

APPLICATION REPORT

INTERNAL COATING OF CEMENT MILL-2 CLASSIFIER SEPARATOR GRIT CONE



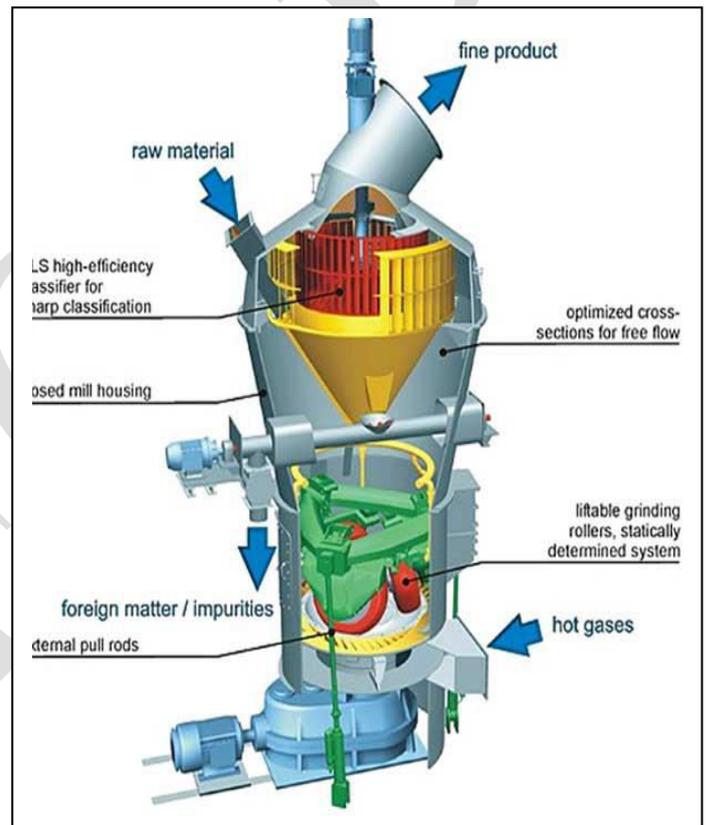
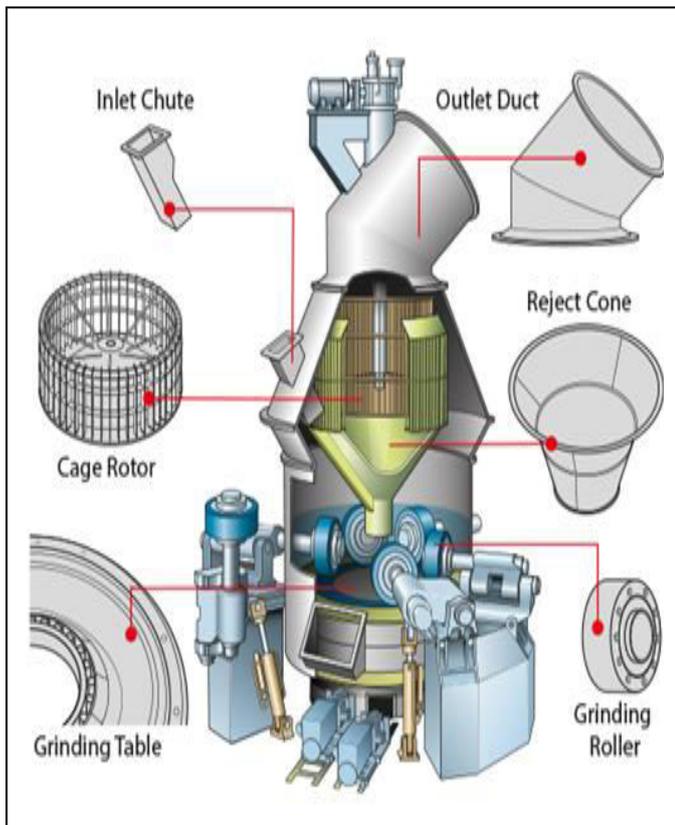
AT

**BHARATHI CEMENT CORPORATION PRIVATE
LIMITED, NALLALINGAYAPALLI, KADAPA (A.P.)**

INTRODUCTION:-

DIFFCOR division of DIFFUSION ENGINEERS LTD successfully completed job work for coating of CLASSIFIER SEPARATOR GRIT CONE. This job work was carried out for our customer BHARATHI CEMENT CORPORATION PRIVATE LIMITED, KADAPA. Our customer were facing problem of high WEAR due to ABRASION. Coating was done with DIFF PRIME, VELICOAT DIFF SCREED, CERABEAD PS and CERABEAD PS2.

Vertical cement mill is consists of the separator rotation system, separate, the upper shell is equipped with the access door and feeding inlet, the roller device, transmission, rod mill, a seal, friction ring, discharge ring, mill regulating device, the wind ring regulating device, roller pressure system, guide rail protection, tie rod sealing device, bearing seal gas supply part, feeding oil groove, internal air pipe sealing.



Structure of vertical cement mill

The motor drives the grinding disc to rotate through the reducer, the material falls from the feeding port on the center of the grinding disc, and the hot air enters the vertical mill from the air inlet. Under the action of centrifugal force, the material moves to the edge of the grinding disc, and it is crushed by the grinding roller when pass the annular groove on the grinding disc. Crushed material is taken up from the edge of the disc by the high-speed airflow of the wind ring. The large particles fall directly on the grinding disc and re-grind. When the material in the airflow passes through the classifier, the coarse powder falls on the grinding disc and re-grinds under the action of the rotating rotor. The fine powder is ground together with the airflow and collected in the dust collecting device, which is the product. The moisture-containing material is dried during contact with the hot gas to achieve the desired moisture.

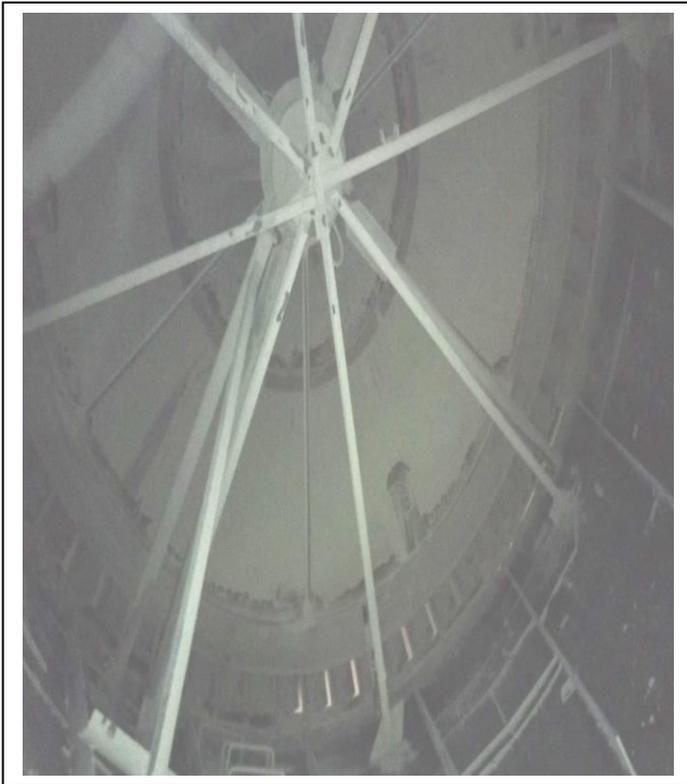
GRIT CONE DETAILS AT BHARTI CEMENT:-

1. **MAKE:** - LOESCHE
2. **MODEL:** -LM53.3+3
3. **CAPACITY:** -230TPH
4. **JOBWORK COVERAGE AREA:** - 65SQM
5. **No. of Mills Coated:** 2 Nos.
6. **No. of order received from Customer:** 02 Nos.

PROBLEMS:-

Customer was facing severe Erosion and Abrasion problems in the inner side of grit cone. Severe abrasion took place during material crushing or pulverizing and due to which lots of pits/holes developed in the cone.

Cement clinker itself has a property of hardness and it is abrasive material for the metallic equipments also. Several factors will influence the type and the severity of wear. The largest influences will be the quality of the cement being processed, the required capacity factor on the pulveriser, the mass flow rate, distribution, and resulting velocity profile around the bowl and pulveriser body and the orientation of the grinding elements relative to the velocity vectors.



Inside Surface of Grit cone after wear

PRODUCT RECOMMENDED:-

DIFF-PRIME:-

DIFF-PRIME is a Two-pack polyamine cured epoxy priming surface tolerant compound incorporating a rust inhibitor and passivator.

VELICOAT:-

Resin Impregnated, fabric mainly made from continuous filament E glass yarn. Velicoat suitable for the application where additional strength and resistance is needed for Diffcor Range of Products.

DIFF-SCREED:-

DIFF-SCREED is high solid heavy duty solvent free polymeric resin for mortar screed and metal surfaces has been specially developed for providing high strength to floor and metal structures. DIFF-SCREED is two-component system, providing heavy duty flooring and has high mechanical strength, anti-skidding, non dusting and chemical resistance properties.

CERBEAD PS:-

CERABEAD PS is a Ceramic Bead filled Putty lining compound incorporating a blend of Ceramic Beads and Powders. It exhibits outstanding abrasion resistance, adhesion and toughness.

CERBEAD PS 2 (CERAMETAL 2):-

CERBEAD PS 2 is a solvent free, fluid grade poly ceramic coating and surfacing compound for fluid flow environments. Easily applied by brush, it is the finest material available for repairing and preventing erosion/corrosion damage caused by fluid flow and entrained solids, impingement and bimetallic action. Specially formulated to resist abrasive erosion, it is virtually non-machinable even with carbide tipped tools.

APPLICATION PROCEDURED:-

A. SURFACE PREPARATION:

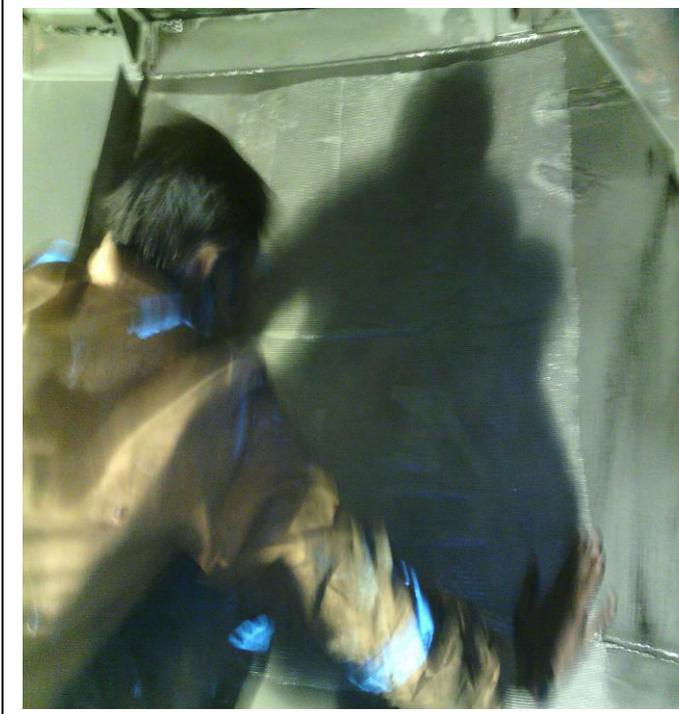
1. Before application of any kind of coating surface preparation is must to activate the base metal so that coating will have better bonding.
2. Clean surface to remove oily, existing coating and any foreign particles.
3. After manual cleaning, surface was cleaned by grit blasting to remove all loose particles. As per ISO standard surface preparation of SA 2 1/2 by blasting with surface profile achieved of 70-90 microns.



Surface preparation don by grit blasting

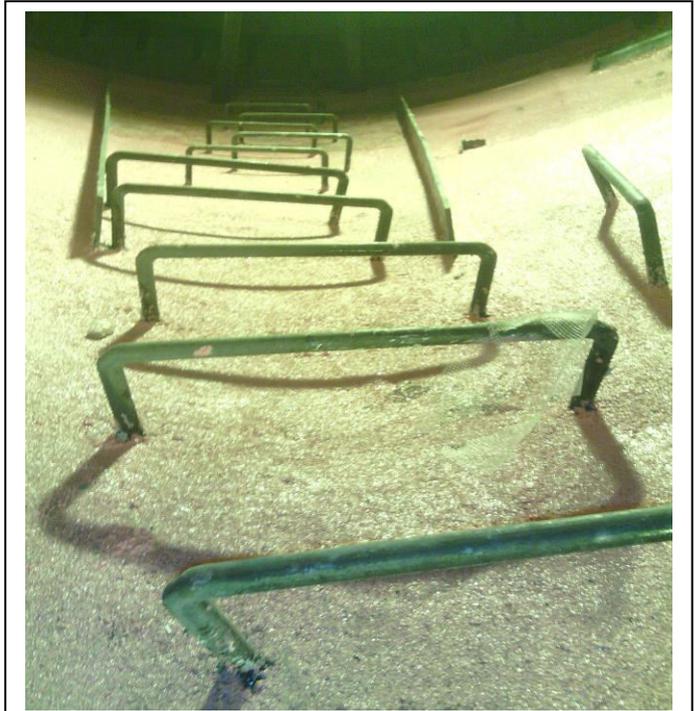
B.PRODUCT APPLICATION:-

- 1) After surface preparation priming was done by **DIFF-PRIME** along with application of **VELICOAT**.



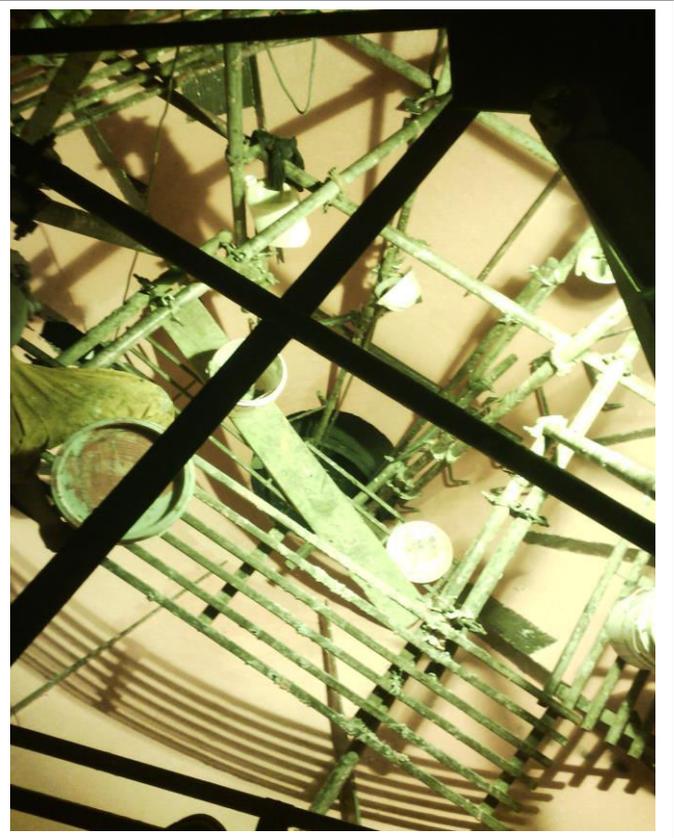
Application of DIFF PRIME as primer and application of VELICOAT

- 2) After priming second coat was done by **DIFF-SCREED** to give for improved surface level and also filling up of pits.



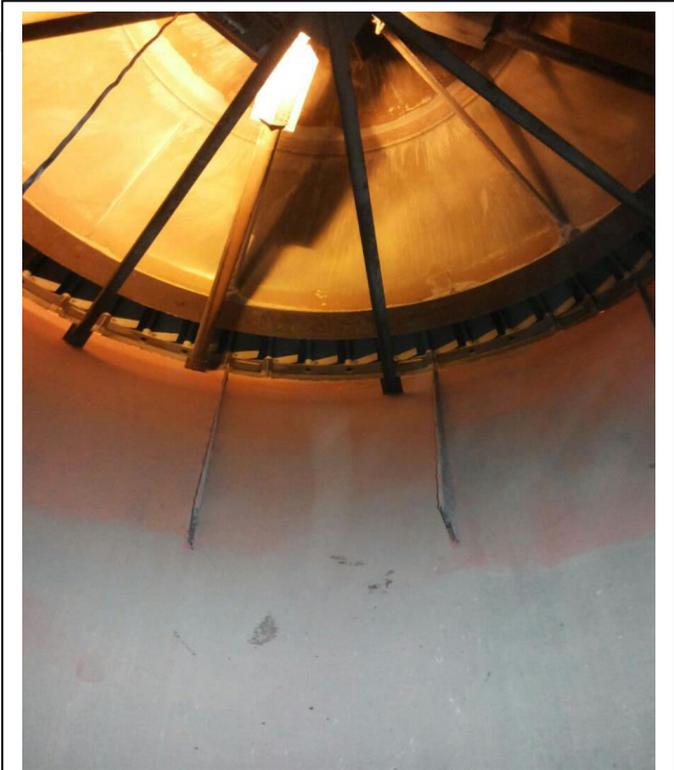
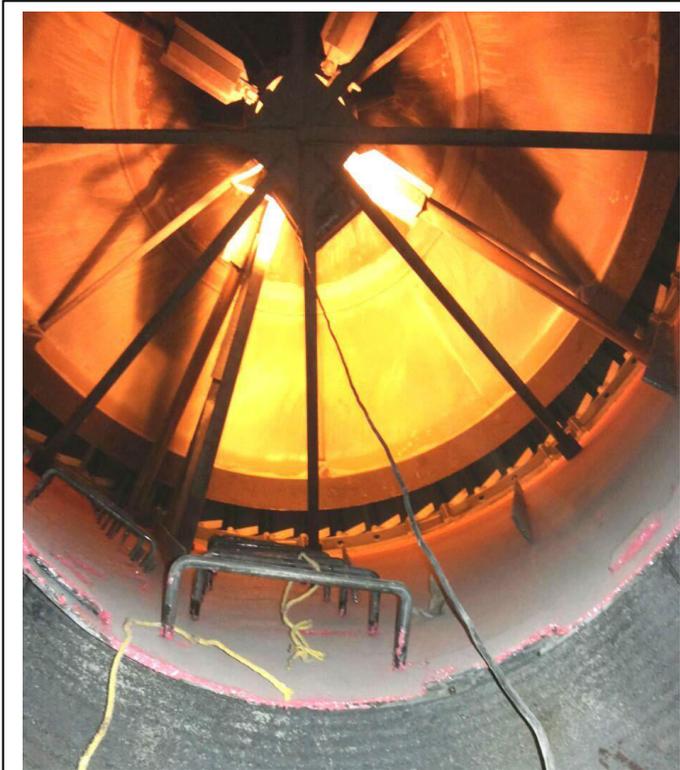
Application of DIF -SCREED as a second coat to level up

3) **CERBEAD PS** was applied for to give resistance against abrasion.



Application of CERABEAD PS as a Intermediate coat

4) Top coat was applied to give Erosion resistance against **CERABEAD PS2**.



Application of CERABEAD PS2 as a Top coat

APPRECIATION CERTIFICATE:-



BHARATHI CEMENT CORPORATION PRIVATE LIMITED
An IMS Certified Company (ISO 9001, ISO 14001 & OHSAS 18001)
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Andhra Pradesh, Ph: +91 8563 200 400/200 411
CIN : U26942TG1999PTC031682

Date: 01.02.2018

APPRECIATION LETTER

The use of CERABEAD-PS with VELICOAT & DIFFSCREED-PS supplied and applied by M/s DIFFUSION ENGINEERS LTD has been used in LOESCHE LM 53.3+3 Cement mill Separator grit cone inside area has been in use since 15.02.2015.

We are pleased to inform you that with the use of CERABEAD-PS Coating, the life of grit cone is increased and running satisfactorily.

We also hope that the technology of CERABEAD-PS Coating shall prove beneficial in other areas of core sector industries where there is problem of erosion and abrasion.

This is to inform that a team of M/s Diffusion Engineers Ltd, lead by Mr.Vinod Yadgiri, Mr.Ramanjaneyulu and TSS Enterprises, Chennai services were appreciable.

With kind regards,

Yours sincerely

(V. Madhusudana Rao)

Sr.General Manager (Engg)



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[f/BharathiCements](#) [t/BharathiCements](#)

ACKNOWLEDGEMENT:-

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AGENCIES INVOLVED: -

TSS Enterprises, Chennai

APPLICATION TEAM:-

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