



PROTECTIVE MAGNETIC-ELECTRICAL COATINGS BASED ON DISPERSED METAL WASTE FOR MIXING EQUIPMENT OF CASTING INDUSTRY

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Grigory V. Petrishin, Igor B. Odarchenko and Yaroslav V. Kudritsky

¹Mechanical Engineering Faculty, Sukhoi State Technical University of Gomel, Gomel, Republic of Belarus.

²Technological Faculty, Sukhoi State Technical University of Gomel, Gomel, Republic of Belarus.

³Brest State Technical University, Gomel, Republic of Belarus.

Abstract

In this paper, we propose a solution to the problem of increasing the service life of mixture preparation equipment's elements of the casting foundry. The main methods of increasing the wear resistance of the parts are considered. It is proposed to apply protective coatings on the working surfaces of equipment's parts by the magnetic-electrical method. New low-cost powder mixtures for coatings, obtained by borating dispersed metal wastes, have been developed. The influence of the composition of the developed powder on the wear resistance of magnetic-electrical coatings under abrasive wear conditions has been established. The possibility of increasing the hardness and wear resistance of magnetic-electrical coatings by introducing sintered hard alloy waste - dispersed tungsten carbide into the composition of the powder has been studied. The results of comparative laboratory tests of the wear resistance of magnetic-electrical coatings using mass-produced powders and new powders based on diffusion borated metal waste are obtained. Production tests of mixer blades for the preparation of sand mixtures in the foundry have been carried out, and an increase in service life by 50-70% has been established in comparison with mass-produced parts.

Keywords: Protective coatings, metall powders, borated materials, metal waste, wear resistance.