

An Experimental Assessment of Special Metal Castings in Reducing Abrasive Wear

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In both the engineering and the agricultural industries, components that are no longer considered entirely fit for purpose are already being exchanged for new parts that have a longer operating life. Today's fast developing industrial sectors are making higher demands on standards for the quality of their components. Such components and their lifetimes are very closely linked to the discovery of new materials which will better meet the requirements of the individual industries. This paper describes the experimental assessment of special castings from the viewpoint of their durability in the face of abrasive wear and friction, density, hardness and their metallurgical structure. In laboratory tests, ten experimental samples were prepared containing increasing amounts of carbon and chromium, whilst the other chemical elements remained constant. Durability in the face of abrasive wear was evaluated on grinding plates with various sizes of abrasive parts. Hardness was determined according to the Vickers method. The results of the experiments confirm the hypothesis of a proportionate increase in resistance to abrasive wear with the increase in carbon and chromium.

Keywords: special castings, abrasive wear, density, hardness, metallography

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