

Hot work often presents one of the greatest risks to both life safety and property protection at a facility. As a result, it is important that such work is avoided where possible, and well managed if not.

The term hot work refers to any temporary or permanent activity or process that generates a potential source of ignition, whether through heat generation, sparking or an open flame. This includes but is not limited to:

- ▼ welding
- ▼ grinding
- ▼ thermal or oxygen cutting or heating
- ▼ hot riveting
- ▼ other heat producing or spark generating operations.¹

While the risks of directly igniting combustible and flammable materials may be obvious, there are a number of more indirect risks associated with this type of work. The hot work itself can generate toxic fumes and gases while sparks, molten metal or hot slag can travel great distances, passing through



gaps in walls or floors igniting combustible materials thought to be safe from the hot work area.

The portable nature of most hot work processes also means that these exposures can be introduced to areas with unforeseen hazards. These could include concealed plastics (such as in insulated sandwich panels), plastic ductwork and rubber or plastic lined equipment.

The safest and most effective control measure for hot work (as with all hazardous processes) is to not do it. Where possible, a safer alternative should be sought to minimise the risk such as using a hand saw rather than a cutting torch, self-tapping screws rather than spot welding or nuts and bolts rather than welding.

If hot work must be undertaken on a regular basis, a dedicated hot work area should be provided. This should be an area of non-combustible or fire resistive construction, free from combustibles and flammables, segregated from adjacent areas and equipped with suitable fire extinguishers, automatic sprinkler protection or suitable heat detectors and mechanical ventilation for fume control.

When temporary hot work is required within the general workplace, a hot work permit system should be implemented and applied to both in-house personnel and contractors. This will not only provide a means to evaluate the area and the immediate fire hazards but will give cause to examine the requirement to conduct hot work in-situ or relocate the work to a protected area.

A Hot Work Permit should include:

- ▼ details of the work being performed, including authorisation
- ▼ requirements for fire suppression equipment in the area
- ▼ an assessment of the condition and suitability of the equipment to be used
- ▼ clearance of the work area from combustible materials with items wet down or protected by non-combustible shields should this not be possible
- ▼ requirements for any work-specific hazards (for example construction materials for building structural works or any additional permits required)
- ▼ the provision of a suitable fire watch during and following the completion of hot work
- ▼ confirmation that the work has been completed and the work area made safe.

A Hot Work Permit should form part of a holistic Permit-to-Work System that is integrated into business practices.

References

1. Standards Australia, 1997, *Safety in welding and allied processes Part 1: Fire precautions*, AS 1674.1-1997, Standards Australia, NSW.

For more information or a sample hot work permit:

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