COMPARISON BETWEEN DIFFERENT CLADDING TECHNIQUES

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ABSTRACT
The paper addresses a theoretical approach on cladding techniques and focuses on the electroslag and submerged arc strip cladding methods, highlighting their advantages/disadvantages and applications in different industrial sectors. Cladding with stainless steel or Nickel alloys is an economical procedure to deposit a corrosion resistant protective layer over a load bearing mild or low alloyed steel structure. This process represents the best technique for coating any shape, increasing life-time of wearing. Low dilution between track and substrate, in comparison with other welding processes, and strong metallurgical bond are achieved. Other features of the cladding process are related to the low deformation of the deposited metal, small heat affected zone and lack of cracks and porosities in the joint. Because of high cooling rate, fine grains are obtained in the microstructure. The cladding process is applied for the reconditioning of the parts subjected to wear, where the aim is to restore the shape and mechanical properties by depositing additional layers with controlled chemical composition. Strip cladding is, therefore, frequently applied in the production of components for the chemical, petrochemical and nuclear industries, as well in mining, steel plants and earth moving equipment fabrication.

KEY WORDS: Strip cladding, electroslag welding, submerged arc welding.

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