

BASIC MIG WELDING

**Weld carbon steel work pieces
using the gas metal arc welding
process in the down-hand position.**

US 243066 Level 2 (12 Credits)

**Describe the gas metal arc welding
process and related equipment.**

- ☑ The importance of correct assembly of the gas metal arc welding equipment, and the consequences of incorrect assembly, are explained with reference to the manufacturer`s requirements.
- ☑ Basic and major components of the gas metal arc welding equipment are identified and the explanation of function and purpose is correct in terms of manufacturer`s requirements and standards.
- ☑ Parts and equipment are correctly identified and the implications of the incorrect identification of parts are explained.
- ☑ Terms and definitions used are consistent with generally accepted welding terminology as recorded in international welding standards.
- ☑ Suitable power source, wire-feeder, shielding gas, regulator, flow-meter, materials as specified on drawings and weld filler material, according to welding procedure specifications.

**Select, assemble and conduct pre-
operational checks of gas metal arc
welding equipment.**

- ☑ Identification and selection of gas metal arc welding equipment as specified according to work-site practices and manufacturer`s specifications.
- ☑ Identification and rectification of hazards related to welding processes in accordance with standard work site practices.
- ☑ Pre-operational checks are carried out in accordance with manufacturer`s specifications.
- ☑ Welding parameters are set in accordance with job requirements.
- ☑ Resources to include: manufacturer`s specification, worksite practices and safety and environmental issues.
- ☑ Welding parameters: volts/amperes, gas-flow, wire speed, and wire stick out as specified in the welding procedures specifications.

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.
- ☑ Safety legislation as per job requirements.
- ☑ Inspection methods - Visual, destructive or non-destructive.
- ☑ Observations applicable prior to the tack-welding process: Heat input, electrode size, filler material selection, joint preparation, welding technique, consumable usage, handling and gas shielding.

Weld workpieces.

- ☑ Despite the minimum material thickness as specified in the range statement, learners have to display sufficient competency to prepare the groove prior to welding.
- ☑ Welding filler material selected as specified on welding procedure specification.
- ☑ Workpiece welded in position.
- ☑ Safety precautions adhered to during welding process.
- ☑ Welding parameters are established to an approved welding procedure specification (WPS).
- ☑ Workpiece cleaned after welding as per worksite practices.
- ☑ Material type to be used: May be chosen 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.
- ☑ Suitable power source, wire-feeder, shielding gas, regulator, flow-meter, materials as specified on drawings and weld filler material.
- ☑ Welding procedure specifications, where applicable.
- ☑ Welding positions include: Fillet welding, Flat; Groove welding, Flat and flat-rotated.

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

Fact Sheet

Inspect welded workpiece for defects.

- All welding spatter removed as specified in cleaning procedure.
- Welded workpiece conforms to job specifications.
- Inspection methods and procedures selected are conducive to specifications.
- Documentation completed as reflected in worksite practices.
- Worksite practices, inspection methods, and cleaning procedures.
- Welded joints acceptance criteria to be in accordance with a national and/or international welding standard.

Care for and store welding consumables and equipment.

- Tools and equipment cared for as per vendor 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.

COURSE DURATION: 5 DAYS


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