

# Emergency Action Plan, Fire Safety, Machine Guarding, Lockout Tagout Affected, Creating Good Habits, Blocked Fire Extinguishers, Ladder Safety

## Emergency Action Plan (EAP)

An emergency action plan (EAP) is a written document that acts as a blueprint or guide to help facilitate and organize both employer and employee actions during workplace emergencies. Well-developed emergency plans, along with proper employee training (to understand their roles and responsibilities) will result in fewer and less severe injuries/illnesses and less damage to the facility during emergencies. A poorly prepared plan and/or no employee training, will likely lead to a disorganized emergency response, resulting in confusion, injury, and damage.

This training session will help employees better understand how to prepare for and respond to emergencies in the workplace. Employees will learn about evacuation routes, emergency alarms, responding to fire or smoke, responding to a chemical spill, responding to natural disasters, etc.

### **When to sound the alarm:**

Every employee needs to be prepared for emergencies and know how to safely respond to various workplace emergencies. Examples of some workplace incidents that will cause for alarm, and have emergency protocol take place are:

- Experience or anticipate an explosion
- Chemical spills or gas leaks
- Natural disasters
  - Tornado, Earthquake, Severe Weather
- Human Threats
- Workplace violence or terrorism
- Most common cause for emergency:
  - Fire
  - Smoke

### **Evacuation Procedures:**

- Understand emergency alarm
- Listen for any specific instructions
- Follow the nearest exit route
- Know locations of fire extinguishers
- Proceed to the designated assembly area
- Assist others that may be in need of assistance

### **Emergency Alarms:**

- Manual fire alarm box
- Public address system
- Phones or radios
- Air horn
  - One continuous blast means outside evacuation
  - Intermittent blasts mean inside collection
- Word of mouth/Intercom system

### **Emergency Routes:**

- Should be unobstructed
- Keep dangerous items away
- Exit should be clearly visible and distinctive
- Non-Exit doors or passages need to be marked "Not an Exit"
- If they can be mistaken as an exit or passageway

- Be sure there is nothing obstructing the exit door from opening, like snow

### **Collection Points:**

#### *Outside Collection Points*

- Ensure collection point does not block emergency vehicles
- Proceed directly to your designated meeting area
- Make sure you are accounted for

#### *Inside Collection Points*

- Should be a central location
- Should not be exposed to windows
- Management should bring a weather radio and phone access with them

### **Emergency Contacts:**

- Emergency reporting procedures (who reports emergencies)
- Emergency contact information o 911 vs 9-911
  - Employee contact information
- List of employees for head count

### **What a Fire Needs to Burn:**

- Fuel Source
  - Flammable liquids
  - Gasoline/Kerosene
- Ignition Source
  - Heat, flames, sparks, static electricity
- Oxygen
  - Present at all times in air

### **Fire Prevention:**

- Keep dust under control
- Dispose of oily rags appropriately
  - Store in closed approved containers
- Don't allow combustibles to accumulate
- Keep emergency exits clear

### **Different Fires Need Different Treatment:**

The National Fire Protection Association has classified fires into four main types. Remember to determine which type of fire/fuel source you're dealing with before you choose an extinguisher. All fire extinguishers are labeled to tell you which classes of fire they're designed to be used for.

#### *Classes of Fires*

- Class A – fires are the most common. They involve wood, cloth, paper, rubber, and plastics. Water or dry chemicals should be used to extinguish these fires. Do not use carbon dioxide extinguishers or those containing sodium or potassium bicarbonate.
- Class B – fires involve flammable liquids, gases, and greases. Foam, carbon dioxide, and dry chemical extinguishers should be used. Water fog and vaporizing liquid extinguishers may also be used.
- Class C – fires involve electrical equipment. Carbon dioxide and dry chemical extinguisher should be used. Do not use foam or water extinguishers.
- Class D – fires involve combustible metals, such as magnesium, titanium, zirconium, and sodium. These fires require special techniques to control. None of the extinguishers mentioned should be used.

Multi-purpose extinguishers (ABC) will handle all A, B, and C fires. **All fire extinguishers are labeled with either ABC, or A, or B, or C, so be sure to read the label.**

### **How to Use a Fire Extinguisher:**

*Remember the word PASS*

- Pull the pin
- Aim the extinguisher nozzle at base of fire
- Squeeze the trigger while holding extinguisher upright
- Sweep the nozzle side to side, cover the area of the fire

Remember, fire extinguishers are for small fires only or to be used to help you escape the building. 10-pound fire extinguishers last between 7-15 seconds.

### **New Employee Question List:**

When a new hire comes on board it is imperative that we are answering a few questions for them in how we conduct our EAP. After discussing this try frequently quizzing them as it will help if an emergency ever comes up. Examples of some new hire questions are:

- What are our alarms and where are they located?
- Where are the fire extinguishers?
- Where are our emergency exit doors in my area?
- Where are our collection points?
- Who is my direct supervisor for future questions?

### **Machine Guarding**

Guards are installed on machines to protect operators and others in the area from injury. Today, most machines at most worksites are equipped with guards. The dramatic improvement in guarding over the past dozen or so years has meant fewer employees sustaining the crushing injuries that used to occur all too frequently.

Yet even today some operators find ways of putting themselves in danger by removing or bypassing machine guards or tampering with interlocks so they can operate their machines faster. *In this company, failure to use the guards provided is cause for disciplinary action.*

Here are some facts to show why it is important to properly guard your machine.

- 18,000 serious injuries every year
- 800 deaths per year still occur on average by those who operate and maintain machinery
- Power Press Brakes and Forging Machines are the most cited types for large machine safeguarding

### **Where Are The Hazards?:**

Listed below are the main areas where contact with a piece of machinery can cause the most harm or potential death to a person. Recognizing these areas before starting work and making sure they are properly guarded will be the best way to keep yourself and others safe from unnecessary harm.

#### **Point of operation**

- Where work is performed on a material to shape or manipulate it to its desired form.

#### **Mechanical power transmission**

- The components of the mechanical system that transmit energy to the part of the machine performing the work.

#### **Other moving parts**

- Any exposed moving component that could cause injury.

### **Where Hazards Occur:**

There seem to be as many hazards created by moving machine parts as there are types of machines. Safeguards are

essential for protecting workers from needless and preventable injuries.

A good rule to remember is, any machine part, function, or process which may cause an injury must be safeguarded. When the operation of a machine or accidental contact with it can injure the operator or others in the vicinity, the hazards must be either controlled or eliminated. Some examples of basic machine hazards that require safeguarding include:

- Point of operation
  - Rotating parts
    - Shafts, including shaft ends
    - Gears and pulleys
    - Collars, couplings, and cams
  - Nip/Pinch points
    - Rotating cylinders
    - Chains and sprockets
    - Belts and pulleys
  - Shear points
    - Hedge trimmers
    - Grain augers
    - Rotary mower blades
  - Crushing points
    - Presses
    - Unsecured materials and equipment
    - Heavy objects
  - Cutting actions
    - Band saws
    - Circular saws
    - Drill presses
    - Lathes and mills
    - Flying chips, scrap metals, or sparks
- Mechanical power transmission
  - Pulleys and flywheels
  - Connecting rods and couplings
  - Belts
  - Cams and cranks
  - Spindles
  - Gears and chains
- Other moving parts

#### **Most Common Safety Measures:**

- Fixed guards - These guards should only be removed by lockout tagout authorized employees.
- Safeguarding Devices - These guards are set when traditional fixed or distance guards aren't enough. They stop the machine if a hand or any part of the body is inadvertently placed in the danger area.
- Distancing guards and Tools - Forces employees to stay out of the area in which work is being performed by the machine, thus preventing contact.
- Awareness Barriers – These are warning devices used in conjunction with other guards to keep employees aware of the dangers.

Rules to remember:

1. Do not operate without a guard
2. Do not bypass a guard
3. Shutdown during service
4. Never reach into operating equipment
5. Use appropriate protective equipment such as distancing guards or PPE
6. Maintain machinery properly
7. Give yourself “An O.U.T.” by never reaching  
Around, Over, Under, or Through guards

### **Best Practice for Operation (Machine Operation Check List):**

Breakdowns, jammed work, and broken parts sometimes cause us to forget ordinary safety procedures. Very often, to remedy these conditions it is necessary to get into out-of-the-way places. During these situations, use extreme caution. Use a push stick or block to help remove pieces.

Guards are there to prevent injuries and should never be tampered with. It is to everyone's advantage to make sure all guards are placed properly—and it pays to double-check; hands, arms, and lives are saved that way. If you see a piece of equipment without a guard, or any other unsafe condition, report it to your supervisor immediately, whether the equipment is in your work area or elsewhere. When working with machinery, you should also do the following:

- Before turning on the machine, check that guards are in place at:
  - Exposed points of operation
  - Ingoing nip points
  - Blades
  - Rotating parts including drive components (chains, belts, pulleys, etc.)
  - Any operating points that send off flying chips or sparks
- Never remove or defeat safeguards. Majority of amputations are the result of operators removing or defeating safeguards.
- Never operate a machine that is missing a guard. Never operate a machine that is not equipped with adequate point-of-operation safety guards or safety devices.
- Never leave machines unattended with parts still moving. Never leave a machine that is still on or has been turned off but is still coasting.
- No loose clothing, long hair, or jewelry. Confine or tie back all loose clothing, long hair, and jewelry.
- Never reach around or under a guard. You are defeating the guard's purpose!
- Don't use gloves. They can interfere with a precise grip or get caught in pinch points or the point of operation.
- Check machines before use. If anything seems to be missing or not working properly, report it.
- Lock out the machine if a guard or safety device needs to be removed.

### **Abrasive Grinding Wheels:**

A common piece of equipment that's used throughout many facilities in general industry is the abrasive grinding wheel. When it comes to properly guarding abrasive grinding wheels, the guarding must meet the following minimum general requirements:

- Resting Guard
  - Set at an 1/8 inch from the wheel
- Tongue Guard
  - Set at a 1/4 inch from the wheel
- Adjustable shields do not replace or substitute for a mandatory tongue guard

## **Lockout/Tagout**

When a machine requires maintenance or repair, energy (pneumatic, hydraulic, electrical, or mechanical) must be turned off and locked and tagged with a label to protect workers from accidental machine start-up or unexpected energy release. Lockout and tagout procedures are used to warn employees and ensure that the electrical power is properly disconnected. Only qualified, authorized employees can disconnect the source of power and lock and tag it. There are two types of employees when you are talking about lockout/tagout:

- Authorized – is that employee who can physically lockout a piece of equipment (usually a set-up person or a maintenance person). Unless you have been trained in proper lockout procedures you are not authorized to lockout equipment.
- Affected – is the employee that is affected by the equipment being lockout (machine operator).

Locks and tags are used for everyone’s protection against electrical dangers. **For your safety and others, never remove or ignore a lock or tag.**

### **Responsibilities of Being Lockout/Tagout Affected:**

If you operate or use machinery or equipment on which servicing, or maintenance is being performed under Lockout/Tagout, or you work in an area in which such servicing or maintenance is being performed, your job qualifies you as “affected”. As an “affected employee”, it’s your primary responsibility to report any machinery or equipment issues and leave the machinery/equipment alone while it’s being serviced or repaired. Some of your main responsibilities include:

- Notifying maintenance of issues
- Leaving locks, tags, and equipment alone

### **Lockout Affected:**

As an “affected employee”, you also understand how to respond:

- Stay clear of the area and wait for further commands
  - If possible, vacate the area entirely
- Talk with management about what to do while your machine is under lockout tagout
- Do not touch locks, tags, or place any other lock on machinery
  - Do not assist lockout tagout authorized employees with any part of the lockout tagout process
- If you are not trained, you are not allowed to be involved

### **Lockout Authorized Procedures:**

To safely apply energy control (Lockout/Tagout) procedures to machinery or equipment (using Lockout/Tagout devices), “authorized employees” must perform certain procedures, in a specific order, before servicing or performing maintenance on the machinery/equipment. These procedures are:

1. Notification of employees: “Affected employees” should be notified of the planned lockout or tagout before controls are applied.
2. Preparation for shutdown: Before an “authorized” or “affected employee” turns off a machine or equipment, the “authorized employee” must have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.
3. Machine or equipment shutdown: The machine or equipment must be turned off or shut down using the procedures established for it to avoid any additional or increased hazards to employees as a result of the machine or equipment stoppage.
4. Machine or equipment isolation: All energy-isolating devices that are needed to control the machine's energy source must be located. These devices must then be used to isolate the machine or equipment from its energy source.
5. Lockout or tagout device application: Lockout or tagout devices must be affixed to each energy-isolating device by “authorized employees”. Lockout devices where used, must be affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position. Where tagout devices are used, it must be affixed in a manner that

will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.

6. Stored energy: After the energy-isolating device has been locked out or tagged out, all potentially hazardous stored or residual energy must be relieved, disconnected, restrained, or otherwise rendered safe.
7. Verification of isolation: Before any work begins on machines or equipment that have been locked out or tagged out, an "authorized employee" must verify that the machine or equipment has been properly isolated and deenergized.
8. Release from Lockout/Tagout

### **Creating Good Habits:**

When working in hazardous conditions you should always expect a safe working environment. Sometimes when we work we can make some mistakes that create a hazardous working environment without even realizing it. It is important to work towards creating better habits in the workspace not only to remove hazards but also to prevent them before they even come about. We all deserve to be able to go home properly every single day and the work you do to make that happen should always matter. Take the time, learn the process, and teach others to make this environment as safe for you and your fellow coworkers as you can.

#### **How Can This Help:**

- Reduces Mistakes
- Reduces Injuries
- Increases Productivity
- Decreases Absences
- Decreases Turnover
- Improves Stress Management

#### **Safety Attitude:**

Sometimes simply changing your mindset can be more than enough to improve the safety in the workspace. A safe environment is one that is worked on by everyone. Do everything you can to work towards a safer goal and always remember the it is a consistent thing we must do every day.

- Following all safety procedures
- Work with your full attention
- Avoid Horseplay
- Speak up about improvements
- Ask Questions
- Participate in Trainings

#### **Staying Organized:**

- Evaluate your working spaces
- Remove hazards prior to work
- Label all bottles
- Clean as you go
- Empty filled trash cans
- Store flammables in flammable cabinets
- Control combustible dust

#### **Maintaining PPE:**

- Inspect before each use
- Ensure proper fit
- Replace not repair
- Have the correct PPE
- Evaluate job for additional need
- Understand all hazards prior to work
- Follow all required dress codes

**Teamwork:**

- Accountability is a top priority
  - Everyone needs to follow all safety rules
  - No one is exempt
- Encourage each other to:
  - Report all accidents and near misses
  - Do the right thing
- Ask questions when:
  - You don't understand a safety procedure
  - Don't agree with a safety procedure
  -

**Blocked Fire Extinguishers:**

Fire extinguishers are one of the most important safety tools in any workspace or public area. It is important if we have a chance for a fire to start that we are proactive in the suppression of it and the access to said devices. The worst scenario would be a small fire starting and we are unable to get to an extinguisher so instead a building burns down. Safety for ones self is the top priority but if we can prevent a small fire from growing we should.

**Prevent Blockage:**

- Watch where you store material
  - Access to fire extinguisher needs to be unobstructed
  - Pathway to it needs to be clear
  - Extinguisher needs to be easily reachable
- Extinguishers need placed every 75 feet
  - Keep extra around areas prone for fires
  - Move extinguisher if blocking becomes consistent
- Utilize floor markings and Overhead markings
  - Signage is required

**Fire Extinguisher Inspections:**

Just like maintaining the space is important so is the condition of a fire extinguisher. Maintaining the fire extinguisher in the best way possible is a consistent way to always be prepared for the worst. Through inspections and replacements are absolutely necessary in all cases.

- Monthly Inspection
  - By Qualified Employee
  - Check the Tamper Seal
  - Check the Fluid Level
  - Sign and Date
- Annual Inspection
  - By an outside company
  - Schedule Ahead
  - Checks for major damage or low charge

**Reporting Issues:**

- Low Extinguisher Levels
  - Report to manager immediately
  - Get a replacement ASAP
- Fire extinguisher blockage
  - Remove obstruction
  - Report if persistent issue
- Encourage temporary storage to be away from emergency equipment
  - Permanent storage as well

**Ladder Safety:**

Every year many injuries and deaths are tied to ladders. Injuries can be serious, even from a short height. It is important to understand how to use a ladder safely, how to inspect a ladder for safety, and how to store a ladder properly.

### **Basic Types of Ladders:**

- Step Ladders (A-Frame Ladders)
- Wheeled Ladders
- Fixed Ladders (Part of building structure)

### **Controlling Hazards:**

- The use of ladders is one of the leading causes of fatalities and injuries. Fortunately, ladder accidents can be prevented.
- You don't have to suffer a painful, possibly disabling injury. You have the power to prevent ladder accidents by taking three simple steps:
- Use the right ladder for the right job
- Use ladder that is free from defects
- Use the ladder in the way it was designed to be used.
  - The Right Ladder:
- Use the right type, length, and rating for the job
- Never use the top two steps of a ladder
- Tell your supervisor if you need a longer ladder

### **Free from Defects:**

All ladders should be inspected before each use. It doesn't take long to check out a ladder to make sure it's safe to use. But those few minutes could be the most important of your life.

- Regardless of ladder type, inspect the ladder before each use
- Do NOT use the ladder if it is bent or there are missing parts
- Tell your supervisor about the defective ladder

### **Ladder Inspection:**

When you do a ladder inspection, check to make sure that:

- Steps or rungs are in good repair and free of mud, grease, oil, or sticky substances;
- Side rails have no cracks or splits;
- Metal parts are lubricated;
- Rope is not worn or frayed;
- Spreaders or other locking devices are in place and working properly;
- Splinters or sharp edges have been filed down;
- Safety feet are solid and in place; and
- Metal ladders are free of dents and bent parts.

You should also inspect ladders following any tip-overs or possible damage to a ladder that has been struck by something, hit something, or been dropped.

### **Proper Use:**

- Ladders must be used according to the manufacturer
- Take the time to read the information
- Read and follow all informational stickers and warning labels
  - Replace missing stickers or warning labels
- Maintain 3 points of contact
- Maintain proper positioning
- Do NOT lean away from the ladder to carry out our task
- Always keep your weight centered between the side rails
- Move the ladder as necessary

- When using ladders to access another level, secure and extend the ladder at least 3 feet above the landing point
  - Angle ladder so the horizontal distance of the bottom is 1/4 the working length of the ladder
- Fixed Ladders:
- Must be equipped with a:
    - Personal fall arrest system, ladder safety system (if installed on/after 12-19-2018)
    - Personal fall arrest system, ladder safety system, cage, or well (if installed before 12-19-2018)
  - PFAS or ladder safety system must provide protection throughout entire vertical distance of ladder

**Wheeled Ladders:**

Although like a regular staircase, the fact that it is mobile adds new hazards and as a result further safety precautions that need to be followed such as:

- Must be equipped with a:
  - Properly functioning wheels/tires
  - Brake/ wheel locking system
  - Chain/barrier at the top of the stairway
  - When working at the top of the ladder, a chain or guard must be in places for fall protection.
  - Positioned on a level surface.
  - Ensure the wheels are locked in place before climbing.
  - Know the maximum capacity and don't overload.
  - Before moving it to a new position, make sure nothing has been left on the ladder that could fall off and hurt someone.

**Resources**

- (OSHA, osha.gov)