

STYDY OF MECHANICAL PROPERTIES OF MOLYBDENUM COATINGS DEPOSITED BY THERMAL FLAME SPARYING ON GRAY CAST IRON

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Abstract: Thermal spraying coatings are used to meet the most stringent industrial requirements in the wider of application. The molybdenum coatings present a good wear resistance which used several mechanical applications. In this work, we studied the mechanical properties of molybdenum coating deposited using thermal flame spraying on gray cast iron with lamellar graphite. After optimization of the spraying parameters, the microstructure was investigated using optical microscopy, scanning electron microscopy and X-ray diffraction. The mechanical properties obtained by microhardness and nanoindentation tests were evaluated on a polished cross section. The mass loss was measured using the abrasive wear test at varying the normal load. The results showed an improvement the mechanical properties of gray cast iron after deposition of molybdenum with wire-flame spraying.

Keywords : Thermal Spraying, Molybdenum Coating, mechanical properties, Nanoindentation, wear.