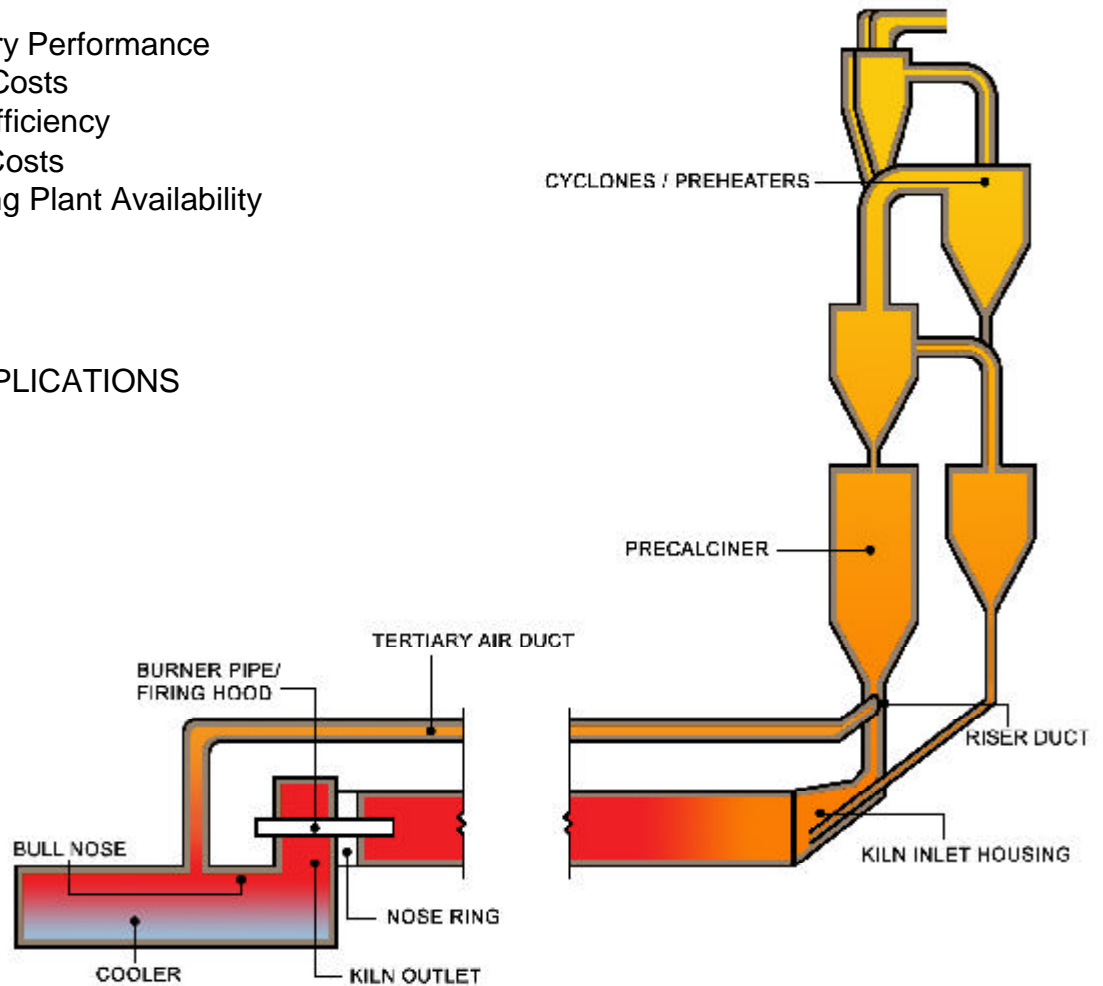


# SUNSHINE: SAVING COSTS IN CEMENT MAKING

A unique range of Stainless Steel Fibres for Cement Kiln Refractories offering:

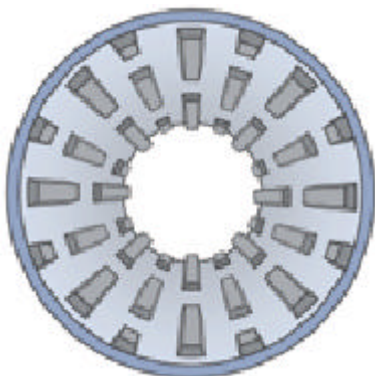
- Improved Refractory Performance
- Lower Installation Costs
- Better Operating Efficiency
- Lower Refractory Costs
- Increased Operating Plant Availability

## CEMENT KILN APPLICATIONS

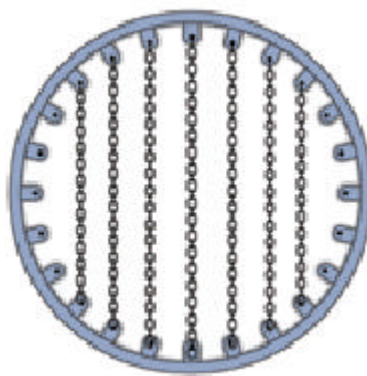


## OTHER APPLICATIONS

LIFTERS



CHAIN SECTIONS



PLANETARY / SATELLITE COOLERS



# S NSHINE: SAVING COSTS IN CEMENT MAKING

## Burner pipe / Firing hood

Refractory materials used for the external protection of burner pipes experience flexing, high thermal stresses and thermal cycling. The use of fibre reinforcement increases the bond strength of the refractory preventing crack propagation and extending the refractory life in service. The positive benefits lead to a reduction in maintenance and material costs.

Recommendation [Metalx](#), [ME 446](#)

## Cyclones / Preheaters

Erosion from dust particles, thermal shock and thermal cycling are all factors leading to the progressive wear of preheater linings. Steel fibres increase refractory toughness to improve performance and provide a long-term solution.

Recommendation [ME304](#), [ME 430](#)

## Precalciner

Both calcined kiln feed and high temperature can cause hot face wear of the precalciner refractory. The addition of fibres helps to strengthen the matrix and resist these forces which would otherwise cause cracking and spalling, shortening the refractory's working life.

Recommendation [ME 446](#)

## Riser Ducts

Riser duct refractory deteriorates due to clinker dust penetration and/or impact from high-pressure water or mechanical cleaning (to remove the build up of Sulphates). Steel fibre reinforcement lessens refractory damage and lengthens refractory lifetime, saving maintenance and costs.

Recommendation [ME 310](#), [ME 446](#)

## Tertiary air ducts

Abrasive clinker dust and chemical attack from the gases impact on the refractory which can lead to spalling and the growth of cracks. Fibres, acting as crack stoppers, prevent the refractory material from breaking up prolonging its service life and reducing repairs.

Recommendation [ME 304](#)

## Kiln Inlet Housing / Chamber

The kiln inlet by virtue of its shape, exposure to chemical attack from gases demands a high strength refractory. Fibre addition can improve refractory toughness. The selected steel fibre must be compatible with both temperature and atmosphere

Recommendation [ME 310](#), [ME 446](#), [Metalx](#)

## NoseRings

Flexing and thermal shock place particular demands on nose ring refractory. Fibre reinforcement improves flexural strength and reduces cracking avoiding the need for frequent, costly repairs.

Recommendation: [ME 310](#), [Metalx](#)

## Lifters

Both high temperature and mechanical damage cause rapid refractory wear in the lifter zone. The addition of fibres increases refractory toughness which leads to improved performance ensuring maximum refractory reliability.

Recommendation [ME 310](#), [Metalx](#)

## Chain sections

Although wet kilns operate at lower temperatures in this area the refractory lining in the chain section is subjected to severe abrasion from the chains sliding down the side of the kiln. The use of fibre reinforcement strengthens the refractory and considerably improves resistance to mechanical abuse.

Recommendation [ME 304](#)

## Kiln Outlet

The kiln outlet, positioned inside the kiln hood reaches 1200/1400°C and needs to have good thermal shock and cycling resistance. Fibres ensure the refractory can withstand such conditions, preventing the growth of macro-cracks and delaying failure.

Recommendation [Metalx](#)

## Cooler Throat / Cooler

Modern grate coolers are subject to impact from clinker and suffer thermal shock where hot clinker is quenched by high velocities of cool air. Steel fibres have been used to strengthen cooler throats, sidewalls and roofs resulting in extended service times and more predictable refractory performance.

Recommendation [ME 310](#)

## Bull Nose:

Intense clinker dust abrasion and thermal shock/cycling cause deterioration of the bull nose refractory. Fibre reinforced blocks minimise damage and extend service lifetime.

Recommendation [ME 304](#), [ME 310](#)

## Planetary / Satellite Coolers

The impact of falling clinker causes severe abrasion in cooler elbows. A fibre reinforced refractory last considerably longer to give significant economies in production and maintenance costs.

Recommendation [ME 310](#), [ME 446](#)