

HARDNESS INVESTIGATION ON WELDED JOINTS FABRICATED VIA BASIC FLUX COATED ELECTRODE WITH MANUAL METAL ARC WELDING

Ravishankar.M.K & Lakshmanaswamy

Research Scholar, Department of Mechanical Engineering, U.V.C.E Bangalore, Karnataka, India

Research Scholar, Department of Mechanical Engineering, U.V.C.E Bangalore, Karnataka, India

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ABSTRACT

Today, the Manual Metal Arc Welding has an important role in latest manufacturing, such as automobiles, aircraft, and high-pressure packing. This method is primarily used for construction, repair, and manufacturing activities using steel alloys. The advantages of MMAW are location capability, metallurgical benefits, and high-quality weld metal deposit. The setting of weld parameters, however, requires significant skills. The mechanical characteristics of joints are primarily dependent by the bead geometry and the weld microstructure influenced by MMAW methods of metal transmission and arc stability. This paper discusses the hardness of welded joints via a basic flux coated electrode with MMAW. Fifteen combinations of Basic flux coated electrode is manufactured and used for making welded joint under 90A and 100A of welding current. The result shows that when the amount of heat input increase, hardness decrease On the other hand, Hardness increases with increasing basicityindex (BI). The optimum Hardness for welding metal is produced by the welding electrode BE-10 at 90A with 185 HV while the lowest value is 175 HV (a decline of 11.6%) For BE-7 at100A

KEYWORDS: *Manual Metal Arc Welding (MMAW), Basicity Index (BI), Hardness, Basic Electrode (BE)*