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著者	HOMMA Masao, MEGURO Hiroshi, MORITA Sougoro, ABE Yoshihiko
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Studies on the Wear Resisting Properties of the Spheroidal Graphite Cast Steel*

Masao HOMMA, Hiroshi MEGURO, Sougorô MORITA and Yoshihiko ABE**

The Research Institute for Iron, Steel and Other Metals

Abstract

The mechanical properties of the spheroidal graphite cast steel were already reported by the authors. This investigation has been made to compare the wear resisting properties of the spheroidal graphite cast steel with those of other cast irons. The surface hardness of the wear test pieces before and after the wear testing was measured. The results of this investigation can be summarized as follows: (1) In the dry abrasion between specimens of the same quality, the spheroidal cast steel is remarkably improved its wear resisting properties by oil quenching and tempering treatment. (2) In the dry abrasion and oil abrasion between specimens of the different qualities, in the pearlitic type, this cast steel is superior to the ductile cast iron. (3) In the case of dry abrasion, the difference between the surface hardness of the wear test pieces before and after wearing, became larger with an ordering of ferrite, pearlite, quenching and tempering matrix, and bainite. These differences have no relations to graphite shapes or wearing amounts.

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** Toyota Central Research and Development Laboratories., Inc., Nagoya.