



**Employee  
SAFETY MANUAL  
2015**

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## TABLE OF CONTENTS

INTRODUCTION .....	3
ACKNOWLEDGEMENT.....	4
SAFETY.....	5
HOUSEKEEPING.....	8
PROTECT YOUR BODY.....	8
MATERIAL HANDLING .....	9
MISCELLANEOUS TOOLS AND EQUIPMENT .....	10
PERSONAL PROTECTION .....	10
FALL PROTECTION.....	12
RESPIRATORS.....	13
TOOLS.....	14
MOBILE EQUIPMENT.....	15
SIGNAGE .....	16
FLOOR OPENINGS .....	17
WORK PERMITS .....	17
LADDERS AND SCAFFOLDS .....	18
WELDING, CUTTING, AND BRAZING .....	19
ENERGY SOURCES AND LOTO.....	21
FIRE PROTECTION .....	22
EMERGENCY GUIDELINES.....	27
CLOSING .....	28

## INTRODUCTION

Dear T.A. Woods Company Employee:

I am delighted to have this opportunity to welcome you into the T.A. Woods Team.

Our success for the past several decades has been the result of having an outstanding TEAM. Our TEAM members understand the importance of working together to accomplish outstanding safety and quality.

We strive to provide a quality work place which incorporates dedication to ensuring all have a safe work environment. Our motto of "THINK SAFETY:WORK SAFELY" communicates our belief in a true Safety Culture which incorporates processing safety and instilling guidelines for safe work behaviors. T.A. Woods Company is firmly committed to the safety of all employees.

Employees are encouraged to report any unsafe work practices or safety hazards. All accidents and near misses no matter how slight are to be immediately reported to your supervisor.

Please take the time to read this [Employee Safety Manual](#) which includes our basic safety policies and rules. If you have questions concerning safety issues, your employment, or any applicable policies or procedures, your supervisor can assist you with obtaining answers or direct you to the appropriate manager for assistance.

Sincerely,

CEO  
T.A. Woods Company

# ACKNOWLEDGEMENT

## Employee Safety Handbook: Code of Safe Practices

I, \_\_\_\_\_ (print name), hereby acknowledge that I have received, read, and understand the T.A. Woods Employee Safety Manual. I agree to conform to all practices, safety rules, and regulations relating to safe work performance. I understand that my failure to follow these safety procedures will result in disciplinary action, up to and including discharge.

I understand and acknowledge this manual may not be all encompassing and that some safety practices and policies may vary based on the specific project and/or specific client site. Additionally, I understand some tasks and jobs may require specific training. If my position requires such training I understand I am not to begin work until the training has been completed successfully.

I further understand:

- All accidents are preventable through implementation of effective Safety and Health policies and programs.
- It is my responsibility to report all unsafe conditions or safety violations of the Safety Handbook or general safety rules to my supervisor or other management personnel in order to minimize the potential injury to myself and fellow workers.
- I am encouraged to inform my immediate supervisor of any hazards on the job without fear of reprisal.
- I am encouraged to ask my immediate supervisor questions about any of the policies and procedures listed within this document and within the T.A. Woods Safety Plan and procedure manuals.
- Our safety program applies to all employees and persons affected or associated with T.A. Woods Company. Everyone's goal must be to constantly improve safety awareness and to prevent accidents and injuries.

THE CONTENTS OF THIS MANUAL ARE PRESENTED AS AN OVERVIEW AND GUIDE TO SOME OF THE CURRENT SAFETY POLICIES OF T.A. WOODS COMPANY IN EFFECT AS OF THE DATE OF THIS MANUAL. FROM TIME TO TIME THE COMPANY MAY, IN ITS SOLE DISCRETION, CHANGE, DELETE, OR ADD TO THE PROVISIONS OF THIS SAFETY MANUAL. T.A. Woods Company's comprehensive Field Safety Manual is available at all project sites and in our business office.

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Employee Name(Printed): \_\_\_\_\_

## **SAFETY**

T.A. Woods Company is committed to providing a safe and healthy working environment and to complying with relevant federal and state occupational health and safety laws (including the Standards of the Occupational Safety & Health Administration, EM-385 , and other safety standards as applicable to work tasks). To accomplish this objective, all T.A. Woods Company employees are expected to work diligently to maintain safe and healthy working conditions and to adhere to proper operating procedures designed to prevent injuries and illnesses. T.A. Woods is committed to the well being of all employees as well as all associated with T.A. Woods Company. We strongly believe in our motto: THINK SAFETY:WORK SAFELY. Our goal at T.A. Woods is to create a Safety Culture which allows all to work 100% free of all injuries and illnesses. In an effort to achieve this goal we have established safety guidelines to help strengthen our continuing effort to create a safe and healthy work environment for all employees on our project sites, facilities, and business offices.

### ***Incident and Injury Reporting***

**Report all incidents inclusive of accidents and near misses which include any level of property damage or personal injury immediately to your supervisor no matter how minor.** Under no circumstances are you to leave the work area without reporting. This is to ensure our procedures are followed in order to obtain prompt medical attention if necessary and to ensure company and client/site procedures are followed including notification, documentation, and post incident substance testing. The supervisor and affected employee(s) will complete an Incident Report, ART Form, and/or Driver Accident Report as applicable. Failure to report and complete required documents will result in disciplinary action.

If you are involved in an accident resulting in injury or illness, medical care above self-administered first aid will be directed by T.A. Woods Company. Procedures are in place to ensure you get prompt, effective care. TAW provides transitional duty which allows an injured or ill employee to heal under a doctor's care while remaining productive. Employees are required to return to regular duty upon release from the treating physician.

### ***Safety Techniques***

***No Employee Is Ever Required to perform work that he or she believes is unsafe or that he or she thinks is likely to cause injury or a health risk to themselves or others.***

In an effort to achieve T.A. Woods's safety goals, we have established safety guidelines to provide a safe and healthy work environment for all T.A. Woods employees. Your general responsibilities as an employee include:

#### ***Safety Work Task Assignment***

Before each shift, the supervisor is responsible for holding the first of daily 5X3 Safety/Production Huddles to inform and engage employees in necessary precautions and actions to be taken before starting work tasks. You are responsible for understanding and following the safest means to perform your assignment. If you don't understand, ASK your supervisor. A hazard analysis such as an AHA, TAW Daily Safety Checklist, or similar will be used to assist in understanding task-based and site-based hazards and precautions.

#### ***Inspections***

Supervisors will complete a TAW Daily Safety Checklist at the start of each work shift to identify hazards and share information with team employees during 5X3 Daily Huddles. All employees should make a check of the work area at the start of the shift each day to ensure safe working conditions. Inspecting work areas and task assignments is an on-going process throughout the work day. All ladders, scaffolding, mobile equipment, tools, electrical cords, personal fall arrest systems, and other as designated will be inspected prior to the start of each work shift. Documentation will be completed as designated.

#### ***Distractions***

When your mind is in one place and your body in another, it can mean DANGER! If you have a personal situation persistently bothering you, please notify your supervisor so that you may be appropriately reassigned if possible. There may be instances when you should utilize time off (as applicable) to gather your thoughts and return to work when you feel it is safe for you and your co-workers.

### ***Safety Meetings and Training***

Daily 5X3 Safety/Production Huddles are held daily with all employees. These safety/production huddles occur at the start of the work day; immediately after lunch; and, at the end of the work day. The purpose of these huddles is to concentrate on "HERE AND NOW" safety by placing accident prevention foremost in the mind of each individual and to acquaint you with information regarding hazards and accident prevention strategies. Weekly Safety Training will be conducted on Monday morning prior to the initial 5X3 Huddle. Additional safety meetings maybe scheduled as deemed appropriate. Attendance is mandatory for all site-based meetings and trainings.

### ***General Conduct***

All employees are expected to conduct themselves in a professional manner. Horseplay, practical jokes, harassment, discriminatory behaviors, etc. are forbidden. Employees are required to work in a safe injury-free manner displaying accepted levels of behavior. Conduct that places an employee at risk or which threatens or intimidates others if forbidden.

### ***Drugs and Alcohol***

T.A. Woods Company will not tolerate the possession, use, or abuse of drugs or alcohol that endanger the health and well being of our employees, or threatens the company's operations, reputation, or competitiveness. Employees who violate the company's Substance Use and Abuse Policy, which is provided at hire, become a direct risk to the safety of all TAW's employees. An employee in violation of this policy will face disciplinary action up to and including immediate discharge.

## Safety Approach

At T.A. Woods Company, safety is a priority in everything we do and it is the common thread woven through all levels of the company. Ultimately, our goal is zero accidents meaning everyone must do their part to prevent accidents and injuries.

To provide a visual for this ongoing commitment, our “Safety Ascension – Drive to Zero” illustration gives an instant view of our approach to work place safety. Each level within the illustration offers a purpose to reach our performance goals and commitment to continuous safety excellence.



## HOUSEKEEPING

If you keep your area neat, it encourages safe work habits. Housekeeping considerations are as follows:

- Store trash, waste, and scrap in correct containers
- Store materials, tools, and equipment safely
- Keep small items in boxes or bins
- Keep the floor clear of tools, materials, and debris
- Keep walkways and stairways clear of debris
- Ensure that work tables are occupied only by work at hand and tools required for work being done
- Ensure that hazardous flammable/combustible material/chemicals are stored in proper containers and cabinets
- Clean up tools and work areas as your jobs progress
- Keep cords and hoses seven feet overhead or lay them flat outside or to the side of walkways and work areas
- Keep all material, tools, and equipment in a stable position (tied, stacked, or chocked) to prevent rolling or falling.
- Maintain clear access to all work areas

### ***Trash, Waste, and Scrap Disposal***

All debris, waste, and scrap must be placed in proper containers. Disposal should be completed at the end of the task versus the end of the day.

### **Access**

Routes leading to and from all work locations must be clear of obstructions and with adequate lighting except in special instances approved by tank work or restricted-access permits. Access to materials stored in mobile storage container should be accessible with a minimum 2 feet access/egress path from the front to the back of the container and appropriate lightening.

Walkways and stairways should be clear, equipment or materials must not block access/egress path, and emergency exits should be identified and clear. Do not block any emergency equipment or fire extinguishers. Do not block electrical breakers, controls, switches, access doors, and covers to electrical equipment. Stack, store or spot material so that it can be reached readily by workers and material-handling equipment.

### ***Slips/Trips***

- Practice safe walking and working skills, particularly in congested areas (shorter steps)
- Use caution in inclement weather, keep soles of boots free of mud
- Pay continuous attention to where you are stepping and working
- Clean spills right away
- Keep your hands free for balance
- Wear slip-resistant protective toed lace-up work boots
- Take walkways and accesses provided
- Use handrails when using stairways
- Keep work areas well illuminated and clean

## PROTECT YOUR BODY

Maintaining your health through good nutrition, daily exercise and getting sufficient rest will help you stay safe both at work and at home.

### ***Repetitive Motions***

Many tasks in our scope of work require physical motion. Repetitive motion injuries can be lessened by following a few work behaviors:

- Take short frequent breaks from repetitive motion tasks; alternate tasks
- Maintain good posture when sitting and standing – awkward postures amplify the strain on muscles, tendons, and nerves
- Work at a steady speed to complete daily assignments
- Maintain flexibility by warming up your muscles before you begin working for the day – perform stretching exercise for your hands, wrists, back and neck to help avoid problems
- Purchase tools with ergonomic features to reduce the strain of repetitive motion tasks



## ***Awkward Postures and Force***

When working in awkward postures, your body parts are significantly altered from their neutral positions. This can lead to musculoskeletal disorders and injuries. To reduce the risk of injury, keep your body parts in neutral positions and stop what you are doing if you must use excessive force to get a task done. Look for better ways to complete your work when you are faced with pain or must stress your body.

## ***Fatigue***

Fatigue can set in at any time based on variables such as working environment, force needed to perform a task, and time. Fatigue can not only affect your physical strength, it can also affect your mental sharpness. To avoid fatigue (muscle tightness, aches, pains, and mental cloudiness), alternate from high force tasks to low force tasks, change work environment, rest your body during breaks and lunch, and stay hydrated.

# **MATERIAL HANDLING**

## ***By Hand - Consider your Back***

- Plan the move before lifting to ensure you have an unobstructed pathway
- Test the weight of the load before lifting by pushing the load along its resting surface
- If the load is too heavy (over 30 pounds) or bulky, use lifting and carrying aids such as hand trucks, dollies, pallet jacks, and carts or get assistance from a co-worker
- Position your feet 6-12 inches apart with one foot slightly in front of the other
- Face the load
- Bend at the knees, not at the back
- Keep your back straight
- Get a firm grip on the object – use handles if they are present
- Hold the object as close to your body as possible
- While keeping the weight of the load in your legs, stand in an erect position
- Perform lifting movements smoothly and gradually; do not jerk the load
- If you must change direction while lifting or carrying the load, pivot your feet and turn your entire body. Do not twist at the waist
- Set down objects in the same manner as you picked them up, except in reverse
- Do not lift an object from the floor to a level above your waist in one motion – set the load down on a table or bench and then adjust your grip before lifting it higher
- Never lift anything if your hands are greasy or wet
- Protective gloves are mandatory for all tasks

## ***By Mechanical Handling***

- Know the weight of the object to be handled
- Know the capacity of the handling device (crane, forklift, chain fall, come-along) that you intend to use
- Be familiar with the information in the manufacturer's operation manual which should be located on the equipment
- Use tag lines to control loads (do not wrap line around your hands or body)
- Have active, non-expired certification to operate material handling equipment
- Understanding principles of rigging prior to beginning; specific tasks will require certification
- Inspect and complete inspection tag prior to use of material handling equipment

## ***Material Preparation***

- Clean up ragged metal edges
- Pull all protruding nails and wires or bend them flush
- Store on dunnage for ease of handling

### ***Stability Control –Material and Equipment***

Ensure your body, material, tools, and equipment are safe from such unexpected movement as falling, slipping, rolling, tripping, blowing, or any other uncontrollable motion

- Use anchorage, lanyard, and body harness as required
- Protect the area below as a non-access zone with appropriate barricades and signs
- Put absorbent on all grease and oil spills immediately and then clean up spill immediately
- Chock all material and equipment (such as pipe, drums, tanks, reels, trailers, and wagons) as necessary to prevent rolling
- When working at heights, secure tools, equipment, and materials from falling
- Do not store materials tools on ladders, ducts, lighting fixtures, beam flanges, hung ceilings, or similar elevated locations

### ***Rigging***

***NOTE: You must be properly trained before you use rigging equipment.***

- Know the proper use of chain falls, come-alongs, chokers, shackles, nylon slings and clamps
- Inspect and Test rigging equipment prior to starting each work task
- Never raise a load over people.
- Use tag lines to control the load
- Know the capacity of rigging equipment and weights of loads
- Establish non-access zones using appropriate barricades

## **MISCELLANEOUS TOOLS AND EQUIPMENT**

### ***Hooks, Shackles, Beam Clamps, and Chokers***

- Only one eye in a hook- use shackle to hold two or more eyes
- All hooks must have a safety latch.- always place a load in the center of a hook and never on the point
- Get approval from your supervisor before rigging to any anchorage to ensure that it will support the load being raised
- Never use plate grips, tongs, pipe clamps, etc., as substitutes for beam clamps
- Hooks, shackles, and beam clamps should be inspected before use- Do not exceed the capacity marked on the equipment

### ***Chain Falls and Hoists***

- A chain hoist must be used within its rated capacity- make sure the capacity is marked on the equipment
- Chain hoists are designed so that one person can operate the hand chain to lift the maximum load for the chain hoist
- Do not leave an unsecured and unattended load hanging on a hoist or a chain fall
- Do not stand or have any part of the body below a load suspended on a chain hoist
- Do not wrap the load chain around the load to be lifted
- Every chain hoist should be inspected before making a lift – the inspection should include the hooks for any irregularities, the chain for wear or damage, and the housing and sheaves for any signs of damage

### ***Rope and Chains***

- Wire: Inspect for frays, kinks, broken wires, and worn spots before using
- Fiber: Inspect for excessive broken fibers, wear, and deteriorated inner and outer strands before using
- Chains: Inspect for wear and damage

Ensure ropes and chains are appropriate for tasks. If unsure, consult your supervisor.

## **PERSONAL PROTECTION**

Engineering and administrative safety controls will be used prior to or along with Personal Protective Equipment (PPE). The pre-task Hazard Analysis and Daily Safety Checklist will determine the appropriate controls to ensure **TAW** employees' safety and health.

### ***Clothing & Appearance***

All clothing must comply with general work and safety practices. Do not wear clothing that could get caught in machinery or otherwise cause an accident. Shirts with at least a four (4) inch sleeve with no holes must be worn at all times. While

working around rotating equipment or heavy machinery, shirt tails will be tucked in. Long pants at appropriate length to avoid tripping with no holes or rips should be worn.

### ***Eyes, Face, and Neck***

Eye Protection is to be worn 100% of the time with no exceptions. Employee supplied safety glasses and goggles, including prescription lenses and frames, must meet minimum standards. All protective glasses must have side shields

Face protection including face shields and welding shields are required when engaging in operations such as welding, burning, grinding, chipping, handling chemicals, corrosive liquids, or molten materials, operating power-actuated tools, drilling, driving nails, and other tasks which create debris or hazards to the face and neck areas. Safety glasses are to be worn under face shields

Employees engaged in welding must use filter lenses or plates of not less than No. 10 shade. Employees engaged in helping welders should not look directly at the welding process and must use approved eye protection. Welding can cause arc burns. Keep your neck and face protected

Burning goggles or glasses with a minimum shade of 3-5 and plastic cover plate on both sides of the filter lens or side shields are required for gas tasks such as soldering and cutting

All employee safety glasses whether supplied by the company or employee, including prescription safety glasses, will meet ANSI Z87.1 standards. Safety glasses should be worn on the jobsite at all times except in marked areas where safety glasses are not required such rest areas. Dark lens safety glasses should not be worn in buildings or areas where visibility is restricted

#### Precautions for eye debris

- Know the location of eyewash stations or portable eye wash bottles
- Flood eyes with water if contact with foreign matter is suspected
- Report all incidents to your supervisor immediately
- Do not try to remove foreign matter yourself, seek first aid
- Keep hands away from eyes and limit blinking

### ***Hearing Protection***

Approved hearing protection must be worn as specified in all posted areas and while working with or around high-noise-level producing machines, tools, or equipment. Unless otherwise notified, rule of thumb is “if you can’t carry a conversation at normal every day volume when standing approximately 3 feet from a co-worker, you should be wearing hearing protection”. Temporary hearing protection should be attached to hardhat at all times.

### ***Hand Protection***

Gloves are required to be worn 100% of the time. Suitable gloves should be worn for specific tasks:

- Cut and puncture resistant gloves are to be used when using edged or pointed tools or material (e.g., utility knives, electrical knives, insulators knives, etc.) and when working with sheet metal, wiring, piping, and the like
- Chemical resistant gloves are to be used for special types of work (e.g., solvents and corrosives)
- Dielectrically tested rubber gloves are to be used on all electrical work where there is possible contact with energized circuits (e.g., Panels, disconnects, motor control centers, etc.) Always inspect before using. Follow LOTO policies
- Leather glove worn when working with abrasive material or material exposed to heat or cold, etc.

### ***Restrictions***

Material should be secured when using power tools. Do not depend on your ability to hold against the power of a machine or tool. Rings and other jewelry **are hazardous** in the work area and should be removed while using power tools. Remember to let the tool do the work for you and do not use excessive force.

### ***Legs, Thighs, Knees, Shins and Ankles***

- Pointed tools should not be carried in pockets
- A canvas or leather tool sheath hung from the belt is acceptable- ALL POINTS DOWN!!

- Specific tasks will require additional PPE such as aprons, chaps, etc.

### Foot Protection

All employees are required to wear a substantial safety –toed boot (or ANSI Z41 equivalent) with preference to those providing ankle support through lacing. Rubber boots with safety toe protection should be worn on jobs subject to chemically hazardous conditions. Specific job sites may have additional requirements.

Shin guards and metatarsal guards are to be worn when jack hammering or when usage is required.

## FALL PROTECTION

Personal Fall Arrest Systems with appropriate anchorage points must be worn and tied off 100% when working on the following:

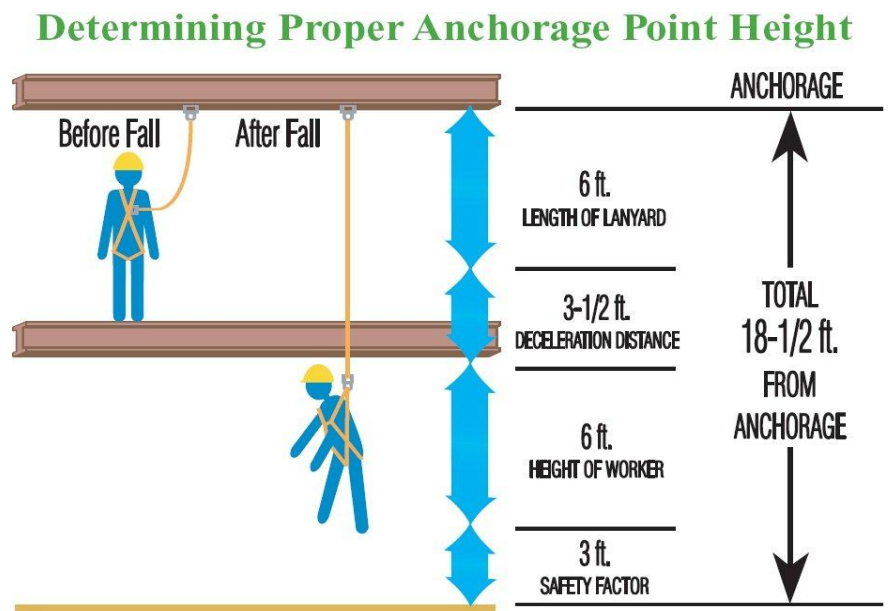
- On a walking or working surface (6) six feet or more above a lower level or within (6) six feet of a leading edge
- All sloped roofs
- Flat roofs without handrails within (15) fifteen feet of a leading edge for non-roofers, (6) six feet of a leading edge for qualified roofers
- Any suspended platform or stage
- Any scaffold with incomplete handrail or decking
- In all aerial lifts
- Ladders – per general safety requirements and per project requirements

Body harnesses must be arranged so that the support point is in the rear. Lanyards must be secured to a substantial overhead anchorage capable of supporting 5,000 pounds of force per person.

- Defective fall protection equipment must be immediately Red Tagged, taken out of service, and returned to fabrication facility
- Employees are responsible for inspecting their own personal fall arrest system before each use; inspection checklists will be completed before each use by the employee planning to use the PFAS.
- Components of personal fall arrest systems should be stored appropriately including hanging lanyards and harnesses in a dry environment

**\*Use this reference chart when using a 6 foot shock absorbing lanyard\***

**\*NOTE: NEVER USE FALL PROTECTION EQUIPMENT TO HOIST MATERIAL\***



***\*NOTE: Use a fall limiter or a self-retracting life line if application of chart cannot be met***

# CONFINED SPACE

Confined space means a space that (1) is large enough and so configured that an employee can bodily enter it; (2) has limited or restricted means for entry and exit; or (3) is not designated for continuous occupancy. Additional hazards can be the result of the presence of hazardous gases, vapors, fumes, cleaning chemicals, dusts, or excessive heat or cold. As well, the creation of an oxygen-deficient or oxygen-rich atmosphere creates hazards which may cause serious injury or death. To reduce your risk of confined space injuries and/or illness:

- Ensure you understand if the space has been designated confined space or permit confined space
- If designated confined space, you must have training as an attendant, entrant, or supervisor in the hazards, including means of exposure such as inhalation, signs of symptoms, consequences of exposure, safety controls, and rescue
- You must be trained in safe work practices - PPE, entry/exit procedures, work allowed in space, rescue plan
- Never enter a confined space without an attendant or hole watch outside of the space
- Maintain communication with the attendant/hole watch
- Exit the confined space as soon as possible when:
  - ordered by the authorized person
  - you or a co-worker recognize signs or symptoms of exposure
  - a prohibited condition exists

If you believe your job requires confined space entry and you are not properly trained, do not undertake the work. Contact your supervisor for approval.

# RESPIRATORS

## ***Respiratory Protection***

Appropriate respirators will be provided and used for protection against excessive concentrations of dusts, mists, fumes, or vapor and gases, or from oxygen deficiency. This PPE will be used when engineering controls and administrative controls do not provide sufficient protection from environmental hazards.

The appropriate respiratory protective devices will be provided for the hazardous material involved and the extent and nature of work performed.

If you are required to use respiratory protective devices, you will be provided a medical clearance physical, fit tested and properly trained in the use and care of respirators. Any employee whose job entails a reasonable expectation of wearing a respirator must maintain a clean shaven face in the seal area.

Make sure that all respiratory protective equipment is inspected regularly and is maintained in good condition. Respiratory equipment must be cleaned and sanitized according to manufacturer's recommendations after each use, stored and labeled in a dust-proof container or plastic bag between uses.

## ***Dust Mask***

### **Comfort/Nuisance disposable dust masks**

A comfort mask will be available through the approval of the safety department.

Dust Mask Safety Consideration:

- No dust mask will be used when there is a heavy concentration or unknown concentration of dusts, mists, fumes, vapors or gasses
- No dust mask will be used when there is a heavy concentration of dust particulates
- No dust mask will be used when a respirator is required
- No used dust mask will be taken off the job site
- If for any reason work becomes questionable, the work must stop and inspection and/or sampling will be conducted

# TOOLS, MACHINES, AND EQUIPMENT

## General

- Do not operate any tool without proper training; follow manufacturer's manual for safe use
- Some tools will require certification such as powder-actuated tools
- Some activities will require permits before using tools due to work environment hazards
- Tools and equipment must be in good condition and maintained in such condition
- Tools and equipment are to be inspected prior to use
- Tools or guards are not to be altered
- Tools are to be used only for their designed purposes
- No homemade tools are allowed on the jobsite
- Personal tools are subject to safety inspection at any time
- Tools showing damage or alterations will be Red Tagged, removed from the worksite, and returned to the fabrication facility for repair or replacement

## Hand Tools

Every tool is designed for certain tasks; use a tool only for its intended purposes. Every tool needs care!

- Keep your hand tools in good condition - sharp, clean, oiled, dressed, and not abused
- Worn tools are dangerous e.g., the "teeth" in a pipe wrench can slip if worn smooth; an adjustable wrench will slip if the jaws are sprung; hammer heads can fly off loose handles
- Do not use a tool if the handle surface has splinters, burrs, cracks, or splits
- Tools subject to impact (chisels, star drills, and drift pins, etc.) tend to "mushroom"- keep them dressed to avoid flying metal particles
- Don't force tools beyond their capacity or use "cheaters" to increase their capacity
- When handing a tool to another person, direct sharp point and cutting edges away from yourself and the other person
- Do not carry sharp or pointed hand tools screwdrivers, scribes, chisels, or files in your pocket
- Do not perform "make-shift" repairs to tools
- Do not throw tools from one location to another or from one employee to another
- When climbing, transport tools in a tool belt – do not carry tools in your hands or clothing

## Portable Power Tools

- Torque is the circular or rotating motion in tools such as drills, wrenches, and saws that results in a strong twisting force. Do not use excessive force. Be prepared in case of jamming
- Have good footing; use two hands, help as assigned, and be ready to release the power switch or trigger (this should be fail-safe so that it cannot be locked "on"). Watch for "coasting" or idling motion
- Flying objects can result from operating almost any power tool, so you must always warn people around you and wear proper eye and face protection
- Contact with moving parts can be hazardous - keep moving parts directed away from your body - Never touch a power part (e.g., drills, chucks, blades, and bits) unless the power source is disconnected and tool is de-energized
- Beware of swinging around with the tool running; someone might be behind you
- Tool condition should be monitored -inspect each power tool before using it - look for damaged parts, loose fitting, and frayed or cut electric cords - Red Tag, remove from site damaged or altered power tools and return to fabrication facility
- Tools must be de-energized with the electric cord unplugged before making tool adjustments - air must be "bled down" before replacement or disconnection
- Consumable parts must meet specifications and be inspected before use (e.g., grinder wheels and metal drill bits must be approved for maximum rpm of the machines, etc.)
- Portable equipment will 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
- Grounding-type equipment – a flexible cord used with grounding-type equipment will contain an equipment grounding conductor - Attachment plugs and receptacles may not be connected or altered in a manner that would prevent proper continuity of the equipment grounding conductor at the point where plugs are attached to receptacles - additionally, these devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the

current-carrying conductors - adapters which interrupt the continuity of the equipment grounding connection may not be used

### Guarding

Proper guards or shields originally installed by the manufacture will remain in place on all power tools while in use - do not use improper tools or tools without guards in place. No "handmade" handles or extension "cheaters" are permitted

## **Machine Safety**

### Adjustment, Servicing, and Repairs

- Shut down machines and take necessary action to prevent accidental starting - this will require a completed lock and tag procedure – all employees involved should be included in all LOTO procedures
- Replace all guards before start-up - remove cranks, keys, or wrenches used in service work
- Designated supervisors are responsible for LOTO procedures from de-energizing to re-energizing once task has been completed. LOTO procedures begin and end with a crew meeting to discuss procedures.

### Operating Practices

- Loose clothing, rings, and other jewelry are discouraged from being worn around operating machines- keep sleeves buttoned or rolled up
- Keep fingers away from moving parts - shut off machines and disconnect from energy source using LOTO procedures when remove waste - use a brush to clean up and deburr
- Inspect daily before start-up - look for loose or damaged parts, adequate lighting, lubrication, and abandoned tools or material that could "vibrate into trouble"
- Use clamps or vises to hold work whenever possible
- Many machines have safety interlocking devices - be sure they work, and NEVER BYPASS AN INTERLOCK DEVICE.
- Some machines use air, hydraulic, tension, electric, or a combination of energy sources all energy sources must be disengaged and LOTO procedure in place when necessary to make repairs or adjust moving parts - beware of air left in system - "bleed down"
- Fire hazards are constantly around us - oil, rags hot slag, and fuels are fire hazards - know where fire extinguishers are located and keep the machine area clean

### General Machine Safety

- Do not remove, alter, or bypass any safety guards or devices when operating mechanical equipment such as a mechanical power press, press brakes, metal working lathes, drills, or when bending or forming materials
- Do not try to stop a work piece as it goes through any machine - If the machine becomes jammed, disconnect the power before clearing
- Do not wear loose clothing or jewelry in the fabrication facility
- Read and follow safety warnings posted on or near any machinery
- Long hair should be tied back when working with machinery

## **MOBILE EQUIPMENT**

### **General**

It is our intent to provide you with equipment that is safe to use. You will be responsible for inspecting your equipment before use. If the equipment becomes defective in any way, notify your Supervisor immediately and place Red Tag - DO NOT USE tag on it. Know the limitations and specifications of the equipment you use. Understand the manufacturer's guidelines. Do not exceed those limits. Do not use the equipment for other than its intended purpose.

### **Mobile Equipment**

1. Only trained and certified employees will be permitted to operate mobile equipment including aerial lifts, forklift/powered industrial trucks, excavation equipment, and others as designated by the company.
2. Inspection and Maintenance: Mobile equipment will be inspected daily before being placed in service using a Mobile Equipment Inspection Tag or similar. If the inspection shows any condition adversely affecting the safety of the equipment,

it will be Red Tagged and returned to the fabrication facility or rental vendor. The manufacturer's manual should be stored on the equipment and operators should familiarize themselves with the manual's information.

3. Parked, Unattended Mobile Equipment: Lift mechanisms will be fully lowered, control neutralized, power source shut off, and brakes set before dismounting. Keys will be removed and provided to the superintendent or stored in the assigned location. If equipment is charging at the end of the day, it will be parked in a non-access area near the power source.
4. Traveling: All traffic regulations will be observed, including authorized speed limits on public and private roads, project sites, fabrication facilities, and lay down yards. Arms and legs are not to be extended outside the operator's compartment. No employee will walk or stand between a moving vehicle and a fixed object; no person will pass beneath the elevated lift mechanism whether loaded or not. Passing of other mobile equipment in motion is strictly forbidden. Obey all stop signals and sound your horn. Utilize common sense and caution by slowing down or stopping at intersections, blind spots, or other dangerous locations not specifically marked by traffic signs. Railroad tracks and other rough surfaces will be crossed at an angle whenever possible. Grades will be ascended and/or descended slowly. Loaded mobile equipment will ascend or descend all grades with the load upgrade. Unloaded vehicles will ascend or descend all grades with the lift mechanism downgrade. Avoid operating mobile equipment near the edge/side of an elevated ramp, dock, or platform. All dock plates or other bridging devices will be properly secured before driven over.
5. Loading: Only stable or safely arranged loads will be handled. Loads will at no time exceed the rated capacity of the mobile equipment.
6. Unloading: Unloading areas will be approached with caution. When operating a forklift control levers (Tilt, Up/Down) should not be manipulated until at the load deposit point. Use extreme caution when disengaging from a load and insure clearance of vehicle from load.
7. Stunt Driving and Horseplay Will Not Be Tolerated and will be grounds for immediate discharge.
8. Remove equipment from use immediately if repairs are needed or equipment is defective. Red Tag the equipment and notify your supervisor who will return the equipment to the fabrication facility or contact the rental vendor.

### **Company Vehicles**

The driver will be approved by Safety and complete T.A. Woods Company Vehicle Use Policy/Safe Driving Compliance prior to operating a company vehicle on public and private roads, project sites, fabrication sites, and laydown yards.

## **SIGNAGE**

### **Signs**

***Use signs when necessary and remove them promptly when no longer required. Pay attention to signs - follow their instruction.***

Signs are to be placed on barricade stands, posts, fences, doors, or other suitable locations. Before work starts signs must be placed where they will be most effective and removed when no longer needed. Signs must be legible and be color coded appropriately for the application.

### **Barricades**

- Barricades should be around 42 inches high and should be square and level.
- Use appropriate spacing with barricade stands.
- Hang an appropriate sign on each side of a barricade; add extra signs when a barricade has an extended span.
- Maintain barricades and signs as needed, fading, weather conditions, and altering due to changing work conditions



# FLOOR OPENINGS

## *Open Holes*

Anyone making a hole of 2 inches or greater in diameter that someone could trip, step into/fall through, to a lower level is responsible for having it properly barricaded with signage and properly covered.

All holes or openings through floors must be provided with a hole cover. Do not store material or equipment on a hole cover.

Hole covers should have a sign reading, ""HOLE COVER KEEP OFF\*\* in high visibility paint identified on the top of the cover. Covers must be cleated, wired, or otherwise secured to prevent slipping sideways or horizontally beyond the hole. Covers must extend adequately beyond the edge of the hole.

**NOTE: Hole covers must be capable of supporting at least two (2) times the maximum intended load.**

## Examples of Signs & There Proper Barricade Tape

**DO NOT MIX THEM!!!**



# WORK PERMITS

## *Permits*

The following permits are required BEFORE you may begin any of the listed activities. Also follow site specific permit requirements.

**Confined Space:** A space large enough and so configured for a person to enter and has limited or restricted means of entry or exit and is not designed for continuous human occupancy (e.g., tanks, vessels, bins, silos, hoppers, boilers, pits, trenches, vaults, septic tanks, sewers, underground utilities, pipelines and similar structures) and may contain a hazardous environment.

**Hot Work:** Flame or spark producing activities such as welding, cutting, grinding, open flame or excessive heat.

**Line Break:** Disconnecting piping where there is pressure, liquids, air, or other forms of material.

**Excavation:** All types of work that requires removal of dirt, etc.

**Hot Tap or Stopple:** Activity that requires qualified personnel to install a tap or stopple in a pressurized line.

**Electrical Hot Work:** Activity that requires qualified personnel to troubleshoot an electrical panel or control that is energized

**High Pressure Water Blasting:** Any type of high pressure water blasting that exceeds 5,000 PSI.

**Lifting/Crane:** Equipment having a boom and cable to raise, lower, and swing equipment or materials.

## LADDERS AND SCAFFOLDS

### *Ladders*

All ladders must be inspected prior to use. A Ladder Inspection Tag or similar document must be completed by the employee who will use the ladder.

Step-ladders must be fully opened and set level. Work facing the ladder with both feet in the rungs. Do not stand on the top two rungs of a ladder. Do not place ladders on barrels, boxes, bricks, pails, concrete blocks or other unstable bases. Maintain a three point contact when climbing or descending. Do not stand on the top steps of the ladder. Center your body in the middle of the ladder and do not over reach. Only one person is allowed on the ladder at a time.

Ladders are not to be painted except for identification purposes. Appropriate manufacturer decals must be affixed to the ladder and readable. The Duty Rating/weight requirements must be followed. Ladders should never be altered. Always follow manufacturer's specifications and guidelines. Extension ladders must be extended and secured three feet above landing areas. Do not use ladders for skids, braces, workbenches, or for any purposes other than climbing. If it is necessary to place a ladder in or over a doorway, barricade the door and post warning signs.

While ascending or descending a ladder, maintain three (3) points contact with the ladder. Do not carry items in your hands while climbing up or down a ladder. Do not jump from a ladder to the ground or to another surface. Keep both feet on the ladder rungs while working. Do not lean past the frame of the ladder or place one foot on a line or piece of equipment. Never place tools or materials on the steps or platform. Change the position of the ladder as often as necessary in order to face the work.

- When not in use, the ladder should be returned to a proper storage area and stored in a secure position – ladders should be stored in an upright position and secured with lock to protect against theft.
- Do not stand on a ladder that wobbles to the left or right of center
- Do not use ladders having loose rungs, cracked or split side rails, missing rubber foot pads or are otherwise visibly damaged
- Red Tag defective or damaged ladders – return to fabrication facility for disposal
- Care should be taken when transporting ladders to avoid damage

### *Scaffolds*

Qualified employees with the appropriate training and certification are permitted to erect and dismantle scaffolding. Before starting work on a scaffold, it should be inspected by a competent person who is trained and certified in the safety requirements of working on the scaffold. Daily inspections will be documented on the appropriate inspection tags. Red Tag (do not use) or green tag will be affixed to the scaffold daily

When working on any scaffold platform not equipped with standard guardrails or complete deck, personnel must wear safety harnesses with the lanyard property tied off to a substantial anchorage capable of supporting 5,000 pounds.

When working on any scaffold (rolling, stationary, or suspended) in the vicinity of energized electrical lines or equipment, employees must ensure that no part of the scaffold or his/her body will come in contact with the electrical lines or equipment. A minimum of 10 feet separation is recommended with additional clearance needed based on voltage and work tasks.

- Do not alter a scaffold unless you are a qualified person. Only certified builders will erect, disassemble or alter scaffolding.
- No one is allowed to ride on a rolling scaffold when it is being moved -remove or secure all tools and material on deck before moving.

# WELDING, BRAZING, AND CUTTING

## **General**

Welding machines, equipment, and accessories must be inspected daily before use by completing a Mobile Equipment Inspection Tag or similar inspection document. No welding, brazing, or cutting will begin until directed by a T.A. Woods Company supervisor. Welders will be certified in the specific task such as 6G (pipe), structural, orbital or other.

Avoid breathing fumes. Utilize natural ventilation, air movement systems and ventilation systems, and/or respiratory protection.

No welding or burning is to be done on a closed vessel or tank, or on any vessel or tank that has not been cleaned. A supplied air respirator is required when cutting or burning inside a tank or vessel.

A Hot Work Permit is required prior to the start of welding, striking an arc or lighting a torch. Additional permits may be required based on the work tasks.

Each welder or brazer is responsible for containing sparks and slag and/or removing combustibles to prevent a fire. Fire watch will be conducted for 30 minutes after the last weld unless otherwise advised by the host facility.

Safety Precautions specifically for employees welding, soldering, brazing, and cutting:

- Obey all signs posted in the welding area
- Do not leave oily rags and paper in welding, cutting, or brazing work areas
- Do not perform hot work within 50 feet of containers of flammable or combustible chemicals
- Red hose=gas fuel                      Green hose =oxygen
- Inspect machine, leads, grounds, clamps, gauges, torches, and cylinders before each work shift and complete inspection tag
- Do not use worn, burned, or cracked hoses
- Leads, hoses will be clear of passageways
- Do not use oil, grease, or other lubricants on the regulator
- Blow out hoses before attaching torch
- Ignite torches with friction lighters only; do not use a cigarette lighter
- Do not change electrodes with bare hands – use dry rubber gloves
- Do not wear contact lenses while welding, brazing, soldering, or cutting
- Wear a protective welding helmet with filter plate and lenses
- When brazing, soldering, or cutting wear appropriate lens 3-7 in safety glasses, full face shield as applicable
- Wear clothing made of cotton, wool or non-synthetic fibers
- Use a welding screen to shield others from flying slag and intense light
- Do not use a torch on any container labeled flammable or combustible

## **Protective Clothing**

Protective clothing required for welding and burning varies with the scope and environment of the work to be performed.

- Cotton or special fire retardant synthetic clothing should be worn. Other types of clothing are very flammable and melt, causing more serious burns when exposed to flames and high temperatures.
- All welders should wear flameproof gauntlet gloves: when brazing, soldering, or cutting leather gloves will be worn
- Flameproof leather (or suitable material) aprons should be considered if long-term exposure to radiant heat or sparks is anticipated.
- Flameproof sleeves are mandatory when welding, burning, or cutting with a flame.
- Consider using fire resistant leggings, high boots, or equivalent for heavy work.

## **Welding (Electric)**

All work must have a separate and adequate ground. The ground lead must be pulled from the machine to the work locations

Do not leave a rod in the electrode holder when laid down. Put stub ends in proper containers - not on the floor.

You are responsible for turning your machine off at the end of your shift and securing all components.

Appropriate PPE must be worn including welding helmet, gloves, sleeves, apron, protective-toed boots, and other as applicable to the work tasks.

Do not weld, cut or burn near or near flammables/combustibles.

### ***Burning (Gas)***

After the regulator is connected, stand to one side of gauge while the cylinder valve is opened. Open the cylinder valve slowly. Be certain that the second stage of the regulator is closed before opening the cylinder valve.

Open valves on fuel gas cylinders (propane, acetylene, nature gas) 3/4 turn only. Open oxygen cylinder valves wide open.

Do not exceed 15 psi on the torch side of the gauge when using acetylene.

When lighting a torch, open the fuel gas valve on the torch before opening the oxygen valve. Use an approved striker. Do not use matches or cigarettes to light a torch.

All compressed gas cylinders should be kept in bottle-carts when transported or in use. Do not use compressed air to blow out anchor holes or clean your work area.

All burning rigs must be tied off vertically to an adequate support while in storage, transit, or use. Oxygen and fuel gas shall be separated at a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire resistance rating of at least one-half-hour.

Keep oil and grease away from oxygen-regulator hose and fittings. Do not store wrenches, dies, cutters, or other grease-covered tools in the same compartment with oxygen equipment.

Never leave a torch in a vessel, tank, or other closed container because of the potential hazard of leakage.

Never use oxygen in pneumatic tools to pressurize a container, to blow out lines, or as a substitute for compressed air or other gases.

Place cylinders and hoses where they are not exposed to sparks and slag from a burning operation. Use check valves or flashback arrestors on fuel lines.

Handle cylinders with care, as follows:

- Lift to upper levels with approved cages only.
- Do not strike an arc on cylinders.
- Do not use cylinders as rollers.
- Do not lift with slings or by the protective cap.

Break down regulators and replace caps on the bottle at the end of the shift.

### ***Compressed Air***

Check hoses and couplings daily before use. Use only hoses designed to handle decompressed air. Never crimp, couple, or uncouple pressurized hose. Shut off the valve and bleed down the hose.

All hose couplings must be provided with a positive locking device (i.e. wired together). **Do not use compressed air for cleaning off clothing or workbenches at any time.** Keep hoses off the ground or floor wherever they interfere with walkways, roads, etc.

# ENERGY SOURCES – Electrical, Hydraulic, Chemical, Mechanical, Tension, Etc.

## **General**

Any employee working in the vicinity of energized power distribution lines must ensure that no part of his/her body, tools, or equipment will come within 10 feet of the power lines. If the job requirements do not permit this, specific safety precautions must be taken to ensure employee safety.

## **Energy and Apparatus**

**T.A. Woods Company is a zero-energy state company, meaning we do not work on energized lines or equipment.** In the event this type of work is necessary, a permit must be obtained ALONG with direct approval by the project or safety manager. Employees engaged in electrical work must have adequate tools and protective equipment prior beginning work. All energized electrical panels and outlets must be covered appropriately against accidental contact with conductive material.

**ONLY A QUALIFIED ELECTRICIAN TRAINED IN "NFPA-70E" (ARC FLASH TRAINING) WILL BE PERMITTED TO PERFORM ELECTRICAL WORK ON ENERGIZED SYSTEMS AND ONLY AFTER DIRECT APPROVAL BY THE PROJECT MANGER OR SAFETY MANAGER.**

**Prior to working on any machinery or equipment when guards are removed, every energy source including electrical, hydraulic, chemical, mechanical, tension, etc.) must be deactivated, stored energy dissipated, and the control looked in the off (safe) position. This lock out procedure will be instituted by a competent person.**

## **Lock, Tag, Try, Test**

1. Each person required to work on machinery or equipment for maintenance, construction, repair, production plug-up or for any other reasons which might create a hazard, must have a clean and un-mutilated "DO NOT OPERATE" tag with his/her name and date on the tag. Each person must also have a lock designed for locking out breakers or other energy source.
2. Before starting work, the main disconnect switch of the machine will be turned to the "OFF" or "LOCK" position. Supervisor will hang his/her lock & tag first.
3. If more than one person is to work on the equipment, a multiple hasp will be attached to the disconnect switch, or a lock box will be set up after it has been turned to the "OFF" position and locked out. Each person will then attach his/ her lock and tag to the hasp or lock box.
4. After locking out and tagging the main disconnect switch, the start button switch will be pushed to make sure the equipment is inoperative. All employees other than LOTO supervisor will be clear of machine and/or work area if applicable.
5. Test terminals to ensure zero voltage and to eliminate any other sources of energy that may exist.
6. When the work has been completed, communication will be made to the employee group and each person will remove his own lock and tag.
7. If the work has not been completed by the end of a shift, the person(s) who attached their lock and tag will remove them and notify his/her supervisor and facility personnel in charge of the equipment. The oncoming shift will attach his/her lock and "DO NOT OPERATE" tag to the hasp or lock box.
8. When work is completed the supervisor will be the last person to remove his/her lock and tag after confirming that it is safe to do so. Crew members will be clear of the equipment and work area.
9. Locks and tags that have been inadvertently left on after the work has been completed or after the end of the shift may be removed only by a safety representative or supervisor, and then only after it has been made sure that the employee who attached the lock and tag has left the site and that it is safe to remove the lock and tag.
10. No one will add or remove another person's lock under ANY circumstances, except stated in #9.

## ***Lock-Out Devices and Tags.***

Lock-out devices and tags are placed on energy sources that must not be operated to eliminate injury. Lock out devices and tags will be available for the different types of disconnects, breakers, etc., that you encounter. Tags that are printed “DANGER – DO NOT OPERATE” will be used for this activity.

## **Example of a lock out tag**



## ***Electric Shock Hazards***

Guard against shock at all times. Keep the following in mind:

- Use ground fault interrupters (GFCIs) when using cord and plug tools or equipment
- Use battery or low voltage lights whenever possible
- Relocate ground wires when they must be disconnected from plumbing to ensure that grounds are properly connected
- Remember we work “zero energy” – practice LOTO
- Turn off the main current breaker and lock it prior to starting any generator- this will prevent inadvertent energization of power lines from back feed electrical energy
- Turn off generators and let them cool completely before refueling
- Use double-insulated tools and equipment distinctively marked as such
- Inspect all electrical equipment before use
- Do not stand in wet areas when using portable electric tool

## ***Burn Prevention***

Many work duties may subject you to possible burn injuries resulting from hot equipment, steam lines, hot pipes and/or hot water. When working with machinery, use the following safety techniques:

- Ensure that fuel systems including lines, tanks, and valves are operating without leaks
- Ensure that fuel to air ratio is not too high
- Wear appropriate PPE including hard hat, heavy-duty gloves, eye protection, full face protection based on task, hearing protection and full coveralls as needed
- Treat a boiler vessel as a permit-required confined space
- All sources of energy must be locked out and tagged out prior to any tasks

## **FIRE PROTECTION**

### ***General***

Permits are required for welding, burning, other open flame work, or energized work.

### ***Extinguishers***

Know the location of the nearest fire extinguisher and how to operate it. Know the type of fire on which it should be used. Check the label. Be aware that certain toxic fumes may be generated by a fire.

Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use. Return extinguishers for servicing promptly after use. Fire extinguishers are used for incipient fires that are no larger than an office waste basket with no known combustibles or flammables in or near the fire or used when exiting the building when there is a potential of fire exposure. Extinguishers are not intended to fight a building fire.

All Fire Extinguishers must be inspected and tags initialed at the start of each month.

Remember **P-A-S-S** when using a portable fire extinguisher

**P**ull the safety pin

**A**im the nozzle at the base of the fire

**S**queeze the operating trigger

**S**weep side to side covering the base of the fire

### ***Combustibles***

Combustible material must be kept away from steam lines, radiators, heaters, hot process, and service lines. Combustible material under or near welding and burning operations must be moved to a safe distance away or covered with fire-retardant material. Where this is not possible, all sparks and slag must be contained.

### ***Refueling***

Portable power equipment must not be refueled while running or when hot. Use a static ground when available to prevent an explosion.

### ***Smoking***

Smoking including the use of e-cigarettes is authorized in approved areas during designated approved breaks and lunch. Discard tobacco products in approved receptacles, never in waste baskets or trash cans. Employees will abide by project and facility rules.

### ***Flammables***

Flammables must be stored in properly labeled containers and in designated areas. Keep flammables away from smoking, welding, burning, or other sources of heat.

### ***Liquids - Flammable***

Do not use any of the following types of liquids until given specific safety instructions to do so.

- Petroleum fuels
- Thinners
- Degreasers
- Protective coatings
- Acids
- Caustics

**NOTE: STORE FLAMMABLES AND COMBUSTIBLES IN PROPER STORAGE CONTAINERS AND CABINETS.**

<b>*There are 3 classes of common fires and 2 specialty classes*</b>	
<b>CLASS A:</b> Class A fires involve common combustibles such as wood, paper, cloth, rubber, trash and plastics. They are common in typical commercial and home settings, but can occur anywhere these types of materials are found.	
<b>CLASS B:</b> Class B fires involve flammable liquids' gases, solvents, oil, gasoline, paint, lacquers, tars and other synthetic or oil-based products. Class B fires often spread rapidly and, unless properly secured, can reflash after the flames are extinguished.	
<b>CLASS C:</b> Class C fires involve energized electrical equipment, such as wiring, controls, motors, data processing panels or appliances. They can be caused by a spark, power surge or short circuit and typically occur in locations that are difficult to reach and see.	
<b>CLASS D:</b> Class D fires involve combustible metals such as magnesium and sodium. Combustible metal fires are unique industrial hazards which require special dry powder agents.	
<b>CLASS K:</b> Class K fires involve combustible cooking media such as oils and grease commonly found in commercial kitchens. The new cooking media formulations used for commercial food preparation require a special wet chemical extinguishing agent that is especially suited for extinguishing and suppressing these extremely hot fires that have the ability to reflash.	
<i>(NOTE: Although ABC and BC Dry Chemical extinguishers can control a fire involving electronic equipment, the National Fire Code (NFPA 75-1999 edition), Section 6-3-2, specifically advises against dry-chemical extinguishers for fires involving computers or other delicate electronic equipment due to the potential damage from residues.</i>	

## HAZARDOUS MATERIALS

### ***Hazard Communication (Right to Know)***

If you are working with hazardous chemical, or may come in contact with them, you must be provided information and training concerning the hazardous chemicals by your employer. This training should include, but not be limited to:

- An explanation of the Hazard Communication Standard
- Notification of the training requirements of the Hazard Communication Standard.
- Notification of the locations of the hazardous chemicals.
- A description of the labeling system.
- A description of the Safety Data Sheet (SDS) their use, and location

General rules for handling chemicals:

- Read all labels and Safety Data Sheets
- Follow instructions for quantity – more does not mean better
- Minimize contact with chemicals by wearing PPE such as gloves, glasses, goggles, face shields, aprons, and respirators as needed
- Always wash your hands after handling chemicals
- Questions or concerns regarding chemicals should be reported to your supervisor.

All chemical containers must be labeled to identify contents and hazards. Most labels use numbers to rank the hazard level in three important areas:

- Fire (red background) – will the material burn?
- Health (blue background) – is the material dangerous to the body?
- Reactivity (yellow background) – is the material dangerously unstable?



Pictograms will be used to denote the types of hazards

## ***Dangerous Substance Exposures***

### *Asbestos:*

Inhaling asbestos fibers can cause serious lung diseases or harm to other organs that may not appear until many years after your initial exposure. Take the following precautions when working near or with ACM:

- Review documents supporting the work area is free of ACM including inspection and abatement if necessary
- Do not eat, drink, smoke, or chew gum in areas of potential exposure or adjacent areas
- If asbestos is detected, follow company policies regarding safe work practices such as respirators, coveralls, PPE, hygiene and decontamination guidelines
- When working with asbestos, utilize wet dust suppression techniques by keeping the material wet and vacuum the dust regularly using a HEPA vacuum

### *Lead:*

Lead can accumulate on your skin and clothing in the form of dust. It can also be inhaled or ingested in the form of fumes and can damage the lungs, kidneys, nervous system, intestines, and reproductive system. If you are working with lead, it is imperative that you rigorously practice good personal hygiene to minimize your health risks. Good hygiene can also prevent you from taking lead-contaminated dust out the workplace and possibly into your home. Use the following safety practices when working with lead:

- Review document supporting the work area is free of lead or has permissible exposure limit including inspection and abatement if necessary
- Do not smoke, eat, drink in contaminated work areas or while wearing contaminated clothing
- Use open flames with caution around lead dust clouds, which can be highly flammable under certain circumstances
- Wear appropriate PPE at all times
- Avoid generating dust by using the correct tools
- Do not use materials that are incompatible with lead such as oxidizers, acids, bases
- Open containers on approved surfaces
- Follow handling precautions for chemicals listed on the Safety Data Sheet (SDS)
- Use wet dust suppression by wet down the area with water then vacuum with a HEPA filter
- Wear a respirator when designated; ensure all procedures have been completed in order for you to wear a respirator

### *Mold:*

Standing water can contribute to the growth and transmission of many kinds of fungi, some of which may cause illness. Due to the nature of what we do, we may be at an increased risk of exposure to airborne fungi and spores. This material may travel through the respiratory tract when it becomes airborne. Consider the following safety suggestions when working in potential mold growth areas:

- Learn to recognize the symptoms of mold exposure including eye irritations, flu-like symptoms, and wheezing.
- Prolonged contact with contaminated water can lead to a fungal skin infection – minimize your risk by washing your skin with warm, soapy water and keep your skin as dry as possible
- Avoid breathing dust generated by moldy building materials
- In addition to engineering and administrative controls, you may need to wear appropriate PPE
- It is important to practice good hygiene including washing your body thoroughly after work

### *Silica:*

Crystalline silica is a basic component of soil, sand, granite and many other minerals. Quartz, the most common form, is a component of sand, stone, rock, concrete, brick, block, and mortar. All forms may become respirable size particles when employees chip, cut, drill, or grind objects that contain crystalline silica.

Silicosis is a disabling, non-reversible lung disease.

Consider the following safety suggestions when working with or near silica:

- Follow engineering and administrative controls set by your employee – including wet cutting techniques
- Wear appropriate PPE
- Use wet dust suppression by wetting down the area with a water and using a vacuum with a HEPA filter
- Avoid dry sweeping and avoid be in areas where others are dry sweeping
- Do not eat, drink, smoke, in areas where crystalline silica dust is present

- Practice good hygiene – wash your hands and face

#### *Carbon Monoxide:*

Carbon monoxide (CO) is a colorless, odorless gas whose dangers can strike without warning. It is non-irritating during exposure, yet lethal. CO is produced when gas equipment is not working properly which allow high levels of gas to escape into the air. In addition gas-powered tools may also put you at risk of CO over exposure.

You should be mindful of the signs of CO poisoning, including: feeling dizzy, drowsy, nauseated, having tightness across your chest or vomiting. Contact your supervisor immediately if you or a co-worker experience these symptoms.

#### *Corrosive Liquids (Acids and Caustics)*

Do not store, handle, apply or use acids or caustics until your supervisor has provided directives, safety precautions, and proper PPE.

Never add water to acid; if dilution is needed, read the chemical's label for instructions. Dispose of chemically soaked material in the proper container.

#### *Radioactive Material:*

Keep clear of all radioactive material and areas where such work is being done. These areas will have radiation hazard signage.

**If you have any concerns or desire any information concerning chemicals in your workplace, ask your Supervisor for information.**

## **ENVIRONMENTAL SAFETY**

### **Heat –Related Illnesses**

1. Wear clothing conducive for the temperature – preferably light cotton or cotton blend shirts and work pants
2. Adapt to working in hot conditions gradually, avoid over-exerting during peak temperature periods
3. Drink water frequently – 4 to 8 ounces every 20 to 30 minutes – stay away from caffeinated drinks as they tend to increase urination which causes rapid depletion of body liquids
4. Watch for the following signs and symptoms of heat-related illnesses:
  - Heat cramps – muscle spasms in the back, stomach, arms, and legs, which are attributed to the loss of body salt and water during periods of heavy perspiration
  - Heat exhaustion – heavy sweating, cool or pale skin, nausea, headache, weakness, vomiting, fast pulse
  - Heat stroke – high body temperature, minimal sweating, red and dry skin, rapid breathing and pulse, headache, nausea, vomiting, diarrhea, seizures, confusion, or unconsciousness
5. Treat heat illness as soon as possible by doing the following:
  - Heat cramps – move to a cooler area and drink approximately 6 ounces of water every 15 minutes. Follow up with a physician if needed
  - Heat exhaustion – move to a cooler area and lie down with your legs slightly elevated, cool your body by fanning and applying cool, wet towels and drink approximately 6 ounces of water every 15 minutes. Follow up with a medical examination
  - Heat stroke – call 911 immediately – move to a cooler area, remove outer clothing, immerse yourself in cool water or apply cool, wet towels or cloths to the body. Do Not drink liquid and wait for emergency personnel to arrive

### **Cold Weather Illnesses**

1. Exposed skin freezes within one minute at -20 F when the wind speed is 5 mph and will freeze at 10 F if the wind speed is 20 mph. When skin or clothing are wet, injury and illness can occur in temperatures above 10F and in some instances above freezing. When the body is unable to warm itself, hypothermia and frostbite set in, resulting in permanent tissue damage and even death.
2. Watch for the following signs of cold-related illnesses:
  - Uncontrollable shivering
  - Slurred speech
  - Clumsy movements
  - Fatigue
  - Confused behavior
3. Layer clothing to keep warm enough to be safe, but cool enough to avoid perspiring excessively

- Inner layer – synthetic weave to keep perspiration away from the body
  - Mid layer – wool or synthetic fabric to absorb sweat and retain body heat
  - Outer layer – material designed to break the wind and allow for ventilation
4. Wear an approved hard hat liner to help avoid losing body heat
  5. Place heat packets in gloves, vests, boots, and hats to add heat to the body
  6. Watch for effects of cold temperatures on common body functions such as:
    - reduced dexterity and hand usage
    - cold tool handles reducing your grip force
    - the skins reduced ability to feel pain in cold temperatures
    - reduced muscle power and time exhaustion

## EMERGENCY GUIDELINES

Stay calm and think through your actions. Know the location of the building exits. Do not take elevators, use the stairs. Do not hesitate to alert others as you exit if you believe there is an emergency occurring. All employees should be made aware of the rally point for each site.

### Evacuation

Employees will be notified of a possible emergency via warning system such as a fire alarm, air horn, radio, or other means. This includes fire, inclement weather, storms, hurricanes, earthquakes, threats, and acts of violence.

Upon becoming aware of the emergency, you should follow the directives provided by your supervisor. Do not delay evacuation to get personal belongings or to wait for others. As applicable, all doors should be closed as the last person exits. Upon leaving the crisis area, all should report to the rally point for a head count. If any employee is missing, an immediate report should be made to the nearest supervisor who will in turn report this to the first responders.

Employees will stay together in a group at the rally point until dismissed. The order to re-occupy a building or site will be issued by designated personnel.

### Fire Safety

Alert others as you exit the area. If you have been trained to extinguish an incipient fire, use the following approach:

When using an extinguisher, stay between the fire and an exit; stay low and back away when the fire is extinguished. A fire extinguisher is not intended to fight a building fire, but rather a tool to help you escape.

### Medical Emergency

Upon discovering a medical emergency, notify your supervisor immediately. Stay with the person involved until released by your supervisor. Do not come in contact with body fluids unless you have current First Aid Certification and Bloodborne Pathogen training and have the proper personal protective equipment. Human Resources will make necessary notification to family members of the employee suffering the medical emergency.

### Bloodborne Pathogens

Blood and other body fluids can carry pathogens which are capable of causing diseases including HIV and hepatitis. We can't tell by looking at a person if they are infected with a pathogenic disease, you must take precautions.

- If a co-worker is injured and losing body fluids, alert a Supervisor immediately. Stay away from the area and warn others to also do so. You may stay close enough to the injured person to support him/her, but only those with first aid training should provide care.
- In the event you find spilled body fluid, a syringe, or other medically contaminated materials, do not attempt to clean. Contact your supervisor.

If a task or project location subject you to possible bloodborne pathogens, appropriate training and vaccinations will be made available at the company's expense.

## **Workplace Violence**

Any employee who feels he/she has been threatened should immediately report this concern to the immediate supervisor. If preferred, report directly to Human Resources.

- If any person (employee or non-employee) is observed exhibiting threatening behavior or making threatening statements, the person discovering the situation is to report this immediately to the highest ranking company supervisor on site. Communication will be made with Human Resources.
- Depending upon the level of concern, the supervisor will contact the authorities using the 911 call system
- **Never** attempt to confront any person exhibiting threatening behavior

## **CLOSING**

Thank you for taking the time to review and read this safety manual. Our success as an organization depends on our ability to be safe in the workplace. If you have any questions regarding this manual please contact your supervisor.