

# FIRE SAFETY GUIDE TO HOT WORKS



This document is designed to assist NFU Mutual customers in managing the fire risks associated with hot works



**NFU Mutual**  
RISK MANAGEMENT SERVICES

## INTRODUCTION

Hot Work can be defined as: 'Any temporary operation or task that involves open flames or production of heat and/or sparks'. Serious fires frequently occur as a result of carelessness or ineffective supervision when hot work is being undertaken with the sources of heat most commonly involved in hot works being: gas/electric welding and cutting operations, blowlamps/blowtorches, hot air 'gun's or blowers, bitumen/tar boilers, angle grinders and grinding wheels and brazing and soldering.

The risk of fire can be reduced by implementing a Risk Management Programme to minimise potential hazards.

A designated person or team should oversee the Fire Risk Management Programme to ensure all aspects are properly considered, managed and any required corrective action is implemented without delay.

## GENERAL CONSIDERATIONS

1. Hot work to only be undertaken by competent and trained personnel and where there is not a safer alternative method of work.
2. If contractors are engaged to undertake hot work, only competent contractors suitably experienced in hot work to be used and proof of Public Liability insurance with an indemnity limit of at least £5 million to be obtained prior to works commencing.
3. Any person/persons undertaking hot works to be made aware of the fire safety procedures at the property and give a written undertaking to comply with them.
4. The equipment is of proprietary manufacture operated by a competent employee or contractor and is:
  - i. Maintained and serviced in accordance with the manufacturer's instructions, where owned by you;
  - ii. Attended at all times while alight or in operating mode; and
  - iii. Extinguished immediately after use;
5. Where an alternative method of work is not possible hot work to be transferred to a safer location e.g. contractor's own premises, dedicated workshop or open yard, to reduce the risk of fire within the premises.
6. Ideally hot work not to be undertaken in, or in direct proximity to, buildings containing combustible composite insulated panels, but where the use of such equipment within the building is unavoidable, it is not to be completed within 2 metres of them unless they are protected by non-combustible fire blankets, drapes or screens, and subject to a strict 'permit to work' system, unless undertaken by own staff in accordance with documented safe hot working procedures/policy.
7. Buildings of Modern Methods of Construction (MMC) present specific fire safety concerns. These include: volumetric/modular buildings, which are assembled on site from modules/pods; panelised systems, which are delivered to site in flat-packed condition for assembly;

hybrid buildings, which are produced using traditional and modern methods, and timber-framed buildings, which make use of standardised, prefabricated timber wall panels and floors. Both the hot work permit issuer and hot work operative (see below) to have a detailed understanding of the type of building in which any hot work is to take place, the levels of compartmentation and the risk of fire spread to ensure that it can be undertaken safely.

8. If the premises are protected by an automatic fire alarm system, any deactivation of heat or smoke detectors to be strictly limited to the work area, and for the duration of the works only. This will

minimise the risk of false alarms occurring but ensure the detection is in full operation after the works have been completed. If the works are to be conducted in phases, the fire detection to be fully operational during those interim periods.

9. We recommend the area immediately within the vicinity of the work be inspected using a thermographic imaging camera to ascertain if there are any hot spots present.
10. Where there is a high risk of fire the work to be undertaken outside normal working hours.

## FIRE RISK ASSESSMENT

Ensure your fire risk assessment includes an assessment of the risks and necessary

control measures required for safe management of hot works.

## PRIOR TO WORK COMMENCING

1. A suitable competent person to be made responsible for fire safety.
2. A trained person not directly involved with the work will provide a continuous fire watch during the period of hot work.
3. In buildings of multiple occupancy liaison to be established between all occupants to enable contractors or others to be effectively controlled and managed and fire safety management precautions reviewed.
4. Access to be made available to areas/ compartments adjacent to where work is to be undertaken which may be in separate occupancy.
5. An area of at least 10m around the work to be cleared of combustible materials and flammable liquids or gases. Where combustible materials cannot be removed, they together with any openings or gaps in walls, floors and ceilings within 10m, to be protected by non-combustible blankets, screens or drapes.
6. Where hot work is to be undertaken on buildings containing composite panels, modern methods of construction (MMC) or similar construction, the type of insulation or other materials behind metal, or other non-combustible surfaces must be assessed. If combustible materials are identified or suspected, alternative methods to be employed if possible - if in doubt it should always be assumed that panels have a combustible core and follow the above.
7. All floors to be swept clean and combustible floors in the area to be covered with overlapping sheets of non-combustible material or wetted and liberally covered with sand.
8. If work is to be undertaken on one side of a wall or partition the area on the other side to be examined to ensure that any combustible materials are not in danger of ignition by direct or conducted heat.
9. If hot work is undertaken on plant, it is to be purged of hazardous substances e.g. flammable liquids/vapours.
10. At least two suitable fire extinguishers to be made available for immediate use. Regular inspection and maintenance to be undertaken and recorded by an approved supplier. Staff to be provided with instruction and training in the correct use of extinguishers.
11. All personnel involved with the hot work to be familiar with escape routes from the premises and the method of raising the fire alarm.
12. All equipment to be used in accordance with manufacturer's instructions, attended at all times when alight or in operating mode, lit as late as possible and extinguished immediately after use.
13. During the work fire alarm detection and suppression systems may need to be isolated to prevent false activations. Only individual detectors in the vicinity of the work to be isolated. Any activation of detectors out of these areas suggests smoke may have spread beyond the area anticipated by the risk assessment and therefore suggests hidden fire spread and will require immediate investigation.
14. Sprinkler systems should remain active throughout hot work whenever possible.

## FOLLOWING COMPLETION OF THE WORK

1. The area to be cleared of any hot waste materials and spent materials generated by the process.
2. All equipment, including gas cylinders, to be removed from the site or returned to a designated safe store.
3. The site to be monitored by a trained competent person for at least 60 minutes after completion of the work to detect and extinguish any smouldering materials or address any hot spots. It is strongly recommended this is followed by further checks being made at regular intervals, of no more than 20 minutes, up to 120 minutes after cessation of hot work, before the permit is signed off. The fire watch period to be extended where determined necessary by fire risk assessment. The inspections to embrace the floors below and above and areas on the other side of walls or partitions as appropriate.
4. Any sections of the fire alarm and other active fire protection measures that have been isolated for the period of the work permit, or smoke detectors covered over, to be fully reinstated on completion of the works.

## HOT WORK PERMITS

1. Where hot work is undertaken in any area other than designated workshops, whether by employees or contractors, a Hot Work Permit to be in place.
2. A Hot Work Permit is a formal written statement that all foreseeable fire related hazards have been documented and relative precautions defined. It does not in itself make the task safe but relies on conscientious implementation by specified personnel to adequately control the risks.
3. The person authorising the hot work to have competency/training of the associated activity and risks, and have appropriate authority, to ensure compliance with the procedures. Consideration to be given to those involved in the management of hot works obtaining the Fire Protection Association (FPA) Hot Work Passport qualification to demonstrate competency.
4. Prior to hot work being undertaken the person authorising it to issue a permit detailing the exact nature and location of the work, the period for which it is valid, the risk controls to be complied with and the inspection upon completion of the work.
5. Hot Work Permits to be issued only by the person/persons authorised to do so. The requirements stated in the permit to be complied with before the permit is issued, and the work covered by the permit to not be extended to cover unauthorised works.
6. Permits to be issued in duplicate with the top copy being given to the person undertaking the work and the second copy retained by the person authorising it.
7. General open-ended hot work permits not to be permitted under any circumstances and to be task specific for the purpose of the contract works only.

8. Unscheduled spot-checks to be made of the work during progress to ensure compliance with the permit.
9. On completion of the work the person undertaking it to complete and return the permit with the authorising person to check the work has been undertaken correctly and all personnel and equipment have been removed from the area.

10. Consideration to be given to taking photographs to prove that the hot work is complete and, where appropriate, thermal imaging equipment used to check that there are no incipient hot points.
11. The Permit to Work system to be monitored, reviewed and, where necessary, amended on an ongoing basis to ensure it fully meets the business's needs.

## FURTHER GUIDANCE

RISC Authority are a funded research scheme supported by a significant group of UK insurers and conducts research in support of the developments and dissemination of best practice on the protection of property

and business. Guidance document - RC7 Risk Control Recommendations for Hot Work, and the Joint Code of Practice on the Protection from Fire of Construction Sites is available at [www.riscauthority.co.uk](http://www.riscauthority.co.uk)

## HOT WORK PERMIT CHECKLIST

The following checks to be carried out prior to commencing Hot Work. The person carrying out these checks to consider each of the following statements. The box alongside each statement needs to contain a 'Yes' or to be left blank (if the matter is not relevant) if a Hot Work Permit is to be issued. A 'No' may result in refusal of a permit.

This Checklist Relates to Permit Number: \_\_\_\_\_

## GENERAL

Wherever practicable the use of Hot Work to be avoided and a safer alternative undertaken. If you cannot comply with the following points, do not go ahead with the Hot Work.

## FIRE PROTECTION?

YES NO

Where sprinklers are installed they are operative. (In sprinklered premises, hot work not to be carried out when the water supply to the sprinkler system is shut off.)

Where an automatic fire detection system has been installed, it will be kept operative. Only the zone where Hot Work is being carried out will be isolated for the period whilst the Hot Work is in progress.

A trained person not directly involved with the work will provide a continuous fire watch during the period of Hot Work.

Following completion of each period of the work, the fire watch will continue for at least 60 minutes, with further checks at regular intervals, of no more than 20 minutes, up to 120 minutes after the cessation of hot work, before the permit is signed off. This is to ensure the working area and all adjacent areas, including the floors below and above, and areas on the other sides of walls, screens and partitions and above false ceilings are free of smouldering materials and flames.

At least two suitable extinguishers, and where available, a hose reel are immediately available. The personnel undertaking the work and providing the fire watch are trained in their use.

Personnel involved with the work and providing the fire watch are familiar with the means of escape and method of raising the alarm/calling the Fire & Rescue Service.

## PRECAUTIONS WITHIN 10 METRES (MINIMUM) OF THE WORK

YES NO

Combustible materials have been cleared from the area. Where materials cannot be removed, protection has been provided by non-combustible or purpose-made blankets, drapes or screens.

Flammable liquids and/or cylinders have been removed from the area.

Floors have been swept clean.

Combustible floors have been covered with overlapping sheets of non-combustible material or wetted and liberally covered with sand.

All openings and gaps (combustible floors or otherwise) are adequately covered.

Protection (non-combustible or purpose-made blankets, drapes or screens) has been provided for:

- i. walls, partitions and ceilings of combustible construction or surface finish
- ii. all holes and other openings in walls, partitions and ceilings through which sparks could pass.

Where hot work is to be undertaken on buildings containing composite panels, modern methods of construction (MMC) or similar construction, the type of insulation or other materials behind metal or other non-combustible surfaces has been assessed. If combustible materials are identified or suspected, alternative methods to be employed if possible - if in doubt it should always be assumed that panels have a combustible core and follow the above.

Where work is to be undertaken on one side of a wall or partition the area on the other side has been examined to ensure that any combustible materials are not in danger of ignition by direct or conducted heat.

Combustible materials have been moved away from the far side of walls or partitions where heat could be conducted, especially where these incorporate metal.

Enclosed equipment (tanks, containers, dust collectors etc.) has been emptied and tested, or is known to be free of flammable concentrations of vapour or dust.

## EQUIPMENT

Equipment for Hot Work has been checked and found to be in good repair.

Gas cylinders have been properly secured.

## HOT WORK PERMIT

A copy of the completed permit should be retained for auditing purposes.

Issuing Company: \_\_\_\_\_ Permit Number: \_\_\_\_\_

**(To be completed by the person responsible for carrying out the work)**

Building \_\_\_\_\_

Exact location of proposed work \_\_\_\_\_

Nature of work to be undertaken \_\_\_\_\_

I understand the scope of work and precautions to be undertaken.

Signed: \_\_\_\_\_ Block capitals: \_\_\_\_\_

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

Contractor Company (where applicable) \_\_\_\_\_

## AGREEMENT

**To be completed by the Company Safety Officer or other nominated person (the 'Issuer of the Permit')**

This Hot Work Permit is issued subject to the following conditions:

Issue of Permit: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Expiry of Permit\*: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

\*It is not desirable to issue permits for protracted periods. Fresh permits should be issued where, for example, work extends from morning to afternoon.

A final check of the work area shall be made, not before (time): \_\_\_\_\_

Additional conditions required: \_\_\_\_\_

The above location has been examined and the precautions listed on the attached checklist have been complied with. I have carried out a risk assessment and consider that there is no reasonably practical alternative to doing this job using Hot Work. I have been provided with evidence of appropriate Public Liability Insurance.

Signed: \_\_\_\_\_ Block capitals: \_\_\_\_\_

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

Contractor Company (where applicable) \_\_\_\_\_

## FOLLOWING COMPLETION OF WORK

(To be completed by member of staff or contractor responsible for the work. The permit to then be returned to the Issuer)

YES NO

The work area and all adjacent areas to which sparks and heat might have spread (such as floors below and above, and areas on other sides of walls) have been inspected and found to be free of smouldering materials and flames.

Paint strippings, stub ends of welding rods and other hot waste materials have been removed and disposed of safely.

All equipment, including gas cylinders, has been removed to a safe area.

Time inspection completed (This must be at least 60 minutes after work was completed, followed by further checks being made at regular intervals, of no more than 20 minutes, up to 120 minutes after cessation of hot work).

Signed: \_\_\_\_\_ Name of Signatory in block capitals: \_\_\_\_\_

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

Contractor Company (where applicable) \_\_\_\_\_

## SIGN OFF BY ISSUER OF PERMIT

The Hot Work has been completed. Any zone of the fire alarm system and any other fire protection system that was isolated has been fully reinstated.

Signed: \_\_\_\_\_ Name of Signatory in block capitals: \_\_\_\_\_

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

## IMPORTANT NOTE:

The information contained herein is designed for guidance only and NFU Mutual cannot accept responsibility for any errors or omissions arising from its use. Should further guidance be required please contact our local NFU Mutual Regional or Branch office, or telephone Risk Management Services on 01789 202425.



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