

On the Behaviour of Graphite in Graphitic Cast Steel

著者	HOMMA Masao, MAEKAWA Shizuya, SUZUKI Koreaki
journal or publication title	Science reports of the Research Institutes, Tohoku University. Ser. A, Physics, chemistry and metallurgy
volume	25
page range	162-162
year	1974
URL	http://hdl.handle.net/10097/27727

On the Behaviour of Graphite in Graphitic Cast Steel*

Masao HOMMA

*The Research Institute for Iron, Steel and Other Metals
Tohoku University*

and

Shizuya MAEKAWA and Koreaki SUZUKI

Nippon Seiko Co. Ltd., Muroran

Abstract

Graphitic cast steels are in the hypereutectoid range and have spheroidal graphites in the as-cast state. This research can be summarized as follows:

(1) Gray cast irons with the strongest graphitizing tendency have oxygen and sulfur contents in the ranges of 20~30 and 150~300 ppm, respectively. It can be assumed that their contents of the graphitic cast steels are equal to those of gray cast irons having the strongest graphitizing tendency.

(2) Use of carbide slag before and after melting down of raw iron materials effectively decreases oxygen contents of these steels and improves their behaviour of graphitization; that is, the form of graphite is more spheroidal, nodules are increased and sizes become smaller than those when carbide slag is not used.

(3) Concerning the fading phenomena after inoculation, there is almost no degradation in the spheroidal form of graphite, and the size of graphite becomes smaller with the lapse of time.

* The 1639th report of the Research Institute for Iron, Steel and Other Metals. Published in the Transactions of the Japan Institute of Metals, **14** (1973), 97 and AFS Cast Metals Research Journal, **9** (1973), 163.