

Abstract Details

Title: A Study on SMAW by Varying the Concentration of Calcium Flouride (CaF₂) in Metal Cored Flux Coated Electrode

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Abstract: Mild steels are widely used in various structural and fabrication applications like Bridges, buildings, machineries etc. Being very common and general purpose structural steel, it is widely applied to welding all over the world. A variety of electrodes are available globally for welding of mild steel, but the development of new electrodes is always a necessity. This paper aims to find out the influence of varying concentration of Calcium Fluoride in the flux composition on the various characteristics of metal cored coated electrodes for the purpose of developing efficient and better rutile electrodes for structural mild steel. The information about the effects of CaF₂ on the electrodes characteristics is scarce in international welding literature. In this work five rutile metal cored coated electrodes were prepared by increasing Calcium Fluoride (CaF₂), at the expense of cellulose and Si-bearing components like Mica and Calcite in the fluxes. Various mechanical properties like micro hardness, tensile properties and Impact toughness were measured . Qualitative measurements of operational properties like porosity, slag detachability, arc stability and smoke level were also carried out.

Keywords: SMAW, Mild steel, Metal cored flux coated electrodes.