

## **Guidance for the Evaluation of Method Statements for Hot Work**

### **What is a hot work?**

**Hot work** is any work that could generate sufficient heat to ignite building materials and cause a fire to establish within the infrastructure of the building. Examples of hot work include; roof work with LPG torches, bitumen or tar burners used for roof work, soldering pipe work to plant and other items, brazing, welding, cutting with power tools, grinding of metal products and some chemical treatments which result in an exothermic reaction.

### **Hazards in Hot Work**

Ignition of Building Materials – if sufficient heat is generated during hot work building materials such as wood, materials treated with weather proofing products, paint and insulating materials could easily ignite. Often these materials will burn slowly and fire may spread within the building structure and remain undetected until it grows significantly and takes hold. Work on roofs, ceiling voids, service risers etc are of a particular risk.

Burns to personnel – from contact with hot surfaces following hot work activity, heat transferred through conductive materials may pass to other parts of the building adjacent to the area of works.

Smoke and fumes – during some hot work fumes and toxic smoke can be generated as by products to the hot work. If these are inhaled in sufficient quantities by personnel undertaking the work or adjacent to the work area these products may cause ill health effects.

Sparks and hot partials ejected during hot work – during cutting, grinding and welding activity sparks and other partials of hot debris can be ejected to other areas of the work place which may ignite flammable materials or gasses and vapours.

### **Precautions for Hot Work**

As a **minimum** the following precaution should be applied to all hot work;

1. All hot work must be subject to the University's Permit to Work System; no other local arrangements or contractors systems should be accepted. There permit must not be issued until a suitable and sufficient risk assessment and safe system of work has been supplied by the company or individuals undertaking the work.
2. The whole activity should be supervised by an individual who has the responsibility to ensure that all of the necessary precautions are implemented and must have received training in hot work precautions.
3. All work undertaken where a risk of ignition exists should be the subject of fire inspections during the work and after the work has been completed. Fire watch should be undertaken between half an hour and up to one hour after the work has been completed to ensure that materials have not been ignited by the work undertaken.
4. Where possible and practicable materials adjacent to the area to be heated will be dampened to prevent ignition, where this is not possible areas should be protected with flame resistant materials to prevent ignition.
5. Suitable fire extinguishers should be available during hot work to be used in the event of ignition of materials. Care should be taken when selecting appropriate extinguishers, that their deployment does not create damage to the building infrastructure or increase the risk of harm to those personnel undertaking the work.
6. All smoke and heat detectors within the vicinity of the hot work should be protected with proprietary covers to prevent accidental fire alarm activation. Before covering detectors the

Building Supervisor in Campus Services must be notified and covers for fire detectors must be removed at the end of each day.

7. All areas that have been heated should be provided clear and conspicuous safety signage to identify that the area could be hot. This should include areas adjacent to or above or below the area of work where heat transfer could occur through conduction.
8. Any process that creates toxic or hazardous fume should be undertaken in well ventilated areas, where this is not possible forced ventilation or local extraction should be used to remove toxic fumes from the atmosphere.
9. All flammable substances and flammable atmospheres should be removed before any hot work commences. This includes the isolation of extracts onto roofs, removal of flammable liquids and gasses and removal of combustible materials stored in the work area.
10. Suitable lighting should be available during the task where work is undertaken during night-time's. This can be either from existing lighting in the area or supplementary lighting installed during the task. In either case emergency lighting should be available to aid escape in the event of a power failure.
11. The wearing of Personal Protective Equipment (PPE) such as overalls, safety footwear, gloves, safety helmets and dust masks. Consideration should be given the specification of PPE to be flame resistant during hot work activity.

#### **Further Guidance**

Further Guidance on Hot Work is available from the Safety and Risk Management Team or Hot Work Authorisers in the Estates Department.

Additional guidance can be found in the HSE's guidance note INDG 297 – The safe use of compressed gases in welding, flame cutting and allied processes which can be downloaded from the HSE web site <http://www.hse.gov.uk/pubs/indg297.pdf>.