



**TOWARDS A
CORROSION AND
ABRASION FREE WORLD**

State-of-the-art Infrastructure



Plant I



Plant II



R & D Division



Atomic Absorption Spectrometer



Abrasion Tester



Adhesion Tester



Salt Spray Analyser



Our Founder - Late Mr. Shyam Merani

Jyoti Ceramic Inds. Pvt. Ltd. was founded in 1970 by Late Mr. Shyam Merani, who pioneered manufacturing of industrial ceramics in India. During this journey of over 4 decades, Jyoti Ceramic Industries has garnered rich manufacturing experience and today is considered to be amongst the leaders in this field.

We take this opportunity to thank you for your goodwill and unflinching faith in our products, for all these years.

Corrosion, abrasion and chemical attack destroy millions of dollars worth of equipments each year. Worldwide research shows that nearly 70 - 80% of equipment failures are purely on account of their surface erosion, hence it has become imperative to have effective preventive maintenance solutions at hand. Protection is the best insurance against corrosion & abrasion.

The time has arrived for Ceramics to finally take centre stage and we at Jyoti Ceramic take great pride in spearheading its ascent. We leave no stone unturned to guarantee optimum quality.

Our legacy of redefining quality standards in the industry has inspired us to manufacture high quality industrial ceramics for a wide variety of applications. Our range of products include Ceramic wear resistant lining tiles and coating compounds, High temperature heat resistant ceramic refractory coating compounds, Adhesive cements, Ceramic ballistic armor tiles, High purity alumina ceramic pyrometry tubes and custom ceramic parts etc.

Bolstering Jyoti's umbrella further is its Aluma-Coat Coating Compound. Introduced in 1998, this polymer based ceramic coating has proved to be an excellent corrosion and abrasion resistant coating. The credit for it goes to our team of R&D scientists, who have developed these coating products.

We hereby stand fully committed and assure you of path-breaking ingenuity, through the consistent delivery of world-class quality ceramic corrosion and abrasion resistant coating products.

Total customer satisfaction is our avowed goal.

Coating Products

Aluma-Coat - A revolutionary corrosion, abrasion and chemical resistant ceramic coating is available in Trowelable, Brushable or Sprayable formulations.

Aluma-Coat® TW (Trowelable)



Aluma-Coat TW (Trowelable)

USP: Converts soft surfaces to abrasion and corrosion resistant.

Aluma-Coat TW: A 2 part epoxy resin based coating compound. It comprises of sintered sapphire hard aluminium oxide ceramic micro beads doped in resin, designed to resist chemical attack, cavitations, abrasion, moderate impact and also withstand maximum temperature upto 150°C / 302°F.

Aluma-Coat TW: Can be applied on any surface such as ferrous, non-ferrous metals, stone, concrete, wood, plastics etc.

Use in major industries: Mining and mineral processing, Cement, Power, Petrochemical, Paper and paper pulp, Fertilizers, Dredging and a host of surface treatments requiring corrosion and abrasion resistance.

Areas for application: Chutes, Rod and ball mill feed plates, Pan feeders, Conveyors, Bucket elevators, Dust collectors, Cyclones, Soil and rock box outlets, Hoppers, Classifiers, Pipe elbows, Slurry lines, Coal exhausters, Chip cyclones, Tanks, Dredging equipments etc.

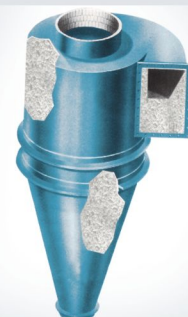
Applications



Slurry Lines Coated with Aluma-Coat TW



Inner Base of Dust Collector Coated with Aluma-Coat TW



Classifier Lined with Aluma-Coat TW

Aluma-Coat® BR (Brushable & Sprayable)



Aluma-Coat BR (Brushable)



Aluma-Coat BR (Sprayable)

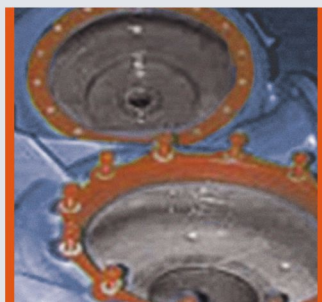
USP: A corrosion, abrasion and chemical resistant coating.

Aluma-Coat BR: A specially formulated 2 part epoxy based coating consisting of 80% micro fine sintered ceramic powders. It is a satin smooth, high gloss, low friction coating designed to protect surface against turbulence, corrosion, erosion, chemical attack and withstand maximum temperature up to 150°C (302°F). It can also be applied on steel & concrete structures prone to corrosion due to chemicals, saline atmosphere and contact with liquids.

Use in major industries: Shipping, Cement, Fertilizer, Paper pulp, Sugar and a host of other industries which require surface treatments for corrosion and erosion resistance.

Areas of application: Fan propellers, Pump shafts, Pump housings, Flanges, Machine ways, Anti-friction bearing housings, Sleeve pots, Castings of submersible water pumps, Potable water tanks, Chemical handling pumps, Butterfly valves, Repairs of pin hole leakages due to sludge line erosions and for many other applications where abrasion, cavitation, corrosion and chemical corrosion are chronic problems.

Applications



Fan Propeller Housing Coated with Aluma-Coat BR



Expansion Joint Coated with Aluma-Coat BR



Motor Shaft Coated with Aluma-Coat BR



Lug-style Butterfly Valve Coated with Aluma-Coat BR

Coating Quality

At Jyoti Ceramic, we believe our real work begins at the application stage in our customer's workshop. Keeping this in mind, our dedicated Q.C. team strives relentlessly to ensure optimum quality assurance and customer care.

Surface preparation: To ensure long term performance of Aluma-Coat, proper preparation of the surface is of utmost importance. The exact procedure of surface preparation depends upon the severity of the application, expected service life and initial surface condition. We suggest the following:

No.	Desired result	Method
1	Removal of dust, dirt, grease, oil etc.	Use any industrial grade cleaner
2	Removal of rust	Roughening the surface with sander or any other suitable tool
3	Removal of severe surface corrosion	Use SA2.5 grade grit or sand blasting

All of the above should be followed up by vacuum cleaning or oil free dry air blasting. A thoroughly clean abraded surface will hold the applied coating compound firmly.

Technical tips for successful working with Aluma-Coat

Working time and curing of the coating depends on mixed mass and temperature. Higher the ambient temperature, faster will be the rate of curing.

To reduce the curing time for Aluma-Coat coating compound at lower ambient temperatures, it is recommended:

- To store Aluma-Coat at room temperature i.e. 25 - 30°C / 77 - 86°F
- To pre-heat the surface to be repaired until warm to touch

To test for serviceable surface:

Pierce a finger nail into the Aluma-Coat coated area; if the nail pierces into the coating, it indicates that the coating is not cured, hence allow the coating for further period of curing. But if the nail fails to pierce, it indicates that the coating has cured completely and surface is in serviceable condition.

Shelf life of Aluma-Coat TW/BR kit Resin part at 25 - 30°C / 77 - 86°F: Around 24 months in original airtight container.

Shelf life of Aluma-Coat TW/BR kit Hardener at 25 - 30°C / 77 - 86°F: Around 24 months in original air tight container.

Aluma-Coat BR Viscosity Evaluation Report
(With different concentration of commercial grade Acetone as solvent)
Viscometer used: Brookfield Viscometer
Model DV - I

No.	Aluma-Coat BR (Part I & II)	Quantity of Acetone for further thinning	Temp.	Spindle No.	Viscosity	Consistency	Air pressure of compressor
1	500 gms	28 gms (5.6%)	30°C	#3	1120 (1100 - 1200 cps)	Brushable	-----
2	500 gms	35 gms (7%)	30°C	#3	860 (800 - 900 cps)	Sprayable	5 - 6 kg / cm ²
3	500 gms	40 gms (8%)	30°C	#3	620 (600 - 700 cps)	Sprayable	5 - 6 kg / cm ²
4	500 gms	50 gms (10%)	30°C	#3	450 (450 - 500 cps)	Sprayable	5 - 6 kg / cm ²

- Note:**
- Viscosity depends on the ambient temperature and quantity of the mixture and pot life of the mixture.
 - Mixture must be used within 30 - 40 minutes.
 - Pot life varies with ambient temperature and quantity of the mix.
 - Spray-gun used: Pilot spray gun type P - 80 (Gravity feed spray gun with 0.75 ltrs capacity gravity cup). Nozzle aperture size - 1.57 mm.
 - We do not recommend any paint thinner such as turpentine, kerosene (Liquid paraffin), petrol for thinning Aluma-Coat BR matrix kit.

Aluma-Coat kit coating compound

Property chart

No.	Property	Aluma-Coat TW Trowelable	Aluma-Coat BR Brushable
1	Type	Two components: I. 80 - 85% spherical Alumina beads doped in epoxy resin II. Hardener	Two components: I. 80% fine sintered ceramic powder doped in epoxy resin II. Hardener
2	Colour	White	Terracotta brown and grey
3	Appearance at 25°C / 77°F	Granular highly viscous paste	Smooth highly viscous paste
4	Average particle size	Ø 0.4 - 0.8 mm	60 - 65 microns
5	Mixing ratio Part I. : Part II. Epoxy resin : Hardener	100 : 4 gms by weight	100 : 8 gms by weight
6	Pot life at 25°C / 77°F for 500 gms mix	30 - 45 minutes	30 - 45 minutes
7	Initial setting time at 25°C / 77°F	4 - 5 hrs	4 - 5 hrs
8	Curing time at 25°C / 77°F	24 hrs for about 5 - 6 mm of thick coating	24 hrs for about 0.8 - 1 mm of thick coating
9	Application method	By trowel	By brush / spray
10	Thinning recommended by commercially available Acetone / Xylene	Not recommended	As per consistency required. For brush application (Approx. 5 - 10%). For spray application, use as per consistency required.
11	Overcoat time / Time interval between 2 coats	Not recommended	After approx. 6 - 8 hrs or when first coat has just become tack free
12	Recommended thickness	About 5 - 6 mm	About 0.8 - 1 mm
13	Approximate coverage per kg mix	0.1m ² /kg at about 5 mm thick coating	0.7m ² /kg at about 0.8 to 1 mm thick coating
14	Maximum service temperature	150°C / 302°F	150°C / 302°F
15	Mechanical strengths*		
A	Compressive strength as per ASTM - 695 standards	840 kg/cm ²	840 kg/cm ²
B	Flexural strength (ASTM - 790)	700 kg/cm ²	700 kg/cm ²
C	Adhesive strength	90 - 95 mpa	90 - 95 mpa
D	Shore 'D' hardness (ASTM - D - 2240)	85 - 90	85 - 90
16	Salt / Cyclic corrosion test. According to ASTM B - 117 - 97 standards after 1000 hrs of test at 35°C, pH value 7.2, humidity 95% RH	No changes observed	No changes observed

***Note:** Mechanical properties were tested 7 days post curing.

Aluma-Coat® Kit Packaging



Aluma-Coat TW (Trowelable), BR (Brushable) Matrix and Hardener are packed separately in air tight strong & sturdy plastic containers in sizes of 1 kg, 5 kgs, 10 kgs & 25 kgs.

Unit Conversions	
• $(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$	• $\text{Mpa} \times 145 = \text{psi}$
• $\text{mm} / 25.4 = \text{Inches}$	• $\text{NM} \times 8.851 = \text{lb. in}$
• $\mu\text{m} / 25.4 = \text{mil}$	• $\text{NM} \times 0.738 = \text{lb. 1t}$
• $\text{N}/\text{mm}^2 \times 145 = \text{psi}$	• $\text{N.mm} \times 0.142 = \text{oz. in}$

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