

IMPROVEMENT IN WEAR RESISTANCE OF AISI H13 STEEL BY PACK-BORONIZING METHOD

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Boronizing has been employed to increase the service life of parts such as orifices, ingot molds and dies for hot forming made of AISI H13 steel. In this study, pack boronizing of AISI H13 Steel was done. Samples were boronized at 950°C for 0.5 hr, 1 hr and 4 hr. In all the specimens both the iron boride layers (FeB, Fe₂B) were formed. It was seen that as soaking time increases, thickness of boride depth also increases. Continuous decrease in the hardness from surface to unboronized layer was observed. Boronized specimen at 950°C for 4 hr showed better hardness and so was studied for further investigation. This study was compared with Nitrocarburized cycle at 550°C for 12 hr. High wear resistance was observed in the boronized specimen than in nitrocarburized sample. COF was ranging from 0.40 to 0.70.

Biography

Niketan Manthani, has done his Post-graduation in Metallurgy from IIT Bombay with experience in the industry across, Metallurgy, Quality Assurance, Mechanical Functions, Production Line, Operations and Safety. His research interests include surface treatment process, failure analysis, new product development and currently spearheading as Metallurgical Researcher with Bharat Forge Limited, Pune. Bharat Forge Limited is metallurgical driven company which has expertise in material science and manufacturing process. Bharat forge is into many fields, and at present it is moving into non-automotive sector too. We are exploring our research into numerous fields ranging from Nanotechnology to Megastructures. Bharat Forge is rightly called the biggest forging company in world.

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