



ASTONLARK

RISK MANAGEMENT

Hot Work

INTRODUCTION

Serious Fires frequently occur during maintenance and construction operations, where work is proceeding on either machinery, plant or the fabric of buildings. Most of these are the result of carelessness and ineffective supervision during operations requiring the use of open flames or the local application of heat. The sources of heat most commonly involved include:

- Gas or electrical welding and cutting apparatus.
- Blow lamps and blow torches.
- Bitumen and tar boilers.
- Grinding wheels and cutting discs

Whether hot work is carried out by your own employees or by outside contractors or their sub-contractors it is important that all such work is fully and effectively managed. Outside contractors working in or around your premises with which they are not familiar present the most serious hazard.

It is unlikely that they will know the particular fire risk present or the correct action to be taken in the event of a fire. Your own employees should be familiar with the premises and all of the potential fire risks present. However such familiarity can result in complacency and carelessness. Therefore, exactly the same high standard of management supervision and control should be exercised.

Experience has shown that a satisfactory standard of care and supervision is far more likely to be achieved where a formalised written permit to work system is in force, under a suitably experienced supervisor with the authority to ensure compliance with the procedures. These recommendations comprise overall advice. A sample Hot Work Permit which provides a check list of the most obvious

precautions is attached to this document.

RECOMMENDATIONS

1. GENERAL PRECAUTIONS

1.1 Hot work should only be authorised where a safer method of work is not available.

1.2 Hot work should only be carried out by trained personnel.

1.3 Wherever possible items to be the subject of hot work should be removed to a safe area designated for that purpose.

1.4 In sprinklered premises welding and cutting operations should not be carried out when the water supply to the sprinkler system is shut off.

1.5 When hot work is being undertaken in premises fitted with an automatic fire detection system only the zone where the work is being carried out should be isolated. The zone should be reinstated as soon as the task has been completed.

1.6 A trained person should provide a continuous fire watch during and for at least 1 hour following each period of work. This action will detect and extinguish any incipient burning in the work area and in all adjoining areas to which sparks and heat may spread.

2. PROCEDURE FOR HOT WORK PERMITS

2.1 Prior to the commencement of work a hot work permit should be obtained from an authorised person. This should be done on every occasion that hot work of any type is undertaken within or upon the fabric of established buildings or any structures or plant in the open.

2.2 The authorised person should have experience or training in the problems associated with hot work and suitable status within the organisation to ensure compliance with laid down procedures.

2.3 Hot work permits should not be issued without considering the significance of any other permits to work in the vicinity or adjacent manufacturing processes.

2.4 Hot work permit should be issued for a specific task that is to be undertaken in a clearly identified area.

3. BEFORE HOT WORK COMMENCES

3.1 Before work commences, an area within 10m of the hot work process should be cleared of combustible materials and flammable liquids. All elements of combustible construction and surface finishes should be protected. This applies to any openings, holes or gaps in walls, floors and ceilings through which sparks could pass. The 10m distance may need to be increased especially in high fire risk areas or when overhead work is to be undertaken.

3.2. Where combustible materials within 10m cannot be removed, they should be completely protected by the use of non-combustible or purpose made fire retardant blankets, drapes or screens. Flammable liquids should always be removed from the area.

3.3 Combustible floors in the designated areas should be covered with overlapping sheets of non-combustible material or wetted and liberally covered with sand. Particular care should be taken to ensure that any gaps in the flooring are adequately covered.

3.4 Floors should be swept clean.

3.5 Hot work should never be carried out in an atmosphere containing flammable

vapours or combustible dust. Where a hazardous atmosphere is suspected, air samples should be taken and work only commenced when the atmosphere has been certified to be non-hazardous. If there is a risk that the flammable atmosphere may recur, further testing of the atmosphere will be necessary.

3.6 Flammable solvents should not be used to clean surfaces immediately before work commences.

3.7 Before carrying out work on one side of a wall or partition an examination should be made of the area on the other side to ensure that any combustible materials are not in danger of ignition by direct or conducted heat.

3.8 Where hot work is to be undertaken on composite building panels or similar constructions i.e. panels incorporating thermal or other insulation material, the type of insulating or other materials behind metal or other non-combustible surfaces should be assessed. If combustible materials are identified or suspected, especially polystyrene, polyurethane or other foam plastics, alternative methods should be employed.

3.9 Good ventilation should be provided in all areas where hot work is to be carried out as procedures may produce copious volumes of smoke and fumes.

3.10 At least 2 LPCB approved extinguishers each with a rating of 13A or a hydraulic hose reel should be provided at a place where the hot work is to take place and make ready for immediate use in the event of an outbreak of fire.

3.11 All personnel involved with the hot work should be familiar with the means of escape from the premises and the method of raising the fire alarm and summoning the brigade.

4 FOLLOWING COMPLETION OF HOT WORK

4.1 When work is complete, paint strippings, hot stub-ends of welding rods and other hot waste materials should be removed and disposed of safely.

4.2 At the end of the working period all equipment, including gas cylinders, should be removed to a secure area. Where bitumen/tar boilers were employed, only the gas cylinders need to be removed.

5. RECOMMENDATION SPECIFIC TO INDIVIDUAL ITEMS OF EQUIPMENT

5.1 Blow Lamps and Blow Torches - LPG blow lamps or torches should be extinguished and allowed to cool before changing cylinders. Paraffin or petrol blow lamps should only be filled and lit in the open and should not be refilled when hot.

Blow lamps or torches should be lit as short a time as possible before work commences and extinguished immediately after the work ceases.

Lighting up should only be carried out in accordance with the manufacturer's instructions. Blow lamps or torches should not be left unattended when alight.

Electrically powered hot air blowers are a particular source of danger as no flame is apparent. When using these appliances the same safety measures should be observed as when undertaking other forms of hot work.

5.2 Bitumen and Tar Boilers - To prevent heat igniting the roof, bitumen or tar boilers, lead heaters and similar equipment should only be taken onto roofs in exceptional circumstances where

a non-combustible heat insulating base must be provided.

The equipment must always be supervised by an experienced operator and sited on a firm and level surface where spilled material can easily be controlled.

Gas cylinders must be at least 3m from the burner. Gas hoses should be in good condition and properly fitted. Cylinders not in use should be stored away from the working area.

The bitumen level and its temperature should be monitored and the lid should normally be kept on the boiler.

The burner should be turned off before transporting the boiler on a lorry or trailer.

5.3 Grinding Wheels and Cutting Disc - The correct grade of wheel or disc should be used for the task in hand.

Before each period of use the wheel/disc should be checked to ensure that it is securely fastened and in good condition.

6. CONTRACTED WORK

6.1 Prior to entering into a contractual agreement with contractors, advice should be obtained from Aston Lark Limited on the adequacy of the contractors insurance. Arrangements and amounts of cover can vary considerably.

6.2 Contractors should be made aware of the fire safety procedures operating at the premises including the hot work permit system. Written undertaking to observe the precautions should be obtained from the contractor prior to the commencement of the work.



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