

Conduct plastic welding in engineering construction

Overview

This standard is about conducting thermal plastic welding operations in engineering construction.

You will need to be able interpret and understand instructions and specifications in order to connect and adjust plastic welding equipment, conduct cleaning and alignment of the joint faces and perform welding operations to the specification whilst adhering to health and safety legislation, regulations and safe working practices.

In the context of this standard, your responsibility is limited to working within clearly defined procedures and following instructions from trade/craft personnel. In some cases, you may still be expected to refer to others for final authorisations, even though you remain responsible for identifying and implementing decisions within the limits of your responsibility.

This standard is for

This standard is for those that are supporting activities in engineering construction.

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Performance criteria

You must be able to:

1. work safely at all times, complying with health, safety, environmental and other relevant regulations, directives and guidelines
2. ensure that the **work environment**, material, equipment and tools are suitably prepared for the activities to be undertaken
3. follow the relevant joining procedure, work instructions and specification
4. confirm the materials and the joining surfaces are suitable for plastic welding activities
5. prepare the materials and the surfaces to be joined
6. set the parameters of the plastic welding machine, as required
7. carry out and monitor the plastic welding operation
8. produce plastic welded joints of the required quality and specified dimensional accuracy
9. shut down equipment to a safe condition on completion of joining activities
10. seek confirmation that the welding activity is completed to the required specification
11. reinstate the work area
12. deal promptly and effectively with problems within your control and report those that have been and those that cannot be solved

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Knowledge and understanding

You need to know and understand:

1. relevant legislative, regulatory and local requirements or procedures and safe working practices including your responsibilities with regards to reporting lines and procedures
2. preparation and reinstatement requirements in respect of the work area, tools, material, and equipment, and the possible consequences of incorrect actions in these areas
3. the hazards associated with plastic welding and how to minimise them
4. the principles and variety of plastic welding methods
5. plastic welding terminology
6. you need to know and understand the following features of the equipment used for plastic welding:
 - the types of machines
 - how they generate heat
 - how they generate force
 - control systems
7. how to check that the material preparation meets the specification
8. how to apply the related control procedures for the consumables required for specific processes to include:
 - how to identify them
 - what the different types are
 - how to store, handling and disposal of them (before during and after use)
9. how to set up and operate the different equipment used for plastic welding
10. how to identify common defects in plastic welding, the causes of the defects and what to do if found
11. methods of inspecting the completed weld
12. tool and equipment control: the correct use of relevant tools and equipment and your individual responsibility for the use, care and security of those you use

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Scope/range

Work environment

Typical work environments could include:

- engineering construction sites
- controlled operations
- offshore installations
- maintenance sites
- nuclear sites
- repair sites

Work environments may be open or restricted spaces:

- at height
- confined spaces
- control rooms
- controlled operational and offshore installations
- designated work areas
- explosive atmospheres
- existing plants and structures
- fabrication workshops
- in plant rooms
- inside structures, system and plant
- on access structures (scaffold)
- on open structures
- onshore and offshore installations
- potential explosive atmospheres
- shafts
- shipyards
- tunnels

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