

Sec. 3. and 2 :- 1. Resistance Welding :-

1. In resistance welding, a heavy electric current is passed through the metals to be joined over a limited area causing them to be locally heated to plastic state and the bond is completed by the application of pressure for a prescribed period of time. No additional filler metal is required.
2. Resistance welding is employed mainly for mass production.

2. HAZ in Welding :-

HAZ (Heat Affected Zone) is the portion near the weld metal zone which is composed of parent metal and did not melt but heat to a enough high temperature for a sufficient period. Due to this heating, mechanical properties and microstructure of this zone have been changed.

The HAZ in low carbon steel of normal structure welded in one run with coated electrodes or by submerged arc welding

Process comprises of following three metallurgical different regions -

3. Submerged Welding :-

1. In this kind of welding, the flux begins to deposit on the joint to be welded. Whenever the flux is cold, then it acts as an insulator.

2. The arc can be started by moving the steel by the work portion. The arc struck will constantly remain below a wide coating of flux, and the generated heat by the arc softens the granular flux.

4. Soldering

It is a low-temp analog to brazing.

It uses filler alloy with melting temp. below 450°C (840°F).

Base metal does not require preheating.

It creates stronger joints.

Brazing

It is used to join a wide variety of similar or dissimilar metal.

It is done at temp. above 450°C but below the critical temp. of metal.

Base metal requires preheating.

Joints are relatively weaker than soldering.