



## **WELDING FIRES**

**Arkansas Workers' Compensation Commission/  
Health & Safety Division**

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One of the worst factory fires in history was started by sparks from a portable welding outfit, which ignited liquid in a conveyor drip pan. A fire destroyed the French liner, Normandie, which was being refitted to carry troops during World War II, when welding sparks fell into waste wood and excelsior. An aircraft carrier fire in the Brooklyn Navy Yard in 1960 was started by welding sparks and slag falling into spilled motor fuel.

In each case, there either was inadequate protection or no protection of the flammable material from flame and sparks. The ships were steel, but filled with flammable material. The factory was steel, concrete and glass, but contained flammable fixtures, stock, and process material. Practically anything can burn and be damaged if it gets hot enough. And there's plenty of oil, grease, and other combustible materials on any construction site in addition to the lumber and scrap.

### **How Welding Fires Start**

Fires from welding operations are started by sparks, hot slag, and flame from the torch. Sparks often drop or are carried long distances by the wind. Slag falls on surfaces or materials below. And a welding torch flame can ignite many substances within a radius of several feet. Be familiar with the standard safety rules for welding so you can spot and report any problems.

### **The Welders' Responsibility**

When a welding operation moves into a work area, it's primarily the welders' duty to guard against fire. This means making sure there's no flammable material within range of the flame. Wood, paper or other combustibles should be removed. The welders also are responsible to see that no sparks or slag falls on combustible materials.

Keep extinguishing materials, such as water or sand, on hand, if you must weld near combustibles. You may even find it necessary to assign a worker with a fire extinguisher to stand by and put out sparks.

### **Flammable Liquids**

Welders should not begin working in any area where there are flammable liquids before checking with the supervisor. If you have to weld or torch any tank or drum that has contained flammable liquids or gas, don't start your work until an approved test shows that there's no danger of vapors present. Don't take anyone's word that the tank or drum was tested previously. Insist on a test just before starting your work.

### **Combustibles**

Where floors are combustible, welders must place fire resistant material beneath the work area, so that hot slag cannot contact the floor. Wood floors should be swept clean before welding over them, and should be covered with metal or some other material that won't burn. In some cases, it is advisable to wet the floor down.

But remember that this adds a shock hazard, which must be guarded against if you are arc welding. Be sure there are no cracks into which sparks or slag may fall, and never allow this hot material to fall into concealed spaces between walls and floors.

#### **1-Welding Fires**

You may have to protect openings, such as open doorways, with a non-combustible curtain. Be sure this curtain reaches to the floor, so that the hot slag can't roll under it. Ask yourself also if wind can carry sparks or slag over the side and down onto storage areas or adjacent property.

## **Welding Equipment**

Welders must keep cylinders a safe distance from where they are working, which means that hoses must be completely uncoiled. You should keep the tanks and hoses behind you, never in front where flame, heat, or slag will strike them. Hoses must be protected to keep trucks from running over them, and people from walking into them or dragging things across them.

Cylinders must be properly secured when in use and the caps in place during transportation.

## **Ventilation**

Good ventilation is a must for all welding operations. Many of these operations produce fumes that are harmful in heavy concentrations, and good ventilation is the only method of protecting yourself against this hazard. Screens around your work must be placed so as not to prevent good air circulation. Sometimes special ventilating equipment is necessary. If you have any doubt about the adequacy of ventilation on a job, ask the supervisor for this opinion. Don't weld in a small room or tank or other closed place without first making sure the ventilation is good.

When welders leave their equipment or stop work, they must shut off the oxygen and acetylene at the cylinders, so that no gas can enter either hose. And of course, the rule for everyone except the welders is: "Hands Off All Welding Gear."

## **Eye Protection**

Eye protection is necessary on all welding jobs, and full face protection is needed on many jobs. The type of protection you've been told to wear on your operations has been proven necessary by experience.

Face and eye protection is needed in many operations performed by welders besides actual cutting and welding. That's why, for instance, electric welders need goggles as well as the regular helmet. Any welder may have to do a good deal of chipping. And this work, usually done with the helmet raised, can throw particles of metal into your eyes.

Basically, however, eye protection is designed to protect you against sparks, slag, molten metal, and flash burns caused by radiation from the welding equipment. If you follow the rules for wearing face and eye protection, you won't have any face and eye injuries from cutting or welding work.

## **Everyone's Responsibility**

Remember that preventing welding fires is everyone's responsibility, whether doing the actual welding or not.

Date	Company Name	
Project Name	Meeting Location	Person Conducting Meeting

**Items Discussed:**

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**Problem Areas or Concerns:**

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**Attendees:**

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**Comments:**

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