

## Experience Sharing



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## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions

### CO Gas Duct Internal Protection

**Operating Medium :** A mixture of gases like CO, CO<sub>2</sub>, H<sub>2</sub>, O, CH<sub>4</sub>, N & Ar with suspended solids and moisture making the medium very abrasive & corrosive.

**Problem :** The above slurry is transported by pipelines having diameter ranging from 700 DN - 1000 DN. Severe abrasion & corrosion is leading to punctures within 3 years. 8 mm thick pipelines (ducts) are reduced to 3-4 mm.

**Solution :** To meet this aggressive working conditions, ProCoat offered their advanced 100% solids, high performance abrasion and corrosion resistant coating system. ProCoat had taken up job on turn-key basis and carried out grit blasting and coating application work. ProCoat product works on barrier protection principle and eliminates the ingress of corrosive molecules through it thereby isolating metal surface absolutely to prevent corrosion. Coating is engineered to have excellent adhesion, chemical and abrasion resistance for enhancing life by forming a tough, durable coating system.

ProCoat Coating is protecting these ducts since almost 4 years.

Customer standardized ProCoat coating and used for around 300 meters pipelines.



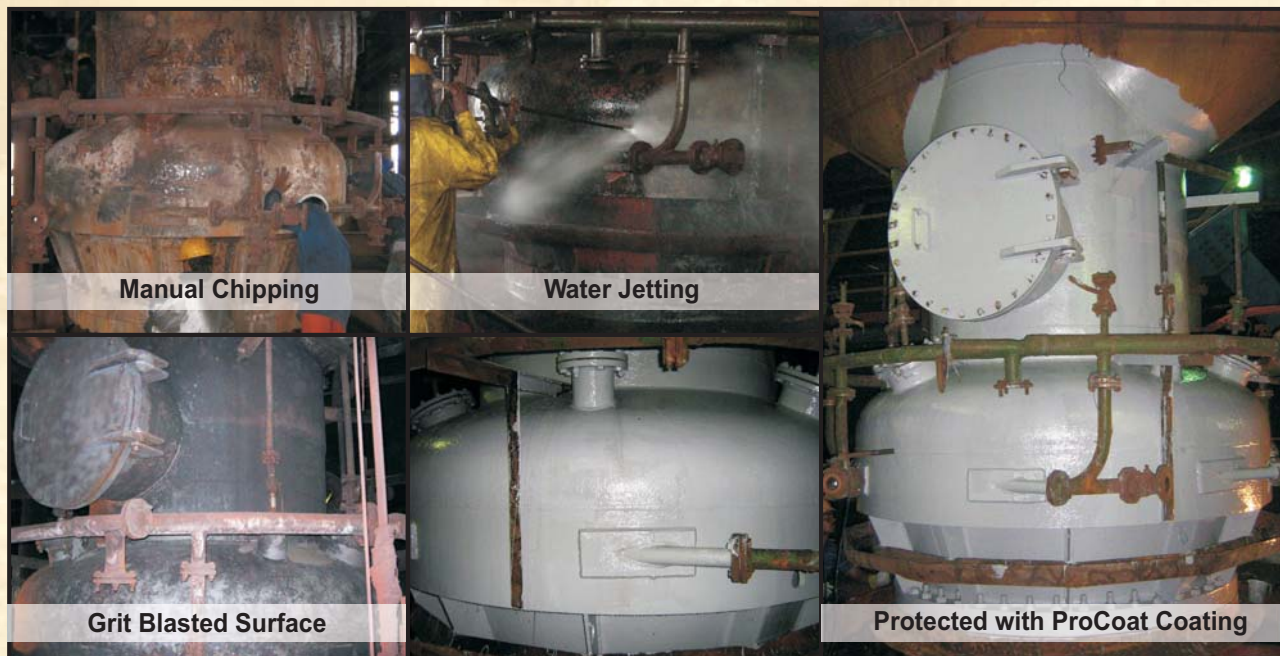
### CO Gas Cone External Protection

**Operating Medium :** Inside cone high temperature gases flows causing the shell to build high temperatures of more than 200° C. The shell is getting cooled by continuous water jets to reduce the shell temperature.

**Problem :** Cone external surface is undergoing heavy corrosion due to rapid reaction of metal with water, under influence of high temperature. Around 10mm thick rust flakes are being formed leading to loss of metal thickness of the cone.

**Solution :** ProCoat advanced 100% solids, high performance corrosion resistant coating system was used for this cone external surface. On turn-key job basis ProCoat carried out mechanical chipping for removal of thick rust deposits, followed by water jetting for removing contamination and then grit blasting finally coating application work was carried out.

ProCoat Coating is protecting these Cones since almost 3 years absolutely without allowing corrosion reaction over the surface.



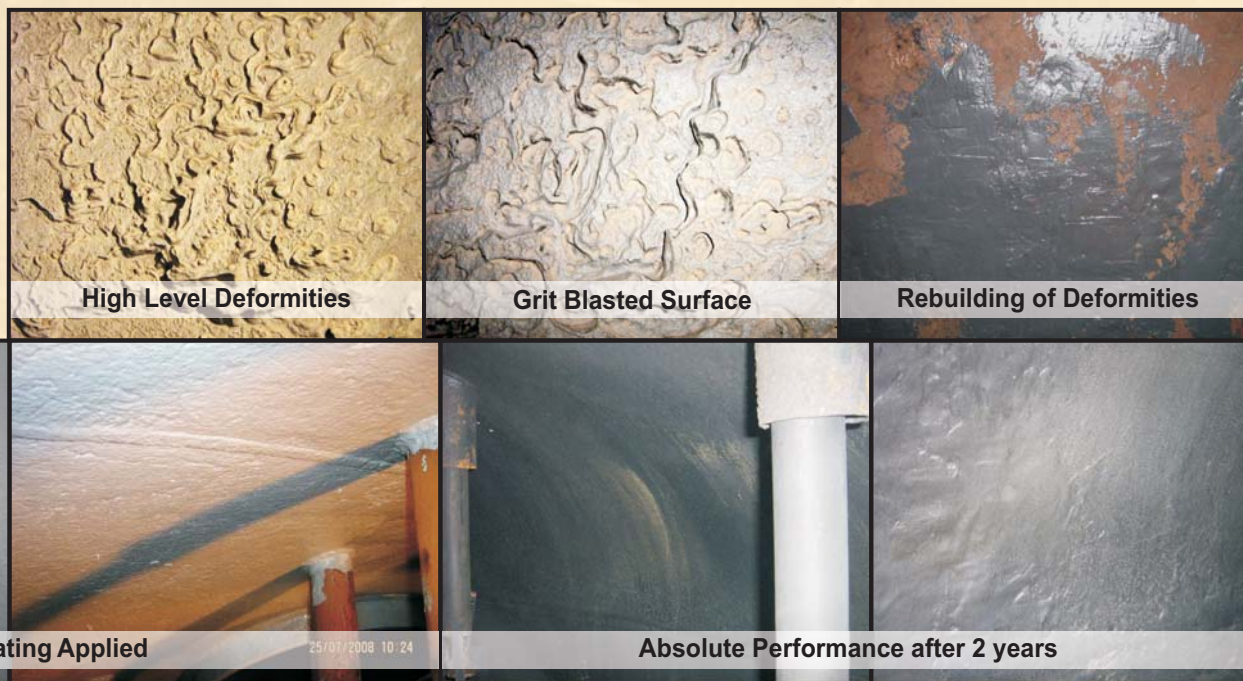
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### Cooling Gas & Top Gas Packing Scrubbers - Internals

#### Problem:

Scrubbing action of high temperature corrosive gasses with high velocity jets of water through nozzles making inside environment highly corrosive and acidic plus water immersion effect. Scrubber metal is continuously undergoing corrosive reactions leading to heavy metal loss in form of cavities ranging from 3 mm to 15 mm in 5 years time. Customer does not have any option other than providing external cladding.

ProCoat Specialities offered high performance metal reclamation system for rectification of large deformities to rebuild profile of internal surface. Top coat of ProCoat's barrier coating system with exceptional chemical and corrosion resistant coating system has been applied with due quality checks. The coating stands in excellent condition without any rust spot even after 2 years.



### Cooling Gas Compressor's Suction Silencer Internal Protection

Silencer is handling high pressure, corrosive gases with suspended particles and moisture making the medium as corrosive and abrasive slurry causing erosion of metal and leading to punctures.

ProCoat Specialities taken up this work and adopted thorough hydro jetting to remove chemical contamination and then surface is grit blasted to get a profile of 75-100 microns. ProCoat advanced, 100% solids, barrier coating system is applied which is designed to withstand the abrasive, corrosive and chemical effect of slurry.

ProCoat coating is found in excellent condition even after 2 years.



## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions

### Abrasion Protection of Drier Cyclones Internal Surface from Hot Metal Particles



ProCoat Specialities offered a high performance, 100% solids, high temperature resistance along with superior abrasion and erosion resistant coating system for protection of internal surface of steel plant's Drier Cyclones from sliding abrasion of high velocity fine iron particles at temperature of around 250° C.

### Abrasion & Corrosion Protection of Filter Bed Structures from Slag Erosion with Hot Water Immersion Duty



ProCoat Specialities offered a high performance, 100% solids, high temperature resistance along with superior abrasion and erosion resistant coating system for protection of filter bed structures of steel plant from high abrasion and erosion of iron slag slurry.

### Abrasion & Corrosion Protection of Thickener Internal Rotating Mechanism from Hot Abrasive Slurry



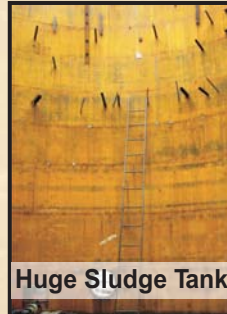
Huge steel plant's thickener internal structures were blast cleaned and protected with ProCoat Specialities advanced Novolac polymer coating system. ProCoat coating system meets duty parameters like immersion conditions, resistance to abrasion and corrosion thereby enhancing the life of these structures for extended periods

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### SLUDGE TANK INTERNAL PROTECTION

Two huge sludge tank of 11 mtr height x 11 mtr diameter is being used to handle thick, heavy abrasive slurry with wet temperatures around 70°-80° C. Internal metal surface is subjected to high abrasion due to coarse, abrasive particles and high wet temperatures accelerates severe metal corrosion. ProCoat Specialities carried out thorough surface preparation using chilled iron grit blasting to attain SA3 finish with 75-100 micron profile.

ProCoat advanced, solvent free, abrasion and corrosion resistant coating system was applied to a thickness of 500 microns average. Successful protection is observed even after a period of 18 months and life expectancy is more than 5 years



Huge Sludge Tank



Grit Blasting Progress



ProCoat's Abrasion & Corrosion Protection Coating



ProCoat Coating Applied

### SLAG GRANULATION PLANT Supporting I Beams & Structures Protection

Red hot slag is being quenched with high pressure water and is coming into this slag granulation plant producing high temperature steam with boiling water along with large quantities of abrasive slag. I Beams & other structures are under immersion condition and suffering from high degree of corrosion and abrasion.

ProCoat Specialities carried out thorough water jetting and blast cleaning to obtain optimum surface finish and profile.

Over these cleaned I beams and structures, ProCoat advanced, high temperature, abrasion and corrosion resistant polymer coating system was applied to protect these structures from abrasive slag and boiling water.



Heavy Corrosion of I Beams



Grit Blasting of I Beams



ProCoat Coating Applied



Slag Granulation Plant



Corroded Conveyor Structure



Grit Blasted Surface



ProCoat Coating Applied

## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions

### HCL & SULFURIC ACID STORAGE TANKS External Protection

ProCoat Specialities carried out thorough contamination removal, surface cleaning by means of grinding to make the surface clean, dry and rough and applied ProCoat high end chemical resistant coating system over the external surface of these storage tanks to protect them from the spill and dripping of concentrated hydrochloric and sulfuric acids.



### AVGF & COMPRESSOR TANKS EXTERNAL CORROSION PROTECTION

Severe corrosion due to effect of hot steam and continuous water spills occurring from adjacent cooling towers over these tanks, ProCoat Specialities applied high performance barrier coating system with exceptional corrosion resistance over these tanks external surface after thorough blast cleaning. These tanks are getting protected from almost 3 years with a life expectancy of 10 years.



### PROCESS WATER STORAGE TANKS

Two huge concrete process water storage tank having a typical problem of exchanging ions from concrete and metal into process water and causing changes in ppm which created problem with process.

ProCoat Specialities prepared concrete surface with detergent and fresh water cleaning and applied a barrier resistant coating system with insulation properties. Lab tests of this process water was found to meet exact ppm without any traces of contamination



### RAW WATER TANK - INTERNAL

ProCoat Coating systems were applied over four raw water tanks internal surface to protect the concrete surface from getting deteriorated and to enhance the life of these concrete storage tanks.



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### SLAG GRANULATION PLANT Conveyor dead end structure

After thorough blast cleaning of this structure applied ProCoat advanced polymer coating system designed with barrier protection along with abrasion and water immersion resistance to offer long term protection to this conveyor dead end structures.



### PROTECTION OF CONVEYOR STRUCTURE CONSTRUCTED OVER SEA

ProCoat Specialities executed saline protection coating system for this huge conveyor structure by adopting copper slag blast cleaning and application of long term saline corrosion resistant coating system with exceptional barrier protection properties from the effect of saline winds and humidity.



### CONVEYOR SUPPORTING LEGS & FRAMES

ProCoat's advanced saline corrosion resistant coating system is used to protect these supporting legs and frames of this conveyor.



### SHIP LOADER STRUCTURE CONSTRUCTED OVER SEA

ProCoat Specialities executed saline protection coating system for this huge conveyor structure by adopting copper slag blast cleaning and application of long term saline corrosion resistant coating system with exceptional barrier protection properties from the effect of saline winds and humidity.



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### STEEL PLANT TOP GAS MIST ELIMINATOR & VENTURI SCRUBBER INTERNAL PROTECTION

Continuous contact of highly corrosive medium, scrubbing of corrosive gases with high suspended particles and high pressure water jets, causing severe corrosion and cavities on the internal surface of the equipment. Also, heavy metal loss in irregular fashion.

ProCoat Specialities executed using chilled iron grit blasting for surface profile then metal reclamation work with advanced, high functionality Novolac metal rebuilding system and further protected with high end chemical and corrosion resistant coating system. The equipment is performing since almost 3-4 years and the coating is intact.



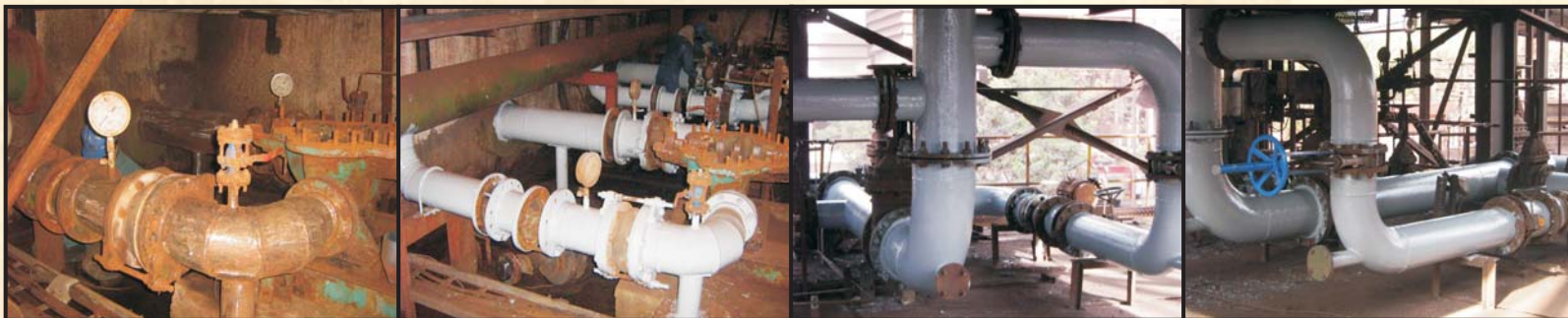
### PROTECTION OF IRON SLAG REDUCERS

ProCoat's ceramic lining systems are meeting protection requirements of this slag reducer internal surface from the effect of high abrasive slag and slurry movement. Coating enhanced life of these reducers from 3 months to 12 months.



### PROTECTION OF PUMP HOUSE PIPELINES

ProCoat water resistant coating systems are used to protect these pipelines external surface from the effect of corrosion caused due to continuous spill of water and polluted fumes.



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### Slag Granulation Plant Conveyor Pulley Supporting Structures

ProCoat coating system is effectively protecting these structures from corrosion due to continuous spill of water and slag deposition during operation.



### CO Gas Seal Parts

These gas seal parts both internal & external surface got protected with ProCoat coating system from aggressive abrasion and corrosion effects caused due to handling of CO gas slurry at high temperatures.



### Cooling Gas - Cones

Huge cones handling CO gas along with suspended particles and slurry causing abrasion and corrosion. ProCoat coating systems applied internally to protect from duty parameters and external coating to protect from continuous water spills.



### Abrasion & Corrosion Protection of Guide Vanes

Impact of water with silt on guide vanes develops pits and cavities resulting in metal loss. ProCoat executed metal rebuilding of pits and cavities then applied an advanced, 100% solids coating system which effectively resist abrasion and corrosion effects of water flowing from penstock.



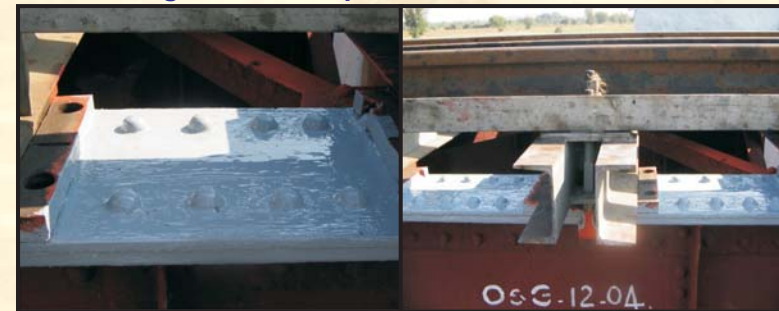
### Abrasion and Erosion Protection of Francis Turbine Runner from Silt

Hydro Plant's Francis Turbine Runner vanes are coated with ProCoat ceramic system to protect them from erosion and abrasion effect of silt and water during operation



### Corrosion Protection of Bridge Girders exposed to Human Waste

Girder top surface between rails are suffering from corrosion due to deposition of human waste dropped from passenger trains. ProCoat applied long term protection coating system over it.



## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions

### Chemical Spill Protection of Concrete Foundations



### Spill Protection of Kiln Roller Concrete Foundations



### Chemical Protection of Process Floor

Process floor of a chemical plant suffering from corrosion and deterioration of concrete due to spills of chemicals and fluids. ProCoat Specialities executed chemical resistant floor coating system after carrying out thorough surface preparation with contamination removal, cleaning and drying.



### Chemical Protection - Drain Trench



Drain trenches of a chemical plant were coated with ProCoat chemical resistant coating system to prevent seepage of chemicals into concrete.

### Protection of Pump House Base Frames & Concrete Foundations



Metal base frames and concrete foundation beds get deteriorated due to continuous spillage of water during operation of pumps. ProCoat advanced polymer coating is applied over these base frames and concrete to prevent corrosion reactions and ingress of water thereby eliminating the chances of corrosion for extended periods.

## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions



**Galvanic and Saline Corrosion Protection of Pipeline Flanges**



**Corrosion Protection of substation Marshalling Boxes**



**Saline Corrosion Protection of Electrical Structure**



**Galvanic and Saline Corrosion Protection of Pipeline from saline winds and water spills**



**Abrasion & Corrosion Protection of Raw Water Pump Impellers**



**Corrosion Protection of Water Pumps, Motors, Foundations from water spills**

Metal base frames and concrete foundation beds are get deteriorated due to continuous spillage of water during operation of pumps. ProCoat advanced polymer coating is applied over these base frames and concrete to prevent corrosion reactions and ingress of water there by eliminating chances of corrosion for extended periods.

## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions

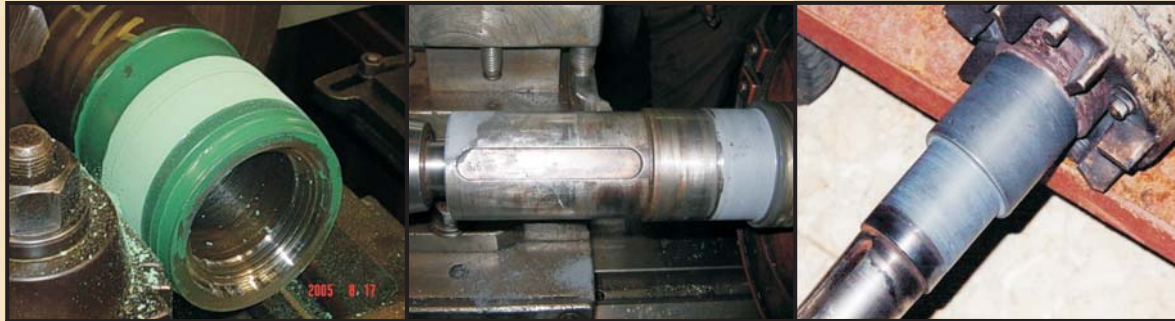
### SEPAK FAN ABRASION PROTECTION

ProCoat's advanced ceramic system for deformities rectification over the edges of vanes will protect the surface from further erosion. On top of this reclaimed area, high performance ceramic system is brush applied, which cures to a tough, abrasion resistant layer with extreme smooth surface to reduce friction and offer excellent abrasion resistance to the Sepak Fan.



Grit Blasting - Progress

### METAL REBUILDING OF SHAFTS & BEARING HOUSINGS



### LRS TANK INTERNAL & EXTERNAL METAL PROTECTION FROM CORROSION

LRS tank internal and external protection with ProCoat coating system for preventing corrosion as well to insulate the metal from electrolytic reactions.



### CEMENT MILL - BAG HOUSE DOOR & INTERNAL PROTECTION

ProCoat high performance advanced, chemical and corrosion protection system applied on bag house doors for protecting them from acidic corrosion at high temperature. Excellent protection since three years.



## Long Term Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Various Equipments From Aggressive Operational Conditions

### Corrosion & Abrasion Protection of Base Rings



ProCoat Specialities protected these base rings from corrosive and abrasive effect of ammoniated slurry. ProCoat executed the coating application after thorough copper slag blast cleaning followed by application of chemical and abrasion resistant coating system with due quality checks.

### Long Term Corrosion Protection Coating System for cooling water pumps



ProCoat Specialities protected these big horizontal and vertical pumps from continuous water spills during operation. ProCoat high performance corrosion resistant coating system prevents corrosion of metal by providing a barrier layer there by eliminating ingress of water molecules.

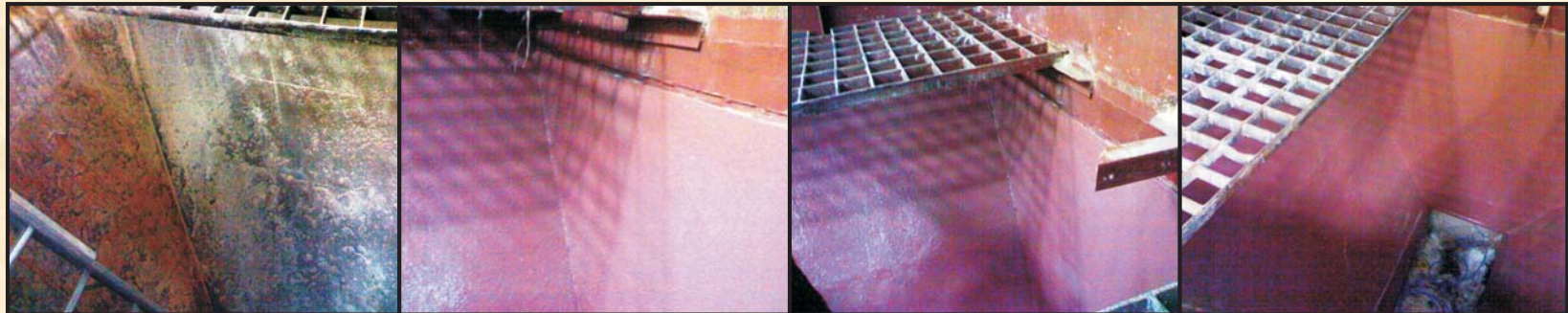
### Sugar Brine Recovery Concrete Tank Leak and Corrosion Protection System



Concrete tank handling sugar brine is facing problem of seepage and corrosion. ProCoat Specialities concrete penetrating primer coating followed by corrosion protection system is applied.

### Anti-Corrosion and Smooth, low friction coating system over ceramic Slip House Hopper internal surface

ProCoat applied a high performance corrosion resistant coating system with smooth low friction properties for enhancing free flow of ceramic medium as well as preventing corrosion of internal surface of this slip house hopper.



## Long Term Corrosion Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Substation Structures From Aggressive Saline & Industrial Polluted Environment

### ELECTRICITY SUBSTATION — STRUCURAL PROTECTION



ProCoat Advanced, 100% solids, multifunctional polymer coatings systems were used at substation structures which are located in aggressive environment comprising salinity, humidity, chemical fumes, acid rain conditions and protecting absolutely since three years. ProCoat coating systems are out performing at these environment in comparison to conventional paints, chlorinated rubber paints, zinc rich coatings & even epoxy paints of reputed make which are failing in just 12 months and causing the metal to corrode heavily.

### ELECTRICITY SUBSTATION — STRUCURAL PROTECTION



Equipment supporting structures like CT, PT, LA, isolator etc of substation undergo severe corrosion due to exposure of chemical fumes along with moisture from adjacent factory. Conventional systems fails to protect.

ProCoat Specialities carried out turn key application by surface preparation, contamination removal from the surface and applied chemical and corrosion resistant coating system over these structures which ensuring absolute protection since four years.



## Long Term Corrosion Protection Solutions Provided By ProCoat Specialities Pvt. Ltd. For Transmission Towers From Aggressive Saline, Chemical and Humid Conditions

### TRANSMISSION TOWER PROTECTION FROM ACID RAIN, CHEMICALS, SALINITY, INDUSTRIAL POLLUTION



Above shown 132kV transmission tower is located near chemical zone and exposed to sea water from the adjacent cooling towers, emissions like sulfur dioxide, oxides of nitrogen, moisture and other pollutants from adjacent refinery, fertilizer, chemical factories creating acid rain conditions. Galvanized Iron tower parts are undergoing severe corrosion and losing metal thickness in just six years. ProCoat Specialities carried out blast cleaning of tower parts and applied chemical & corrosion resistant coating system with thorough quality checks and guaranteed performance for 5 years.



### TRANSMISSION TOWERS PROTECTION FROM SALINITY & INDUSTRIAL POLLUTION

Narrow based 132kV transmission towers are located just adjacent to sea and surrounded by chemical, fertilizer industries which are emitting corrosive substances, fumes and industrial pollutants. Mild steel is undergoing severe corrosion reactions as corrosive and conductive electrolyte is present over the surface and forming thick rust flakes leading to severe metal loss. Electricity Board has to maintain these structures for longer periods as this circuit is revenue generating, modifications or replacement option is practically not possible.



ProCoat Specialities thoroughly analyzed the environmental conditions and degree of corrosion and offered solution with their advanced polymer coating system which is designed with barrier protection properties, solvent free, chemical and corrosion resistance. ProCoat Specialities took up the work on turn-key basis and executed the work by sand blasting of entire tower on-line and applied coating system along with UV resistant topcoat. Guaranteed the performance for minimum 5 years with a life expectancy of 8-10 years.

## Power Transformers, CT, PT, MOCB's Oil Leakage Arresting Executed By ProCoat Specialities Pvt. Ltd. Without Draining Oil From Equipment

ProCoat Specialities offers proven oil leakage arresting products with specific and relevant properties like ability to bond on oily surface, rapid curing properties, nil shrinkage after curing and high temperature resistance and flexibility.

ProCoat Specialities has hands on expertise for providing effective solution to oil leakages from various oil filled equipments like power transformers, CT, PT & MOCB's etc.

Oil tends to leak from various parts of these equipment like bell covers, flanges, bushing seating areas, OLTC chambers, Inspection covers, pipes, butterfly valves, radiator fins, LV & HV bushing flanges etc.

ProCoat has a set of products for arresting leaks from bolts, instant sealing of leaks from flanges, reinforcement of initially arrested leaky areas.

ProCoat provides services for attending oil leakages on-line without draining oil from the equipment.

As of now ProCoat Specialities has provided effective 60 - solutions for oil leakage arresting to approximately 50 substations of 132kV & 220kV rating.

ProCoat Specialities can provide turn-key solutions right from inspection of leaks, assessment of quantities of products required and also offering services by executing surface preparation and application of products.



### Product Range Includes

- Corrosion Protection System
- Chemical Protection System
- Abrasion Protection System
- Concrete Protection System
- Ceramic Repair System
- Metal Repair System
- Floor Repair System
- Concrete Repair System

**ProCoat Products Are Zero VOC  
100% Solids**

**Non Hazardous To The User  
Non Toxic To The Environment**

### Our Commitment

We are committed to provide most reliable innovative products and also advice on use and application of our products.

**We Keep  
Wheels Moving,  
Equipments Running,  
Plants Shining  
&  
Executives Smiling.**

As a solution provider, ProCoat Specialities Pvt. Ltd. takes utmost care:

- In proper analysing of problem and its causes.
- In narrowing down of product selection for ensuring utmost performance.
- In micro planning for job execution
- For mobilizing application specialists and equipment for execution of critical jobs.
- To ensure desired surface preparation by means of copper slag / chilled iron grit / sand blasting.
- In removing contamination and salts.
- For coating application to the utmost precision.
- To ensure integrity of coating application with appropriate quality checks like thickness, holiday spark testing.
- To enhance the service life of equipment / substrate.
- To ensure value to the money spent.

### ProCoat Specialities Pvt. Ltd.

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