



# Hot Work



The purpose of a hot work program is to ensure appropriate safeguards are in place to prevent a fire from non-routine work involving open flames, sparks or heat. Typical non-routine hot work includes but is not limited to brazing, cutting, grinding, soldering, torch applied roof, welding and thawing pipe. While there are multiple reasons hot work may be required, it is critical for management to have a program in place to control the work and ensure appropriate safeguards are in place as outlined in NFPA 51B, “*Standard for Fire Prevention During Welding, Cutting and Other Hot Work*” and ANZI Z49.1.



### Instructions

#### DO NOT perform hot work when any of the following apply:

Management (the Permit Authorizing Individual or PAI) has not approved the work.

Fire protection systems are impaired or explosive atmospheres may be present.

Equipment, drums, tanks or other containers that previously contained materials may create an explosive atmosphere.

The area has flash fire exposures from combustible dusts.

#### Step 1: Prior to Approving Work

The PAI must:

Determine if **alternative work methods** are available to eliminate hot work.

Determine if the work area is a “permit required” area. A permit-required area is any location not designed for routine hot work.

Ensure the appropriate type and quantity of safety devices such as rated fire blankets, fire hoses and extinguishers are readily available for use in the hot work area.

Ensure the person(s) conducting hot work have the knowledge and skills to safely perform the work.

Ensure contract(s) and certificate(s) of insurance are on file for all contractors.

Ensure staffing is available on-site to conduct **fire watches**. The fire watch must continuously observe the work area during hot work and be trained in sounding the fire alarm and the use of fire watch equipment.

Notify the employees and/or contractors who will conduct the hot work of site-specific combustible materials, hazardous processes or conditions, or other potential fire hazards. These hazards must be removed or protected prior to starting work.

#### Step 2: Prior to the Start of Work

The PAI must:

Inform the hot work operator that the person serving as a fire watch has the authority to stop hot operations if unsafe conditions develop.

Inspect the work area and verify all areas within 35' (11 m) in all directions are “fire safe.” This distance may be increased if hot slag, sparks or other sources of ignition extend beyond 35' (11 m). All of the following must be addressed during this process:

Combustible materials have been removed or shielded by a non-combustible barrier or with fire rated barriers, blankets or pads. Combustible materials include parts of the building such as wood, plastic insulation and other combustible building components in addition to contents, debris, dust, lint and oily deposits.

Any opening within 35' (11 m) in any direction of the work area has been covered or sealed with fire rated non-combustible material to prevent sparks entering adjacent areas of voids in walls, ceilings or other partition.

Combustible and/or flammable liquids have been removed from the work area.

Ducts or conveyors that might carry sparks out of the work area are shielded, shut down or both.

Where present, combustible floors are kept wet, covered with damp sand or protected by listed welding blanket, welding pad or equivalent.

Where floors have been wet down, appropriate steps have been taken to protect workers from possible electric shock.

Ensure the fire watch has toured the work area and is familiar with the planned work, the combustible materials present in the work area, and safeguards used to prevent ignition of materials that can burn.

Ensure that, for walls, ceilings and openings:

- Fire-resistant tarps are suspended beneath work area to collect any sparks.

Combustibles have been moved away from the other side of the wall.

Construction is noncombustible and without combustible coverings or insulation.

### Step 3: During Work

The person performing fire watch duties has the authority to stop work if unsafe conditions develop.

While the work is in progress, during any lunch and/or coffee breaks, and for a minimum of 60 minutes after the work is complete, a continuous fire watch is provided at the work site and one floor above and below the work site.

The PAI shall re-inspect the hot work area at least once during the hot work permit time period to ensure a fire-safe area is maintained.

### Step 4: Fire Watch/Monitoring

While the work is in progress, during any lunch and/or coffee breaks, and for a minimum of 60 minutes after the work is complete, a continuous fire watch must be provided for the floor where work is taking place.

The fire watch must be expanded to floors above and below the work site when there is a possibility of hot slag or sparks entering those areas.

Upon completion of the Hot Work, the PAI will determine the nature and extent of fire monitoring required.

### Step 5: Final Checkup by PAI

The cutting/welding permit has been completed and returned.

The site was examined 2-4 hours after the work was completed.

## Work on Enclosed Equipment/Confined Spaces

**Warning: Do not conduct hot work on enclosed equipment or confined spaces without using an explosive gas detector to check for the presence of flammable vapors before and during hot work.**

Flammable vapors may accumulate within a confined or enclosed space, or in below grade sumps or pits. The only way to ensure these flammable vapors are not present is to use an explosive gas detector and maintain adequate continuous ventilation.

- Enclosed equipment is clean of all combustible dust and other combustible material.

- Containers have been purged of flammable liquid/vapor.

- Measurements taken by an explosive gas detector confirms the atmosphere has been purged of flammable liquid/vapor.

- Pressurized vessels, piping and equipment are removed from service, isolated and vented.

To learn more about managing your risk and increasing efficiency, visit [cna.com/riskcontrol](http://cna.com/riskcontrol) (U.S.) or [cnacanada.ca](http://cnacanada.ca) (Canada).

# Hot Work Permit

Date: \_\_\_\_\_ Permit Number: \_\_\_\_\_

Specific Location for Hot Work: \_\_\_\_\_

Describe the Work:

Who is Conducting the Hot Work?

Contractor (contract is required)

Employee

**Name and Signature of Person Doing the Work (Hot Work Operator):**

By signing below, I attest that:

1. I will not perform hot work without approval of the designated PAI and will immediately stop work if an unsafe condition develops.
2. I am aware of the hazards associated with hot work and various methods to eliminate or protect these hazards from sources of ignition.
3. I will examine all equipment to ensure it is in safe operating condition before starting work.
4. I am familiar with the requirements of hot work as outlined in NFPA 51B, *"Fire Prevention During Welding, Cutting and Other Hot Work"*.
5. I have been trained in the proper operation of hot work equipment.
6. I am aware of the inherent risks associated with hot work and understand the emergency procedures in the event of a fire.
7. This permit only authorizes work during the dates and times indicated.

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Permit Authorizing Individual: (PAI)**

By signing below I attest that:

1. I have been designated by management as the person responsible to authorize hot work.
2. I am familiar with site-specific flammable materials, hazardous processes or other potential fire hazards that are present or are likely to be present on the work location.
3. The above hot work location has been inspected and that the precautions listed on this document have been taken.

Permission is granted for the work described above. This permit is only valid for the dates and times listed below.

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Permit Dates and Times (Completed by PAI)**

This section is to be completed and signed by the supervisor after completion of the project. Completed hot work permits should be maintained in accordance with organizational retention policies.

Important: This permit is valid for one shift only.

Permit Valid Date: \_\_\_\_\_ Start Time:                      AM      PM

End Time:                      AM      PM

Comments:

Approval Signature: (Permit Authorizing Individual) \_\_\_\_\_

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