

Apprentice & Journeymen Training Trust Fund Of the Southern California Plumbing & Piping Industry

Torch Work Policy & Procedure

1. Proper Protective Equipment (P.P.E.) must be worn during all torch work operations:
 - ANSI Z87+ rated safety glasses with side shields are required. Additional eye and face protection may be required for the job. Refer to Eye and Face Protection Policy & Procedure and Figure 1-1 P.P.E. Recommended Shade Level Chart.
 - Fire resistant work gloves. Refer to Figure 1-10 Welding Glove Recommendations.
 - Work attire – long pants, long-sleeved shirt, welding jacket, sleeves or leathers.
 - Synthetic materials that easily burn or flare up must not be worn.
 - Keep shirt sleeves and collars buttoned.
 - Cuffs and material frays should be eliminated from work pants.
 - Avoid tucking pants into work boots.
 - Work boots must be ankle high or greater.

2. Safety precautions:
 - Remove all flammables and combustible hazards from the work area. If they cannot be fully removed, they must be protected with fire blankets.
 - A portable fire extinguisher must be on hand while performing torch work.
 - Verify extinguisher is the correct size and type.
 - Inspect extinguisher before use – it must be in good condition, fully charged and ready for use.
 - Review operating instructions located on the side of the extinguisher.
 - Perform torch work in a well-ventilated area.
 - If proper ventilation cannot be achieved, stop work and inform the Instructor of Supervisor immediately.
 - Check for sparks and smoldering material in and around the work area during hot work operations.
 - After hot work operations are completed, inspect in and around the work area for sparks and smoldering material.

3. Transporting/handling:
 - A suitable hand truck or bottle cart must be utilized when moving cylinders.
 - Cylinders must be secured to hand truck or bottle cart.
 - NEVER drag or roll cylinders.
 - NEVER leave cylinders free-standing unattended.
 - Regulators must be removed before transporting cylinders.
 - Verify valve is closed.
 - Valve protection cap must be in place, straight and snug.

4. Cylinder storage:
 - Must be stored in well-ventilated location, separately, in their designated area, with a fire resistant wall separating oxygen and acetylene cylinders.
 - Incompatible gasses and materials must be stored separately.
 - Secured in the vertical position, valve closed and protection cap in place.
 - Empty and full cylinders must be segregated.
 - Empties must be tagged “Empty” and dated.
 - Storage area shall be properly ventilated and free of trash and debris.

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- Access and egress to storage area must be unrestricted.
- Cylinder storage area must be secured.
- Access to cylinder storage is limited to A&J Authorized Staff and students, under the direction of an A&J Authorized Staff Member.
- Cylinders must be protected from being struck, excessive heat, flame & sparks.
- Cylinders must be used in the order received.

5. Inspection:

- Cylinders must be inspected upon delivery from gas supplier and before each use.
- Must verify gas cylinder contents are correct type and size ordered.
- Verify the compressed gas cylinder contains the proper type needed for the task being performed.
 - If you are not sure if gas is correct, stop work and ask.
- Damage to bottle, including dings, dents, cracks, arc marks, corrosion, etc. should be reported immediately.
- Valve protection cap should be in place, on straight and free of damage and is easily removed.
- Valve handle should be in place and undamaged.
- Valve body should be free from damage, corrosion, oil and grease.

Oil and grease on oxygen valves, regulators, torch components or connections can result in a violent chemical reaction or explosion

- Fusible plug should be in place, undamaged and with no sign of tampering.
NEVER use a cylinder if it doesn't not meet all parts of inspection
- Remove cylinder from service immediately.
- Clearly mark cylinder as "unsafe", with a short description of issue, time & date.
- Inform Instructor or Supervisor. Supervisor will inform the gas supplier.

6. Use after compressed gas cylinders have passed inspection:

- Cracking while standing behind or to the side of the valve outlet, **NEVER** in front of the valve outlet.
- Slightly open and close cylinder valve to dislodge any dirt and debris that may be present in valve. Always crack valves in a well-ventilated area.
- If a valve key is needed to open and close a compressed gas cylinder, it must be left in place while the cylinder is in use.
- **NEVER** open the valve on an acetylene bottle more than 1 ½ turns.

7. Regulators:

- **NEVER** use a compressed gas cylinder without proper regulator.
- Verify regulator is the correct type for cylinder contents.
- Inspect regulator body and connections for damage.
- Regulator must be free of oil and grease.
- Connect regulator to cylinder and snug with a wrench.
- While standing with the cylinder between you and the regulator, **NEVER** in front of or behind the regulator, perform cracking procedure.
- **NEVER** modify or tamper with regulators or their components.
- Acetylene must not be used at pressure higher than 15 P.S.I.
- The presence of oil or grease on oxygen valves, regulators, torch components or connections can result in a violent chemical reaction or explosion.

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NEVER use a regulator if it does not meet all parts of inspection

- Remove from service immediately.
- Clearly mark as “unsafe”, with a short description of issue, time & date.
- Inform Instructor or Supervisor.

Regulators must be cleaned and repaired by a qualified technician

8. Hoses and connections:

- Hoses must be closely inspected before each use.
- No visible damage to hoses, such as cracks, burns, holes, etc.
- No signs of improper repairs made to any part of the hose.
- **NEVER** use tape to repair a hose.
- Hoses must be protected from flame, sparks, moving equipment, sharp and falling objects.
- Oxygen hose is the color green.
- Acetylene hose is the color red.
- Hose should be ran so as not to create a tripping hazard.
- Connections must be ferrule or clamp type.
- Connections must be capable of withstanding twice the maximum delivery pressure of the regulator being used.
- Oxygen equipment has right hand threads.
- Acetylene equipment has left hand threads & indentations on the connections.

NEVER use a hose or connection that does not meet all parts of inspection

- Remove from service immediately.
- Clearly mark as “unsafe”, with a short description of issue, time & date.
- Inform Instructor or Supervisor.

9. Torches:

- Verify torch assembly and flame tip is the proper size and type for work being performed.
- Flashback arrestors are required for torch work.
- Torches may come equipped internally with flashback arrestors.
- If flashback arrestors need to be added, they must be installed at the torch.
- **NEVER** use a torch set up without the flashback arrestors properly installed.
- Torches must be ignited with a friction lighter (striker).
- **NEVER** use matches or cigarette lighters on hot work to light torches.
- Cylinder valves must be closed when switching out torches or when time between uses exceeds 5 minutes.
- If flashback occurs, check torch tips for dirt, condition of torch seat, O-ring, connections and oxygen acetylene pressures.

10. Tips:

- Must be inspected before each use.
- Verify O-rings are in place and free of any damage.
- No physical damage to tip.
- Face of tip is square, showing no deformities.
- Tips is free of slag and dirt.
 - Sand or file off any dirt and slag on the outside face of the tip.

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- If needed, square off the face of the tip and round off any dings or sharp edges with a mill file.
- Clean tip orifices using a tip cleaner.

NEVER use a torch or any components, attachments or accessories if they do not meet all parts of inspection

- Remove from service immediately.
- Clearly mark as “unsafe”, with a short description of issue, time & date.
- Inform Instructor or Supervisor.

ATTENTION – Oxygen and acetylene rigs must be broken down at the end of every shift or when not in use.

NEVER move compressed gas cylinders with regulators attached.

NEVER move compressed gas cylinders without valve caps.