

November 2008

## HOT WORK

What is the common cause of many major fires, the insurance response, and what must be done to prevent these:

### INADEQUATE CONTROL OF 'HOT WORK' TOO OFTEN THE CAUSE OF MAJOR LOSS

'Hot Work' is not surprisingly the spark that starts many major conflagrations, unfortunately. (NZ Fire Service statistics lumps this cause of fire into "All Structure fires - heat source too close to combustibles: fires near trees, welding/cutting, debris – 321 fires in 2007").

The insurance industry knows all too well the cost of fires caused by hot work getting out of control. We all regularly observe in the media the reports on major fires where this is the apparent cause.

'Not surprisingly' when we stop to consider that the 'spark/s' from welding, brazing, grinding and cutting of metal are extremely hot tiny pieces of the metal in molten and hard form, flowing from the work and landing onto or into the ground, floor, ceiling, roof, wall, cavities, drains, containers of all kinds of liquids, solids and gases, and so-on.

'Unfortunately' because when hot work is inadequately controlled it often results in an 'out of control' fire or explosion, with the resultant damage being a preventable loss.

We know that most operators of such hot work equipment take positive measures to prevent those extremely hot bits of molten metal from touching or resting on things that catch fire or explode.

The very good vigilance by these many operators of hot work equipment is overshadowed by the outcomes of inadequate management of welding, brazing, cutting and grinding, the 'could have been prevented fire or explosion if only the right measures had been taken prior to commencing the hot work' cases.



### INSURANCE IMPLICATIONS

It's a good and bad news story

The good news is simply that property insured under a Material Damage (or 'old fashioned fire'), or a Contract Works policy is insured for loss caused by fire and explosion.

From a hot work contractors view point, a Public Liability policy responds to legal liability arising from damage to other party's property - the principal's and/or adjacent and neighbouring owners' and occupiers'.

In addition, businesses that undertake hot work on their premises - using contractors or own staff - may need to call on their Public Liability policy if the hot work causes loss to third party property.

The bad news is that sometimes insurance companies may add a Warranty or Condition to insurance policies relating to the use of hot work equipment.

These policy conditions call for the use of a formal Hot Work Permit System whenever hot work is being performed. In particular, such Warranties are applied to Contract Works and Public Liability policies, which places a significant onus on the business, or the property owner, or the project manager to ensure compliance

If a loss occurs when the Hot Work Permit System has not been used, the insurance policy may not respond. This is not applied 'across the board', but applied to individual policies – Material Damage, Contract Works, or Public Liability – depending on the actual risk profile of the business.

Your Willis Client Advocate will advise you of the status of your policies.

## THE WAY TO MINIMISE THE CHANCE OF HOT WORK FIRES AND EXPLOSIONS

The Hot Work Permit System not only ensures compliance with insurance policy warranties, but even more importantly, it prevents 'out of control' fires and explosions.

Following is a General Guidelines for Hot Work set of protocols:

### GENERAL GUIDELINES FOR HOT WORK

#### Definition

Hot work means, the use of welding cutting brazing and grinding equipment, blow lamps (including electric hot air blowers) or other heat or flame producing apparatus.

#### When Is A Permit Needed

When any process involving the use of the above equipment is carried out, *outside* of a designated welding bay or area in an engineering shop or as part of a normal manufacturing process.

A designated bay is an area with:

- no flammables or combustible materials,
- a non-combustible floor,
- non-combustible barriers or shields from floor to ceiling with no penetrations (to prevent sparks, hot or molten material from leaving the area or reaching the inside wall or floor cavities),
- ready access to fire protection equipment,
- adequate lighting and ventilation appropriate to the work.

#### Who Needs A Permit

Anyone doing the work, whether an employee or a contractor.

#### Who Issues The Permit

A supervisor or manager is responsible for the issue of the permit and ensuring that the required precautions have been taken.

Where the work is being undertaken by a contractor the permit may only be issued by a manager or supervisor of the organisation that has engaged the contractors.

Under no circumstances are contractors to be permitted to conduct hot work without the authorisation of the principal.

### What Is The Format Of The Permit

There are two types. For simple operations the 'stiff card' system may be used. For more complex and hazardous operations a full page 'Duplicate Book' system should be used as this provides more detail of the process to be adopted. All cards/forms should be numbered. In both cases the precautions to be adopted are printed on the card/form. Willis can provide samples of both types.

### What Is The Procedure

There should be two parts to the permit, one held by the person carrying out the work the other by the supervisor issuing the permit.

It is the responsibility of the supervisor before issuing the permit to ensure that all safety precautions are being met. The permit should be tagged to the welding set or clearly displayed in the work vicinity so that the authority to operate is clearly visible.

On completion the person doing the work obtains sign off from the supervisor to show that the work has been completed safely and the two parts of the permits are retained for at least three months.

Permits should be issued for no more than an eight hour period. 'Open ended' permits must not be issued, although in exceptional circumstances a permit may be extended to the following day if the work is non-hazardous and identical to previous work and all precautions remain in place.



## General Safety Precautions

The following precautions are generic and each job should be individually assessed for the safety precautions to be adopted.

- Before hot work is undertaken consider what alternatives are available, e.g, moving the item to be worked upon to a designated welding area.
- Carry out a full risk/hazard assessment of the work and the area in which work is to be carried out.
- Ensure that there is no combustible material below the area or within 10 metres horizontally. Use welding screens to isolate the area.
- Cover all floor openings, holes etc. Cover combustible flooring.
- Wet down surfaces especially wooden floors.
- Check what is on the other side of an item to be welded, e.g, welding on a steel wall, there may be electrical cable on the other side.
- Ensure that all fire equipment is operational in the area, e.g, sprinklers.
- Appoint a person not involved in the operation to act as 'fire watcher' to monitor the safety aspects of the work. The 'fire watcher' must not be a contractor.
- Ensure the fire watcher is trained and familiar with emergency and communication procedures.
- Maintain the fire watch for at least one hour after completion.
- Ensure first aid fire appliances are readily available at the site.
- Certain hazardous areas or operations will require the development of specific safe working procedures - see below
- Further information on precautions to be taken during welding and cutting may also be obtained from NZS 4781: 1973 Safety in Welding and Cutting.



Special considerations are needed in the following cases which are not covered by these general precautions:

- Cutting or welding of drums that have or may have contained flammable liquids. Where such work is done specific safety procedures must be developed. Refer to guidelines published by OSH 'Hot Work on Drums and Tanks'.
- Hot work in any confined space as defined in AS/NZS 2865: 2001 Safe Working in Confined Space.
- Hot work in any area containing flammable vapours or explosive dusts.

Special care is also required when engaged in welding and cutting in areas containing expanded polystyrene sandwich insulation ("EPS") panels.

Insulation panels, even those that may be called 'non-combustible', 'fire resistant' or similar terminology should NEVER be cut or drilled using any heat producing apparatus. Cold low speed cutting apparatus should be used.

## CONTACT

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