Hot work

Introduction

Hot work includes any task or process that generates flames, sparks, or intense heat capable of igniting nearby materials. Common examples include welding, cutting, brazing, soldering, grinding, torch-applied roofing, pipe thawing, and other spark producing work. Hot work continues to be a leading cause of property fires. Not only do they result in a high frequency of fires, but they also tend to be severe.

Key risks / issues

- Ignition of combustibles in the area
- Sparks and molten metal traveling through wall or floor openings, ducts, conveyors, cracks, or penetrations
- Heat conduction through metal walls, piping, floors, or structural members to concealed combustibles
- Hot work performed by contractors who may be unfamiliar with the building, processes, or hidden hazards
- Delayed ignition or smoldering fire after the work crew has left the area

The safest approach is to avoid hot work when a cold-work alternative is practical. When hot work is necessary, it should be completed in a designated hot work area whenever possible. Work outside a designated area requires a permit and additional safeguards. The use of a hot work permit system requires all employees and contractors to follow specific guidelines when performing hot work.

Protection

Develop and implement a written hot work program that applies to employees and contractors and assigns trained permit-authorized individuals.

Perform hot work in a designated area whenever possible. Maintain designated areas free of combustible and flammable materials and provide an appropriate fire extinguisher.

Require a completed permit before hot work begins in any non-designated area. The permit should be valid only for the specific location, task, and time period authorized.

Maintain a 35-foot fire-safe zone by removing combustibles or protecting materials that cannot be moved.

Provide a continuous fire watch during hot work and for at least 60 minutes afterward, followed by periodic fire monitoring for an additional three hours unless site conditions require a longer period.

Train employees and contractors on the permit system, area preparation, extinguisher use, alarm notification, fire-watch responsibilities, and stop-work authority.

Retain completed permits and periodically audit the program to verify that required precautions are consistently followed.

Ordering hot work permits

In addition to the example hot work permit provided in this document, two-part hot work permits are available to be mailed or distributed to your business through your local Risk Control Consultant or by contacting the Risk Control Property team at riskcontrol.property@emcins.com.

The first page of the permit may be retained for your hot work records, while the second page is a high-visibility fluorescent orange tag designed to be attached to the welding cart or work area as a reminder that hot work activities are in progress.

Designated areas vs. hot work permit required

Area type	Typical characteristics	Expectation
Designated	Approved location; noncombustible or fire-resistive construction; free of combustible and flammable contents at all times; separated from adjacent areas.	A permit is not required, but the area and equipment should still be inspected before work begins.
Hot work permit	Any location not specifically designed and maintained for hot work, such as a production floor, roof, loading dock, storage area, or temporary work location, whether maintenance staff or a 3rd party contractor is completing the work.	A hot work permit is required. The area must be made fire-safe before work begins.

Hot work permit

Avoid hot work when possible

Hot work permits are required for any operation involving open flames, sparks, or any heat producing process that is conducted outside of a hot work designated area.
The person performing the hot work must fill out this form in its entirety and submit it to the permit authorized individual (PAI) for approval prior to beginning the project.

General information

Hot work by:

☐ Employee: _____

☐ Contractor: _____

Phone number: _____ Date: _____ Start time: _____

Location: _____

Person completing fire watch: _____

Type of work to be performed

☐ Welding ☐ Cutting ☐ Grinding ☐ Soldering ☐ Torch-applied roofing

☐ Pipe thawing ☐ Brazing ☐ Drilling ☐ Electric tools ☐ Other heat-producing process

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Hot work safety checklist

1. Planning and communication

- ☐ Hot work is performed in the safest possible location
- ☐ Contractors are informed of all hazardous materials and conditions they may encounter
- ☐ Hot work operators are adequately trained
- ☐ Supervisors and employees are notified of nearby hot work operations

2. Equipment and site readiness

- ☐ If the worksite is inside a sprinklered building, the sprinkler system is operational, and the control valves to the sprinkler system are open
- ☐ Suitable fire extinguishing devices are available and maintained at the worksite
- ☐ Hot work equipment is in good repair
- ☐ Prior to work on closed equipment, ductwork, or piping flammable gases and vapors are monitored
- ☐ If flammable liquids or gases are present, they are removed or purged prior to hot work occurring

3. Fire prevention measures (35-ft rule)

- ☐ Combustible materials are relocated at least 35 ft from the hot work zone
- ☐ Materials or combustible construction that cannot be moved are properly shielded or guarded using welding blankets, pads, and curtains
- ☐ Ducts and conveyors are protected or shut down

4. Fire watch and monitoring

- ☐ Fire watch personnel are trained in extinguisher use and alarm operation
- ☐ A fire watch is posted during hot work and remains for at least 30 minutes after completion
- ☐ More than one individual is completing a fire watch on the opposite side of the floor or wall when openings are present or where heat could transfer through conductive materials
- ☐ Depending on the occupancy and construction factors present, fire monitoring is performed for at least one hour after completion of the fire watch

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Authorization

This permit is valid for a single shift, provided that the conditions present at the time of issuance remain unchanged. If any condition changes in a way that compromises the safety of the hot work area, the permit becomes immediately void. In such cases, a new hot work permit must be issued before work can resume.

I have personally inspected the location where the above work is to be done, have checked for compliance with safety precautions listed on this permit, and authorize the work to be performed.

Name: _____ Title: _____

Signature: _____ Date: _____

Permit #: _____

Authorized duration of permit: _____ to _____

This permit and associated warning sign must be posted near the hot work site during all hot work.

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WARNING

HOT WORK IN PROGRESS
WATCH FOR FIRE

Stop work immediately if an alarm signals an emergency situation in or near your work area.

If you have questions about these hot work operations

Contact (Permit authorized individual): _____

Phone number: _____

WARNING

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