Course Fact Sheet only for
MERSETA SMME Project 2009
from 1st Jan 2009 to 31st March 2010
Damelin Saldanha

Fact Sheet

BASIC OXY – ACETYLENE GAS WELDING AND CUTTING

Weld work pieces using the oxy-acetylene gas welding process in the down hand position
US 243072 Level 2 (10 Credits

Describe and explain the oxy-acetylene gas welding process.

- ☑ Welding hoses, jubilee clamps, gas cylinders (oxygen and fuel gas), regulators, welding torch, welding nozzles, non-return valves and flashback arrestors.
- ☑ The importance of correct assembly of the oxy-acetylene gas welding equipment, and the consequences of incorrect assembly, is explained with reference to the vendor requirements.
- ☑ Basic and major components of the oxy-acetylene gas welding equipment are identified and the explanation of function and purpose is correct in terms of vendor requirements and standards.
- ☑ Parts and components correctly identified and the implications for not testing for leaks are explained.
- ☑ Terms and definitions used are consistent with generally accepted welding terminology as recorded in international welding standards.
- ☑ Parts include: gas cylinders, gas regulators, flashback arrestors, hoses, clamps, welding torch, welding nozzles, gas cylinder key and soapy water.

Select, assemble and conduct pre operational checks of oxy-acetylene gas welding equipment.

- ☑ Verification of identification and selection of oxy-acetylene gas welding equipment as specified in the welding procedure specification.
- ☑ Identification and rectification of hazards relating to welding process in accordance with standard work site practices.
- ☑ Pre-operational checks are carried out in accordance with vendor specifications and to be leak free.
- ☑ Manufacturer`s specification, worksite practices and safety and environmental issues.

Prepare workpieces prior to welding.

- ☑ Workpieces prepared prior to welding as specified on drawing and worksite practices.
- ☑ Dimensions and alignment checked as specified on drawing.
- ☑ Workpiece tack welded in position as per drawing specifications.
- ☑ Safety precautions adhered to.
- ☑ Inspect workpiece prior to welding.
- ☑ Worksite practices, tools, equipment, safety requirements and materials.

Weld metals with oxy-acetylene gas welding process.

- ☑ Welding filler material selected as specified in the welding procedure specifications.
- ☑ Workpiece welded in position.
- ☑ Safety precaution adhered to during welding process.
- ☑ Workpiece cleaned after welding as per worksite practices.
- ☑ May be selected from the range of carbon steels (plate only), applicable to the material groups 1, 2, 3 or 11 [according to ISO (TR) 15608).
- ☑ Material thickness: minimum -1,6mm.
- ☑ Welding equipment, tools, protective clothing and equipment, welding procedure specification, materials as specified on drawings and weld filler material. Weld positions to include: Fillet welding:
- ☑ Flat/Horizontal. Groove welding:
- ☑ Flat/Horizontal.

Inspect welded workpiece for defects.

- ☑ All residues flaking of material and slag removed as specified in cleaning procedure.
- ☑ Welded workpiece conform to specifications as reflected on drawing.
- ☑ Inspection methods and procedures selected are conducive to job requirements.
- ☑ Documentation completed as reflected in worksite practices.
- ☑ Worksite practices, inspection methods, and cleaning procedures.

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- ☑ Welded joints acceptance criteria to be in accordance with a national and/or international welding standard.

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Care for and store welding consumables and equipment.

- ☑ Tools and equipment cared for as per manufacturer`s specifications and stored as per worksite practices.
- ☑ Tools and equipment stored to conform to worksite practices.
- ☑ Welding consumables stored in accordance with worksite practices.
- ☑ Tools and equipment stored to conform to worksite practices.

Cut materials using the oxy-fuel gas cutting process (Manuel cutting)

US 203067 Level 2 (6 Credits)

Describe the oxy-fuel cutting process.

- ☑ The importance of correct setting of cutting pressures, and the consequences of incorrect settings, is explained.
- ☑ The thickness of materials, size and type of cutting nozzles in relation to fuel gas used, and the impact of cutting torch manipulation during the cutting process.
- ☑ Basic and major components of the oxy-fuel cutting process and equipment are identified, and the explanation of function and purpose is correct in terms of cutting standards.
- ☑ Consequences of incorrect start up and shut down procedures are explained.
- ☑ Cutting characteristics of carbon steel are identified and the implications for un-safe conditions are described.
- ☑ Terms and definitions used are consistent with generally accepted cutting terminology as recorded in cutting standards.
- ☑ Cutting characteristics of carbon steel are identified and explained in relation to the cutting process.
- ☑ Terms and definitions used are consistent with general accepted cutting terminology as records in resource materials.

Prepare for the oxy-fuel cutting operation.

- ☑ The scope and precise nature of preparing for oxy-fuel cutting is in accordance with manufacturer`s documentation and work instructions.
- ☑ Fuel gas used can be acetylene or LPG (liquid petroleum gas).
- ☑ Oxy-Fuel gas equipment is assembled and tested in accordance with manufacturer`s instructions and company specific safety operating procedures.
- ☑ Resources are correct for the task, available on site by the agreed time, and checked for serviceability or status in accordance with worksite practices and cutting standards.
- ☑ Cutting equipment, lifting equipment, material supports, applicable documentation, personal protective equipment, measuring tools (rulers, tape measure).
- ☑ Pre-operational checks are carried out in accordance with manufacturer`s operations manual and specifications.
- ☑ Cutting of materials match work instruction sheet.
- ☑ Prepared cutting equipment matches material thickness and cutting specifications.

Cut material.

- ☑ Cutting of material is carried out in accordance with work instruction sheet and drawing requirements.
- ☑ Safety precautions are applied and adhered to in accordance with OHS Act (applicable to the cutting process).
- ☑ Apply quality check on cut materials.
- ☑ End product is inspected to conform to specifications as reflected on drawing or job requirement.
- ☑ Defects include excessive slag, rough cutting surface, jagged edges, rounded top corner. Hazards include flashbacks: Identify and correct cutting defects. Material type to be used: May be selected from the range of carbon steels (plate only), applicable to the material groups 1, 2, 3 or 11 [according to ISO (TR) 15608)
- ☑ Material thickness: minimum - 10mm. Positions: All positions/directions.

Care and storage of cutting equipment, tools, and materials.

- ☑ Explain the care and storage procedures for tools, equipment in accordance with work site practices and specifications.
- ☑ Oxy-fuel cutting equipment dismantled and stored in accordance with manufacturer`s specification and requirements.

COURSE DURATION: 5 DAYS

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