

INFLUENCE OF CARBON AND BORON IN IRON-CHROMIUM HARDFACING ALLOY SYSTEM

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ABSTRACT:

An experimental study of addition of carbon and boron in chromecarb alloys is described. Variations of carbon using graphite and boron, using ferroboration in the flux formulations lead to welding electrodes(SMAW) of different alloy chemistry, microstructures, hardness and more importantly wear characteristics such as low stress abrasion resistance, solid particle impingement resistance as per ASTM tests. The welds are deposited using DC Rectifier and tested in the lab., Low Stress Abrasion Resistance of about 0.05g (Weight Loss) alongwith nucleated boride in the microstructure is noticed. It is being observed that addition of Boron alters the microstructure. This also enhances the wear resistance property of the alloy system, overall. This need to be established further.

Key words: SMAW Electrode, Ferro Boron, Graphite, Microstructure, ASTM Tests