

# Services to the world of cement and mineral processing.



## Refractory Drying & Preheating

The refractories that line the thermal areas of cement production units, are designed for efficiency, durability and ease of installation. Though they are ver-

satile and form a strong integral structure, they are vulnerable in newly installed or green states.

Castable refractory is susceptible to explosive

spalling and macro-cracking. Damage from macro-cracking





Explosive Spalling

may not be apparent until the first cool-down when the refractory shrinks.

Plastic refractories can form shear planes if heated too slowly and explode from steam pressure if heated too fast.

Hotwork's heating system involves convective heating with flame safety protection and quick acting temporary thermocouples placed in critical areas.

Our unique dryout system uses full fan output for convective heating for the entire heat range and our burner dampers start out wide open.

Temperature increases can be at any rate: 2° or 200° per hour to 1000°.

### Firing Hoods, Nose Rings, Coolers (head & caption)

Hotwork treats these areas: Tertiary Air Duct, Firing Hood, Nose Ring, Tertiary Take-off, Bullnose, Drop-Out Chute, Curbs & Walls.

### Normal startup problems vs Hotwork method

During a normal startup using the kiln burner, heat is introduced at the firing hood and drafts up the kiln. The cooler does what it is designed to do – cools. The refractory dry-out occurs in a matter of seconds when it is bathed in hot clinker. Using the Hotwork method, heating from the cooler dries the curbs and bullnose and then

drafts up to dry and preheat the firing hood and nose ring. Preheating can be done at the same time as startup.

For a new line, Hotwork fre-



Equipment is designed for easy installation

quently heats the entire system including the cooler, kiln and tower. An additional benefit is in using this heat for initial raw mill production. This is one of the greatest services we can provide a new facility because there is no way to start a preheater without feed and heat is needed from a kiln to generate feed. A new raw mill needs a 2-3 day run to make adjustments. We have run for weeks to fill silos.

### Raw Mill heating & setu

Hotwork heats raw mills for initial testing and to provide feed while a kiln is down. We depend on ID fan or baghouse fans to pull the heat through the mill. For setups Hotwork systems are interlocked with the ID fan. Alternate burner positions for mill heat involve top preheater stage heating with manways left open to ingress air.



Wide open

Lime Preheater

Our burner operates on natural gas, propane or diesel



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