

KAWASAKI STEEL TECHNICAL REPORT

No.41 (October 1999)

*Advances in Iron and Steel Technologies,
Commemorating the 30th Anniversary of
Technical Research Laboratories*

Recent Activities in Research of Refractories and Slag

Masato Kumagai

Synopsis :

Technical trends during the last ten years in the fields of refractories and slag and an outline of the activities of the Refractories & Slag Laboratory of Kawasaki Steel are presented. In the field of refractories, successful results were achieved in the development of flame gunning repair and application to the coke oven, expanded use of monolithic refractories, and extension of oven life by structural design of refractory installation and slag design. In the field of slag, recycling of slag in the steel works, stainless slag treatment technology, and the development of applications for blast furnace slag are contributing to efforts to create an environment-friendly steel works through recycling of resources and reduction of industrial wastes.

(c)JFE Steel Corporation, 2003

The body can be viewed from the next page.

Recent Activities in Research of Refractories and Slag*

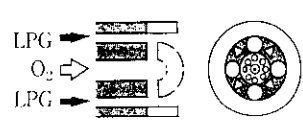

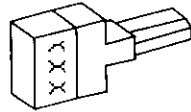


Synopsis:

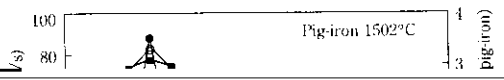
Technical trends during the last ten years in the fields of refractories and slag and an outline of the activities of the Refractories & Slag Laboratory of Kawasaki Steel are presented. In the field of refractories, successful results were achieved in the development of flame gun-

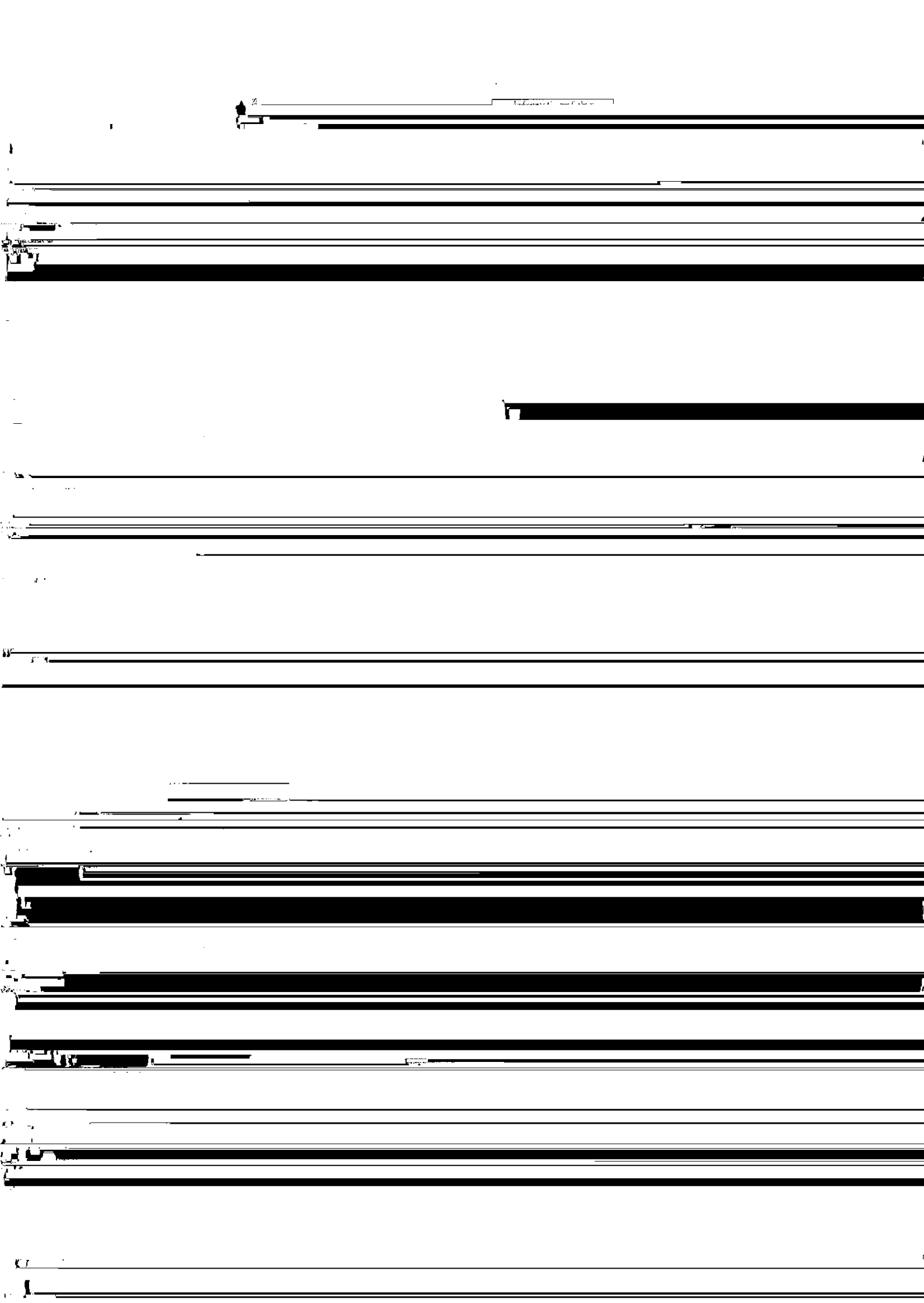
...tion to the... ..

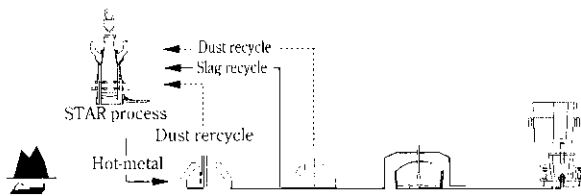
Table 1 Comparison of various flame gunning techniques for coke oven

	K-FG type	Fosbel type	Lava flame type
Burner construction			
	LPG + SiO ₂ + O ₂	Si(+ Al) + O ₂	LPG + O ₂

dynamic calculations.^{7,8)} A splash coating technique was developed, contributing to a large extension in furnace







References

- 1) P. M. Benson, Q. K. Robinson, and C. Dumazeau: Proc. 39th Int. Colloquium on Refractories, 118(1993)
- 2) H. Hiroki, A. Takahashi, Y. Nanba, N. Tsukamoto, Y. Kurashina, and K. Yanagawa: *Shinagawa Technical Report*,