

STRUCTURAL ARC WELDING (INTERMEDIATE)

**Weld carbon steel work pieces
using the shielded metal arc
welding process in all positions.**

US 243056 Level 4 (25 Credits)

Describe and assemble the shielded metal arc welding equipment.

- ☑ The importance of correct assembly of the shielded metal arc welding equipment, and the consequences of incorrect assembly, is explained with reference to the manufacturer's 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 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, assemble and conduct pre operational checks of shielded metal arc welding equipment.

- ☑ Verification, identification and selection of shielded metal arc welding equipment as specified per job requirements.
- ☑ Identification and rectification of hazards relate to welding process in accordance with standard work site practices.
- ☑ Pre operational checks are carried out in accordance with manufacturer's specifications.
- ☑ A safe worksite is created to prevent damage to equipment and injury to people.
- ☑ Resources to include: manufacturer's operational and specifications manual, 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.

- ☑ Safety precautions adhered to.
- ☑ Inspect workpiece prior to welding.
- ☑ Resources include: Tools, equipment, safety requirements in relation to job requirements.

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 parameters are established to satisfy job requirements.
- ☑ Welding consumables selected and used as per job requirements.
- ☑ Workpiece welded in position as per job requirements.
- ☑ All positions (vertical, horizontal, over-head, down hand).
- ☑ Safety precaution adhered to during welding process.
- ☑ Workpiece cleaned after welding as per worksite practices.
- ☑ Potential causes for weld defect/imperfections are identified prior to welding and action taken meets job requirements.
- ☑ Heat input, electrode manipulation, electrode size, joint preparation, welding technique, consumable handling.
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- ☑ Resources include: Welding equipment, tools, protective clothing and equipment, welding procedure specification, materials as specified on drawings and weld filler material.
- ☑ 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 - 1,6mm.
- ☑ Welding consumables as specified in the welding procedure specification where applicables.

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Inspect welded work piece.

- All welding slag and spatter removed as specified in cleaning procedure.
- Welded workpiece conforms to 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 worksite practices.
- Tools and equipment stored to conform to worksite practices and procedures.
- Welding consumables stored in accordance with worksite practices and procedures.
- Tools and equipment cared for is limited to defect reporting and storage in usable condition for next user.

COURSE DURATION: 7 - 10 DAYS


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