

# Workshop Safety Guide



# Table of Contents

General Workshop Safety Rules.....	2
Back and Lifting Safety.....	3
Ladders and Stairway Safety.....	4
Hand Tools Safety.....	6
Power Tools Safety (General).....	7
Saws.....	8
Drills.....	9
Powder-Actuated.....	10
Welding Safety (Arc).....	11
Welding Safety (Oxy-Acetylene).....	13

# Workshop Safety Rules

1. Follow all safety precautions. Be aware of your surroundings and refrain from any activity that could result in an accidental injury.
2. Restricted substances (drugs or alcohol) are not permitted on the premises.
3. If drug and/or alcohol use is suspected, a student will be asked to take a drug test or breathalyzer before resuming participation in the workshop activities.
4. Students must remain in their respective class areas while class is in session.
5. Be aware of emergency exit routes, fire extinguisher and first aid locations. Report all fires to your supervisor.
6. Never remove a tag labeled "caution," "danger," etc., without authorization. Safety.
7. Head protection shall be worn when falling objects may be a hazard.
8. Do not leave tools, cords, or equipment where anyone can trip over them.
9. Students should not wear jewelry, especially long earrings and necklaces.
10. Long hair should be tied back at all times.
11. Food is allowed in the designated eating area only.
12. Smoking is permitted only in the designated area outside of the building.
13. Carry full trash bags away from the body to prevent accidental cuts, scrapes, or abrasions from items within the bag.
14. Students must wear prescribed personal protective equipment.
15. Do not carry sharp objects in pockets or clothing.
16. Report all equipment defects immediately.
17. Horseplay, practical jokes and fighting that could result in injury and/or property damage must be avoided.
18. Deliberate mishandling of tools, equipment or property is prohibited.
19. Never commit or participate in unsafe behavior.
20. Everyone should observe all safety signs.
21. Careful consideration shall be given to environmental hazards created by inclement weather such as snow and ice. Caution shall be used when driving in the workshop parking lot.
22. Sexual, racial, and/or gender harassment will not be tolerated at any time in workshop.
23. Inappropriate clothing shall not be worn in workshop, (i.e. tank tops, shorts, sandals, ill-fitting jeans and/or tops).

# Back and Lifting Safety Rules

1. Lift correctly: bend your knees and lift with your legs.
2. Communicate with others when carrying large items.
3. Look where you are going, especially through doors and around corners.
4. Be aware of the back end and what's behind you.
5. When carrying tall objects like a flat or ladder, lift with one hand high to carry the weight and one hand low to balance the object.
6. If you are losing your grip or if something is too heavy, tell the person you are carrying it with and take a rest and get a better grip.
7. When you lean materials against a wall, be sure that the object is a sufficient distance between its base and the wall, so it will not fall back by itself.
8. Use hand trucks or carts whenever possible to move an item.
9. If the object is too heavy, large, or awkward to lift, get help.
10. Be certain you have good footing for balance. Wear footwear with a good non-slip sole. Place feet comfortably shoulder width or slightly more apart, one foot slightly in front of the other.
11. Keeping the back straight, bend your knees to squat comfortably to grip the object. Keep object close to your body.
12. Wear gloves if necessary to get a comfortable grip and protect the hands from sharp corners and splinters. Get a palm grip, do not grip with fingers only.
13. Do not twist your body or jerk the load.
14. Never attempt to catch or stop falling objects.
15. Do not lift over shoulder height without help. Keep your balance.
16. Do not travel while carrying a heavy load.
17. Unless absolutely necessary, no one person shall lift another person.

# Ladders and Stairway Safety

1. Always have someone hold the bottom of the ladder.
2. Before you get on a ladder, make sure that all four legs are firmly on the floor.
3. Remember not to leave anything on top of a ladder.
4. When working above on a ladder be aware of overhead scenery, lighting instruments, and electrical cables.
5. Do not hand-carry loads on a ladder.
6. Do not try reaching so far that you lose your balance; move the ladder.
7. Do not stand on the ladder's top three rungs.
8. The base should be spaced 1 foot away for every 4 feet it reaches up.
9. Ladders used to reach a walking surface or roof must extend at least 3 feet beyond.
10. Extension ladders need both locks holding to prevent overloading a rail.
11. Never use a folding step ladder in an unfolded position.
12. Maintain ladders and stairways free of oil, grease, and other slipping hazards.
13. Do not load ladders beyond their maximum intended load nor beyond their manufacturer's rated capacity.
14. Use ladders only for their designed purpose.
15. Use ladders only on stable and level surfaces unless secured to prevent accidental movement.
16. Do not use ladders on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement.
17. Secure ladders placed in areas such as passageways, doorways, or driveways, or where they can be displaced by workplace activities or traffic to prevent accidental movement. Or use a barricade to keep traffic or activity away from the ladder.
18. Keep areas clear around the top and bottom of ladders.
19. Do not move, shift, or extend ladders while in use.
20. Always face the ladder when climbing up or down.
21. Use both hands when climbing a ladder.
22. Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
23. Ladders shall never be used in the horizontal position as scaffolds or work platforms.
24. Never drop anything from overhead or stairway.

## **Ladders and Stairway Safety (cont.)**

25. Never run on stairway.
26. When ascending or descending stairs, use handrails.
27. Do not use stairway if handrail is broken.
28. Do not climb stairs when view is obstructed.
29. If the object is too heavy, large, or awkward to carry alone up or down stairs, get help.
30. Unless absolutely necessary, no one person shall carry another person up or down stairways.
31. Wet stairways are hazardous, do not use unless absolutely necessary.
32. Do not hang over top rail of mezzanine area.

# Hand Tool Safety

1. Appropriate personal protective equipment such as safety goggles and gloves must be worn to protect against hazards that may be encountered while using hand tools.
2. Instructors and students have a responsibility to work together to establish safe working procedures. If a hazardous situation is encountered, it should be brought to the attention of the proper individual immediately.
3. Hand tools should be used only for the purpose for which they were designed and should not be mistreated. For example, wrenches should not be used as hammers and screw drivers as levers.
4. Sharp edged or pointed tools without protective covers should not be carried in pockets.
5. Wrenches, including adjustable, pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.
6. Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.
7. The wooden handles of tools must not be splintered or cracked.
8. Never use a screwdriver as a chisel.
9. Do not run in workshop while carrying hand tools.
10. Use the right tool for the job.
11. Examine each tool for damage before use.
12. Floors should be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

# Power Tool Safety Rules (General)

1. Always wear the proper PPE (Personal Protection Equipment)
2. Do not wear loose clothing or jewelry that can get caught in moving parts. Long hair must be restrained.
3. Do not operate a machine until: a) receiving proper instruction, b) fully understanding how to use it, c) you have permission.
4. Wear eye protection.
5. Use all safety guards exactly as they are supposed to be used.
6. If the tool is equipped with a three-prong plug, it should be plugged into a three-hole electrical receptacle. Never remove the third prong.
7. Keep the cord in good condition.
8. Keep it away from heat, oil, and sharp edges.
9. Never carry a tool by its cord, or yank the cord to disconnect it from a receptacle.
10. Never carry a plug-in tool with your finger on the switch.
11. Report any defective or broken plugs and insulation on cords.
12. Make all adjustments to tools with the power off and the electrical cord disconnected.
13. Start & stop the machine yourself and stay with machine until it stops.
14. Keep a safe distance between your hands & all moving parts on the machine.
15. Never work on a machine or power tools when you're tired or hurried.
16. When two people work on a machine, the person who is operating the machine should give instructions and the person who is helping should follow them.
17. Give your machine your full attention. Don't look away or talk to others.
18. Never startle someone who is using a power tool or machine.
19. Plan your work before you begin. If you're going to be cutting a big piece, get help before you start. Don't wait until you're in trouble.
20. Don't leave a machine unattended while it's running.
21. Disconnect the electrical power before you oil or clean a machine.
22. Keep your work area clear of scrap, liquids, & other items.
23. Don't lean or lounge on machines.
24. Notify your instructor immediately if anything breaks or malfunctions.
25. Get first aid treatment for every injury and notify instructor immediately.



## Power Tool Safety (Saws)

1. When working on a table, miter, band, or circular saw, never put your hands anywhere near the moving blade, especially when attempting to remove waste or cut-offs.
2. Always check the stock you're preparing to cut for any metal (nails, screws, staples, etc.) before beginning a cut.
3. Always disconnect the electricity to the power tool before changing the blade, oiling, or performing maintenance.
4. Never use an electric saw where there are flammable vapors or gases present.
5. Never use a portable electric tool where there are flammable vapors or gases present.
6. Secure work with clamps or a vise, freeing both hands to operate the tool.
7. Avoid accidental starting. Workers should not hold a finger on the switch button while carrying a plugged-in tool.
8. Always use the correct blade for the application
9. Be sure to keep good footing and maintain good balance.
10. Before starting a circular saw, be sure the power cord and extension cord are out of the blade path and are long enough to freely complete the cut.
11. Avoid cutting small pieces that can't be properly secured and material on which the saw shoe can't properly rest.
12. When you start the saw, allow the blade to reach full speed before contacting the work piece.
13. Check carefully for loose power cord connections and frays or damage to the cord. Replace damaged tool and extension cords immediately.
14. When using saw blades, direct the tools away from aisle areas and away from others who are working in close proximity.
15. Do not use saws if blades are cracked.

## Power Tool Safety (Drills)

1. Never use a drill where there are flammable vapors or gases present.
2. Avoid accidental starting. Workers should not hold a finger on the switch button while carrying a plugged-in tool.
3. Check carefully for loose power cord connections and frays or damage to the cord. Replace damaged tool and extension cords immediately.
4. Be sure the chuck is tightly secured to the spindle. This is especially important on reversible type drills.
5. Tighten the bit securely as prescribed by the owner/operator's manual. The chuck key must be removed from the chuck before starting the drill. A flying key can be an injury-inflicting missile.
6. Check auxiliary handles, if part of the tool. Be sure they are securely installed. Always use the auxiliary drill handle when provided.
7. Always hold or brace the tool securely.
8. Don't force a drill. Apply enough pressure to keep the drill bit cutting smoothly.
9. Disconnect drill when not in use, before servicing and cleaning, and when changing bits.
10. Avoid accidental starting. Workers should not hold a finger on the switch button while carrying a plugged-in tool.
11. Operate drills within their design limitations.
12. Ensure that cords from electric tools do not present a tripping hazard.
13. Keep hands clear of the barrel end of drill.
14. Never point the drill at anyone.

## Power Tool Safety (Powder-Actuated)

1. Inspect the tool before using it to determine that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions and has the proper shield, guard, and attachments recommended by the manufacturer.
2. Do not load the tool unless it is to be used immediately.
3. Do not leave a loaded tool unattended, especially where it would be available to unauthorized persons.
4. Keep hands clear of the barrel end.
5. Never point the tool at anyone.
6. Do not fire fasteners into material that would allow the fasteners to pass through to the other side.
7. Do not drive fasteners into very hard or brittle material that might chip or splatter or make the fasteners ricochet.
8. Always use an alignment guide when shooting fasteners into existing holes.
9. When using a high-velocity tool, do not drive fasteners more than 3 inches (7.62 centimeters) from an unsupported edge or corner of material such as brick or concrete.
10. When using a high velocity tool, do not place fasteners in steel any closer than 1/2-inch (1.27 centimeters) from an unsupported corner edge unless a special guard, fixture, or jig is used.

# Welding (Arc)

1. Attend welding safety orientation before operating.
2. Use approved helmets and safety goggles with side shields
3. Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless pants, high top shoes or leather leggings, and a cap.
4. Do not wear pants with cuffs or shirts with open pockets or any clothing that can catch and hold molten metal or sparks.
5. Remove any combustibles, such as butane lighter or matches, from your person before doing any welding or cutting.
6. Do not weld, burn, or braze without appropriate eye protection. A light resistant shield should be provided whenever bystanders may be visually exposed to the arc.
7. Properly ground the equipment according to the instruction manual and national, state, and local codes.
8. Do not touch live electrical parts.
9. Insulate yourself from the work piece and ground by wearing rubber soled shoes or standing on a dry insulated mat or platform.
10. Never dip the holder in water to cool it or lay it on conductive surfaces.
11. Do not touch holders connected to two welding machines at the same time or touch other people with the holder or electrode.
12. Do not use worn, damaged, undersized, or poorly spliced cables, welding gun cables, and torch cables.
13. Make sure all connections are tight, clean, and dry.
14. Do not wrap cables around your body.
15. Ground work piece if required by codes.
16. Do not touch an energized electrode while you are in contact with the work circuit.
17. Turn off all equipment when not in use.
18. Disconnect the power to equipment if it will be left unattended or out of service.
19. Keep all covers and panels securely in place.
20. Do not attempt to disconnect electrical equipment under load.
21. Do not apply heat to a work piece covered by an unknown substance or whose coating can produce flammable, toxic, or reactive vapors when heated.
22. Do not dispose of hot slag in containers holding combustible material.

## **Welding (Arc) cont.**

23. All welding, cutting, and burning shall be performed in welding booths only with the exception of oxy-acetylene cutting.
24. Do not weld or burn in areas where spray painting is being performed.
25. Do not attempt to weld if hands and/or clothing are wet.
26. Keep leads and cables clear from obstructing passageways, ladders, and stairways.
27. Do not overload equipment.
28. Use only a proper earthing clamp or bolted terminal.
29. If there is a smell of gas in the workshop, please notify Chicago Women in Trades and/or the New Skill Builders personnel immediately.

# Welding (Oxy-Acetylene)

1. Unqualified persons are not allowed to use the equipment without approved supervision.
2. Read and understand operating instructions before using equipment.
3. Always refer to your welding and cutting charts for proper tip sizes, pressure settings and volume requirements.
4. Inspect and purge all systems before use.
5. Keep work areas clean and well ventilated.
6. Wear welding gloves, helmet, leather apron, welding chaps, leather shoes, welding goggles, and other personal protective equipment to help prevent weld burns and injury.
7. Do not wear clothing made of synthetic fibers while welding.
8. Never look directly at welding arc without proper eye protection.
9. Do not handle cylinders roughly.
10. Never force or hit valves.
11. Use correct wrench to tighten all connections (except the nozzle, which should be hand tightened only). Do not over tighten.
12. Do not move cylinders.
13. When regulators are not on cylinders, keep safety caps in place.
14. Never use oil on welding equipment.
15. Always open cylinder valves correctly. Open the valve on the acetylene cylinder no more than three-fourths of a turn so it can be closed quickly in case of emergency. Open the valve on the oxygen tank fully. While welding or cutting, leave the valve wrench in position.
16. Never stand in front of a regulator while you are opening a tank valve.
17. Do not saturate your clothing with oxygen or acetylene.
18. Before and while lighting the flame, keep the tip pointed away from your body.
19. Always use a striker to light torch, never use matches or lighter.
20. Never use acetylene at a pressure over 15 psi.
21. Do not smoke or allow anyone else to smoke near the oxy-fuel gas welder.
22. Keep the flame and heat away from the cylinder, hoses, and people.
23. Never hang a lighted torch over the fuel cylinders or regulators.
24. Never walk around with a lighted torch or lay it down.

## **Welding (Oxy-Acetylene) cont.**

25. Do not leave the work area until the cylinder valves are closed and pressure is relieved from hoses.
26. Do not weld or cut on containers that have held flammable materials.
27. Remove regulators and replace protective caps before transporting cylinders.
28. Oxygen cylinders should be stored away from acetylene cylinders.
29. Handle hot metal with pliers or tongs.
30. Do not leave hot metal on the welding table unattended.
31. Never use damaged equipment.
32. Always have a fire extinguisher handy when operating oxy-acetylene equipment.
33. Do not carry lighters, matches or other flammable objects in pockets when welding or cutting.
34. Always be aware of others around you when using a torch.
35. Be careful not to let welding hoses come into contact with torch flame or sparks from cutting.
36. No attempt shall be made to transfer acetylene from one cylinder to another, or to mix gases in a cylinder.