Risk taker Other performance issues Prior work history 	<ul style="list-style-type: none"> Facility Design: <ul style="list-style-type: none"> Equipment layout Electrical systems HVAC systems Access ways Material handling requirements Work process flow requirements Illumination Noise Location Factors: <ul style="list-style-type: none"> Geographic area Terrain Surrounding location condition Weather conditions

APPENDIX D:

RETURN TO WORK AUTHORIZATION FORM

RETURN TO WORK AUTHORIZATION FORM

Patient's Name (Last)

(First)

(MI)

Date of Injury/Illness

TO BE COMPLETED BY ATTENDING PHYSICIAN

DIAGNOSIS/CONDITION (Brief Explanation)

I saw and treated this patient on _____ and based on the above description of the patient's current medical problem:

1. ☐ Recommend his/her return to work with no limitations on _____
2. ☐ He/she may return to work on _____ with the following limitations:

CHECK BELOW ONLY AS IT RELATES TO ABOVE CONDITIONS

☐ **Sedentary Work.** Lifting 10 pounds maximum and occasionally lifting and/or carrying such articles such as ledgers and small tools. Although a sedentary job is defined as one which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.

☐ **Light Work.** Lifting 20 pounds maximum with frequent lifting and/or carrying of objects up to 10 pounds. Even though the weight lifting may be only a negligible amount, a job is in this category when it requires walking or standing to a significant degree or when it involves sitting most of the time with a degree of pushing and pulling of arm and/or leg controls.

☐ **Light Medium Work.** Lifting 30 pounds maximum with frequent lifting and/or carrying objects weighing up to 20 pounds.

☐ **Medium Work.** Lifting 50 pounds maximum with frequent lifting and/or carrying of objects weighing up to 25 pounds.

☐ **Medium Heavy Work.** Lifting 75 pounds maximum with frequent lifting and/or carrying of objects weighing up to 40 pounds.

☐ **Heavy Work.** Lifting 100 pounds maximum with frequent lifting and/or carrying objects weighing up to 50 pounds.

1) In an 8-hour work day, the patient may:

- a) Stand/Walk
- | | |
|------------------------------------|------------------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> 4-6 Hours |
| <input type="checkbox"/> 1-4 Hours | <input type="checkbox"/> 6-8 Hours |

- b) Sit
- | |
|------------------------------------|
| <input type="checkbox"/> 1-3 Hours |
| <input type="checkbox"/> 3-5 Hours |
| <input type="checkbox"/> 5-8 Hours |

- c) Drive
- | |
|------------------------------------|
| <input type="checkbox"/> 1-3 Hours |
| <input type="checkbox"/> 3-5 Hours |
| <input type="checkbox"/> 5-8 Hours |

2) Patient may use hand(s) for repetitive:

- | |
|--|
| <input type="checkbox"/> Single Grasping |
| <input type="checkbox"/> Fine Manipulation |
| <input type="checkbox"/> Pushing/Pulling |

3) Patient may use foot/feet for repetitive movement as in operating foot controls:

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

4) Patient may:

None Occasional Frequent
Continuous

- | | | | | |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Bend | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Twist | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Squat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Climb | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Crawl | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Reach | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |


Occasional <33%, Frequent 33-66%, Continuous 67-100%

OTHER INSTRUCTIONS AND/OR LIMITATIONS – INCLUDING PRESCRIBED MEDICATIONS

3. ☐ These restrictions are in effect until _____ or until patient is reevaluated on _____
4. ☐ He/she is totally incapacitated at this time. Patient will be reevaluated on _____
5. ☐ Referred to _____

Physician's Signature

Date

 DAVIS MECHANICAL SYSTEMS		Davis Mechanical Systems, Inc.		
Policy No. 20		Safety Committee		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

MISSION STATEMENT

The mission of the Davis Mechanical Systems, Inc. Safety Committee is to develop and promote a healthy and safe work environment for all employees and visitors to our facilities through the involvement of all individuals with regards to education, communication and safe work practices.

ACTIVITIES

The health and safety activities of the Safety Committee will include, but are not limited to, the following:

- Identify unsafe work practices and conditions and suggest appropriate remedies
- Conduct monthly safety inspections of the facilities, identify safety hazards
- Review Accident/Incident reports and suggest appropriate corrective actions
- Obtain and analyze available data on past injuries and illnesses and identify trends and suggest appropriate corrective actions
- Encourage feedback from all individuals with regard to health and safety related ideas, problems and solutions
- Develop written programs to ensure compliance with OSHA health and safety regulations
- Provide suggestions and recommendations for resolution of health and safety concerns

MEMBERS

The Safety Committee will consist of employees representing various departments from the shop floor and management members. Management Members shall not outnumber the Shop Floor Employees.

Employee representatives shall be nominated by their peers or appointed by the Facility Manager. Safety Committee members will serve a one-year term, excluding the Safety Coordinator. Employees will be nominated or appointed each year. Employees may serve multiple terms.

RESPONSIBILITIES

Supervisor/Foreman

- Enforce all safety and health rules and procedures
- Actively promote health and safety
- Allow time for committee members for safety committee meetings and assigned responsibilities
- Lead by example in following all health and safety rules
- Support committee decisions
- Coordinate the assignment of activities to committee members
- Provide timely feedback to the committee

Safety Coordinator

- Actively promote health and safety
- Act as communication liaison between management and the committee
- Facilitate the Safety Committee meetings
- Coordinate the assignment of activities to committee members

- Establish necessary deadlines based on member's input
- Follow-up on assigned responsibilities
- Prepare an annual report of the committee's accomplishments
- Train new committee members

Committee Members

- Actively promote health and safety
- Attend all Safety Committee meetings
- Bring safety and health concerns to committee meetings and/or to the attention of the affected employee's lead
- Serve as an example by following all safety rules and work practices

Employees


- Actively promote health and safety
- Bring health and safety concerns to his/her department lead, committee members or Operational Manager
- Learn and follow all health and safety rules and procedures
- Attend all health and safety training courses relevant to his/her job position

MEETINGS

- Meetings will be held monthly.
- Special meetings of the committee may be called by the Safety Coordinator upon his/her initiative.
- The minutes of the meeting will be given to each committee member and posted.

QUORUM

A quorum for the conduct of business at each meeting shall be a simple majority of the committee members.

		Davis Mechanical Systems, Inc.		
Policy No. 21		Trenching and Excavating		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Bestman	J. Bestman	1/24/2022

PURPOSE

The objective of the Davis Mechanical Systems, Inc., (Davis Mechanical) Trenching and Excavation Program is to establish minimum requirements for practices and procedures to protect employees from cave-in or earth collapse when working in trenches and excavations.

SCOPE AND APPLICATION

This program sets forth the practices required for trenches or excavations with a depth of five feet or greater along any portion of its length that will be entered by Davis Mechanical employees.

All excavations or trenches 5 feet or greater in depth shall be appropriately benched, shored, or sloped according to the procedures and requirements set forth in this policy.

RESPONSIBILITIES

Safety Coordinator

The Safety Coordinator has the primary responsibility for assisting Supervisor/Foreman(s) in implementation of this policy through coordinating training and consultation. This includes:

- Ensuring employees receive training;
- Providing trench protection systems; and,
- Supporting the use of barricades and other protective measures deemed prudent and necessary by the Excavation Competent Person.
- On site evaluation to monitor use of safe work practices and procedures;
- Assisting with atmospheric testing and equipment selection as needed;
- Providing or identifying appropriate training for Excavation Competent Person and staff;
- Providing technical assistance as needed; and,
- Reviewing and updating the program at least annually.

Supervisor/Foreman

Supervisors/Foremen have the primary responsibility for the implementation of the Trenching and Excavation Safety Policy on their jobsites. The Supervisor/Foreman has ultimate responsibility for the safety of the employees and general public affected by the excavation. This includes evaluation of the work to be performed, determination of the means of protection that will be used and adherence to the provisions of this policy as appropriate. The Supervisor/Foreman must ensure daily, or more often as required, that site conditions are safe for employees to work in excavations. The Supervisor/Foreman or a member of the work group must be a "competent person" as defined by OSHA.

Employees

Employees have the primary responsibility for working in accordance with the provisions of this policy. No employees should enter an excavation meeting the scope of this policy until authorized by the competent person.

DEFINITIONS

Benching	A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels.
Cave-in	The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.
Competent Person	One who is capable to identify existing and predictable hazards in the surroundings or working conditions that may affect employees and the general public, and who has authority to take prompt corrective measures to eliminate them.
Excavation Competent Person	<ul style="list-style-type: none">• Must be trained in and knowledgeable of excavation and trenching standard, and other programs that may apply (Employee Right-To-Know, Confined Space, and Respiratory Protection).• Must be capable of recognizing hazardous conditions and must have authority to stop work and ensure that hazards are corrected Performs and documents the 'Daily Excavation Inspection', and knows when inspections should be performed.• Must assure that the location of underground installations or utilities have been properly located.• Must identify and ensure the use of adequate protective systems, work methods and personal protective equipment (PPE) on the excavation site.
Excavation	Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.
Registered professional engineer (RPE)	Means a person who is registered as a professional engineer. Excavations in excess of 20' deep must be designed by an RPE.
Shield System	A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees with the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Also known as trench boxes or trench shields.
Sloping System	A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline varies with differences in such factors as the soil type, environmental exposure conditions, and application of surcharge loads.
Trench	A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, the excavation is also considered to be a trench.

PROCEDURES

Excavation Competent Person

A competent person shall be identified by name for all excavations that personnel may enter with a depth of five feet or greater at any portion.

Underground Utilities

Underground utilities must be located and marked before an excavation begins.

- **Minnesota Requirements:** Gopher State One Call (GSOC) can be contacted at 811, (651) 454-0002, (800) 252-1166. Locate requests can be made by the excavator at least 48 hours (excluding weekends and holidays) and up to 14 calendar days from the planned start of excavation. The locate marks are valid for 14 calendar days from the start date and time stated on the locate ticket, unless the locate markings become obscured or obliterated.
- **Wisconsin Requirements:** Diggers Hotline can be contacted at 811, or (800) 242-8511. Locate requests can be made by the excavator at least 3 working days in advance of a digging project. The locate marks are valid for the duration of the project provided they are properly maintained.

- **North Dakota Requirements:** North Dakota One Call can be contacted at 811, or (800) 795-0555. Locate requests can be made by the excavator at least 48 hours in advance of the digging project (excluding weekends and holidays). The locate marks are valid for 21 calendar days from the start date and time stated on the locate ticket, unless the locate markings become obscured or obliterated.
- **South Dakota Requirements:** South Dakota 811 can be contacted at 811, or (800) 781-7474. Locate requests can be made by the excavator at least 48 hours in advance of the digging project (excluding weekends and holidays). The locate marks are valid for 21 working days from the start date and time stated on the locate ticket, unless the locate markings become obscured or obliterated.
- **Iowa Requirements:** Iowa One call can be contacted at 811, or (800) 292-8989. Locate requests can be made by the excavator at least 2 working days in advance of the digging project. The locate marks are valid for 20 calendar days from the start date and time stated on the locate ticket, unless the locate markings become obscured or obliterated.

Each excavator on a jobsite is responsible for making their own locate requests, a Davis Mechanical locate request cannot be relied upon by an Excavation Subcontractor.

The location of sewers, telephone, fuel, electric, water lines, or any other underground installations that may be encountered during excavation work must be determined and marked prior to opening an excavation. The Supervisor/Foreman shall make arrangements as necessary with the appropriate utility agency for the protection, removal, shutdown, or relocation of underground installations.

If it is not possible to establish the exact location of these installations, the work may proceed with caution if detection equipment or other safe and acceptable means are used to locate the utility. Excavations must not endanger the underground installations or the employees engaged in the work. Barricades, shoring, suspension or other means as necessary to protect employees should protect utilities left in place.

PROTECTION OF THE PUBLIC

Excavations must be isolated from public access by a substantial physical barrier. Barricades, lighting and posting shall be installed as appropriate prior to the start of excavation operations. All temporary excavations shall be backfilled as soon as possible.

Guardrails, fences, or barricades should be installed around excavations adjacent to walkways, roads, paths or other traffic areas. Use of barricade tape alone is not considered a sufficient method of isolation when the excavation is unattended. Warning lights or other illumination shall be used as necessary for the safety of the public at night. Wells, holes, pits, and similar excavations must be effectively barricaded or covered and posted. Walkways or bridges used by the general public to cross excavations must be equipped with standard guardrails.

For additional information refer to the Davis Mechanical Public Safety Protection Policy.

SURFACE ENCUMBRANCES

All equipment, materials, supplies, buildings, roadways, trees, utility vaults, boulders, etc. that could present a hazard to employees working in the excavation must be removed or supported as necessary to protect employees.

SOIL CLASSIFICATION

The Excavation Competent Person in charge of the excavation shall be responsible for determining the soil type. All previously disturbed soil is automatically considered Type B or C soil. Soil may be considered Type C by default and no additional tests required. To classify soil, as type A or B the Excavation Competent Person shall use a visual test coupled with one or more manual tests.

Visual test

- Evaluate the conditions around the site including the soil adjacent to the site and the soil being excavated. Identify any signs of vibration.
- Check for crack-line openings along the failure zone, look for existing utilities that indicate that the soil has been previously disturbed, and observe the open side of the excavation for indications of layered geologic structuring.
- Look for signs of bulging, boiling, or sloughing, as well as signs of water seepage from the sides or bottom of the excavation. T
- The area adjacent to the excavation should be evaluated for foundations or other intrusions into the failure zone, and the evaluator should check the spoil distance from the edge of the excavation.
- Any one of the following will cause soil to be classified as Type C.
 - Water seepage into excavation.
 - Vibration from road traffic or equipment.
 - Signs of bulging, boiling, or sloughing.
 - Crack lines along failure zone.

Manual tests

- **Thumb penetration test:** Attempt to press the thumb firmly into the soil in question. The thumb can readily indent type A soils with an unconfined compressive strength of 1.5 tsf; however, the thumb only with very great effort can penetrate them. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.
- **Dry strength test:** Take a sample of dry soil. If it crumbles freely or with moderate pressure into individual grains it is considered granular. Dry soil that falls into clumps that subsequently break into smaller clumps (and the smaller clumps can only be broken with difficulty) it is considered cohesive soil.
- **Plasticity or Wet Thread Test:** Take a moist sample of the soil. Mold it into a ball and then attempt to roll it into a thin thread approximately 1/8 inch in diameter by two inches in length. If the soil sample does not break when held by one end, it may be considered cohesive.

A pocket penetrometer, shearvane, or torvane may also be used to determine the unconfined compression strength of soils.

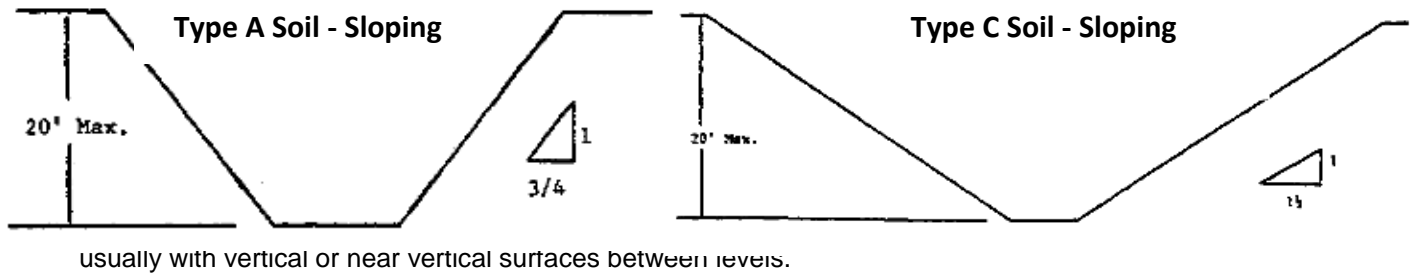
PROTECTIVE SYSTEMS

In excavations greater than 5 feet in depth a method to protect people entering the excavation from cave in must be employed. Acceptable protective methods include sloping, benching, shielding and shoring.

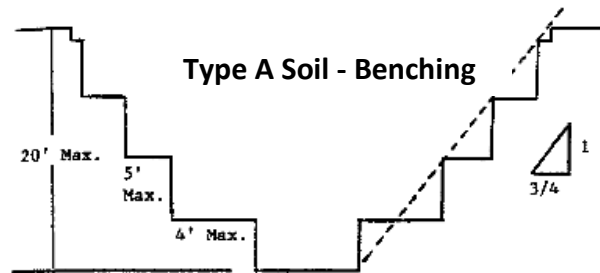
General: Excavations under the base of the footing of a foundation or wall require a support system designed by a registered professional engineer. Sidewalks, pavement, utility vaults or other similar structures shall not be undermined unless a support system or another method of protection is provided to protect employees from their possible collapse. Sloping or benching is often the preferred methods of protection; however, shoring or shielding is used when the location or depth makes sloping to the allowable angle impractical.

Sloping: Maximum allowable slopes for excavations less than 20' deep based on soil type and angle to the horizontal are as follows:

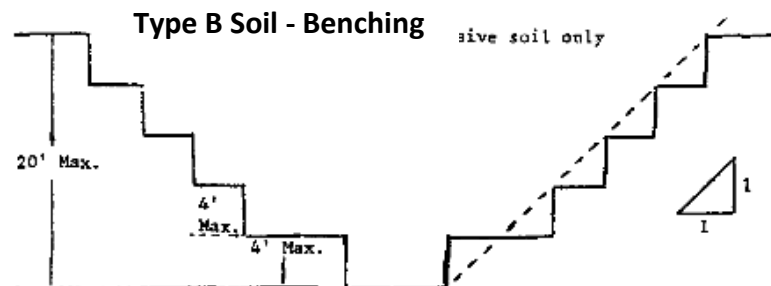
- **Soil Type A** - Most stable: clay, silty clay, and hardpan (resists penetration). No soil is Type A if it is fissured, is subject to vibration of any type, has previously been disturbed, or has seeping water. When sloping Type A soil, a height to depth ratio of $\frac{3}{4}$ to 1, or 53 degrees is allowed.
- **Soil Type B** - Medium stability: silt, sandy loam, medium clay and unstable dry rock; previously disturbed soils unless otherwise classified as Type C. When sloping Type B soil, a height to depth ratio of 1 to 1, or 45 degrees is allowed.
- **Soil Type C** - Least stable: gravel, loamy sand, soft clay, submerged soil or dense, heavy unstable rock, and soil from which any water is seeping. When sloping Type C soil, a height to depth ratio of $1\frac{1}{2}$ to 1, or 34 degrees is allowed.
- **Soil - Mixed Types (Layered Geological Strata)** - The soil must be classified on the basis of the soil classification of the weakest soil layer. Each layer may be classified individually if a more stable layer lies below a less stable layer, i.e. where a Type C soil rests on top of stable rock.



- **Soil Type A:** The vertical height of the benches must not exceed 5 feet. Benches in increments of 2 feet or less are preferred. The angle developed by the edge of the benches must not exceed the maximum allowable slope for that soil type (Type A soil 53-degrees).



- **Soil Type B:** the vertical height of the benches must not exceed 4 feet. Benches in increments of 2 feet or less are preferred. The angle developed by the edge of the benches must not exceed the maximum allowable slope for that soil type (Type B soil 45-degrees).



- **Soil Type C:** Benching is not permitted in Type C soil.

Shielding: Trench boxes or trench shields are intended to protect workers from cave-ins and similar incidents. The trench shield is lowered into the excavation and workers may then enter the protected area within the shield. Only trench shields designed or certified by a registered professional engineer may be used. The use is limited to those trenches for which the shield is certified (e.g. maximum depth and material). The manufacturer must approve any modifications to the shields. The excavated area between the outside of the trench box and the face of the trench should be as small as possible. The space between the trench box and the excavation side should be backfilled to prevent lateral movement of the box.

Trench boxes may be used in combination with sloping and/or benching. The box must extend at least 18 inches above the surrounding area if there is sloping toward the excavation.

Shields may be placed two feet above the bottom of an excavation, provided they are calculated to support the full depth of the excavation and there is no caving under or behind the shield.

Workers must enter and leave the shielded area in a protected manner, such as by a ladder or ramp. Workers may not remain in the shielded area while it is being moved.

Shoring: There are two basic types of shoring, timber and aluminum hydraulic/pneumatic. ***Davis Mechanical will not utilize timber shoring on any project sites without the approval of the Safety Coordinator.*** All shoring will be installed per the manufacturer recommendations (typically from the top down and removed from the bottom up). Hydraulic/Pneumatic shoring should be checked at least once per shift for leaking hoses and/or cylinders, broken connections, cracked nipples, bent bases, and any other damaged or defective parts.

Inspections: Frequent inspection of the excavation and surrounding area by the Competent Person is critical to ensure the safety of the workers involved in work within the trench. The Excavation Competent Person must conduct inspections of the entire excavation site:

- Daily and before the start of each shift.
- As dictated by the work being done in the trench.
- After every rainstorm.
- When fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom, or other similar conditions occur.
- When there is a change in the size, location, or placement of the spoil pile.
- When there is any indication of change or movement in adjacent structures.

Spoil Pile: Temporary spoil pile shall be placed no closer than 2 feet from the surface edge of the excavation. The distance is measured from the nearest base of the spoil to the cut. This distance should not be measured from the crown of the spoil deposit. This distance requirement ensures that loose rock or soil from the temporary spoil will not fall on employees in the trench.

The spoil should be placed so that it channels rainwater and other run-off water away from the excavation. Spoil should be placed so that it cannot accidentally run, slide, or fall back into the excavation.

Surface Crossing of Trenches: Surface crossing of trenches should not be made unless absolutely necessary. However, if necessary, they are only permitted under the following conditions:

- **Vehicle crossings** must be designed by and installed under the supervision of a registered professional engineer.
- **Walkways or bridges** must have a minimum clear width of 20 inches, be fitted with standard rails, and extend a minimum of 24 inches past the surface edge of the trench.

Ingress and Egress: Trenches 4 feet or more in depth shall be provided with ladders or other fixed means of egress. Spacing must be such that a worker will not have to travel more than 25 feet to the nearest means of egress. Ladders must be secured and extend a minimum of 36 inches above the landing. Metal ladders should be used with caution, particularly when electric utilities are present.

Exposure to Vehicles: Employees exposed to vehicular traffic shall be provided with and required to wear reflective vests or other suitable garments marked with or made of reflectorized or high-visibility materials. Trained flag persons, signs, signals, and barricades shall be used when necessary.

Exposures to Falling Loads: Employees are not allowed in the excavation while heavy equipment is digging. Employees must not work under loads being lifted or moved by heavy equipment used for digging or lifting. Employees must stand away from equipment that is being loaded or unloaded to avoid being struck by falling materials or spillage.

Hazardous Atmospheres and Confined Spaces: If there is any possibility that the trench or excavation could contain a hazardous atmosphere, atmospheric testing must be conducted prior to entry. Conditions that might warrant atmospheric testing would be if the excavation was made in a landfill area or if the excavation is adjacent to sources of contamination (e.g. sewage or fuel leaks).

Testing should be conducted before employees enter the trench and should be done regularly to ensure that the trench remains safe. The frequency of testing should be increased if equipment is operating in the trench that could produce airborne contaminants. Employees required to wear respiratory protection must be trained, fit-tested, and enrolled in the Davis Mechanical respiratory protection program.

Trenches and excavations with hazardous concentrations of airborne contaminants or oxygen deficient atmospheres qualify as confined spaces. When this occurs, compliance with the Davis Mechanical Confined Space Program is also required.

Employees shall not be permitted to work in hazardous and/or toxic atmospheres. These include atmospheres with:

- less than 19.5% oxygen,
- a combustible gas concentration greater than 20% of the lower flammable limit,
- concentrations of hazardous substance that exceed those specified in the Threshold Limit Values established by the ACGIH, or Permissible Exposure Limits established by OSHA.

Standing Water and Water Accumulation: Workers must not enter or work in excavations with standing water or in which water is accumulating unless adequate protection is provided.

Protective methods for these circumstances must include:

- Use of special support or shield systems approved by a registered professional engineer.
- Water removal equipment used and monitored by a competent person.
- Safety harnesses and lifelines used in conformance with 29 CFR 1926.104.

During rainstorms employees must exit the trench. The excavation must be carefully inspected by an Excavation Competent Person after each rain and before employees are permitted to re-enter the trench. Protective measures such as diversion ditches and dikes should be used to limit surface runoff water from entering the excavation.

APPENDIX A:
EXCAVATION CHECKLIST

September 29, 2011



OSHI #	OPT. REPORT #	DATE	TIME

MNOSHA EXCAVATION WORKSHEET

Attachment A – MNOSHA Addendum

EMPLOYER:

SITE ADDRESS:

GOPHER STATE ONE-CALL [(651) 454-0002/1-800-252-1166] NOTIFIED/LOCATION MARKINGS: _____ YES _____ NO

IF NO, CALLED OFFICE OF PIPELINE SAFETY [(651) 296-9636]: DATE: _____ TIME: _____

EXCAVATIONS -- 4 FOOT TO 5 FOOT DEEP (Check if present on site)		EXCAVATIONS -- 5 FOOT DEEP AND OVER (Check if present on site)	
	Competent person		Competent person
	Egress		Soil analysis (visual and manual)
	Inspection		Sloping required (If no testing is done, the width of the excavation will be the bottom width plus three times the depth. This will equal a 1½:1 ratio.)
	Confined space (O ₂ testing)		

SOILS -- REFERENCE 1926.652, APPENDIX A (Check if present on site)					
Type C (1½:1)		Type B (1:1)		Type A (¾:1)*	
Fissures		Previously disturbed Type A or B		Undisturbed	
Porous soil		Fissured Type A		Type of soil (circle one): Rocky Clay Silty clay Sandy clay Clay loam	
Vibration		Subject to vibration Type A			
Water (Rain, etc.)		Type A rock not stable			
Submerged soil		Type of soil (circle one): Silt Silty loam Sandy loam Crushed rock			
Previously disturbed soil					
Type of soil (circle one): Gravel Sand Loamy sand					
Compressive strength 0.5 tsf		Compressive strength > 0.5 tsf, but Compressive strength < 1.5 tsf		Compressive strength 1.5 tsf	
				Test Method(s) Used by Investigator	
				Pocket Pentrometer	
				Slope Torvane	
				Manual Method:	

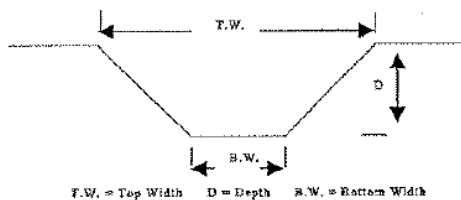
* (¾:1) Allowed if 12 ft. in depth or less, and open 24 hours or less.

tsf = tons per square foot

ADDITIONAL FACTORS (Check if present on site)			
Utilities identified, located, and supported [1926.651(b)]		Spoil pile two feet back [1926.651(j)(2)]	
Egress from excavation [1926.651(c)(2)]		Competent person inspections [1926.651(k)(1)]	
Warning vests [5207.1000(4)]		Fall protection [1926.651(l)(1)]	
Exposure to falling loads [1926.651(d)]		Use of protective system [1926.652(a)]	
Water accumulation [1926.651(h)]		Use of guardrails, fences, barricades, or covers [1926.501(b)(7)]	
Stability of adjacent structures (undercutting) [1926.651(i)(1)]			

PROTECTIVE SYSTEMS					
SLOPING AND BENCHING SYSTEMS					
Option (1) -- Allowable configurations and slopes [1926.652(b)(1)]					
Option (2) -- Determination of slopes and configurations using Appendices A and B [1926.652(b)(2)]					
Option (3) -- Designs using other tabulated data [1926.652(b)(3)]					
	Parameters		Limits		On site
Registered Professional Engineer/Name:					License #
Option (4) -- Design by a registered professional engineer [1926.652(b)(4)] -- Mandatory in excavations 20 feet or more in depth					
	Magnitude of slopes		Safe Configurations		On site
Registered Professional Engineer/Name:					License #
SUPPORT SYSTEMS, SHIELD SYSTEMS, & OTHER PROTECTIVE SYSTEMS					
Option (1) -- Design using Appendices A, C and D [1926.652(c)(1)]					
Option (2) -- Designs using manufacturer's tabulated data [1926.652(c)(2)]					
Option (3) -- Designs using other tabulated data [1926.652(c)(3)]					
	Parameters		Limits		On site
Registered Professional Engineer/Name:					License #
Option (4) -- Design by a registered professional engineer [1926.652(c)(4)]					
Plan indicating sizes, types, & configurations					
Registered Professional Engineer/Name:					License #

Specify dimensions of excavation on drawing below. Use the space provide for calculations or to add any additional
The space provided for calculations or to add any additional information.



Competent Person Determination - Suggested Questions:
a) Who designated you to be the CP? b) Do you have the authority to correct hazards? c) Do you have the authority to stop the work? d) What type of training have you had to be the CP? e) Do you know what type of soil you are working with? f) How did you identify what type of soil you are working with? g) What type of test (visual and manual) did you use to classify the soil? h) How do you know what type of protection system to use for each soil type?

Description/Comments:

APPENDIX B:
UTILITY HIT INVESTIGATION FORM

Damage Information Reporting Tool (DIRT) - Field Form

Part A – Original Source of Event Information

Who is providing the information? ☐ Electric ☐ Engineer/Design ☐ Equipment Manufacturer
☐ Excavator ☐ Liquid Pipeline ☐ Locator ☐ Natural Gas ☐ Private Water
☐ Public Works ☐ Railroad ☐ Road Builders ☐ Federal / State Regulator
☐ Telecommunications ☐ Unknown/Other

Name of person providing the information:

Part B – Type, Date, and Location of Event

Type of Event: ☐ DIRT Event ☐ Underground Damage ☐ Underground Near Miss

☐ Non-DIRT Event ☐ Above Grade ☐ Aerial ☐ Natural Cause ☐ Submarine

***Date of Event:**

***Country** ***State** ***County** **City**

Street address:

Nearest Intersection:

Latitude/Longitude: Lat: Lon ☐ Decimal Degrees ☐ D M S

***Right-of-Way where event occurred**

Public: ☐ City Street ☐ State Highway ☐ County Road ☐ Interstate Highway ☐ Public-Other
Private: ☐ Private Business ☐ Private Land Owner ☐ Private Easement
☐ Pipeline ☐ Power /Transmission Line ☐ Dedicated Public Utility Easement
☐ Federal Land ☐ Railroad ☐ Unknown/Other

Part C – Affected Facility Information

***What type of facility operation was affected?** ☐ Cable Television ☐ Electric ☐ Liquid Pipeline
☐ Natural Gas ☐ Sewer ☐ Steam ☐ Telecommunications ☐ Water ☐ Unknown/Other

***What type of facility was affected?** ☐ Distribution ☐ Gathering ☐ Service/Drop ☐ Transmission ☐ Unknown/Other

Was the facility part of a joint trench? ☐ Yes ☐ No ☐ Unknown

Did this event involve a Cross Bore? ☐ Yes ☐ No

Was facility owner One Call Center member? ☐ Yes ☐ No ☐ Unknown

If No, is facility owner exempt from One Call Center membership? ☐ Yes ☐ No ☐ Unknown

Measured Depth ☐ Embedded in concrete/asphalt pavement ☐ <18" / 46 cm ☐ Measured depth
From Grade ☐ 18" – 36" / 46 - 91 cm ☐ >36" / 91 cm from grade _____ in/cm

Part D – Excavation Information

***Type of Excavator** ☐ Contractor ☐ County ☐ Developer ☐ Farmer ☐ Municipality
☐ Occupant ☐ Railroad ☐ State ☐ Utility ☐ Unknown/Other

***Type of Excavation Equipment** ☐ Auger ☐ Backhoe/Trackhoe ☐ Boring ☐ Bulldozer
☐ Drilling ☐ Directional Drilling ☐ Explosives ☐ Farm Equipment ☐ Grader/Scraper ☐ Hand Tools
☐ Milling Equipment ☐ Probing Device ☐ Trencher ☐ Vacuum Equipment ☐ Unknown/Other

***Type of Work Performed** ☐ Agriculture ☐ Bldg. Construction ☐ Bldg. Demolition ☐ Cable Television
☐ Curb/Sidewalk ☐ Drainage ☐ Driveway ☐ Electric ☐ Engineering/Survey
☐ Fencing ☐ Grading ☐ Irrigation ☐ Landscaping ☐ Liquid Pipeline ☐ Milling
☐ Natural Gas ☐ Pole ☐ Public Transit Auth. ☐ Railroad ☐ Road Work ☐ Sewer
☐ Site Development ☐ Steam ☐ Storm Drain/Culvert ☐ Street Light ☐ Telecommunication
☐ Traffic Signal ☐ Traffic Sign ☐ Water ☐ Waterway Improvement ☐ Unknown/Other

Part E – Notification and Locating

***Was the One-Call Center notified?** ☐ Yes ☐ No Ticket Number

If Yes, type of locator ☐ Facility Owner ☐ Contract Locator ☐ Unknown/Other

If No, is excavation activity and/or excavator type exempt from notification? ☐ Yes ☐ No ☐ Unknown

Was work area white-lined? ☐ Yes ☐ No ☐ Unknown

Part F – Intentionally left blank

Part G – Excavator Downtime

Did Excavator incur down time?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, how much time?	<input type="checkbox"/> < 1 hr	<input type="checkbox"/> 1 -<2 hrs <input type="checkbox"/> 2-<3 hrs <input type="checkbox"/> 3+ hrs Exact Value _____ <input type="checkbox"/> Unknown
Estimated cost of down time?	<input type="checkbox"/> \$0	<input type="checkbox"/> \$1 -1000 <input type="checkbox"/> \$1,001 - 5,000 <input type="checkbox"/> \$5,001 - 25,000
	<input type="checkbox"/> \$25,001 - 50,000 <input type="checkbox"/> >\$50,000	Exact Value _____ <input type="checkbox"/> Unknown

Part H – Interruption and Restoration

***Did the damage cause an interruption in service?** ☐ Yes ☐ No ☐ Unknown

If yes, duration of interruption ☐ < 1 hr ☐ 1 - <6 hrs ☐ 6 - <12 hrs ☐ 12 - <24 hrs ☐ 24 - <48 hrs
☐ 48+ hrs Exact Value _____ hrs ☐ Unknown

Approximately how many customers were affected?
☐ Unknown ☐ 0 ☐ 1 ☐ 2 - 10 ☐ 11 - 50 ☐ 51+ Exact Value _____

Estimated cost of damage / repair/restoration: ☐ \$0 ☐ \$1 - 1,000 ☐ \$1,001-5,000
☐ \$5,001 - 25,000 ☐ \$25,001 - 50,000 ☐ > \$50,000 Exact Value _____

☐ Unknown


*Part I – Root Cause Select only one

<p>Notification Issue</p> <p><input type="checkbox"/> No notification made to One Call Center/ 811</p> <p><input type="checkbox"/> Excavator dug outside area described on ticket</p> <p><input type="checkbox"/> Excavator dug prior to valid start date/time</p> <p><input type="checkbox"/> Excavator dug after valid ticket expired</p> <p><input type="checkbox"/> Excavator provided incorrect notification information</p> <p>Excavation Issue</p> <p><input type="checkbox"/> Excavator dug prior to verifying marks by test-hole (pothole)</p> <p><input type="checkbox"/> Excavator failed to maintain clearance after verifying marks</p> <p><input type="checkbox"/> Excavator failed to protect/shore support facilities</p> <p><input type="checkbox"/> Improper backfilling practices</p> <p><input type="checkbox"/> Marks faded or not maintained</p> <p><input type="checkbox"/> Improper excavation practice not listed above</p> <p>Miscellaneous Root Causes</p> <p><input type="checkbox"/> Deteriorated facility <input type="checkbox"/> One Call Center Error <input type="checkbox"/> Previous damage</p> <p><input type="checkbox"/> Root Cause not listed (comment required)</p>	<p>Locating Issue</p> <p><i>Facility not marked due to:</i></p> <p><input type="checkbox"/> Abandoned facility</p> <p><input type="checkbox"/> Incorrect facility records/maps</p> <p><input type="checkbox"/> Locator error</p> <p><input type="checkbox"/> No response from operator/contract locator</p> <p><input type="checkbox"/> Tracer wire issue</p> <p><input type="checkbox"/> Unlocatable Facility</p> <p><i>Facility marked inaccurately due to</i></p> <p><input type="checkbox"/> Abandoned facility</p> <p><input type="checkbox"/> Incorrect facility records/maps</p> <p><input type="checkbox"/> Locator error</p> <p><input type="checkbox"/> Tracer wire</p>
---	--

Part J – Additional Comments

Part Z – Images and Attachments: List the file names of any images and attachments to submit with this report

www.cga-dirt.com

		Davis Mechanical Systems, Inc.		
Policy No. 22		Vehicle Safety Program		
Rev	Description of Change	Owner	Approver	Date
1	Original	J. Helgeson	J. Helgeson	4/1/2020

PURPOSE

This portion of the safety program applies to all Davis Mechanical Systems, Inc. owned or rented vehicles, and personal vehicles used to further Davis Mechanical Systems, Inc. Business. Our vehicle safety program has been instituted to promote safe driving, and reduce the frequency and severity of collisions within our vehicle operations. Safe fleet operation will also promote a positive public image.

We will provide safe and reliable transportation for authorized drivers and the resources for proper maintenance. It is the driver's responsibility to ensure proper vehicle maintenance, exercise defensive driving, maintain a good driving record, and adhere to Davis Mechanical Systems, Inc. safe driving expectations and objectives of this program.

Note: DOT Safety Regulations apply to Commercial Motor Vehicles over 10,000 lbs. GVWR, and drivers of the vehicles should be familiar with these requirements.

DRIVER EVALUATION

Employees assigned Davis Mechanical Systems, Inc. vehicles or regularly operating personal vehicles for Davis Mechanical Systems, Inc. are expected to maintain acceptable driving records. Allowing the use of our Davis Mechanical Systems, Inc. vehicles and the operation of non-owned vehicles by employees with poor driving records exposes our company to potentially significant liability. Therefore, a driver evaluation procedure has been implemented with the following parameters.

- Prospective employee (whose jobs require operation of a Davis Mechanical Systems, Inc. vehicle) may be hired only on the condition of having a valid driver's license and obtaining an "acceptable" Motor Vehicle Record (MVR). If the MVR proves to be unacceptable (refer to "definition of unacceptable driving record"), the conditional offer of employment will be withdrawn.
- Driving records of current employees operating Davis Mechanical Systems, Inc. vehicles will be audited annually *and* after any vehicle accident. Drivers who have unacceptable driving records (refer to "definition of unacceptable driving record") will be subject to disciplinary procedures.
- Drivers are required to report an accident or moving violations to their supervisor at the time of the occurrence.

DRIVER SAFETY GUIDELINES

Employees assigned Davis Mechanical Systems, Inc. vehicles, or those using their own vehicle for company purposes, are expected to perform in accordance with these objectives:

- Practice defensive techniques and obey all traffic laws to avoid vehicle accidents and traffic violations.
- Keep vehicles well maintained in safe working order. Employees are expected to keep track of maintenance in accordance with the *Vehicle Maintenance* section of this policy.

- Exercise courtesy to other drivers and pedestrians. If the public calls our company to complain about a driver, it will be documented and stored in employee personnel files. This information will be utilized to identify your driving habits and will be used in employee evaluations.
- Don't use drugs and/or alcohol or otherwise drive under the influence of drugs and/or alcohol when operating a motor vehicle. Employees should check with their physician about possible adverse side effects of prescription drugs.
- Transport authorized passengers only. Picking up "hitchhikers" is strictly forbidden. Only the assigned driver or other Davis Mechanical Systems, Inc. personnel engaged in the course of their job functions are permitted in Davis Mechanical Systems, Inc. vehicles.
- Always use seat belts and ensure passengers do as well. Remember that air bags are only as good as the restraints used to keep you in your seat.
- Maintain a safe following distance. The larger the vehicle the longer it takes to stop. Employees will always maintain a safe following distance to help prevent collisions. In the case of bad weather, or poor road conditions, the following distance should be increased.
- Ensure all loads and/or cargo are adequately secured prior to moving the vehicle.
- Only use the vehicle for its intended purpose.
- Personal use of Davis Mechanical Systems, Inc. vehicles is not permitted without prior management approval.

CELLULAR PHONE SAFE USE GUIDELINES

1. **Get to know your wireless phone and its features such as speed dial and redial.** Carefully read your instruction manual and learn to take advantage of valuable features most phones offer, including automatic redial and memory. Also, work to memorize the phone keypad so you can use the speed dial function without taking your attention off the road.
2. **Always use a hands free device.** A number of hands free wireless phone accessories are readily available today. Whether you choose an installed mounted device for your wireless phone or a speaker phone accessory, take advantage of these devices to allow you to keep your hands on the steering wheel and your eyes on the road.
3. **Position your wireless phone within easy reach.** Make sure you place your wireless phone within easy reach and where you can grab it without removing your eyes from the road. If you get an incoming call at an inconvenient time, if possible, let your voice mail answer it for you.
4. **Suspend conversations during hazardous driving conditions or situations.** Let the person you are speaking with know you are driving; If necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow and ice can be hazardous, but so is heavy traffic. As a driver, your first responsibility is to pay attention to the road.
5. **Do not take notes or look up phone numbers while driving.** If you are reading an address book or business card, or writing a "to do" list while driving a car, you are not watching where you are going. It's common sense. Don't get caught in a dangerous situation because you are reading or writing and not paying attention to the road or nearby vehicles.
6. **Dial sensibly and assess the traffic.** If possible, place calls when you are not moving or before pulling into traffic. Try to plan your calls before you begin your trip or attempt to coincide your calls with times you may be stopped at a stop sign, red light or otherwise stationary. But if you need to dial while driving, follow this simple tip - dial only a few numbers, check the road and your mirrors, then continue.
7. **Do not engage in stressful or emotional conversations that may be distracting.** Stressful or emotional conversations and driving do not mix - they are distracting and even dangerous when you are behind the wheel of a car. Make people you are talking with aware you are driving and if necessary, suspend conversations which have the potential to divert your attention from the road.
8. **Use your wireless phone to call for help.** Your wireless phone is one of the greatest tools you can own to protect yourself and your family in dangerous situations - with your phone at your side, help is only three numbers away. Dial 9-1-1 or other local emergency number in case of fire, traffic accident, road hazard or medical emergency. Remember, it is a free call on your wireless phone!
9. **Use your wireless phone to help others in emergencies.** Your wireless phone provides you a perfect opportunity to be a "Good Samaritan" in your community. If you see an auto accident, crime in progress

or other serious emergency where lives are in danger, call 9-1-1 or other local emergency number, as you would want others to do for you.

- 10. Call roadside assistance or a special wireless non-emergency assistance number when necessary.** Certain situations you encounter while driving may require attention, but are not urgent enough to merit a call for emergency services. But you still can use your wireless phone to lend a hand. If you see a broken-down vehicle posing no serious hazard, a broken traffic signal, a minor traffic accident where no one appears injured or a vehicle you know to be stolen, call roadside assistance or other special non-emergency wireless number.

DEFINITION OF AN UNACCEPTABLE MOTOR VEHICLE RECORD

An Unacceptable Motor Vehicle Record (MVR) for any applicant or current employee is one with any one of the following major violations occurring in the last five (5) years from the date of inquiry:

One major violation defined as:

- Any felony in which a vehicle is used including homicide resulting from the operation of any unreasonable risk or with a high degree negligence.
- (DWI/DUI) Driving under the influence of intoxicating liquor or illegal drug.
- Refusal to take a breath analyzer test.
- Failure to stop, report or comply with state statutes when involved in an accident.
- Driving while license is suspended or revoked.
- Reckless or dangerous driving which results in injury to a person.
- Racing.
- Passing a stopped school bus with the stop arm extended and red lights flashing.

An Unacceptable MVR for any applicant or current employee with the following violations or accidents occurring in the last three (3) years from the date of inquiry includes:

- Three (3) or more moving violations not specifically listed above.
- Two (2) or more at-fault accidents.
- One (1) at fault accident and two (2) moving violations not specifically listed above.

DISCIPLINARY ACTION

Drivers who develop an unacceptable record will be counseled and at least one of the following actions may be taken:

1. Reassignment to a non-driving position.
2. Termination of employment. All final decisions and rationale will be documented and approved by management. Information shall be retained in the driver's personnel file indefinitely.

Special Note: *Such drivers will be required to sign a statement indicating understanding of the reason for the disciplinary action.*

VEHICLE MAINTENANCE

Employees operating Davis Mechanical Systems, Inc. vehicles over 10,000 lbs. GVWR are expected to make a safety check of their vehicles before driving. The inspection should verify proper functioning of lights, horn, turn signals, brake lights, oil level, coolant level, tire pressure and condition, and adjustment of mirrors. The operator is responsible for completing a "Drivers Checkup Report."

The Safety Coordinator will be responsible for coordinating our vehicle maintenance program. All maintenance including oil changes, lubrication, repair, parts, etc., will be recorded on a maintenance log. All scheduled maintenance will be in accordance to manufacturer's recommendations. Drivers are to communicate any problems they are having with their supervisor.

ACCIDENT REPORTING

Motor Vehicle Accident Report forms are located in Appendix E, copies will also be kept in each vehicle. The driver of the vehicle involved in an accident will be responsible to complete the form. Completed forms are required to be provided to the Safety Coordinator within 24 hours of the accident.

What to do in the event of an accident.

1. In the event of an auto accident, DO NOT admit fault.
2. First, check all those involved to determine if there are injuries. Call 911 if necessary.
3. While at the accident scene, complete the Motor Vehicle Accident Report form:
 - Get name, address, phone number, make of vehicles, driver's license number, license plate numbers, and names of other passengers and witnesses.
 - Carefully examine damage to all vehicles involved.
 - Discuss the accident with the police only.
 - Obtain a police report at the scene if possible. If not, find out when and where to obtain one.
 - Report the accident immediately to your supervisor.

APPENDIX A:

VEHICLE SAFETY PROGRAM ACKNOWLEDGMENT

Vehicle Safety Program Acknowledgment

I acknowledge receipt of the Vehicle Safety Program for Davis Mechanical Systems, Inc. and have familiarized myself with its contents. I agree to abide by the safety guidelines and procedures described in the program and will contact management with any questions about it.

I have been assigned a driving position with Davis Mechanical Systems, Inc.. I understand that if my driving record is found to be unacceptable upon initial Motor Vehicle Record check I may not be hired for the position.

Printed Name of Driver

Signature of Driver

Date

APPENDIX B:

COMPANY VEHICLE USE POLICY

Vehicle Usage Policy & Acknowledgement

Davis Mechanical Systems, Inc. owned vehicles and/or those used by Davis Mechanical Systems, Inc. employees will be operated in a safe and economical manner with acknowledgement of the following:

1. I acknowledge receipt of the Vehicle Safety Program for Davis Mechanical Systems, Inc. and have familiarized myself with its contents. I agree to abide by the safety guidelines and procedures described in the program and will contact management with any questions about it;
2. Davis Mechanical Systems, Inc. vehicles will be operated in a manner consistent with the Vehicle Safety Program of Davis Mechanical Systems, Inc. Operating any vehicle outside outlined rules in the Driving Policy may result in forfeiture of all driving privileges;
3. All traffic violations received while operating the assigned vehicle will be paid by the employee;
4. Vehicle defects will be promptly reported to fleet manager so that necessary repairs can be made;
5. Davis Mechanical Systems, Inc. vehicles will not be driven by anyone other than the assigned employee drivers or immediate family members unless they are 21 years of age. Other drivers may be allowed if permission is obtained by management.
6. Accidents will be reported to the manager consistent with Davis Mechanical Systems, Inc. "Accident Reporting Policy."

I have read, understand, and agree to the terms set forth in this Vehicle Usage Policy.

Printed Name of Driver

Signature of Driver

Date

APPENDIX C:

PERSONAL VEHICLE USE POLICY

Automobile Insurance Acknowledgement

Between Insurance Company And Davis Mechanical Systems, Inc.

Drivers who use their personal vehicles for **Davis Mechanical Systems, Inc.** business purposes must provide evidence of sufficient insurance liability coverage on their automobile. The driver's own insurance company shall have primary responsibility for any damage or injury incurred by you, by others, or to another's property.

Evidence of liability: Each driver must carry a minimum of \$100,000/ \$300,000/ \$100,000 limits or a combined single limit of \$300,000 of automobile liability insurance coverage. Drivers must submit appropriate evidence of coverage to the Human Resources department annually, which will be kept in the driver's file.

Drivers using their personal vehicle for business purposes must maintain a valid driver's license, must annually provide appropriate evidence of a valid driver's license, must have no major violations as considered by the driver guidelines within the three years, and must have no more than three minor violations within a 3 -year period. Employees must immediately notify the company of any moving violations.

Drivers who violate this policy are subject to discipline, up to and including termination.

By signing below, I accept responsibility while using my vehicle for business purposes and will provide evidence of my insurance coverage and license status as described above.

Printed Name of Driver

Signature of Driver

Date

APPENDIX D: NEW EMPLOYEE CONDITIONAL OFFER NOTICE

Notice Before Ordering Motor Vehicle Reports

The Fair Credit Reporting Act (FCRA) provides individuals with certain rights regarding consumer reports and places certain obligations on employers using consumer reports for employment-related purposes. Consistent with the FCRA's requirements, this notice is provided to you in order to inform you that Davis Mechanical Systems, Inc. may, for employment-related purposes due to assigned duties, obtain a copy of your Motor Vehicle Report.

Authorization to obtain Motor Vehicle Reports

I hereby acknowledge that I have read and understand the contents of the above notice and, by signing below, specifically authorize Davis Mechanical Systems, Inc. to obtain my Motor Vehicle Report for employment related purposes as indicated above.

Printed Name of Applicant or Employee

Signature

Date

Driver License Number

State

Date of Birth

APPENDIX E:

VEHICLE ACCIDENT REPORT

FORM

DESCRIPTION OF ACCIDENT

Date/time of accident: _____

Location of accident (streets, city, state): _____

Road/weather condition: _____

Number of vehicles involved (including yours): _____

Was anyone injured? Yes No

If yes, provide detail in description below.

Did police respond? Yes No

Police department: _____

Report number: _____

Were any tickets issued? Yes No To you To other driver

If yes, provide detail in description below.

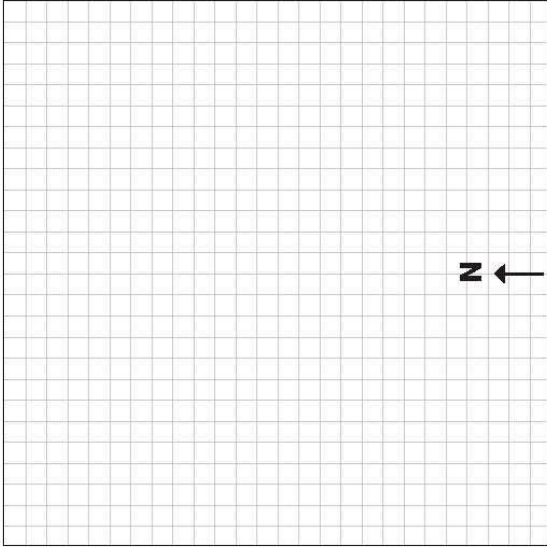


Diagram what happened in the grid above. Draw each vehicle involved and label by number. You are Vehicle 1. Identify streets by name. Use arrows to indicate direction of travel.

DESCRIBE WHAT HAPPENED (REFER TO VEHICLES BY NUMBER. YOU ARE VEHICLE 1.)

Continue on a separate page, if necessary. If more than one vehicle is involved, provide their information on a separate page and identify them by number.

THINGS TO REMEMBER

Your own safety is your first priority in the event of an accident. Only when your own safety is ensured should you attempt to care for others or property.

1. Call 911 if appropriate and/or an emergency.
2. Assist injured parties if able.
3. DO NOT admit fault.
4. Notify your supervisor, safety director or other appropriate company representatives.
5. Discuss the accident only with police.
 - a. If police will/do not respond, provide your insurance and contact information to the other party(ies).
6. Refer all media/press to your designated company spokesperson.
7. Take photos of:
 - a. The scene.
 - b. Damage to all vehicles involved.
 - c. Damage to all other property.
 - d. Other drivers' license(s).
 - e. Other drivers' insurance card(s).
8. Follow your company procedure for reporting the claim to the insurance company.

YOUR INFORMATION

Name (first and last): _____
Phone #: _____
Driver's license #: _____

YOUR VEHICLE INFORMATION (VEHICLE 1)

Year: _____
Last six digits of VIN: _____
Vehicle make: _____
Vehicle model: _____
Damaged part(s) of vehicle: _____
Passengers? Yes No How many? _____



OTHER PERSON'S INFORMATION

Owner's name (first and last): _____
Address: _____
City: _____
State: _____ ZIP: _____
Phone #: _____
Is the owner the driver? Yes No
Driver's name, if different than above (first and last): _____

Address: _____
City: _____
State: _____ ZIP: _____
Phone #: _____
Driver's license #: _____

OTHER PERSON'S INSURANCE INFORMATION

Insurance company: _____
Policy #: _____

OTHER VEHICLE INFORMATION (VEHICLE 2)

Year: _____ License plate #: _____
Vehicle make: _____
Vehicle model: _____
Damaged part(s) of vehicle: _____
Passengers? Yes No How many? _____

DAMAGE TO PROPERTY (OTHER THAN VEHICLES)

Describe property and damage: _____



WITNESS INFORMATION

Name (first and last): _____
Phone #: _____