HASLIN

Hot Work Procedure

SEQ-PR-010

Document Revision Control

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4	Jeremy Wallis	Jeremy Wallis	01/09/2016
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1. Scope

The purpose of this procedure is to provide instructions to manage risks associated with hot work.

2. Application

This procedure applies to any heat and spark producing processes under Haslin's management including but not limited to welding, burning, cutting, brazing and grinding.

3. Definitions

Approved Area	An area/workshop approved by Haslin Manager for day-to-day hot work operations.
Authorised Person	A competent person with approval from the Haslin Site Manager to perform checks and issue a Hot Work Permit.
Combustible	Any liquid, other than a flammable liquid, that has a flash point and has a fire point that is less than its boiling point.
Competent Person	A person who has acquired through training, qualification or experience, or a combination of them, the knowledge, and skills to carry out a task.
Explosive Atmosphere	An area in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of potential ignition sources. Also described as a Hazardous Area.
Fire watch	The assignment of a person to an area for the purpose of preventing a fire from occurring and who is trained to use fire-fighting equipment
Flammable	Liquids, mixtures of liquids, or liquids containing solids in solution or suspension which give off a flammable vapour at temperatures of not more than 60°C (referred to as the flash point).
Hammertech	Haslin's cloud-based Safety Management Software
Hot Work	Any heat and spark producing process, which may introduce a source of ignition into the work or adjacent areas. Examples of such work include: • Electric welding, brazing, acetylene cutting. • Use of equipment with naked flames such as burning torches and blowlamps. • Work which could produce incendiary sparks, such as grinding steel or concrete cutting. • Use of cartridge operated tools and other explosive devices. • Any other work that can generate flames, heat or sparks.
Hot Works Permit (HWP)	A permit issued by an Authorised Person in conformance with this procedure to enable hot work to proceed in a safe manner
Designated Hot Works Zone	A fenced area, 15 metres away from any combustible materials or substances, where hot works can be safely and routinely performed for project activities such as cutting, grinding, and welding

Ignition	A source of energy capable of igniting flammable or combustible substances
Recipient	A person who receives a Hot Work Permit authorising that person or persons to carry out maintenance, repair or construction activities involving hot work.

4. References

- NSW Work Health and Safety Act 2011
- NSW Work Health and Safety Regulation 2017
- NSW Code of Practice – Welding processes 2022
- NSW Code of Practice – Confined Spaces 2022
- QLD Work Health and Safety Regulation 2011
- QLD Work Health and Safety Act 2011
- QLD Code of Practice – Welding processes 2021
- Australian Standard 60079 – Explosive atmospheres.
- Australian Standard 1674 – Safety in Welding and Allied Processes
- WTIA Welding Technology Institute Technical note 7 (Health and safety in welding) and Technical note 20 (repair of steel pipelines)

5. Legal requirements

Risks to health and safety associated with an ignition source in a hazardous atmosphere at the workplace must be eliminated so far as reasonably practicable. If it is not practicable to do so, the risk must be minimised so far as is reasonably practicable.

An ignition source must not be introduced into a confined space (from outside or within the space) if there is a possibility of the ignition source causing a fire or explosion in the space. For further information related to work in confined spaces, refer to SEQ-PR-008 Confined Space Entry Procedure.

6. Procedure

6.1. Responsibilities

Project Managers, Site Engineers, Site Managers and Leading Hands must ensure compliance with the requirements outlined in this procedure.

Employees, Contractors, and Sub-contractors must comply with the requirements of this procedure. Any person in the workplace must comply, so far as the person is reasonable able, with any reasonable instruction that is given by Haslin. A person at a workplace must take reasonable care for his or her own health and safety and take reasonable care that his or her acts or omissions do not adversely affect the health and safety of other persons.

No hot work must occur on equipment, piping, tanks and drums that have previously held flammable substances without approval of Haslin Safety Manager.

6.2. General

6.2.1. Requirements for a Hot Work Permit

A Hot Work Permit & Checklist (SEQ-FM-030) must be raised within the applicable project workspace in Hammertech, and issued by an Authorised Person before any hot work is performed. Ignition sources must

not be introduced into a space if there is a possibility of fire or explosion. If hot work in a confined space is required, this must be risk assessed and documented on the Confined Space Entry Permit Form SEQ-FM-043. All works in a confined space must be carried out in conformance with SEQ-PR-008 and AS 2865.

6.2.2. Appointment of Authorised Personnel

Personnel authorised to issue Hot Work Permits must be competent to perform and supervise the work. The scope of work associated with hot work must be clearly defined.

6.2.3. Assessment and Control of risks before HWP is issued

The Authorised Person must assess and approve of the work area prior to issuing the permit. The risk of fire or explosion must be eliminated so far as is reasonably practicable. If it is not practicable to do so, the risk of fire or explosion must be minimised so far as is reasonably practicable.

Where a flammable atmosphere may exist in a confined space and there is a risk of fire and explosion, all ignition sources in the vicinity must be eliminated. Examples of potential ignition sources, both inside and outside the space, include:

- open flames and hot surfaces
- electrical equipment
- internal combustion engines
- metal tools striking metal surfaces
- spark-producing equipment for example grinding wheels, and
- welding, grinding, oxy acetylene cutting and battery-operated equipment.

Where there is a potential presence of flammable gases or vapours, atmospheric testing must be conducted no more than two hours prior to issuance of the HWP and must be conducted continuously during the works. Testing must confirm that the atmosphere contains less than 5% of the Lower Explosive Limit (LEL) of the specific vapour/gas.

6.2.4. Risk Assessment

A risk assessment must be performed for all hot work tasks. The risk assessment must include:

- The tasks to be done under a hot work permit system
- Hazard controls from fire and explosions
- Appropriate non-flammable PPE worn by those performing the works
- Competency of those performing the works
- Adequate firefighting equipment is ready for use
- Conditions preventing hot works from proceeding (explosive atmospheres etc. – see Section 6.2.5)
- Electrical or hydraulic precautions
- Adequate ventilation of the work area
- Emergency and evacuation procedures and applicable training of personnel
- Weather conditions
- Limiting personnel and vehicle traffic in the area

6.2.5. Conditions Preventing Hot Works from Proceeding

Hot works must not be conducted within 10 metres of the outer edge of an identified explosive atmosphere. Where this is not possible, a specific risk assessment applicable to those works only, is to be completed jointly with the owner/operator of the environment where the explosive atmosphere exists.

6.2.6. Issuing the Hot Work Permit

Prior to issuing a Hot Works Permit through Hammertech, the authorised person must ensure that:

- Equipment is used in accordance with manufacturer's recommendations.

- Gas cylinders are secured and in an upright position in accordance with AS 4332 (acetylene) and AS1596 (LPG)
- Electrical tools and portable equipment must be protected by an ELCB complying with AS3190
- All combustible and flammable materials are removed from the work area
- 'Danger: Welding in Progress signs' are displayed in the area where welding is being carried out
- Firefighting equipment is in direct proximity of the work area and is specific to the type of fire hazard
- HWP must not be issued under a total fire ban, unless total fire ban exemption is obtained
- Welding should not be performed from a ladder

Validity of a Hot Work Permit must be limited to 12 hours, except where the permit is for a designated Hot Works Zone (see Section 6.2.7). The fire watch must be in attendance for the entire duration of the hot works and 30 minutes after the task is completed. The assigned fire watch must watch for uncontrolled sparks, slag, embers, and hot metal off cuts.

The authorised person must complete the Hammertech permit entry in Hammertech, ensuring to include details such as the date, location of the works, and time and period of validity of the permit. The permit is active once the authorised person and the recipient have signed and dated the permit.

6.2.7. Designated Hot Work Zone Permit

Some projects may require the establishment of a designated Hot Works Zone (HWZ), where hot works such as cutting, grinding, and welding, are routinely carried out for the purposes of manufacturing or altering elements required by the project works.

A fire watch is not required for a Hot Works Zone, however strict conditions must be complied with to allow a Hot Works Zone to be operational. Those conditions are:

- The location of the HWZ is a minimum of 15 metres away from combustible materials and substances, and explosive atmospheres;
- All combustible materials and substances are removed from the HWZ
- Firefighting equipment is readily available;
- No other works are to take place on the HWZ;
- The zone must be cordoned with temporary fencing;
- Welding screens must be erected where required;
- Signage must advise the area as the site's designated Hot Works Zone.

A designated Hot Works Zone Permit's validity is to be limited to 1 calendar month, provided applicable HWZ hazard controls remain appropriate to the conditions required to establish a Hot Works Zone. Before a new monthly HWZ permit can be reissued, the Ste Manager must inspect the HWZ to ensure permit conditions are met.

6.2.8. Action when Hot Work Completed

Following the completion of the hot works, the permit recipient must notify the authorised person who issued the HWP. The authorised person must then check the area. *Note: The authorised person/person issuing the permit typically is the site manager, site engineer or safety coordinator.*

The fire watch must observe the work area for a minimum of 30 minutes after work ceases to ensure the area is free of smouldering debris and other potential ignition sources. After the 30-minute safety period has elapsed, and it is confirmed that there is no further risk of combustion or ignition sources, the fire watch is to notify the authorised person that the permit can now be closed in Hammertech. The authorised person shall notify the site manager that the hot work permit is closed and the affected area is safe to resume other works, as required. All hot work permits, risk assessments, and any other relevant documentation shall be maintained within Hammertech for a minimum of two years. Any fire extinguishers that have been discharged must be replaced/recharged.

6.2.9. Duties of the Fire Watch

The fire watch assigned to hot work duties has a responsibility in minimising the risks associated with the hot works. Their duties include, but are not limited to:

a. Before the hot work starts

- Discuss the job with the authorised person and permit recipient.
- Read and understand the Permit.
- Know the location of the nearest means of communication with the Local Fire Brigade.
- Ensure welding flash protection is adequate (i.e. screens and face shields/goggles).
- Position an appropriate fire extinguisher in a location that is directly accessible.
- Determine work area and atmospheric testing routine. The testing radius shall be 5 metres from the point where the hot work is undertaken, provided the hot works are not being undertaken in a classified hazardous area or explosive atmosphere (see Section 6.2.4).
- For electrical welding locate the electrical isolator.
- It may be necessary to wet down the immediate area – check for electrical hazards first.
- The area must be cordoned off with barriers to prevent unauthorized access.

b. During the hot work

- If in doubt, stop the work and seek advice. Fire watch is authorised to stop the hot work at any time.
- Must be in attendance for the duration of the works. If this is not possible, hot work must cease.
- Observe the work area for any arising hazards.
- Know where fire equipment is located and how to use it
- Ensure all control listed on the HWP remain in place
- Ensure people not involved in the works-stay clear of the work area.
- Ensure that during Oxy Acetylene cutting or welding, the torch is only alight and kept in the hand when being used.
- Ensure the direct work area is free of flammable and combustible materials and gases.
- Ensure water is not sprayed on the electric welding equipment.
- Ensure only dry powder extinguishers are used for electric welding jobs.

c. After the hot work ceases

- Fire watch must observe the hot work area for a minimum of 30 minutes after work ceases to check that the area is safe and free from smouldering debris and other potential ignition sources.
- Notify the authorised person after 30 minutes observation that the area is safe and free of fire risks as applicable
- Alert the authorised person or site manager, if after 30 minutes of observation, a risk of fire or explosion remains.

6.3. Personnel Protective Equipment

The persons performing hot works must wear appropriate PPE. For grinding this includes, but is not limited to, fire-resistant clothing, gloves, face shield and hearing protection. For welding, brazing, and oxy acetylene cutting, this includes but is not limited to fire-resistant clothing, welding gloves, welding helmet with filter lens, appropriate respiratory protection, and hearing protection.

7. Training

All Haslin personnel must be trained in the content of this SEQ-PR-010 Hot Work Procedure.

8. Relevant Templates, Forms and Checklists

SEQ-FM-030 Hot Work Permit (Hammertech)