

Spirano, 28-06-2005

**ILA 2006 IN PRAGUE**

**PAPER ABSTRACT of Terruzzi Fercalx S.p.A.**

Title

**CALCINATION TECHNOLOGIES FOR SOFT AND HARD BURNT LIME: CASE STUDIES**

Considering the development of the lime market, worldwide, it is pre-eminent the necessity for the lime producer to tailor their quicklime production according to the quality requirements in terms of soft burnt and hard burnt lime. Our paper will introduce three case studies of three different lime kiln projects producing either soft and hard burnt lime.

Terruzzi Fercalx has in fact developed the following Lime Kiln technologies:

for Soft Burnt Lime

- . FERCALX VERTICAL LIME KILN “Three Way Pressure System”
- . BECKENBACH ANNULAR SHAFT KILN

for Hard Burnt Lime

- . FERCALX VERTICAL LIME KILN “Two Way Pressure System”

For all the three systems we will give detailed information on the performances, achieved on several operating kilns, introducing for each type one lime kiln project as reference.

The kilns that will be taken as typical reference are the following:

a) FERCALX VERTICAL LIME KILN “Three Way Pressure System” producing:

- . CO<sub>2</sub> residual in lime : less than 1,5%
- . lime reactivity : T<sub>60</sub> in max. 30 sec with EN standard
- . fuel consumption : below 900 kcal/kg of lime.

b) BECKENBACH ANNULAR SHAFT KILN producing:

- . CO<sub>2</sub> residual in lime : less than 1%
- . lime reactivity : >360 ml of 4NHCl in 5 min. with Wuelfrath method
- . fuel consumption : around 930-940 kcal/kg of lime.

For this kiln type we have two cases with similar performances, one heated with lean gas and the other with natural gas.

c) FERCALX VERTICAL LIME KILN “Two Way Pressure System” producing:

- . lime reactivity : T<sub>60</sub> in >14 min. with EN standard
- . fuel consumption : around 930 kcal/kg of lime.

For each case study the presentation will be based on the following index:

- Introduction on the project

- main feature of the lime kiln
- operating results (CO<sub>2</sub> residual in the lime, reactivity, fuel consumption, etc.)
- process achievements
- conclusion

Important technical improvements on both the FERCALX VERTICAL LIME KILN and the BECKENBACH ANNULAR SHAFT KILN recently patented shall be also introduced.