

TOOLBOX TALK

Welding Safety

WHY THIS MATTERS

An estimated 562,000 workers are exposed to welding hazards each year. Welding kills over 60 workers annually in the U.S. and causes thousands of burns, eye injuries, and lung diseases. Sparks can travel up to 35 feet — one spark can ignite an entire site.

562K

Workers exposed to welding hazards yearly (OSHA)

35 ft

Distance sparks and slag can travel

10,000°F

Temperature of a welding arc

5 Rules for Welding Safety

Every welder and nearby worker must follow these rules:

1**COMPLETE A HOT WORK PERMIT**

Before striking an arc, ensure a hot work permit is issued. Clear all flammable materials within 35 feet. Post a fire watch during and 30 minutes after welding.

2**WEAR PROPER WELDING PPE**

Welding helmet with correct shade filter, flame-resistant clothing, leather gloves, steel-toe boots, and ear protection. Never wear synthetic fabrics — they melt.

3**ENSURE ADEQUATE VENTILATION**

Welding fumes contain toxic metals (manganese, chromium, nickel). Work in ventilated areas or use local exhaust ventilation. Use a respirator in confined spaces.

4**INSPECT EQUIPMENT DAILY**

Check cables for fraying, electrode holders for damage, ground connections, gas hoses for leaks, and regulators. Never weld with defective equipment.

5**PROTECT OTHERS IN THE AREA**

Use welding screens to shield nearby workers from UV radiation and sparks. Post warning signs. Ensure no one looks at the arc without proper eye protection.

Before You Weld — Quick Checklist

- Has a hot work permit been completed and posted?
- Are all flammable materials cleared within 35 feet?
- Is a trained fire watch assigned with an extinguisher?
- Is the welding area properly ventilated?
- Is all welding PPE in good condition and worn?
- Are nearby workers shielded from the arc and sparks?

Welding Hazards — Know Every Risk

Burns: Most common welding injury. Wear FR clothing, leather gloves, and cover all exposed skin. Never roll up sleeves.

Arc eye: UV radiation burns the cornea (welder's flash). Use proper shade filter per OSHA Table E-1. Even brief exposure causes damage.

Electric shock: Highest risk of immediate death. Never touch electrode with bare skin. Keep cables dry and free of damage.

Fumes: Contain manganese, hexavalent chromium, nickel, and zinc. Chronic exposure causes lung disease and cancer. Always ventilate.

Fire/Explosion: Sparks travel 35 ft. Clear flammables, check for gas leaks, and never weld on containers unless properly purged and certified.

Confined space: Fumes accumulate rapidly. Requires atmospheric monitoring, ventilation, rescue plan, and entry permit per OSHA 29 CFR 1910.146.

Common Mistakes That Kill Welders

- ✗ Welding near flammables without clearing the area — sparks travel up to 35 feet and start fires
- ✗ Not assigning a fire watch — fires can start minutes after welding stops from smoldering slag
- ✗ Welding on containers without purging — residual vapors cause explosions even in 'empty' drums
- ✗ Using damaged cables or working in wet conditions — electric shock can kill instantly at 50 volts
- ✗ Ignoring ventilation in enclosed areas — welding fumes cause long-term lung disease and cancer

Safety Tips to Remember

- ✓ Select the correct shade number: MIG = shade 10-13, Stick = shade 10-14, TIG = shade 8-13
- ✓ Remove your electrodes from holders when unattended — hot electrodes start fires
- ✓ Never weld on painted, coated, or galvanized surfaces without proper ventilation and respiratory protection
- ✓ Keep a charged fire extinguisher within arm's reach at all times during hot work
- ✓ The fire watch must remain 30 minutes after welding ends — most welding fires start after work stops

Discussion Questions for Your Team

1. What welding operations are planned on site today?
2. Has the hot work permit been completed and posted?
3. Who is assigned as the fire watch and are they trained?
4. Is our ventilation adequate for the welding being done?
5. Does everyone nearby have proper eye protection from the arc?

TOOLBOX TALK SIGN-OFF

Date: _____

Supervisor: _____

Project: _____

Location: _____

Attendance sheet attached: [] Yes