

# Welding, Cutting, Brazing Operations (Hot Work) Procedure

January 2023



## **A. Scope**

The performance of work that involves welding, cutting, brazing or use of tools that produce arcing or sparking in most client company facilities may require the execution of a “Hot Work” permit.

## **B. Hot Work Permit**

When “Hot Work” is to be performed the Project Manager should consult with the client’s contract coordinator on the work permit requirements.

## **C. Training and Certification**

Personnel performing Hot Work must be trained in the procedure and in the use of the equipment involved. Welders must be tested and certified in the type of welding to be performed. Documentation of testing must be maintained on site.

## **D. Process Equipment Involved**

Any process equipment involved in the Hot Work should be removed from any chemical processing areas to reduce the potential for fire or explosion. Equipment that cannot reasonably be removed must be depressurized, de-inventoried and decontaminated. The preferred method for decontamination is steaming and/or water washing. In addition, when feasible the use of inert gas purging is an added precaution. Whichever method is used, the atmosphere must be tested and verified “0” LEL prior to work.

## **E. Fire Watch**

Generally, a Fire Watch person will be needed during Hot Work. Fire Watch responsibilities include eliminating fuel sources, protecting non-removable fuel sources, and providing a continuous visual surveillance of the Hot Work site during, and 30 minutes after the completion of Hot Work. See Fire Watch, Section 28 for more details.

## **F. EQUIPMENT INSPECTIONS**

All equipment used for Hot Work such as welding machines, grinders, fuel gas, etc. must be inspected prior to beginning work. Any noted defects or deficiencies will terminate the work until repairs are made. Records of any deficiencies should be maintained at the job site.

## **G. Ventilation**

In areas where exotic metals are involved in the cutting/welding operation and natural ventilation is not adequate, forced air ventilation or the use of supplied air

respiratory protection is required to reduce or eliminate employee exposure. These metals include lead, zinc, cadmium, mercury or beryllium. This list is not all-inclusive.

## **H. Gas Cylinders**

Gas cylinders, such as oxygen, acetylene, or argon must be staged or stored properly. Reverse flow check valves must be installed as required in section 31.0 of this manual. In addition, all cylinders must be used or stored in an upright position and fuel gas cylinders stored no less than 20 ft. from oxygen cylinders. Gas cylinders may not be brought into confined spaces.

### **HELI-ARC WELDING**

Heli-Arc Welding in confined spaces will require the use of air supplied respiratory protection or forced air ventilation and continuous oxygen concentration monitoring.

# Revision History

Rev	Rev Date	Rev By	Approved By	Description
1.0	1.3.2022	Shayne Torrans	Shayne Torrans	Initial Procedure Document
1.1	12.20.2022	Shayne Torrans	Shayne Torrans	Format Revision

## Approvals:

Procedure Owner

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

# Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

# Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.


\*

**\*** *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: \_\_\_\_\_

Signed By	Employee:	_____	Date:	_____
	Trainer:	_____	Date:	_____
	Assessor:	_____	Date:	_____

Regional Manager: \_\_\_\_\_ Date: \_\_\_\_\_



# Environmental Aspects and Impacts

## Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
<b>Purchasing &amp; Administrative Work</b>	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
<b>Climate Control</b>	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
<b>Cleaning of – offices / vehicles</b>	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
<b>Transport (Fleet vehicles / staff travel)</b>	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
<b>Operations</b>		

Activity	Aspect	Impact

# Risk Assessment

Risk Assessment // insert name here

Step No: Logical sequence	Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps.  Each step should be logical and accomplish a major task.	Potential Safety & Environmental Hazards/Impacts at the site of the Job  Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.	Risk Rating  Refer to the risk matrix or HSEQT.PRO. Risk Mgt	Recommended Corrective Action or Procedure  <i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be reduced or controlled to ALARP before work commences.</i>  Document who is responsible for implementing the controls to manage each hazard identified.	Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt
1.					
2.					
3.					
4.					
5.					

# Audit

<b>Process:</b> insert// <b>Procedure:</b> Insert //			Date:	Audited by:
			Location of Audit:	Area Mgr/Supervisor:
Item	Question	Evidence Sited	Comments	Conformance Score 0,3,5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
AUDITOR'S SIGNATURE:  SAFETY REP'S SIGNATURE:		CONFORMANCE SCORE:      / 25  CONFORMANCE %:		0 – Non-Conformance 3 – Continuous Improvement Opportunity 5 – Total Conformance