ALLAN SMITH ENGINEERING PVT. LTD.

We are the supplier of

KILN Shell | Tyre | Full Floating Chair pad | Chair pad Lubrication Bar SHIMS | Girth Gear Spring Plate | Thrust Roller | Support Roller and Shaft Graphite Block | Duplex Graphite Seal

Certified Partner
EUROKILN

Allan Smith Engineering Pvt. Ltd. is a reputed name in Rotary Kiln Industries for providing reliable engineering solutions. We are driven by excellence and aim to emerge as a principal name in the service provider industry.

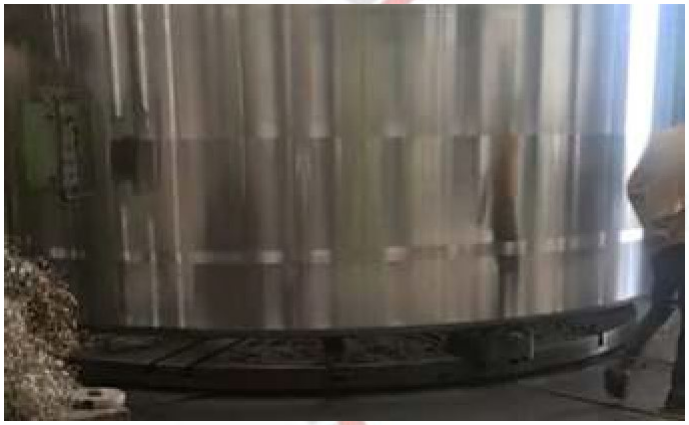
We are located in city of Mumbai, a business centre of India. ***Allan Smith*** Engineering commenced operation in 2009, and began a new chapter in the production of kiln spare parts in 2015.

1. TYRE:

Tyre is a vital component of rotary kiln and the kiln load is transmitted by the tyre on concrete pier through support roller and bearings.

The tyre is designed with an ovality of 0.20%, to maintain the dimensional rigidity and ensures the shell and refractory stability. MOC of the tyre is chosen to ensure the required flexibility and hardness sufficient enough for minimal wear during the operation.

Allan Smith can supply tyre with close tolerance and quality includes heat treatment for better and reliable life.



2. KILN SHELL:

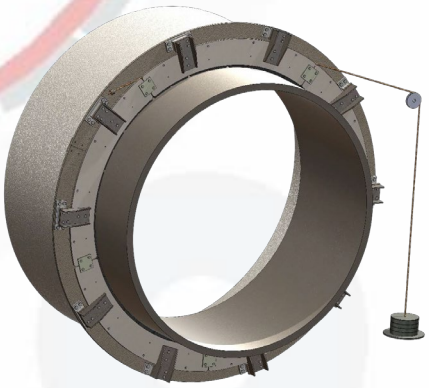
Usually, kiln operates with temperature in excess of 1000°C and the shell plate is protected with suitable refractory, for maximum shell temperature of 350°C. Shell plate develop warpage upon continuous exposure to the higher temperature. And, the condition demands higher strength steel for the purpose for better reliability and longer life. IS 2041 Grade B being an appropriate material for cement kiln shell.

Allan Smith ensures supply kiln shell with suitable grade steel. The choice is made upon extensive engineering to ensure the reliable operation.

3. DUPLEX GRAPHITE SEAL:

Many kiln seals operate at negative pressure; proper kiln end seals are critical for efficient operation and optimum fuel consumption. Important parameter for the choice is suitability of the seal material in the intended operation. And, graphite is better and reliable with higher operating temperatures.

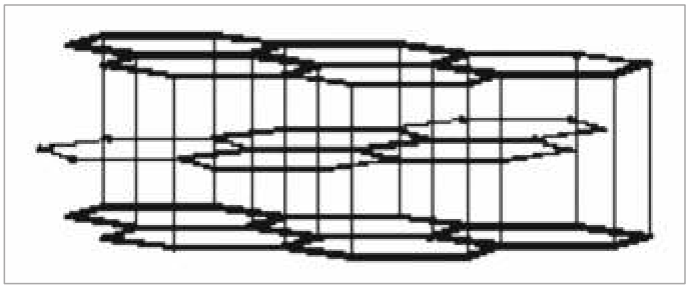
Allan Smith supply seal with duplex graphite blocks can operates well at higher kiln shell runout. Study has proven the seal has performed reliable under extended operation, with early ROI.



4. GRAPHITE BLOCK:

Kiln weigh around 1000 to 2000 MT and rotate on support roller with an rpm of 0.4 to 5. Tyre riding on support rollers with metal-to-metal contact has detrimental effect on the surface by causing pitting. The condition also causes accelerated wear on the roller and tyre surface, as minor amount of slippage exist between the tyre and roller surface. The situation also responsible for development of many surface defects like scuffing, pitting, grooving etc.

Allan Smith supply premium quality graphite block suitable for the tyre/support roller surface lubrication. The block is with lamellar structure and anisotropic properties, under the load of even low tangential stresses, shows easy displacement of laminar layers, is basic property of the lubricant. Usually, particle size of the block is 0.02 mm, ensures fine layer of film adhered on the surface for better lubrication.



5. CHAIRPAD:

Many times, it is observed tyre worn out on inner face and also on the side face. And, replacing the tyre is an expensive instead of the Chair pad.

And, in consideration chair pad are designed with material have lesser hardness compared to the tyre, make the chair pad as sacri□cial element with longer life.

Allan Smith design and supply chair pad and tyre retainer in reference to the site condition. Parameters considered are tyre hardness, shell temperature, rpm etc. Important consideration made while designing chair pad, chair pad should be comparatively softer than the tyre and properly designed.

6. CHAIRPAD LUBRICATION BAR:

Rotary kilns are usually in operation for 24 X 7 for months together continuously and the shell exposed to high shell temperatures, max 350°C. Kilns designed with loose tyres where the tyre rides on sacri□cial elements called as chair pads.

Kiln with loose tyre always have relative movement between the ring and chair pad, causes wear on both the mating surface due to scuf□ng, galling. Higher tyre migration leads to series of maintenance problems.

Unpredictable outages substantially increase the cost of Maintenance which includes loss of production, disrupting the product delivery schedule, in turn cost dearly to the management.

Lube bar is specially designed and developed for the chair pad lubrication, size 250 X 40 X 10 mm. And, especially formulated with blend of graphite, copper □akes and soft metal powders with carrier as wax. When applied on kiln it dissipates and simultaneously lubricates both the chair pad outside diameter and the kiln tire internal diameter. It is easy to apply between kiln shell and riding ring, inserted at the position from clock

position 6. Lube Bar starts melting at 50 to 60°C and the □lm smeared on the mating surface, ensure proper lubrication for a longer period.

Bene□ts of application of Lube Bar

- Minimizes friction across the mating surface.
- Decreases tire retainer wear

7. SUPPORT ROLLER:

Kiln support roller usually made of cast / alloy steel, is most important part of rotary kiln system, carry's entire rotating weight of kiln, usually amounts to 1000-2000 MT (on 6 to 8 rollers). Kiln load transmit to the pier through support roller and bearings. Support roller intended to take designed radial load and part of axial load as well.

Allan Smith ensures in supply of roller with required quality by adhering to international quality norms and inspections system: dimensional check, chemical composition, mechanical property, ultrasonic testing (UT), magnetic particle testing (MT), penetrant test (PT), and X-ray inspection. Most important part, if the roller to be used with existing tyre, roller surface hardness should be according to the tyre hardness.

8. GIRTH GEAR:

Rotary kiln operations demand high reliability transmission system, in which Girth Gear and Pinion play important role and any degradation in the gear system can lead to operational inefficiencies and equipment damage. Clients should consider replacing a gear when visual or diagnostic inspections reveal severe wear patterns that compromise performance.

Continuous cyclic loads can exceed the material's elastic limit, causing permanent deformation of the gear teeth. This plastic deformation often results in a loss of proper tooth engagement and may lead to an uneven distribution of loads across the gear face.

Repeated contact under load can cause a 'step' effect, where portions of the gear tooth surface become more pronounced than others.

9. TWIN SEAL:

Elevate your kiln's efficiency and reliability with our Metal Leaf and Graphite Pad combination TWIN Seal

- Robust Overlapping Leaf Construction

- Featuring a series of overlapping metal leaves swept in the direction of rotation,

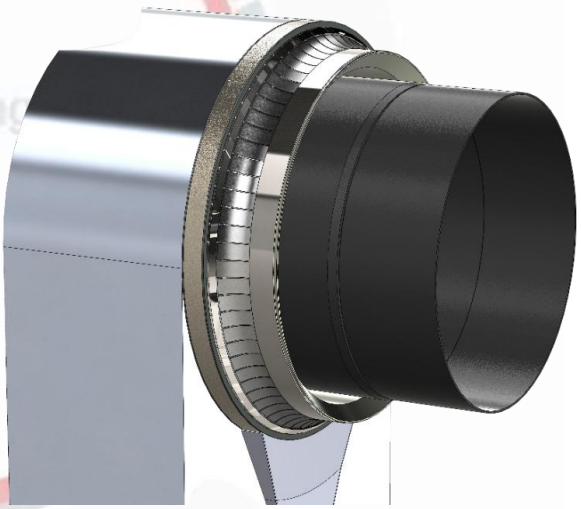
- Leaf Seals are designed for retrofitting applications where exceptional heat resistance and durability are required.

- Self-Lubricating Graphite Pads

- Each leaf end is fitted with graphite pads that create a smooth, low-friction sealing surface against the kiln shell. Rather than causing damage, reducing wear and prolonging equipment life.

- Longer Service Life and Reduced Costs

- Offering up to 40% longer operational life than competing seals, Leaf Seals withstand multiple maintenance cycles.



10. KEVLAR FABRIC SEAL:

Elevate your kiln's efficiency and reliability with our Metal Leaf and Graphite Pad combination TWIN Seal

- Seamless, Full Coverage

  - Unlike traditional seals that may have gaps, Kevlar fabric seals wrap completely around the sealing surface, forming a continuous barrier that effectively blocks cold air from entering the process.

- Enhances Process Control & Efficiency

  - By preventing air infiltration, these seals help maintain stable temperatures, reduce fuel consumption, and decrease ID fan load

- Durable Yet Flexible

  - The high strength and abrasion resistance of Kevlar enable the seal to adapt to equipment movements while enduring demanding industrial conditions.

11. SHIMS:

Alignment correction – Shims (parallel, taper thickness) Shims are small thickness (0-1 to 5mm in an increment of 0.1 mm) metal plates made of SS, MS, Brass. The shims were provided as packing underneath bearing housing to maintain the desired elevation. Mandatory property is to retain dimensional rigidity under the intended load. Many kilns design, demands installation of taper shim for the alignment corrections.

Allan Smith supply shims to precise dimension to an accuracy of 0.05 mm. Shims are computed, designed and supplied to the site requirements.

12. GIRTH GEAR SPRING PLATE:

Kiln girth gear spring plates play an important role in the operation of rotary kiln. The spring is a link between kiln shell & girth gear, as it rotates the kiln upon driven by the pinion. The spring plate is designed to accommodate increase of kiln shell temperature to 350 °C, without increasing stresses on the Gear. In short, the spring plate acts like a shock absorbing system to counter the changes that would otherwise cause problems with the shell / gear during operation, the repercussion results in loss of expensive production time. The spring plates / fork cracks prematurely, if improper designed.

Allan Smith offers high quality spring plates and its replacement at site with required accuracy. We are equipped to monitor the parameters during manufacturing stage to ensure the reliable operation with extended life span.

13. THRUST ROLLER (Kiln Thrust Roller):

Main roll of thrust roller restricts kiln moment of uphill and downhill within de□ned criteria the thrust roller is an important auxiliary key component of a rotary kiln to ensure uniform wear of tyres and rollers surface on the full width. The thrust roller is divided in two types;

13.1 Mechanical thrust roller

13.2 Hydraulic

Customer Satisfaction:

Customer Satisfaction is a major yardstick with which we evaluate our company's performance and growth (instead of INR turnover. We take every effort to exceed expectations of our customers. We design and plan our services after considering the requirements and speci□cations put forward by the customer.

CLIENTELE

GAIL, TATA STEEL, Continental Carbon, epsilon CARBON, TRL KROSAKI, SAINT-GOBAIN, SRF, DIAMOND CEMENT, ADITYA BIRLA HINDALCO, CCI, ANDHRA PAPER LIMITED, AGI

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