Abstract

The present paper study the behavior of hardfacing electrodes for shielded metal arc welding process (SMAW), used in the manufacturing of lateral shields mills for crushing arid aggregates. Filler metals, from three different manufacturers, and recommended for this application were evaluated. Deposits with different levels of current welding were made, using a simulator device that allows manual hardfacing tests without the interference of the welder. Technical and operational characteristics of the studied welding consumables, like: fusion and deposition rate, actual performance and operating stability, were determined; also the properties of the deposits: metallographic structure and hardness, were established. The integrated analysis of all these characteristics, allowed the selection of the most adequate filler metal, and the welding current that should be use for this specific application. Finally, comparative test of wear was developed under real service conditions, demonstrating the feasibility of the substitution among those elements.

Keywords

Mills arid, hardfacing, SMAW