

SAFETY MEMO

November 6, 2023 – Hot Work



Did you know?

Description

Hot work such as welding, cutting, grinding or other work that generates a high temperature is often conducted during the construction or operation of a factory. Hot work is the cause of 4580 fires, the deaths of 22 civilians, 171 civilian injuries, and property damages of \$484 million annually in the United States¹.

The Issue

Hot work, by its nature, has the potential to easily ignite a fire. In factories, combustible materials are usually present, such as cardboard, oil, wood, and combustible insulation in the walls.

If molten metal particles or sparks encounter the materials mentioned above, then it is possible to generate a fire.

Mitigation

The best mitigation measures are always to safely eliminate the risks. It is important to question the relevance of using hot work. Available alternative methods must be seriously considered before opting for hot work.

Instead of:	Use:
Saw or torch cutting	Manual hydraulic shears
Welding	Mechanical bolting
Sweat soldering	Screwed or flanged pipe
Torch or radial saw cutting	Mechanical pipe cutter
On site assembly	Off site assembly or use of a designated area designed for hot work

When alternative methods are not possible, it is necessary to put in place mitigation measures. It is imperative to obtain a hot work permit to perform the work.



Figure 1: Preventing Fires during Hot Work Operation

Good practices to prevent and mitigate a fire during hot work or when there is combustible material within a radius of 11 m (35 feet) are:

- Remove combustible material and cover with fire resistant blankets or keep wet with water all combustibles that cannot be moved. Openings in walls and combustible floor materials must also be covered with fire resistant material.
- Bring at least one appropriate portable fire extinguisher near the work area.
- Prohibit hot work if the automatic sprinkler system of the building is impaired or not functional.

A fire watch must be assigned if combustible material is present within 11 m (35 feet). The fire watch must be:

- Trained to detect fires that occur in the area exposed to hot work.
- Able to effectively communicate with workers and emergency services.
- Physically capable of performing the physical demands necessary to watch for fires.
- Aware of their responsibilities as a fire watch.
- Be present for the duration of the work and stay there for **60 minutes**² after the end of the hot work. Must also be present during breaks and meals.
- Be trained in how to use a fire extinguisher.

¹ NFPA. (2021, September 24). Hot work incidents and statistics remind us of the importance of pre-incident planning and a dedicated fire watch in chemical, industrial, and manufacturing settings. Retrieve from [NFPA blog](#)

² NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work (2019) <http://www.nfpa.org/51B>

