

SAW strip cladding

The well-known SAW method has been widely used with strip electrodes since the mid-1960s. A strip electrode, normally measuring 60 x 0.5 mm or 90 x 0.5 mm, is used as the (usually positive) electrode and an electric arc is formed between the strip and the workpiece. Flux is used to form a molten slag to protect the weld pool from the atmosphere and helps to form a smooth weld bead surface.

ESW strip cladding

Electroslag strip cladding is a development of submerged arc strip cladding which has quickly established itself as a reliable high deposition rate process. ESW strip cladding relates to the resistance welding processes and is based on the ohmic resistance heating of a molten electrically conductive

slag. There is no arc between the strip electrode and the parent material. The heat generated by the molten slag melts the surface of the base material, and the edge of the strip electrode is submerged in the slag and flux.

The penetration achieved with ESW is less than that with for SAW because the molten slag pool is used to melt the strip and some of the parent material. The temperature of the slag pool is about 2300°C, making it necessary to water-cool the contact jaws.

ESW uses higher welding currents than SAW strip cladding so the welding heads used are more heavy duty.

The following shows the features of ESW compared with the strip cladding process.