

APPLICATION REPORT

INTERNAL COATING OF COAL MILL BAG HOUSE



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**DALMIA CEMENT (BHARAT) LIMITED
VILLAGE- YADWAD, TALUKA- GOKAK, DIST. BEGAUM,
(KARNATAKA)**

INTRODUCTION:-

DIFFCOR division of DIFFUSION ENGINEERS LIMITED successfully completed job work for coating of COAL MILL BAG HOUSE. This job work was carried out for our customer Dalmia cement (Bharat) limited, Belgaum. Our customer were facing problem of high corrosion and Pitting in Coal mill bag house. Coating was done with DIFFGLASS XTREME.

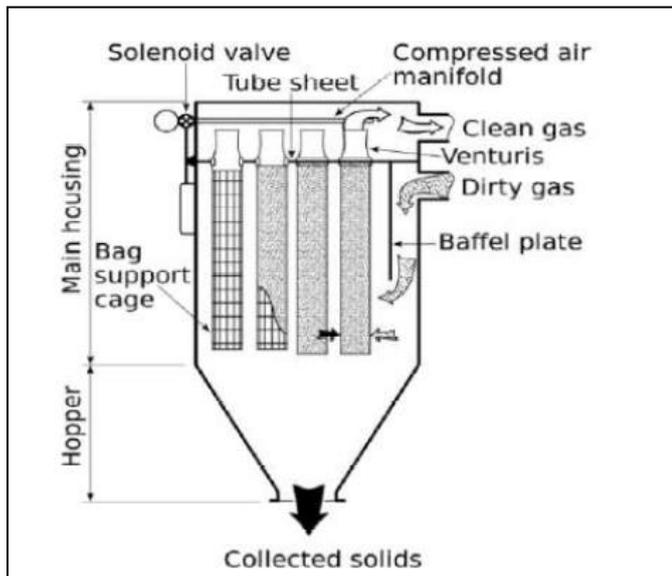
Bag houses, also called fabric dust collectors or fabric filters, are air pollution control devices designed to use fabric filter tubes, envelopes, or cartridges to capture or separate dust and other particulate matter. Their applications range from small household workplaces to large industrial facilities such as coal-fired power plants and cement plants. Compared to other types of air pollution control (APC) equipment, bag houses are incredibly versatile and can be engineered for almost any dust producing application by varying size and bag types. They are very efficient when properly maintained and are also rugged enough to handle rough applications. However, they typically require a lot of maintenance and a relatively dry environment to operate effectively. Their use is also limited to certain operating temperatures and chemical conditions.

There are three different types of bag house cleaning mechanisms; each offers its own advantages for different applications.

1. Reverse Air
2. Shaker
3. Pulse-Jet

Pulse-Jet:-

Pulse-jet (P/J) or reverse-jet bag houses use compressed streams of high pressure air to remove particulate matter. During cleaning, brief (0.1 second) pulses of air are pushed through the bag, dislodging solids which collect in a hopper below. The recommended air to cloth ratio for these bag houses is between 3.25:1 and 4.0:1.



Application: Coal mill Bag house

Type: Pulse- Jet

Area: 367 Square meters

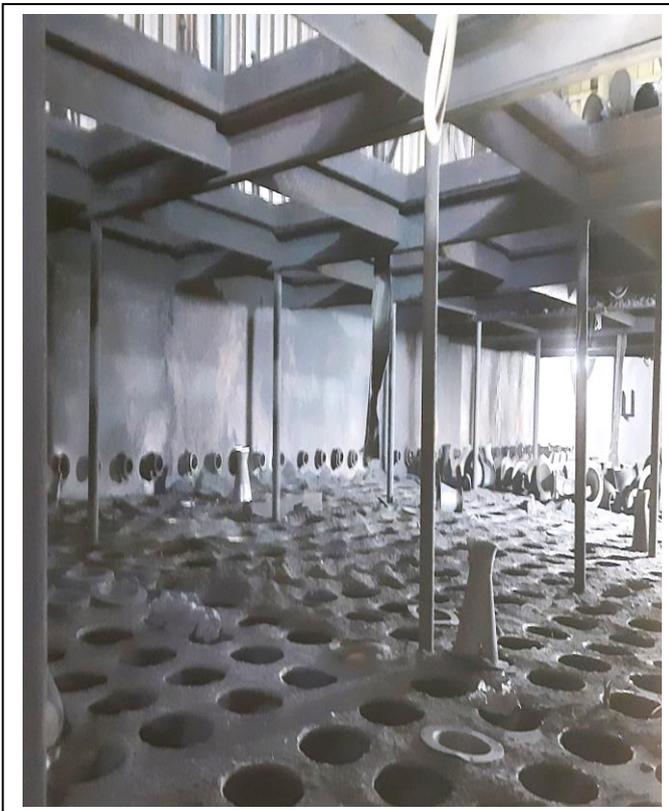
No. of Bag House chamber: 02 Nos.

PROBLEMS:-

Customer was facing severe corrosion problem in bag house. i.e. Corrosion on the wall of bag house, Corrosion on the roof of the bag house Corrosion on the floor of bag house. Abrasion mainly happens when the fly ash impinges on dry areas of the system, removing the thin layer of rust and exposing the steel to corrosion. This creates an abrasion/ corrosion vicious cycle. Corrosion takes place between dissimilar areas of metal where there are differences in electrochemical potential.

Corrosion causes plant shutdowns, a waste of valuable resources, loss or contamination of product, reduction in efficiency, costly maintenance.

After a certain period, Pits start forming and pits leakage in base metal occurs. Sulphur ions- along with other Ions form concentric cells for Pits. Pit initiation already seen in bag house. Bag house Corrosion rate of Pits is "UNPREDICTABLE" Ultimate result of Pit Leakage from the metal surface.



Internal Corrosion in bag house Air chamber, Air Duct, tube sheet and doors

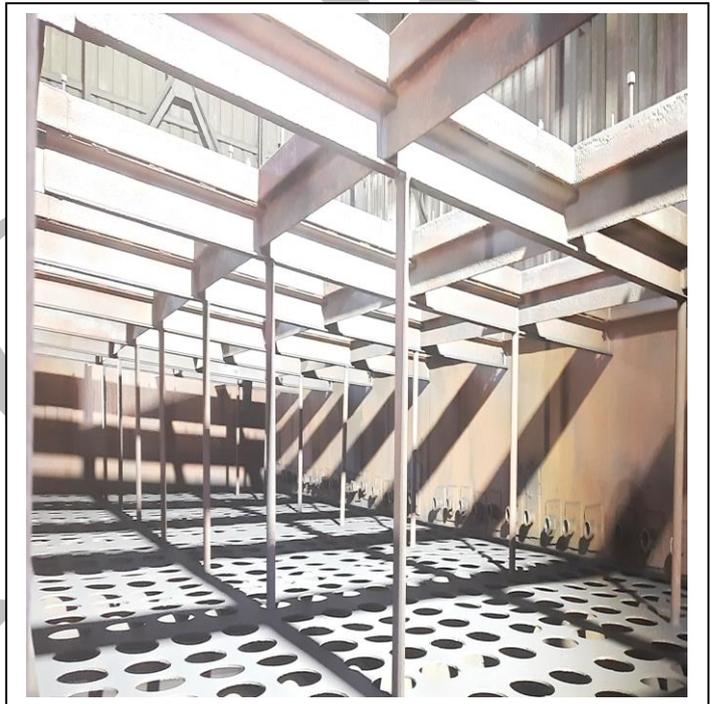
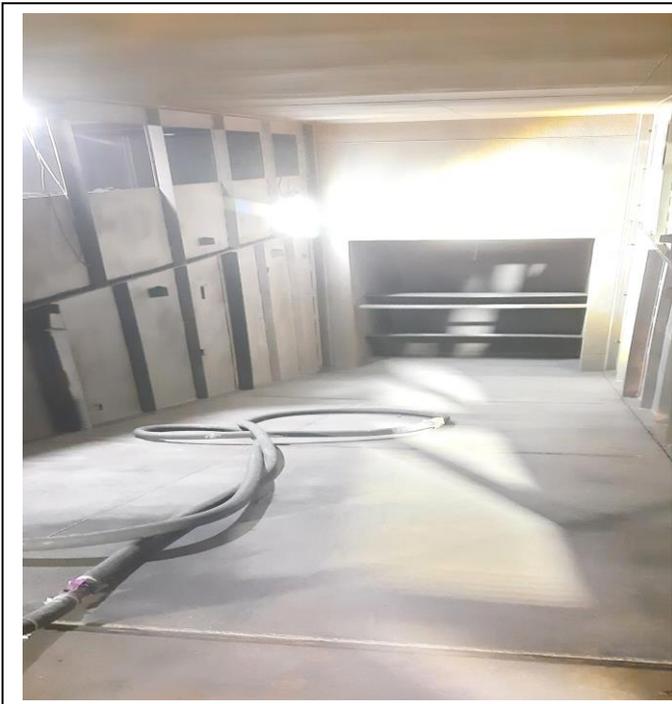
PRODUCT RECOMMENDED:-**DIFFGLASS XTREME:-**

DIFFGLASS XTREME , a heavy-duty lining system for concrete and steel substrates that offers unique combination of vinyl ester novolac resin with Glass flake reinforcement and inert mineral fillers produce a dimensionally stable coating with extremely low permeability and ideally suited for immersion service ,splash/spillage exposure of concentrated acids and aggressive solvents.

APPLICATION PROCEDURE:-

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. Before started blasting work, Customer was removed Filter Bags and cages from inside bag house chamber.
3. After manual cleaning, surface was cleaned by grit blasting to remove all scaling and loose particles. As per ISO standard surface preparation of SA 2 by blasting with surface profile achieved of 60-70 microns.



Surface Preparation done by grit Blasting

B.PRODUCT APPLICATION:-

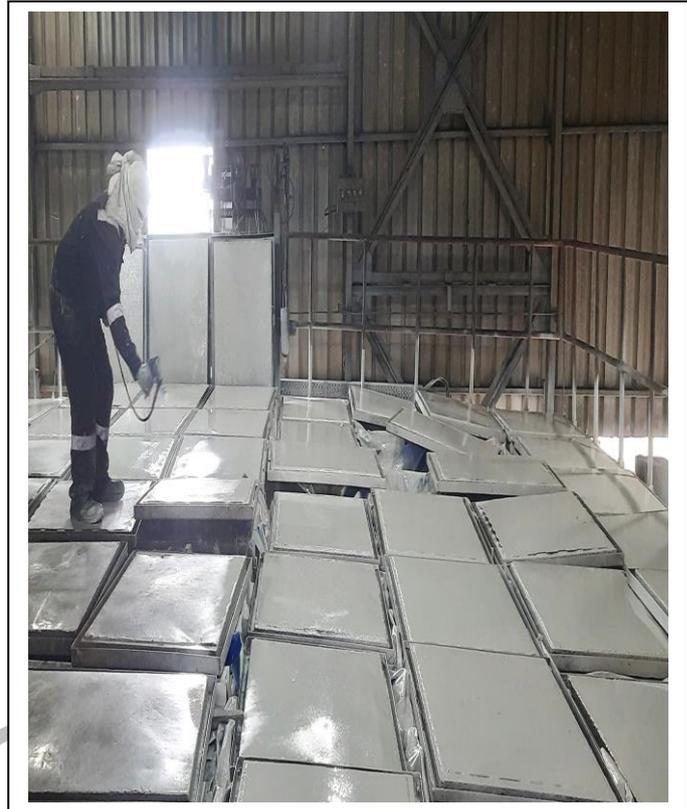
1) After surface preparation, priming was done by **DIFFGLASS XTREME** by used Airless spray gun.



Application of DIFFGLASS XTREME as a Primer coat

2) Top coat of **DIFFGLASS XTREME** was applied inside the surface of Bag house chamber, Air duct and Doors to improve the resistance against chemical corrosion.

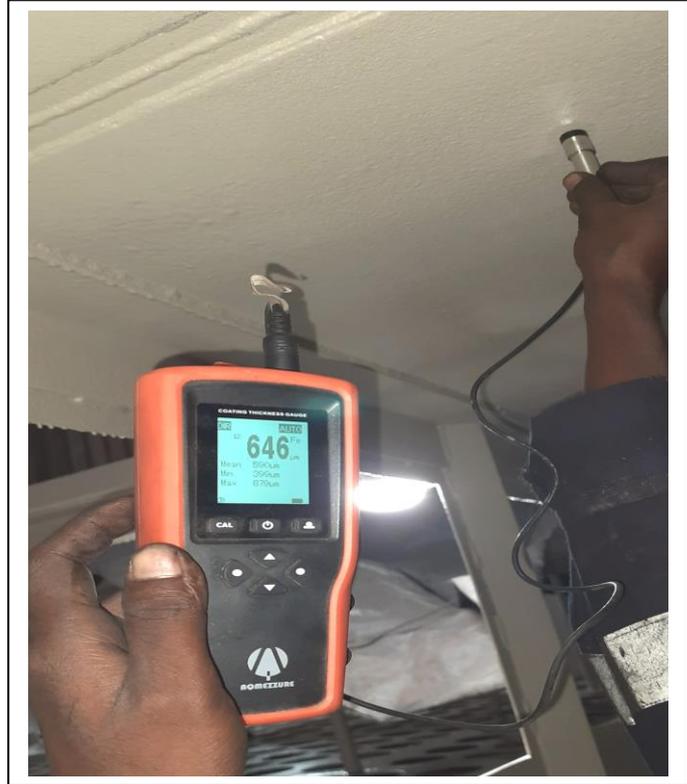
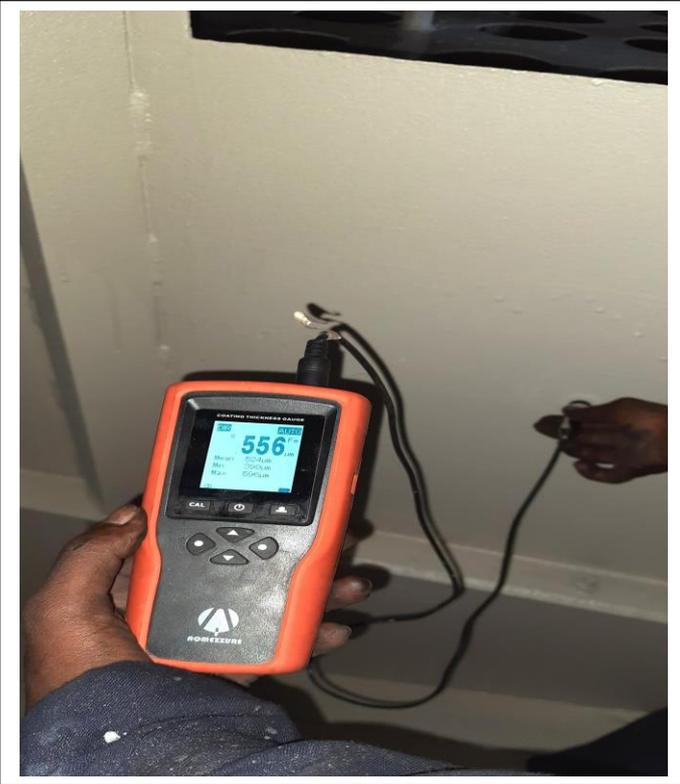


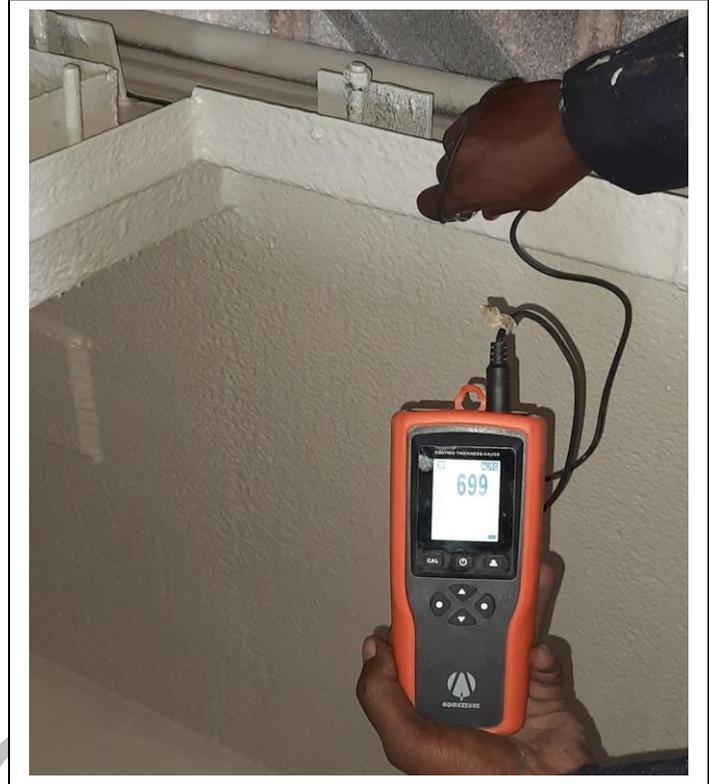
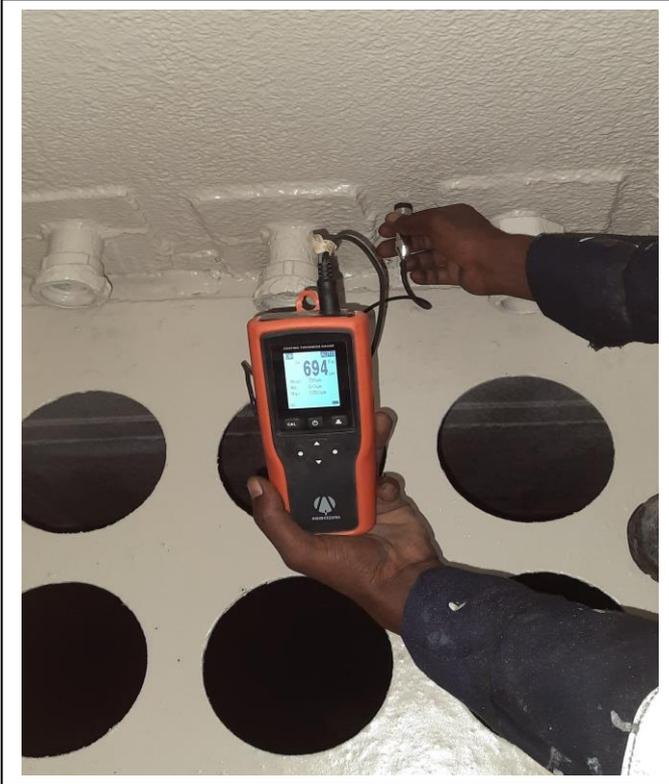


Application of DIFFGLASS XTREME as a Top coat

COATING INSPECTION:-

1) **DRY FILM THICKNESS (DFT):** - Range: 500-600 (Microns)





Coating Thickness measurement by DFT Meter

ACKNOWLEDGEMENT:-

SITE ENGINEER: -

Mr. Ashish Ganvir (Sr. Technical Officer)

AREA ENGINEER:-

Mr. Sonu Jangra (Territory Incharge)

Mr. Veerabhadrayya M P (Marketing Manager)

AGENCIES INVOLVED:-

Force Engineers, Kolhapur.

APPLICATION TEAM:-

Shiva Enterprises contractor team.



DIFFUSION ENGINEERS LIMITED

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