



HOT WORK PROCEDURES IN RESIDENTIAL BUILDINGS

A GUIDE FOR HOUSING PROVIDERS

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Introduction

The purpose of this document is to provide minimum standards for the control of hot work in residential buildings such as apartment buildings, townhouses and row houses. While fires resulting from improperly managed hot work in residential buildings are not as common as in commercial and industrial occupancies, such fires can have devastating effects due to increased likelihood of combustible construction, high concentration of combustible contents, and tenants who may not be able to evacuate quickly. This procedures document and sample permit system will help minimize the chance of fires resulting from hot work activities.

This minimum standard applies to hot work in any area other than normally designated and protected maintenance areas or welding booths. It applies to work both inside and outside the building, and at new construction as well as existing sites. Please note this is a minimum standard.

Responsibility for compliance with these practices remains with the property manager for existing operations and with the project manager for new construction. These practices generally line up with fire prevention codes in most areas. Local management is responsible for compliance with local codes where they may exceed this standard. The issuing of hot work permits must be to individuals, not to contractors or other groups as a whole. If major contractors use their own permit system, their permit should comply with the procedures outlined in this document.

What is Hot Work?

Any cutting, welding, soldering, sweating, or other activity that involves a torch, open flame or other ignition source. Grinding is also considered hot work. Portable heating units such as gas fired salamanders, hot air guns and similar devices are also subject to this permitting function. Torch applied roofing is hot work, governed by this document.

Procedure

REQUIRED ACTIVITY

- ❑ Area supervisors should be consulted prior to the start of work and other hazardous functions should be suspended in the area. Any fixed protection (sprinklers) must remain in full service during the work; if sprinklers are impaired, the hot work should be postponed. Before initiating hot work, make sure all other possible options (such as bolting or threading) have been given due consideration.
- ❑ Individuals who are performing the hot work must be trained in the activity and complete a work permit. This permit must be reviewed by the fire safety manager or other responsible person (e.g., hot work permit authorizer); if it meets the necessary criteria, the permit is signed by the fire safety manager and the work may proceed.
- ❑ Approval of the permit by the fire safety manager simply indicates that conditions are acceptable for work to proceed. It does not release the person(s) performing the work of the responsibility of maintaining a safe working area. If any changes in the work environment or area are noted by the persons performing the work, then the approval of the permit is voided. All hot work must then be stopped until the site has been re-evaluated by the fire safety manager.
- ❑ The person authorized to issue the permit must be familiar with the hazards of the area. The permit should be limited in time, and should be renewed by shift, or daily. Only the person actually performing the work can be issued the permit.
- ❑ The person authorized to issue the permit must check the area prior to issuing the permit. The area must be free of combustibles by at least 35 feet (11 metres) or local combustibles must be protected by heat shields, such as welding screens and tarpaulins. Open spaces in walls and floors for the same distance must be sealed, covered or otherwise protected. Special consideration should be given to holes in floors and combustible walls. A fire watch must be posted and extinguishers must be present. Fire Watchers should be aware of how to sound the alarm and how to respond to small incidents. The Fire Watcher must be trained in the use of the extinguisher.

- If the work is done by a contractor, s/he is usually responsible for the fire watch, extinguishers, and any necessary screens or tarpaulins. However, the final responsibility for hot work always rests with local management.
- The area must be checked at the end of the work and should be attended by a Fire Watcher for at least one continuous hour after the work to look for sparks, hot slag or smouldering that may have been left behind by the work. The first-hour fire watch is then followed by an extended fire watch, who will revisit the work site periodically (every 20- 30 minutes) after the first-hour fire watch for an additional watch period of up to 3 hours. (See Additional Considerations for Residential Buildings)
- Cutting and welding is not to be permitted on any containers or pipelines that could contain flammable liquids, vapours or gases. Any such container must be reliably purged before the work. If there is any doubt, an inert gas purge should remain in place during the work. Hot work in confined spaces requires special attention and may drive a common space into one regulated under confined space entry rules.
- Area considerations should also include routing of employees or other persons who may accidentally make eye contact with the arc. Such incidental viewing may result in eye damage or temporary sight impairment that could result in a separate accident.
- Gas cylinders used for hot work should be stored in a safe manner, preferably outside any building. Cylinders should be confined to a cart when in use, or otherwise restrained at all times. All hot work equipment such as cylinders, valves, hoses, nozzles, carts, extinguishers, etc. must be inspected prior to use and should not be used if deficient.

ADDITIONAL CONSIDERATIONS FOR RESIDENTIAL BUILDINGS / OPERATIONS

In addition to the Required Activity Procedures above, the following objectives specific to residential occupancies should be included:

- **Contractor Management Program:** Hot work procedures and requirements should be included in formal contractor / vendor agreements for single projects (e.g., roof replacement) and on-going service agreements (e.g., plumbers).
- **Service Calls by Contractors:** Emergency maintenance that involves hot work (e.g. leaking water valve in unit) both during and outside of regular

business hours should be attended by local management staff to perform pre-check and fire watch

□ **Fire Watch timelines:**

- Major projects (e.g., roof replacement) and work outside of tenant units should follow the Required Activity Procedures above for fire watch (i.e., during work, 1 hour continuous after work, up to 3 hours extended).
- Service calls (e.g., plumbing / soldering) within tenant units can be challenging in terms of following all of the procedures outlined in Required Activity section. Since hot work in tenant units would typically be limited to soldering (i.e., no hot slag from welding), and the risk therefore reduced, fire watch times should be based on construction type:
 - Fire resistive / Non-combustible (i.e., apartment building) – fire watch during work and 30 min continuous after work.
 - Combustible (i.e., wood frame townhouse) – fire watch during work, one hour continuous after work, one hour extended.

- **Fire Detection:** When hot work in a tenant unit is complete, housing staff should perform a formal check of all smoke alarms in the unit prior to completing a final check.

Appendix A: Templates

The Hot Work Permit should be mandatory for any indoor/outdoor operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: burning, brazing, cutting, grinding, soldering, thawing pipe and welding.

The Permit must be completed in the vicinity of where hot work will be performed and may only be issued after it is inspected and confirmed that the area complies to the precautions listed on the Hot Work Permit.

Please note that **two copies** of the permits should be printed for each project: one should always remain in the hands of Fire Safety Manager; the second one should be posted at the hot work site and signed by Fire Watcher.

When the extended fire watch and final check-up are completed, the work site copy should then be returned to the Fire Safety Manager, ultimately bringing both parts back together to retain on file.

HOT WORK PERMIT

Tracking Number: _____

The issued Hot Work Permit is only valid for a maximum period of 24 hours.

PART A - INSTRUCTIONS

Responsibilities of the Fire Safety Manager/Hot Work Permit Authorizer:

1. Visually verify that all items on the Safety Checklist below are in place and in compliance, otherwise **do not proceed with the work**.
2. Complete both sides of the permit
3. Make two copies of the permit: the permit authorizer should retain one and issue the second copy to the person doing job to be placed within the Hot Work Area, for verification purposes
4. Upon completion of job and extended fire watch, the permit on site is to be returned to Fire Safety Manager/Hot Work Permit Authorizer.

HOT WORK BEING PERFORMED BY:

- EMPLOYEE
 CONTRACTOR (specify) _____

DATE/TIME: _____

LOCATION/BUILDING & FLOOR: _____

NATURE OF JOB: _____

NAME OF PERSON PERFORMING WORK: _____

SAFETY CHECKLIST

- | Y | N/A | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Available sprinklers, hose streams and extinguishers are in service/ operable. |
| <input type="checkbox"/> | <input type="checkbox"/> | Fire Extinguisher(s) or Charged Fire Hose immediately adjacent. |
| <input type="checkbox"/> | <input type="checkbox"/> | Hot Work equipment in good repair. |

REQUIREMENTS WITHIN 15 METERS (50-FEET) OF WORK

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Flammable liquids, dust, lint and oily deposits removed. |
| <input type="checkbox"/> | <input type="checkbox"/> | Explosive atmosphere in area eliminated. |
| <input type="checkbox"/> | <input type="checkbox"/> | Floors swept clean. |
| <input type="checkbox"/> | <input type="checkbox"/> | Immediate area, wet down, covered with damp sand or fire- resistive tarpaulins. |
| <input type="checkbox"/> | <input type="checkbox"/> | Remove other combustibles where possible. Otherwise protect with fire- resistive tarpaulins or metal shields. |
| <input type="checkbox"/> | <input type="checkbox"/> | All wall and floor openings covered.
Fire-resistive tarpaulins suspended beneath work. |

WORK ON WALLS OR CEILINGS

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Construction is non-combustible and without combustible covering or insulation. |
| <input type="checkbox"/> | <input type="checkbox"/> | Combustibles on other side of walls moved away. |

HOT WORK PERMIT

Tracking Number:

WORK ON ENCLOSED EQUIPMENT

Y N/A

- Enclosed equipment cleaned of all combustibles.
- Containers purged of flammable liquids/vapours.

FIRE WATCH/HOT WORK AREA MONITORING

- A "Fire Watch", having no other duties, will be provided during and for one (1) hour after hot work completion, including during any coffee or lunch breaks,
- An extended "Fire Watch Monitoring" will be provided for an additional 3 hours. The extended "Fire Watch Monitoring" must be assigned to a specific individual, who may perform other duties, in the general area of the Hot Work job. This extended "Fire Watcher" will monitor the "Hot Work" area by inspecting the area at regular intervals i.e., 30 minutes.
- Fire Watch is supplied with suitable fire extinguisher(s) and, where practical, charged small hose.
- Fire Watch is trained in use of this equipment and in sounding alarm.
- Fire Watch may be required for adjoining areas, above, & below.

PLEASE INDICATE ANY OTHER PRECAUTIONS BEING TAKEN:

- I confirm the above location has been examined, the precautions checked on the Safety Checklist have been taken to prevent fire, and permission is authorized for this work.

SIGNATURE OF HOT WORK
PERMIT AUTHORIZER:

SIGNATURE OF PERSON PERFORMING
HOT WORK:

DATE and TIME HOT WORK
STARTED:

DATE and TIME HOT WORK FINISHED

1 HOUR CONTINUOUS FIRE WATCH SIGNOFF

START _____ am/pm

FINISH _____ am/pm

SIGNATURE OF FIRE WATCH INDIVIDUAL:



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