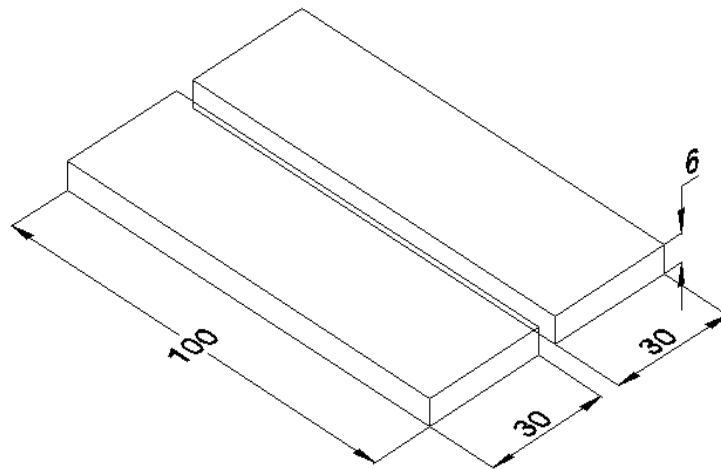
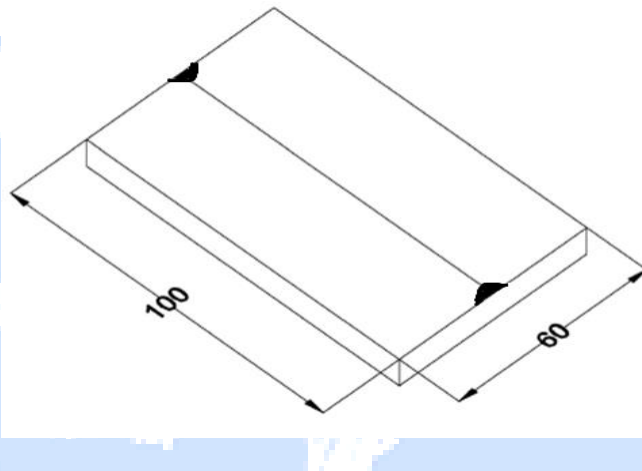


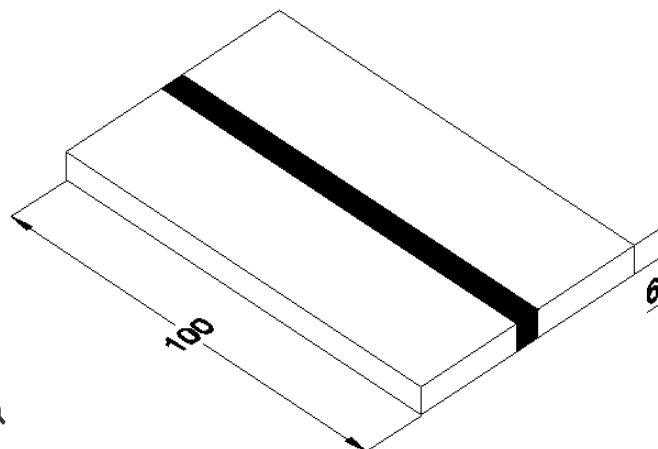
ELECTICAL ARC WELDING BUTT JOINT



PREPARATION



TACK WELD



FINAL WELD

All Dimensions are in mm (100 x 30 x 6)

ELECTRICAL ARC WELDING

BUTT JOINT

Ex no :

Date :

Aim:

To make a butt joint of given two mild steel plate of size 100 x 30 x 6 mm using arc welding method.

Application :

Butt joint is used in very heavy structures, constructions, and steel furniture using arc welding.

Material Specification:

Mild steel plates of dimension 100mm x 30mm x 6mm – Two pieces

Tools Required:

- | | | | |
|--------------------|---------------|---------------|--------------------|
| 1) Bench vice | 2) Try square | 3) Steel rule | 4) Flat File |
| 5) Chipping hammer | 6) Wire brush | 7) Tongs | 8) Welding shield. |

Equipment Required:

- 1) Electrical arc welding machine 2) Arc welding cable 3) Ground clamp

Safety Equipment's:

- 1) Leather apron 2) Hand gloves 3) Goggle etc.

Sequence of Operation:

- 1) Preparing 2) Tack welding 3) Final welding 4) Chipping & Cleaning.

Working Steps:

1) Preparing:

- a) Clean the edges of the work piece using wire brush to remove dust and rust.
- b) Check the dimensions using steel rule and also check the straightness of the edges to be joined using try square.
- c) File those edges using flat file, make them straight and check with the try square.

2) Tack welding:

- a) Place the pieces as close as possible butting against each other over welding table
- b) Check the welding machine, cable, electrode and clamp for proper connection
- c) Select correct electrode (3.15mm) and fix it in electrode holder, use gloves while fixing the electrode
- d) Switch on welding machine, adjust the current to 100amps. Keep the shield closer to eyes and move the electrode nearer to one end of the work piece pair. Electrode should not touch the work piece. A critical distance should be maintained to produce spark. Make a spot over the work piece.
- e) The same way make another spot at the next end of the work piece pair. This is to keep the pieces in place during welding.

3) Final welding:

- a) Move the electrode to first tack and make a spark
- b) Gradually move the electrode towards the second tack without shaking the electrode and maintain the gap between electrode tip and work piece.
- c) This is called as first run (Back hand welding is preferred for thick plates)
- d) For the second run start from first tack and move towards second tack with uniform oscillation motion. This keeps the metal molten a little longer and allows the slag to the surface.

4) Chipping and cleaning:

- a) Allow the work piece to cool and dip it in the water using tongs.
- b) With the help of chipping hammer gently tap the weld bead so that the slag coating is removed from the work pieces?
- c) Clean the work piece with wire brush thoroughly.
- d) Check for the dimensions

Pre Lab Question:

1. What is meant by welding?
2. Name of the two important welding processes?

3. How many types of arc are there?

4. Mention the other name for fusion welding?

5. Arc welding is also known as?

Post Lab Question:

1. What is arc welding?

2. Which of the following is a measuring tool?

3. What purpose the bench vice is used for?

4. In arc blow, the deflection of the arc is?

5. In plasma arc welding, the gas is?



Result:

Thus the given two plates are joined by butt joint using arc welding method