

BASIC ARC WELDING

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

US 243063 Level 2 (20 Credits)

Describe the shielded metal arc welding process.

- The importance of correct assembly of the shielded metal arc welding equipment, and the consequences of incorrect assembly, are explained with reference to the vendor requirements.
- Basic and major components of the shielded 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 components correctly identified and the implications for incorrect identification are explained.
- Terms and definitions used are consistent with generally accepted welding terminology as recorded in international welding standards.
- Parts include: Suitable power source, earth clamp, electrode holder and welding cable.

Select, set up and conduct pre-operational checks of shielded metal arc welding equipment.

- Verification of identification and selection of shielded metal arc welding equipment as specified on 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 manufacturer`s specifications.
- Resources to include: manufacturer`s operational manual, worksite practices and safety and environmental.

Prepare workpieces prior to welding.

- Workpieces prepared prior to welding as specified on drawing and worksite procedures.
- 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.
- Resources include - Worksite procedures, tools, equipment, safety requirements, and materials.

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 electrodes selected as specified on welding procedure specification.
- Workpiece welded in position.
- Safety precautions adhered to during welding process.
- 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.

Inspect welded workpiece for defects in compliance with drawing specifications.

- All residues slag and 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 national and/or international welding standards.

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 to worksite practices.
- Tools and equipment stored to conform to worksite practices.

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COURSE DURATION: 5 DAYS