

Overview

This unit covers the skills and knowledge you will need to carry out joining operations by bringing together two or more materials which leads to a permanent physical change in the properties of the materials. This may be by the use of one of the following 'joining' mediums:- such as soldering, bonding, gluing, welding or brazing.

This will involve carrying out the joining operation according to defined operating procedures. You will be expected to monitor the joining operation, ensuring that the joined components are to the required specification. Meeting production targets will be an important issue and your production records must show consistent and satisfactory performance.

Your responsibilities will require you to comply with organisational policy and procedures for the joining activities undertaken, and to report any problems with the joining activities to the relevant people. You will be expected to work to instructions, taking personal responsibility for your actions and the quality and accuracy of the work that you produce. You will also be expected to complete any necessary documentation.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and to adopt an informed approach to applying the required work instructions and joining procedures. You will have an understanding of the joining process used, and its application, and will know about the equipment, materials and consumables in adequate depth to provide a sound background for carrying out the activities to the required specification.

You will understand the safety precautions required when working with the joining tools and equipment. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

This unit on joining products involves:

1. using the correct equipment for the joining operations
2. using the correct joining 'medium'
3. carrying out the joining operation
4. monitoring the joining operation
5. reporting problems to the appropriate person
6. completing any necessary documentation
7. working in ways which maintain the safety of yourself and others

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Carrying out joining operations

Performance criteria

You must be able to:

- P1 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
- P2 ensure you have the correct job instructions and any relevant joining procedure and quality specifications
- P3 use the appropriate tools and techniques to correctly position and align the components to be joined
- P4 carry out the joining operations according to instructions and safe operating procedures
- P5 monitor the joining operation and identify any problems that occur
- P6 report any problem immediately to the appropriate person
- P7 produce joined product/s which comply with the specification and quality requirements
- P8 work to achieve your production targets
- P9 deal appropriately with finished products and complete any necessary documentation accurately

Knowledge and understanding

You need to know and understand:

- K1 what are the relevant health and safety requirements of the work area in which you are carrying out the joining operations
- K2 what are the specific safe working practices, joining procedures and environmental regulations that need to be observed
- K3 what are the hazards associated with carrying out the joining operations
- K4 what actions need to be taken in case of emergencies
- K5 what personal protective equipment needs to be used during the joining activities and where can it be obtained
- K6 how to make sure you have the necessary job instructions, joining procedures and quality specifications
- K7 what are the specific joining operations to be performed
- K8 what tools and equipment are used for the joining operations being carried out and how to check that they are in a safe and usable condition
- K9 how to correctly position and align the components to be joined
- K10 how to carry out the joining process to achieve the required specification
- K11 why its important to follow the specified joining sequence and procedure at all times
- K12 what problems can occur with the joining operation, how to identify them and who to report them to
- K13 why it is important to report problems immediately
- K14 how to monitor and check the quality of the joined products, against the quality standards required
- K15 what documentation may need to be completed
- K16 what your responsibilities are with regard to the reporting lines and procedures in your working area
- K17 who are the appropriate people and what are their responsibilities within your working area

Additional Information

Scope/range related to performance criteria

You must be able to:

1. Follow the relevant joining procedures and safety requirements to include **all** of the following:
 - 1.1. health and safety regulations
 - 1.2. joining equipment / tool operating instructions
 - 1.3. safe working practices
 - 1.4. company standards and procedures
 - 1.5. job instructions

2. Carry out joining operations using **one** of the following methods:
 - 2.1. hand joining operations
 - 2.2. manually operated machine joining operations
 - 2.3. fully automated machine joining operations
 - 2.4. combined joining operations

3. Carry out checks of the joined products to include the following:
 - 3.1. completeness of joining operations
and **one** other check from the following:
 - 3.2. positional accuracy of components
 - 3.3. joint quality and appearance
 - 3.4. security of joint
 - 3.5. freedom from excessive joining medium

4. Report variations and/or problems to the appropriate person to include **one** of the following:
 - 4.1. supervisor
 - 4.2. team leader
 - 4.3. quality control

5. Work to achieve production targets for **both** of the following:
 - 5.1. output
 - 5.2. quality

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