Lime Dosing & Injection System
for Hot-Spot protection

Process Description:

Dolomite Lime will be injected into the Hot-Spot areas of the furnace into the interface between refractories
and scrap. The Lime sinters on the furnace wall and protects the refractory in the Hot-spot areas.

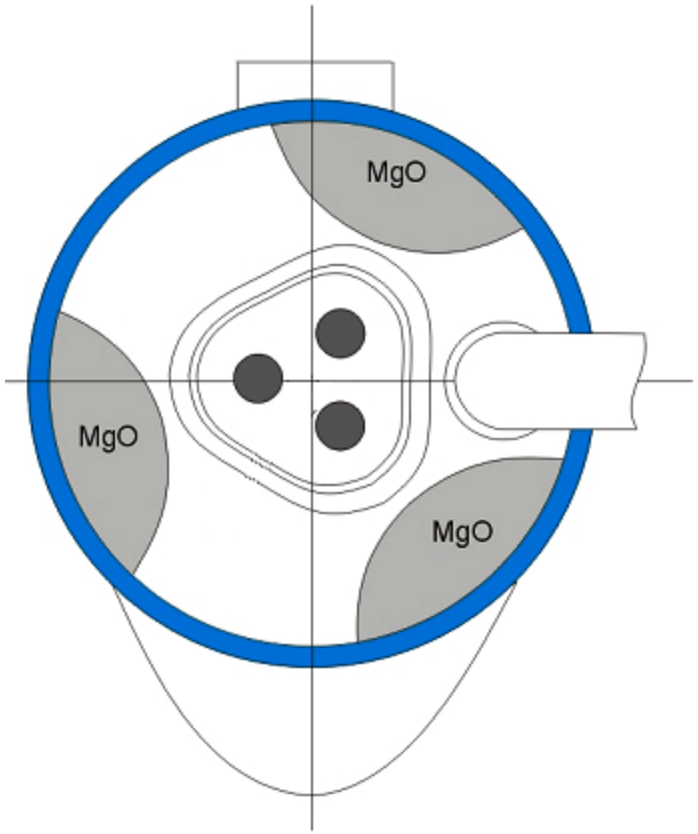
Target

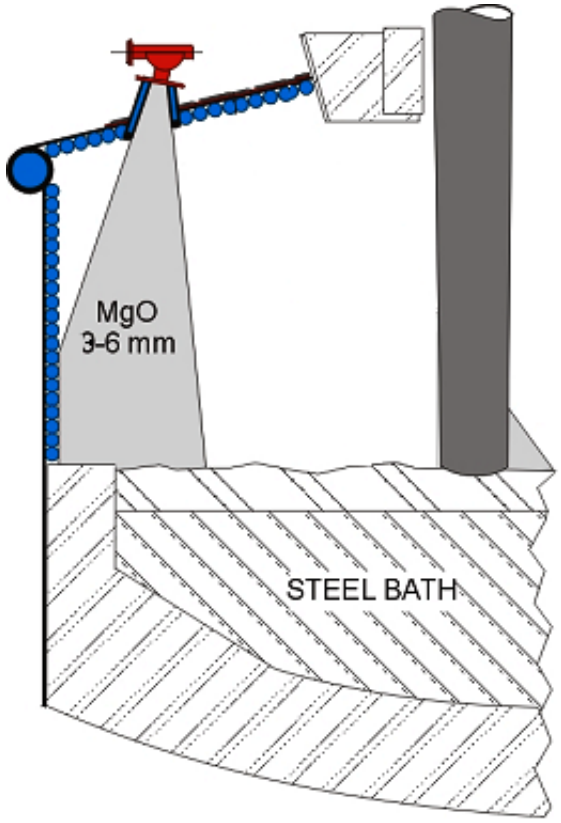
- Refractory protection = > increase of Refractory Life-time
- Panel protection, increase of life time
- Less maintenance work and furnace down-time
- Lower dust emission due to no addition into scrap basket
- Time saving due to less refractory repair time
- Easy handling due to automatic control

Specification of recommended Lime

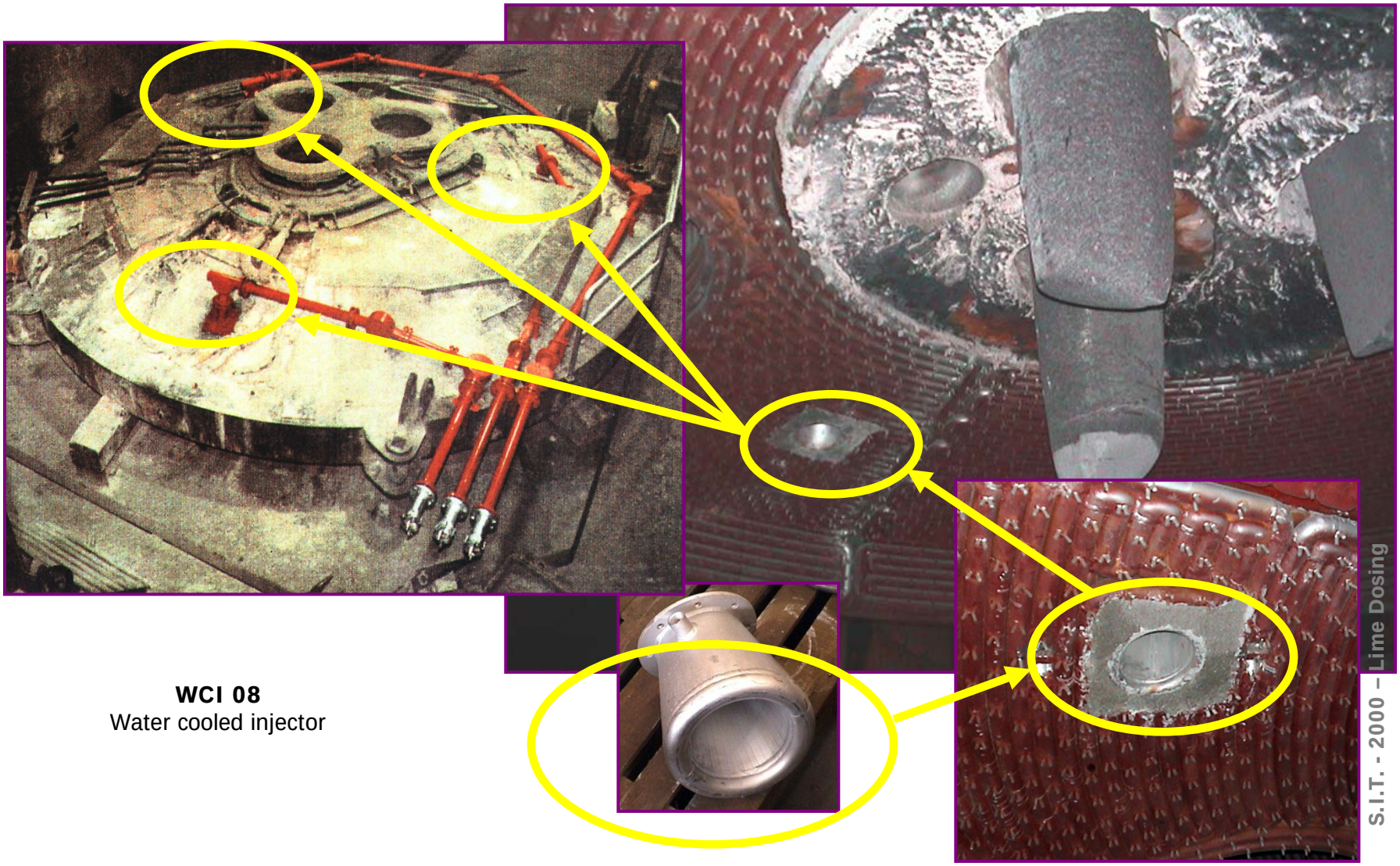
Type:	Dolomite Lime (CaO + MgO)
Grainsize:	3 – 6 mm
MgO content:	up to 30 % (as high as available)
Bulk density:	~ 1 t / m³

HOT-SPOT Protection – Injection Points



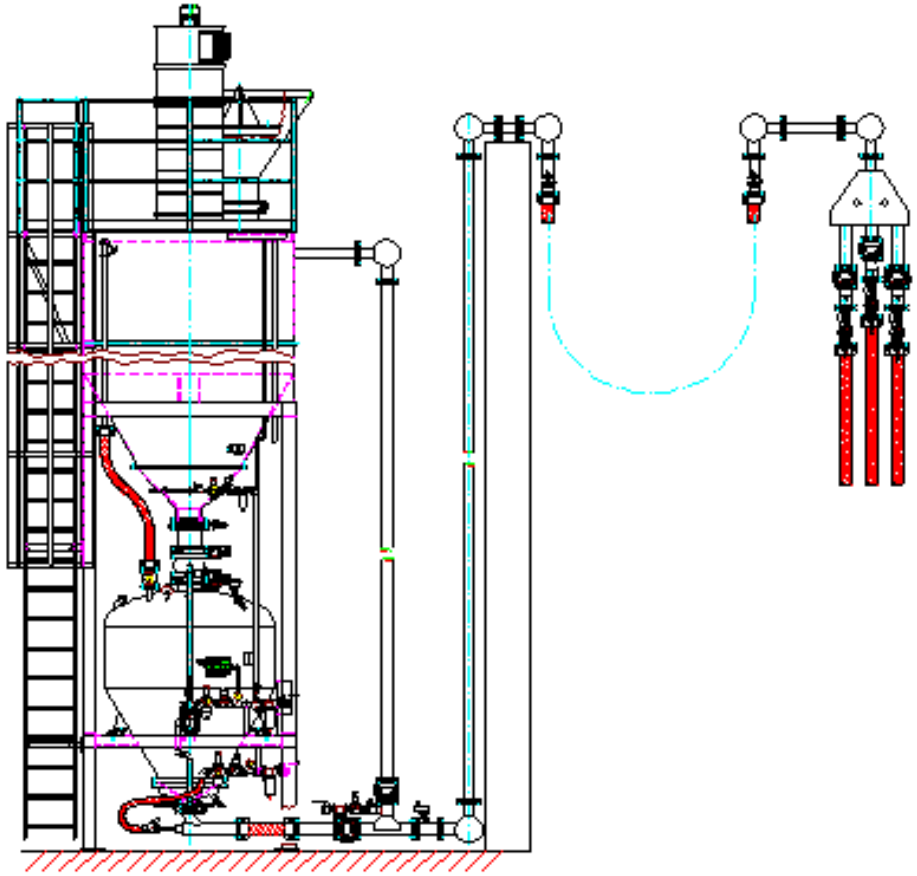


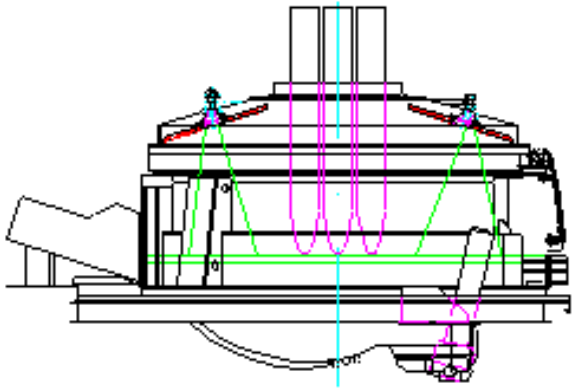
HOT-SPOT Protection – Furnace Roof Installation

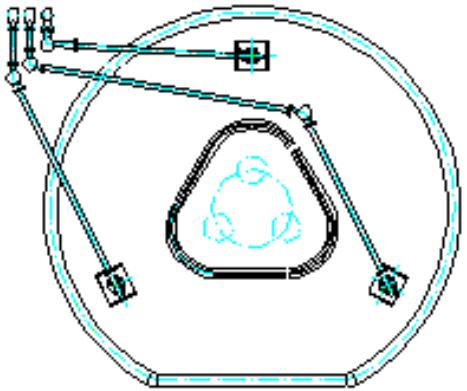


WCI 08
Water cooled injector

HOT-SPOT Protection – Basic System Layout







Lime Dosing & Injection System for Slag Composition

Process Description:

The requested amount of **Lime** will be injected into the electric arc furnace into the hot areas , either through sidewall lances and / or manipulator or through the roof into the Delta between the electrodes. The lime melts quickly and causes basic slag.

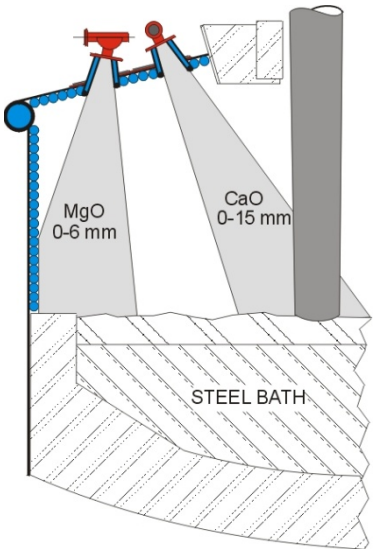
Targets:

-Injection for slag- or metallurgical treatment
- New slag or quicker slag making
- FeO removal from the slag
- Improvement of slag basicity
- De-phosphorisation
- Quick metallurgic reactions

Deciding Factors:

- Availability of Lime on local market
- Already existing Lance Manipulator
- LM adaptable for extra lance for Lime
- Melting process: available time for injection
- Amount of Lime to be injected: T_{lime} / T_{liquid}
- Available space at furnace shell for modification
- Location of hot areas in the furnace

COMBINED SYSTEM - Lime Injection & Hot Spot Treatment



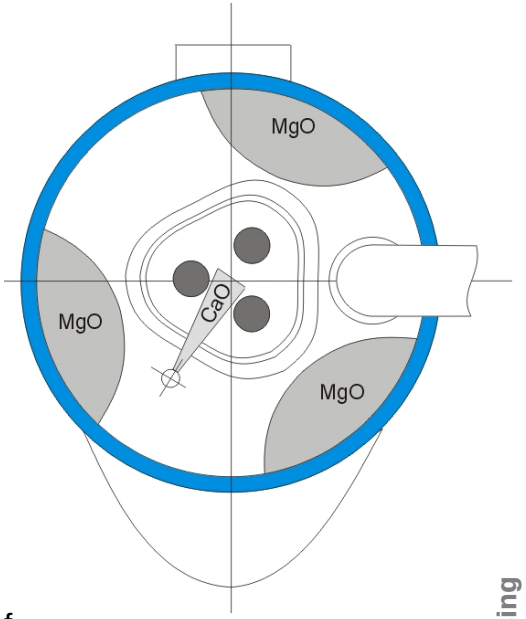
Maximum flow-rate:
Up to 500 kg/min. in 50-m distance to the furnace.

Material grain size recommended:

Lump-lime:	**0 - 15 mm.**
Dolomite lime:	**0 - 6 mm**

Material grain size distribution:

0 – 1 mm	**3 %**
1 – 3 mm	**20 %**
3 – 12 mm	**70 %**
12 – 15 mm	**7 %**



Process :

Dolomite Lime will be injected into the Hot-Spot areas of the furnace into the interface between refractory and scrap.The Lime sinters on the furnace wall and protects the refractory in the Hot-spot areas.