

STUDY OF THE EFFECT OF PROCESS PARAMETERS ON WELD BEAD GEOMETRY OF SAW PROCESS: A REVIEW

GYANENDRA SINGH¹ & ANKIT KUMAR²

¹Assistant Professor, Department of Mechanical Engineering, Invertis University, Bareilly, Uttar Pradesh, India

²Research Scholar, Department of Mechanical Engineering, Invertis University, Bareilly, Uttar Pradesh, India

ABSTRACT

One of the main welding processes used in the industries for the purpose of fabrication of huge sized structures is Submerged Arc Welding (SAW) process. The SAW process consists of a copper coated wire (spooled form, diameter 2 to 10 mm) and granular flux that enables without interruption welding. The flux covers the joint ahead of an electrode wire that remained submerged in flux, thus, there is no requirement of shielding gases. The flux cover eliminates the weld spatter and the arc radiation. The key features of this process are high deposition rates and long weld runs. SAW is mainly used for welding low carbon and low alloy steels; however, heat resistant steel, medium carbon steel and corrosion resistant steel are also welded using SAW. In addition, SAW is used for welding of nickel and monel. The process is used mainly in the downward welding position for plate thickness between 5 to 50 mm, particularly where the welds are straight and long. The SAW is popular for butt and fillet welds in pressure vessel fabrication, ship building, structural engineering, pipe welding and rail-road tank cars. The important process variables in submerged arc welding are: welding current, arc voltage, welding speed, nozzle to plate distance etc. This paper presents the review of the effect of process parameters on weld bead geometry of SAW process

KEYWORDS: Submerged arc Welding, Weld Bead Geometry, Welding Process Parameters