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THERMAL DIFFUSION-BASED BORIDING EFFECT ON HVOF-SPRAYED AISI 316L STAINLESS STEEL COATING

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ABSTRACT

Boriding is an effective method for increasing the surface hardness of materials and preventing wear. Boriding can result in a unique combination of bulk and surface characteristics. According to several research, the most influential factors for boron diffusion during the boriding process are defects and residual stresses in the crystal lattice. Because thermally sprayed coatings exhibit a significant degree of deformation due to particle impact, defects and stress are to be expected. The purpose of this study was to look into the effect of thermal diffusion-based boriding on the 316L coating applied by the HVOF technique. Hardness, wear resistance and coefficient of friction were improved by the boriding coating. Surface boriding has the ability to improve the coating's longevity.

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