

GREENFREE™ KF Goes for a Second Campaign in a Cement Kiln

In February 2003, a Canadian cement manufacturer was interested in testing GREENFREE™ KF to evaluate the product's insulating value and wear resistance. GREENFREE™ KF was featured in the October 2002 *The Resco Line*™, and is an 85% MgO magnesite-spinel brick designed for improved insulating value and reduced shell temperatures.

Deciding on a trial evaluation in a 12' diameter dry-process kiln, the customer installed a 220-mm (8.6") thick lining of GREENFREE™ KF into both transition zones in early March 2003.

The kiln campaign ended about mid-January this year. In the 30' long upper transition zone, remnant thickness varied from 130-mm (5") to 180-mm (7"). The production manager decided that the GREENFREE™ KF upper transition had sufficient thickness to continue for another campaign.

In this plant, the lower transition is very short, only about 6 feet, but usually sees high wear. After service, the GREENFREE™ KF was again about 180-mm (7") thick (see figure 1).



Figure 1. GREENFREE™ KF was approximately 180-mm (7") thick after the first campaign in the lower transition of a 12' diameter cement kiln.

Based on the wear resistance seen in these evaluations, GREENFREE™ KF looks to be a strong candidate for general transition zone service.

RESCOMAG® 92 FMS Establishes Wear Resistance in Lower Transition Zones

RESCOMAG® 92 FMS is a burned, magnesite-spinel brick designed for high wear locations in transition zones, especially the lower transition. The primary wear mechanism in the lower transition is infiltration and erosion of the refractory by the cement clinker liquid phase. 92% MgO magnesite-spinel refractories exhibit better wear resistance to this attack. Further, the ingredients in RESCOMAG® 92 FMS are selected for especially high resistance to melts.

Over the past year, service evaluations of RESCOMAG® 92 FMS have been monitored to verify this product's wear resistance.

- In the outlet transition of a 4.4-m diameter kiln with a precalciner located in the Southwest, a RESCOMAG® 92 FMS lining lasted two years.
- In another 4.4-m kiln in western US, after 10½ months service, the RESCOMAG® 92 FMS retained 75% of original thickness (see figure 2).

RESCOMAG® 92 FMS offers the opportunity to increase service life in difficult lower transition linings and help balance service life, owing to its strong resistance.



Figure 2. RESCOMAG® 92 FMS exhibited superior erosion resistance and good remnant thickness after its campaign in a 4.4-m diameter kiln.



Resco Products, Inc.
Penn Center West
Building 2, Suite 430
Pittsburgh, PA 15276
Phone: 888-283-5505
412-494-4491
Fax: 412-494-4571
www.rescoproducts.com

QUIKTURN Products Continue Growth

In 2003, QUIKTURN castables became Resco's fastest growing product line in both sales and number. QUIKTURN castables are specially designed to be brought into service using process-generated heat. QUIKTURN products are used when cures and dry-outs cannot be carefully controlled.

Applications where QUIKTURN castables and gunning mixes have been successful in cement plants include:

- Firing hood linings
- Nose rings
- Burner pipes
- Cooler sidewalls
- Cooler curbs
- Cooler bull noses
- Tertiary air duct off-takes
- Preheater riser ducts

The ease of dry-out makes QUIKTURN products especially useful in vessels downstream of the kiln main-burner where it is difficult to accurately heat-up monolithic linings. In addition to ease of dry-out, QUIKTURN products feature excellent thermal shock resistance, crack resistance and volume stability (see figure 3).

Newcomers to the QUIKTURN product line are 45% Al_2O_3 QUIKTURN 45G, QUIKTURN 45PC, and a self-flowing product that is suitable for thin burner pipe linings, QUIKTURN 60SF.



Figure 3. After one year of service, QUIKTURN 60PC remains a solid, durable refractory in this cooler bull nose.

Editor's Corner

About a year and a half ago, we began a marketing slogan, "Resco for the long run." The slogan pretty well encompassed Resco's breadth of existence. In two years Resco will celebrate sixty years of supplying special refractories to serving the most critical applications of many customers.



The second element of the long run was the highly experienced people that support Resco's products, from our engineers that create the products to our field sales representatives and managers that help you apply them. Here at Resco, I am fortunate to work with some very skilled and credible people.

What anchors all this are the credible and innovative products that enable you to achieve the long run. As this was going to press, I heard about some RESCOMAG® 85 that lasted three years in a Southwest area cement kiln's upper transition zone (all brick still at least 5" thick)...and the R-MAX® C castable that was giving unprecedented wear resistance in planetary cooler ports...and the great durability that has become a hallmark of our QUIKTURN castables.

No secret that a lot of Resco's growth last year was due to the reality behind our slogan.

Resco for the long run.

Chris Macey

(christopher.macey@rescoproducts.com)

