

Application of Flame Gunning to Hot Fettingling of BOF*

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A thermal spraying technique in which dead burnt magnesia powder is partially fused in flames made by combustion of premixed coke powder in oxygen flow gas and bonded to the furnace wall has been applied to the hot repair of BOF. The technique is called the "flame gunning" and introduced to No. 1 steelmaking shop at Chiba Works, where hard operation such as stainless steel blowing is carried out.

As the flame gunned layer has such low porosity as that of burnt magnesia-dolomite brick, it can withstand 2 heats of stainless steel blowing and 11 heats of low alloy steel blowing. By the introduction of flame gunning, the total refractory cost has been reduced to 26% less than the cost without the gunning.

As the flame gunning has many advantages such as...

since resistance of the gunned layer and low cost...

methods, effects, etc. of flame gunning.

2 Features of Flame Gunning

obtained a dense gunned layer:

Furnace wall temperature
before gunning:

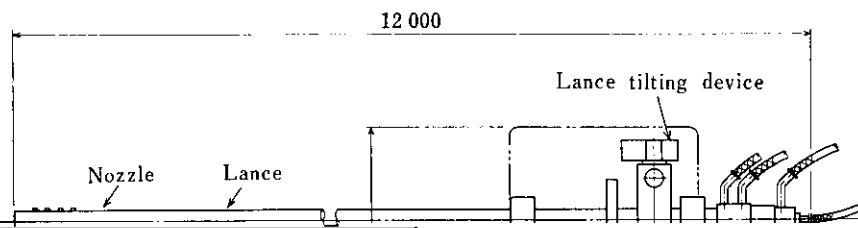
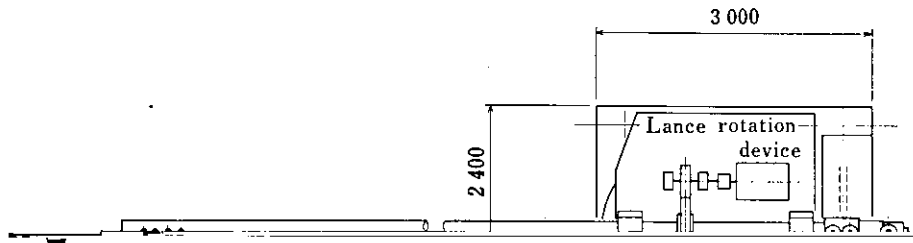
Over 1 200°C

3.1 Gunning Mass Feeding System

This system stores gunning mass, transports it to the gunning lance and feeds it together with oxygen

Table 1 Specification of gunning mass feeding system

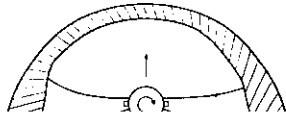
Item	Specification
Pressure tank	Vertical cylinder type



[Redacted]

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A gunned layer obtained by flame gunning has a thickness of about 20 mm when the gunning quantity is 1.5 tons per one gunning operation, though it depends upon the area of repair. A condition of a



provement of the repairing technique coupled with

the high durability of the gunned layer produced through flame gunning, a 26% reduction in refractory

Consequently, it is expected that flame gunning

will play an important role in the future BOF operation which will inevitably entail an increase in the