

## COMPANY PROFILE

**SAMROCK MUREXIN CHEMICALS (I) LTD.**, the company is promoted and founded in the year 1991 by group of technocrats having rich experience in cement and construction chemical industries. The company has long outstanding performance graph and a national presence. We have been certified an ISO –9001: 2008 company by the competent authority.

We are pleased to introduce ourselves as leading service provider of indisputable engineering technology-wisdom available to-day is most efficient, faster and more precise and long term advantageous for connectivity of heavy duty and very high speed machine to foundation, eliminating all limitations of existing conventional method. We have most effective solution to connectivity-related most critical, complex and composite problems of vibration levels which is the root cause for loss of productivity due to interruption of stoppages and restarting, consultancy, complete with system design, expert supervision and skilled labour for application. We also offer turnkey project etc. The evident result reduce vibrations in machines, thereby build up the tolerances in all moving parts as well as bore, bearings, shaft and consequently reduce the breakage, stoppages and achieve increased productivity. That is significant cost saving in wear of mechanical parts as well as power consumption.

In order to meet the challenging man made technologies' requirement in the days ahead, we have brought-in expertise that would enable us not only to continue supplying and servicing with the existing range of products/systems but also enhance the same greatly by adding to the product portfolio a variety of high-tech engineering products/systems and leverage towards total customer satisfaction. We felt a void in the area of materials and surface protection engineering. This was particularly so in the case of large projects. We seized the opportunity and started offering our expertise in the area of turnkey project consultancy complete with system design etc. Our R. & D. department's ongoing initiative endeavors to provide resolution as per customer's requirement.



## 1 LIST OF OUR IMPORTANT CUSTOMERS

1. Allana Frozen Ltd. (Mumbai)
2. Ankur Mills Ltd, (Raipur)
3. Arvind International, Khatrej (Ahmedabad)
4. Arvind Mills Ltd., Naroda (Ahmedabad)
5. Arvind Mills ltd., Santej
6. Asea Browen Boveri Ltd., Maneja (Baroda)
7. Ashima Denim, Khokra (Ahmedabad)
8. Bharat Vijay Mills Ltd, (Kalol)
9. Blue Blend (I) Ltd, Piplej (Ahmedabad)
10. Bridge & Roof Co. (India) Ltd.,
11. Cadila Laboratories Ltd., Ghodasar, Ahmedabad
12. Century Rayon, SHAHAD (M. S.)
13. Cera Sanitaryware Ltd., Kadi
14. Essar Projects Ltd., Hazira
15. GACL, Baroda & Gandhar
16. GHCL, Sutrapada (Veraval)
17. Glaxo India Ltd., Ankleshwar
18. Gujarat Air command, Baroda
19. Gujarat Ambuja Cotspin Ltd., Vrundavan (Himmatnagar)
20. Gujarat Narmada Valley Fertilizer Ltd., (Bharuch)
21. Gujarat Perstorp (India) Ltd., Gandhinagar
22. Haryana Sheetglass Ltd., Ankleshwar
23. Indian Air Force, Southern Command
24. Indian Rayon & Industries Ltd., Veraval
25. JMC Projects (I) Ltd, Ahmedabad
26. M. S. Khurana Engineering P. Ltd., Ahmedabad
27. Modern Denim Fabrics, Sanand
28. Modern Petrofils Ltd., Bamangam
29. Narmada Sugar Ltd., Ghatwa (M.P.)
30. Nirma Ltd., (Savli)
31. Pepsico Holding (I) Ltd (Ahmedabad)
32. Rama krishi Rasayan, Pune
33. Reliance Industries Ltd., Ahmedabad
34. Rohit Pulp and Paper Mills Ltd., Udhwada (Vapi)
35. Sanghi Industries Ltd., Sanghipuram
36. Schott Glass Industries Ltd., Jambusar
37. Silvassa Industries Ltd., Silvassa
38. Taichong Bang Textile Industries Ltd., (Sanand)
39. Torrent Pharmaceuticals Ltd., Indrad
40. United Phosphorous Ltd., Ankleshwar
41. Videocon International Ltd., Gandhinagar
42. Western Railways, Ahmedabad

## General

Concrete is composite materials that consists essentially of a binding medium, within which are embedded particles or fragments of aggregates. However in cement concrete, which is relevant to RCC structures, the binding medium is the mixture of hydraulic cement and water. All concrete in service will be subject to chemical and physical changes. A durable concrete is one in which these changes occur at a rate, which does not detrimentally affect its performance within its intended life. Leave it to concrete alone, the material remains by and large durable, but concrete alone cannot be utilised extensively for structural applications. It is the Reinforced Concrete (RCC), a composite structural material, which is utilised for variety of structural uses. But, it has been observed that RCC has not proved to be durable due to large number of factors, including variations in production, loading conditions in service life and subsequent attack by the environmental factors. However, a well constituted, properly compacted, and cured concrete used in RCC continues to be substantially water tight and durable as long as capillary pores and micro-cracks in the interior do not become interconnected pathways leading to surface of concrete.

Case studies reported in the literature show that much reinforced concrete structure, within a life period of 15 years or so, suffered from of durability distress. The external symptom range from cracking to spalling of concrete, which frequently involved corrosion of concrete, which frequently involved corrosion of reinforcement. In almost all the field cases penetration of water and/or aggressive chemicals during the service life of structure, is the primary reason for the problem. Addressing the issues of deterioration, carbonation chloride ingress, leaching, sulphate attacks, alkali-silica reaction and freeze & thaw are the known responsible natural causes. Out of these, the first three can all lead to corrosion of reinforcement. The general approach for durability is to demand is impermeability of concrete as the first line of defense against any of the deterioration process. Although it is difficult to generalize the cause of deterioration due to interacting nature of various factors, efforts have been made to group the various types as physical and chemical. Because the microstructure of concrete material is continuously changing in response to penetration of water, co<sub>2</sub>, oxygen, and aggressive ions at a rate, which is influenced by local conditions of temperature, humidity and pressure, it would be difficult to make exact quantitative predictions of cause affecting service life.

The deterioration process is considered in 2 stages. During the first stage, due to leaking and weathering effects (e.g. cycles of wetting & drying, diurnal & seasonal temperature variations, etc) the voids and micro-cracks in the interfacial zone between the cement paste and coarse aggregate or reinforcing steel become inter-linked. When the inter-linked network of micro-cracks gets connected to any cracks present at the concrete surface, this provides the primary mechanism of fluid transport into the interior of concrete. Once this happens, the penetrability of concrete increases greatly and the beginning of the second stage during which water, oxygen, carbon dioxide and acidic ions are able to penetrate easily into concrete. The presence of these elements facilitates various physical-chemical interactions as a result of which, the material eventually undergoes cracking, spalling and loss of mass resulting in partial loss of strength and stiffness.

## Guide for repair and rehabilitation of Structures

The decision to repair or replace a structure or its component can be taken only after consideration of likely service life of the structure is established based on the technical & economic evaluations. Once a decision, based on preliminary investigations, is taken to carry out the repairs, proper diagnosis, identification & extent of distress in structural members has to be correctly assessed. A detailed methodology should be developed, which should include available

1. Methods of repair &
2. Repair materials.

Thus, a repair strategy can be adopted, keeping the objective in view. This shall be based on evaluation and available alternative methods of repair & material. Priority should be assigned to

1. Repair of structural defects to ensure safety of the structure and
2. Protection of the structure from further deterioration.

The selected method of repair should achieve one or more of the following objectives:

1. Reinstate the structural integrity of the member by restoring or increasing its strength & stiffness.
2. Prevent the ingress of distress promoting agents such as moisture, chlorides and carbon dioxide to improve durability.
3. Maintaining the aesthetics/appearance of concrete surface.

Depending upon the specific condition of deteriorated structure, the option of the repair methods could be one or more of the following:

- ◆ Grouting & crack repair
- ◆ Patch Repair
- ◆ Replacement of structurally weak concrete
- ◆ Replacement of spalled, and/or delaminated concrete
- ◆ Replacement of carbonated concrete surrounding steel reinforcement
- ◆ Cleaning and passivating the corroded steel reinforcement
- ◆ Concrete overlays with normal, low or highly fluid concrete, latex modified concrete & corrosion protection such as jacketing etc.

### Repair Stages

- ◆ Concrete Removal and Surface Preparation
- ◆ Fixing suitable formwork
- ◆ Bonding / passivating coat and repair application



## Materials for Repair

Wide range of materials for repair of concrete is available differing in cost and their performance. Their application range covers:

### Materials for Surface Preparation

Chemical Rust removers for corroded reinforcement

- ❖ SAMRUST

Passivators for reinforcement protection

- ❖ SAMZINC EP

Bonding Agents

- ❖ SAMBOND AR
- ❖ SAMBOND EP

Structural Repair Materials,

- ❖ SAMCRETE EP 3
- ❖ SAMPRIME 2
- ❖ SAMMOR E
- ❖ SAMCRETE GPM1
- ❖ SAMCRETE MC
- ❖ SAMCRETE EP

Non-structural Repair Materials,

- ❖ SAMWAL PL
- ❖ SAMBOND AE

Injection grouts,

- ❖ SAMCRETE EP 3
- ❖ SAMCRETE 225

Joint sealants,

- ❖ SAMSEAL EP
- ❖ SAMSEAL EP1
- ❖ SAMBOND CF P

Surface coatings for protection of RCC

- ❖ SILICON IMPREGNATION S4
- ❖ SAMBOND S
- ❖ SAMPRIME 2
- ❖ SAMCOAT EP

## Repair and Rehabilitation in RCC structures

1. Grouting in weak RCC members
2. Repair of corroded reinforcement and spalled cover concrete
3. Surface protection coatings

### 1 Grouting in weak RCC members and in brick/stone masonry

The process of strengthening of members is dependent on the original width of cracks as measured after cleaning, scrapping and air jetting.

- i.) Cracks in concrete structures shall be sealed by chipping out a groove of 15 mm width and 10 mm deep; sealing the groove with epoxy putty SAMSEAL EP 1. and then injection of low viscosity clear epoxy SAMCRETE EP 3 shall be carried out.
- ii.) Cracks in masonry shall be sealed by chipping out a groove of 15 mm width and 10 mm deep; applying a bond coat and sealing the groove with epoxy / cementitious putty (SAMSEAL EP 1, SAMBOND CF P). And then injection of cement slurry admixed with SAMCRETE 225 and SAMBOND AE shall be carried out.

#### 1.1 SPECIFICATION FOR EPOXY GROUTING

The epoxy grouting technique shall comprise of following steps:

1. Pretreatment of crack surface.
2. Formation of V notch.
3. Fixing of ports or nipples.
4. Application of surface Sealant or Putty.
5. Epoxy injection

##### 1.1.1 Pretreatment of crack surface

The concrete surface at the crack shall be made free from all oil, grease, dust or other substances likely to impair good bonding. Acids and corrosive chemicals shall not be used for cleaning. The loose material shall be blown out with compressed air to remove all dust. The compressed air shall be free from both oil and water. The surface thereafter shall be made dry before further work.

##### 1.1.2 Formation of V notch

The crack is opened along the crack alignment by making 'V' notches or grooves by means of suitable chisel or mechanical saws. It must be 12 mm deep having 12 to 15 mm top width when the cracks are upto 6 mm wide on the surface. The V notch shall be 12 to 25 mm deep for cracks wider than 6 mm. The grooves are made dust free by means of thorough washing and drying. Alternatively compressed air may be used for the purpose, in which case care, shall be taken to see that the compressed air is free from oil and water.

### **1.1.3 Fixing of entry ports or nipples**

After the cracks are cleaned, 12 mm diameter injecting nipples are inserted at 100 mm C/C and 30 mm to 40 mm deep along the crack line and/or specified by engineer incharge and plugged with SAMSEAL EP.

### **1.1.4 Application of Sealant or Putty**

The distance between the injection nipples along the crack line is sealed with SAMSEAL EP. If the cracks are through the entire thickness of the member, then the same shall, if possible be sealed at both sides. The pre-treatment including fixing of nipples and sealing the remaining length of crack with SAMSEAL EP is carried out at least 24 hours prior to injecting epoxy grout.

Before injecting grout it is made sure that cracks are still free of dust by means of blowing air through all the nipples in succession.

### **1.1.5 Grout mixes**

SAMCRETE EP 3 is thoroughly blended with a mechanical mixer to a uniform and homogeneous mixture. Small batches can be manually mixed using spatulas, palette knives etc.

### **1.1.6 Epoxy Injection Grouting**

Before injecting the epoxy grout, compressed air, free of any oil shall be blown through all the entry ports shall be closed except the one through which the compressed air is blown and one immediate adjacent to it.

The approved system is then injected into the cracks by means of suitable gun or pump at a pressure of 6 to 7 kg/sq.cm. The pressure shall be gradually increased from 0.5 kg/sq.cm to 3 kg/sq.cm. In case of vertical cracks injection shall be started at the lowest nipple and continued until the injected grout begins to flow out at the next higher nipple.

The first nipple is closed off and injection continued at the second until the epoxy grout flows out at the third. The process is repeated until the whole length of the crack is treated. As soon as the system is cured, the nipples are cut. For the horizontal cracks the injection grouting shall be started from one end of the crack and continued to the other end.

## 1.2 SPECIFICATION FOR CEMENTITIOUS GROUTING IN MASONRY

The cementitious grouting technique shall comprise of following steps:

- 1 Pretreatment of crack surface.
- 2 Formation of V notch.
- 3 Fixing of ports or nipples.
- 4 Application of surface Sealant or Putty.
- 5 Cement grout injection

### 1.2.1 Pretreatment of crack surface

The concrete surface at the crack shall be made free from all oil, grease, dust or other substances likely to impair good bonding. Acids and corrosive chemicals shall not be used for cleaning. The loose material shall be blown out with compressed air to remove all dust. The compressed air shall be free from both oil and water. The surface thereafter shall be made dry before further work.

### 1.2.2 Formation of V notch

The crack is opened along the crack alignment by making 'V' notches or grooves by means of suitable chisel or mechanical saws. It must be 12 mm deep having 12 to 15 mm top width when the cracks are upto 6 mm wide on the surface. The V notch shall be 12 to 25 mm deep for cracks wider than 6 mm. The grooves are made dust free by means of thorough washing and drying. Alternatively compressed air may be used for the purpose, in which case care, shall be taken to see that the compressed air is free from oil and water.

### 1.2.3 Fixing of entry ports or nipples

After the cracks are cleaned, 12 mm diameter injecting nipples are inserted at 100 mm C/C and 30 mm to 40 mm deep along the crack line and/or specified by engineer incharge and plugged with SAMBOND CF P.

### 1.2.4 Application of crack filler

The distance between the injection nipples along the crack line is sealed with SAMBOND CF P. If the cracks are through the entire thickness of the member, then the same shall, if possible be sealed at both sides. The pre-treatment including fixing of nipples and sealing the remaining length of crack with SAMBOND CF P is carried out at least 24 hours prior to injecting epoxy grout.

Before injecting grout it is made sure that cracks are still free of dust by means of blowing air through all the nipples in succession.

### 1.2.5 Grout mixes

SAMCRETE 225 is thoroughly blended with 50 kg cement and water in a mechanical mixer to a uniform and homogeneous slurry. Small batches can be manually mixed using spatulas, palette knives etc.



### 1.2.6 Cementitious Injection Grouting

Before injecting the cementitious grout, compressed air, free of any oil shall be blown through all the entry ports shall be closed except the one through which the compressed air is blown and one immediate adjacent to it.

The approved system is then injected into the cracks by means of suitable gun or pump at a pressure of 6 to 7 kg/sq.cm. The pressure shall be gradually increased from 0.5 kg/sq.cm to 2 kg/sq.cm. In case of vertical cracks injection shall be started at the lowest nipple and continued until the injected grout begins to flow out at the next higher nipple.

The first nipple is closed off and injection continued at the second until the grout flows out at the third. The process is repeated until the whole length of the crack is treated. As soon as the system is cured, the nipples are cut. For the horizontal cracks the injection grouting shall be started from one end of the crack and continued to the other end.

## 2. Repair for spalling in Reinforced Cement Concrete Members and corroded reinforcement:

- i.) Removal of cracked, leached, spalled or otherwise damaged concrete by use of hand tools only.
- ii.) Cleaning and scrapping of all surfaces including steel. Air Jetting is permissible for final removal of all small particles.
- iii.) Sealing of cracks which may become visible using procedures separately outlines below.
- iv.) Application of suitable bonding agents (SAMBOND EP, SAMBOND AR) as detailed out in the technical specifications along with the repair schemes for specific areas.
- v.) Applying SAMZINC EP anticorrosion coating on cleaned reinforcement.
- vi.) Addition of reinforcing steel by welding and binding with wire and/or anchoring with SAMSEAL EP 1 where the corrosion had progressed to the extent that less than 70 % of the original area of steel is available.
- vii.) Building up the removed concrete surfaces to original lines and levels using SAMMOR E epoxy mortar when thickness of less than 50 mm is involved and replacement of the damaged concrete with SAMWAL PL or SAMCRETE MC polymer modified plaster / concrete for areas with a depth of 50 mm or more of damaged (and therefore removed) concrete.
- viii.) Painting of the surfaces thus replaced with SAMBOND S at locations exposed to weather

### 2.1 SPECIFICATION FOR EPOXY BONDING OF NEW CONCRETE TO OLD CONCRETE

SAMBOND EP used for bonding shall be obtained from **samrock**. The entire surface of the existing concrete member should be thoroughly cleaned by wire brush and then with compressed air to remove dust and loose particles from the surface. Any crack or spalling of concrete shall be sealed by epoxy injection/epoxy mortar/ grouting as decided by the Engineer-in-Charge. A coating of suitable SAMBOND EP at the rate of

0.5 to 0.8 kg/sq.m should then be applied on the surface of the existing concrete members. Fresh concrete shall then be placed within the pot life of the resin system.

## **2.2 SPECIFICATION FOR EPOXY MORTAR**

### **2.2.1 Proportion and mixing**

SAMMOR E comes in 3 pack system. Part I resin and Part II hardener shall be mixed before adding Part III dry filler. The mixed ready to use mortar should not contain lumps of unwetted filler and should be uniform in colour. For a total weight of 1 kg. Or less, hand mixing will be sufficient. For quantities in excess of 1 kg. or less, hand mixing will be sufficient. For quantities in excess of 1 kg. the component shall be mixed for 3 minutes with a slow speed – 400 – 600 rpm - electric drell with a Jiffy mixer. The stirrer shall be moved up and down and along the sides until an even streak free colour is obtained. Whipping in an excessive amount of air shall be avoided. If no power is available, a flat putty knife may be used to reach into the corners of the can and hand mixing done for at least 5 minutes.

### **2.2.2 Surface preparation**

Surface upon which SAMMOR E is to be placed shall be free of rust, grease, oil, paint, asphalt, loose material, unsound concrete, dust or any other deleterious material.

Since cured epoxy does not provide adequate bond with any material, all overlay, whether epoxy or cement based, shall be done within pot life of the base epoxy layer.

Containment, such as oil, grease, tar, asphalt, paint, wax, curing compounds or surface impregnates like linseed oil or silicones, including laitance and weak or loose concrete shall be removed. When bonding to asphalt, the surface should be roughened so that clean aggregate is exposed. Epoxy bonding agents shall not be applied when it rains, or in standing water. The surface must be dry.

Two general methods of surface preparation shall be followed:

- a. Mechanical that includes grinding, grit blasting, water blasting and scarification.
- b. Chemical that includes acid etching with 15% by weight of hydrochloric solution, followed by repeated flushing with high pressure stream of water.

### **2.2.3 Application**

SAMPRIME 2 epoxy primer coat shall be applied with the help of stiff nylon bristle brushes or hard rubber rollers or spray gun depending upon the nature of surface and extent of work area. As far as possible, the coating shall be uniformly thick.

Before the primer coat is fully cured, epoxy mortar shall be applied by means of trowels and floats. The interval between the application of primer coat and epoxy mortar shall be approximately 30/45 minutes depending upon the ambient temperature.

Seal coat shall be applied after 24 hours curing, after mild roughening of the surface of the mortar.

## 2.3 SPECIFICATION FOR POLYMER MODIFIED CONCRETE

Polymer modified concrete is to be used in many places where the repair works are to be done to structural members where the thickness of the repair work is sizeable.

### 2.3.1 Pretreatment of the damaged structure

Before applying the polymer concrete, the damaged surface of concrete members shall be chopped off with the help of pneumatic tools only. All the loose cover concrete of the member shall be chipped to remove whatever loose concrete present. The concrete surface shall be made free from oil, grease, dust or any other substance likely to impair good bonding. Acids and corrosive chemicals shall not be used for cleaning. The oil shall be removed by the use of Caustic Soda.

The surface of rusted reinforcement shall be cleaned by wire brushing. The loose rust shall be further blown out with compressed air or water jet. However, the compressed air or water shall not contain oil.

### 2.3.2 Application of polymer modified concrete

The polymer modified concrete shall be mixed in proper order, in proper specification. It shall then be applied to make good, the damaged part of structural members. The mixing shall be carried out in efficient concrete mixer. However, the engineer-in-charge may allow hand mixing in case total weight of mix per batch is less than 50 kgs. In case of hand mixing 10% additional cement shall be mixed by the contractor. The mixer shall be charged with the required quantity of coarse aggregates, fine aggregates, cement and premixing shall be carried out for approximately half a minute.

Required quantity of water shall then be added and further mixing carried shall be carried out for 1 to 1-1/2 minutes to obtain working consistency. Care shall be taken to avoid excessive water.

Rendering cement mortar/ concrete shall be done after applying SAMBOND AR bonding polymer to the prepared surface while the bonding coat is still tacky. After application of mortar/concrete the surface shall be closed using wooden float and steel trowel giving it a smooth finish.

### 2.3.3 Curing

Cement mortar/concrete trowelled surfaces shall be kept continuously wet for at least 7 days.

## 2.4 SPECIFICATION FOR RCC JACKETTING

Preparation of surface and concreting

1. All unsound / weak concrete material is first removed by the contractor upto the required depth as directed by engineer. Chipping is continued until there are no offsets in the cavity, which causes an abrupt change in the thickness of repaired surface. No square

shoulders are left at the perimeter of the cavity and all edges are tapered. The final cut surface is critically examined to make sure that it is sound and properly shaped.

2. After it has been ensured that the surface, to which jacket concrete is to be bonded is sound, holes for required depth and diameter are drilled as per spacing stated. The drilled holes are thoroughly cleaned off loose particles by oil free air blast. Approved epoxy (SAMSEAL EP 1) dipped steel bars of required length shape and diameter are then driven inside the holes to form shear keys, which are allowed to set for 24 hours.
3. The balance of the concrete surface is then cleaned off all loose and foreign materials by means of sand blasting or stiff wire brushing. All dust and loose particles resulting from such pre-treatments are removed by oil free air blast.
4. SAMBOND EP epoxy based bonding agent is applied to the prepared concrete and reinforcement substrate before jacketing after tying new reinforcement, inserts etc. Shuttering is then erected and SAMCRETE MC is poured as soon as possible after application of epoxy bonding coat, but always during open time of adhesive. If necessary, considering 'open time' appropriate concrete depth is decided in advance and subsequent pours continued in sequence by continuation of form work after the application of SAMBOND EP to the further part.

## 2.5 CORRODED REINFORCEMENT

### 2.5.1 Surface preparation

Clean the corroded reinforcement with wire brush (if small patches) or sandblasting. If required use rust remover SAMRUST as per shamrock specification.

### 2.5.2 Application of anticorrosive coating

- ❖ **SAMZINC EP** must be applied directly to ferrous metal structures and there must be intimate contact between the base metal and the particles of zinc. The ferrous metal must therefore be rigorously cleaned before application commences.
- ❖ The best method is to shot-blast the surface or rotary wire brushes and chipping hammers can be used. Flame cleaning is also efficient, provided the primer is applied to the metal within 4 hrs after cleaning whilst the metal itself is still warm.
- ❖ The two components must be thoroughly mixed together ensuring that the zinc particles are completely dispersed.
- ❖ The mixed **SAMZINC EP** is brushed onto the clean metal surface, ensuring that there is a continuous film formation. Particular care must be taken to welds and joints. Where welding is to take place on top of the primer, the weld must be thoroughly wire brushed to remove slag and excess flux before applying a further coat.
- ❖ Apply **SAMZINC EP** anticorrosion coating on cleaned reinforcement.

Note:

Addition of reinforcing steel by welding and binding with wire and/or anchoring with SAMSEAL EP 1 where the corrosion had progressed to the extent that less than 70 % of the original area of steel is available.

### 3. PROTECTIVE SURFACE COATING

#### 3.1 SPECIFICATION FOR EPOXY COATING

SAMCOAT EP is a two pack system consists of base and catalyst. These shall be mixed thoroughly in the specified proportion as per **samrock** specification. The mixing done be using an electrically operated mixing device, or rod. The paint shall be thinned if necessary to achieve a spraying viscosity of 100/120 secs. Viscosity is to be checked for every batch with standard viscosity cup known as Ford cup No. 4 or cup No. 4 of IS: 3944 shall also be similarly mixed if necessary to form a semi solid paste, to a consistency for ease of application with a putty blade (made of thin MS/GI/Copper sheet.)

##### 3.1.1 Surface Preparation

Generally all surfaces to be painted shall be wire brushed, cleaned of oil grease and other foreign matters. If the surface is oily, a detergent wash shall be applied on surface where vinyl and epoxy paints are not applied. The surfaces shall then be rubbed with emery paper and the dust removed thoroughly with clean cotton cloth. Special surfaces like concrete, plaster, etc. shall be in addition treated differently as explained below.

a. Concrete Surface

Air water jet at a pressure of 7 kg per sq.cm shall be forced through a nozzle having a tip with an orifice of 1.5 c., if the pressure shall be increased and all the laitance shall be completely washed out. The surfaces shall then be allowed to dry for 48 hours. The pin holes exposed due to air water jet shall then be given a sack rub finish with cement fine sand and all excess cement shall be removed with clean cloth. Any imperfections, bulgings noticed in the concrete surfaces, shall be ground chipped and made good prior to sack rub finish.

b. Plaster surfaces

The surface shall be wire brushed, rubbed with sand paper/emery paper clean and free of all oil, grease, efflorescence, mildew, loose paint and other foreign and loose materials. Plaster cracks shall be cleaned, patch filled with mortar similar to original surface and conforming texture. Where this type of resurfacing may lead to the finishing paint being different in shade from the original surfaces, the resurfaced areas shall be treated with a coat of cement primer covering the area. Surface with mildew or efflorescence shall be treated with an approved fungicide viz. Ammonia wash consisting of 7 gms of copper carbonated dissolved in 8 ml of liquid ammonia and diluted to one liter with water or 2.5 % Magnesium-Silica-Fluoride solutions and allowed to dry thoroughly before paint is applied. Efflorescence shall be removed by scrubbing and treating the affected area with a solution of 30% strength Musiac acid in water (1:6) and washed fully with clean water and allowed to dry thoroughly.

### 3.1.2 Application of Paint (Epoxy protective coating)

SAMCOAT EP has to be applied in accordance with **samrock** instructions in four to five coats to give a total dry film thickness of 6 to 8 mils as instructed by the Engineer before painting is commences an sample panel shall be finished to the approval of the Engineer and finished work shall be as per this approved sample. SAMCOAT EP shall not be done under dusty condition or when the temperature is lower than 18 degrees or while the system is curing. Precautions must be taken to provide adequate ventilation during application and curing of SAMCOAT EP.

SAMCOAT EP shall be applied with epoxy rollor. The rollor shall be dipped into the solution and wrung with the fingers and be rubbed hard on the surface. In this way, first coat shall be given after the previous coat is dried up, the successive coat shall be given in the same fashion surface shall have a uniform texture. Dull polish if specified in the schedule shall be left dull.

### 3.2 SPECIFICATION FOR PROTECTIVE COATING

**SAMBOND S** is a single component. It is aliphatic acrylate, solvent based protective coating, providing outstanding resistance UV light and rain. It protects atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, sulphates, oxygen and water. It is also suitable for use in aggressive marine and coastal environments.

#### 3.2.1 SURFACE PREPARATION

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### 3.2.2 APPLICATION OF COATING

- Apply the primer – **SILICON IMPREGNATION S-4**, based on a silone/siloxane blend, reactive and capable of producing chemically bound hydrophobic barrier.
- **SAMBOND S** should be stirred thoroughly before use.
- **SAMBOND S** may be applied two coats by use of suitable brushes or rollers on primed substrate.
- Apply two coat with wet film thickness not less than 175 micron, keeping and interval of 5 hours in between.



**samrock**  
chemical (i) ltd.

# SPECIFICATIONS FOR PRODUCTS



302, Chanakya, Near Dinesh Hall, Ashram road, Ahmedabad – 380 009. (India)  
Phones: 0091-79-26581419, 26580865 Fax: 0091 – 79 – 26581845,26580062 email : samrock@vsnl.net

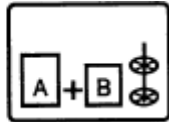




**samrock**  
chemical (i) ltd.

# SAMZINC<sup>®</sup> EP

Zinc Rich Anti-Corrosive  
Epoxy Primer



## Description:

- **SAMZINC<sup>®</sup> EP** is a two pack zinc rich epoxy priming product for ferrous metal structures. It is based on epoxy resin and when cured possesses excellent anti-corrosive and adhesive properties. The cured film consists of about 90% metallic zinc, which gives sacrificial protection to the ferrous metal in the event of break occurring in the film. **SAMZINC<sup>®</sup> EP** is delivered in pre-measured proportions of base and hardener. It replaces ordinary zinc rich coating product, hot dip galvanising and metal spraying, giving first class protection to the metal substrate.

## Advantages:

- The high chemical resistance and adhesion of epoxy resins is combined with the sacrificial protection obtained from zinc particles to provide a priming coat suitable for application to ferrous metal surfaces under conditions of severe corrosion.
- It is used as a primer for chemical resistant surface finishes based on polyurethane, epoxy and chlorinated rubber resins.

## Method of Use:

- **SAMZINC<sup>®</sup> EP** must be applied directly to ferrous metal structures and there must be intimate contact between the base metal and the particles of zinc. The ferrous metal must therefore be rigorously cleaned before application commences.
- The best method is to shot-blast the surface or rotary wire brushes and chipping hammers can be used. Flame cleaning is also efficient, provided the primer is applied to the metal within 4 hrs after cleaning whilst the metal itself is still warm.
- The two components must be thoroughly mixed together ensuring that the zinc particles are completely dispersed.
- The mixed **SAMZINC<sup>®</sup> EP** is brushed onto the clean metal surface, ensuring that there is a continuous film formation. Particular care must be taken to welds and joints. Where welding is to take place on top of the primer, the weld must be thoroughly wire brushed to remove slag and excess flux before applying a further coat.

## PRODUCT DATA:

### Form:

Part I – Liquid  
Part II - Liquid

### Base:

Epoxy Resin

### Colour:

Silver, Grey

### Coverage/ Consumption:

5-7 sq. m / kg for single coat application (DFT 25 micron for single coat application)

### Pot life:

45 minutes at 20°C after mixing  
30 minutes at 30°C after mixing

### Ratio:

Part I – 0.666 kg  
Part II – 0.334 kg

### Storage:

Shelf life 12 months at 25°C

### Safety:

Non-flammable, Use gloves, goggles and protective clothings.

### Packing:

5 kg and 1 kg tin packing





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(2)

## 2 SAMZINC® EP

### Recommended application:

- Coating of steel structures, leg supports and structural framework exposed to corrosive atmosphere.
- Coating of pipelines, ducts, pipe racks etc. to provide protection against corrosive atmosphere.
- Structural members (like beams, columns), machinery foundations etc. exposed to corrosive atmosphere.
- Includes structural steel work, chemical processing plants, machinery, internal and external tank surfaces and all iron and steel structures where long term protection is essential.

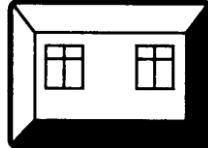
**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**



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chemical (i) ltd.

# SAMBOND® AR

Concrete Bonding Agent and  
Acrylic Emulsion Cement Modifier



## Description:

- **SAMBOND® AR** is a powerful concrete bonding agent recommended for use as a primer for cementitious repair systems.
- **SAMBOND® AR** is a brushable primer for use on concrete. It can also be used in mortar mixes designed for patching and repair jobs. And can be used for old to new concrete jointing compounds.

## Advantages:

- Provides excellent bond to concrete, masonry, stone-work, plaster and boards.
- Improves tensile and compressive strength.
- Aid curing – use as a curing membrane.
- Reduces water loss and good hydration.
- Retains bond strengths for longer time thereby permitting longer intervals between primer application and repair job

## Method of Use:

- **Priming:** Damp the concrete substrate and apply **SAMBOND® AR** on the surface by brush. Apply repair mortar / topping while the substrate surface is still tacky.
- **Directly into mortar/ plaster mix:** Add **SAMBOND® AR** (0.5 kg to 1.0 kg per 50 kg of cement) in water and stir. Slowly add water to dry mix while mixing. Apply mortar/ plaster mix as usual.
- **For old to new concrete jointing:** Add 1 kg **SAMBOND® AR** into 1 litre of water. Stir well. Add cement to this solution to make cement slurry. Apply this slurry on old concrete surface and immediately cast new concrete.

## Recommended application:

Use as a “PRIMER” for application during repairs of:

- Concrete substrates \* Masonry work
- Plaster patching and repairs \* Block boards
- Concrete Construction Joints \* Stone work

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN  
CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

## PRODUCT DATA:

**Form:** Liquid

**Specific Gravity:**  
1.044 at 25°C

## Strength:

N/mm <sup>2</sup>	Curing Conditions	Control SAMBOND AR	
		N/mm <sup>2</sup>	
Compressive	Dry	35	40
	wet	30	30

**Colour:** White

## Storage:

Shelf life 6 months at 25°C

## Safety:

Non-toxic and non-flammable

## Packing:

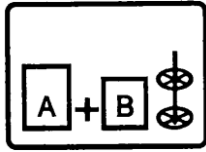
50 kg, 30 kg, 5 kg carboy and 1 kg bottle



**samrock**  
chemical (i) ltd.

# SAMBOND<sup>®</sup> EP

Solvent free epoxy resin  
old to New concrete bonding agent



## Description:

- **SAMBOND<sup>®</sup> EP** a solvent - free epoxy resin concrete bonding agent available in two components.

## Advantages:

- Bonds new cementitious materials to existing (old) cementitious surface.
- Offers excellent adhesive strength to concrete.

➤ <b>Properties:</b>	At 20°C	At 35°C
Full hardness	48 hrs	48 hrs
Full cure time	7 days	7 days

➤ <b>Strength:</b>	Compressive	50 N/mm <sup>2</sup>	Tensile	20 N/mm <sup>2</sup>
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## Method of Use:

- Pour the entire content of hardener into the resin container.
- Mix the two materials thoroughly until a uniform colour is obtained.
- Mixed **SAMBOND<sup>®</sup> EP** should be brushed to the prepared surface.
- Apply new concrete within 16 hrs at 20°C and within 6 hrs at 35°C to the **SAMBOND<sup>®</sup> EP** coated substrate.

## Recommended application:

- For bonding new cementitious materials to existing cementitious surface
- Horizontal and vertical surfaces where mortar or concrete can be supported by form work.
- For repairs and extensions to structural concrete in factories, loading bays, bridges, roads, bonded or granolithic floor toppings etc..

## PRODUCT DATA:

### Form:

Part I - Paste  
Part II - Liquid

### Base:

Solvent free epoxy resin

**Colour:** Green (when mixed)

### Coverage/Consumption:

2.2 sq. m per kg depending on the substrate

### Pot Life:

5-6 hrs at 20°C, 2-3 hrs at 35°C

### Ratio:

Part I – 0.645 kg  
Part II – 0.355 kg

### Storage:

Shelf life 12 months at 25°C

### Safety:

Use gloves, In flammable

### Packing:

6 kg and 1 kg tin packing

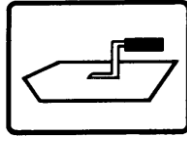
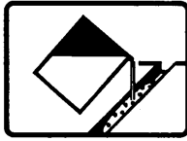
**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN  
CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**



**samrock**  
chemical (i) ltd.

# SAMCRETE<sup>®</sup> EP 1/2/3

Solvent Free, Free Flow, Non Shrink  
Epoxy Resin Grouts



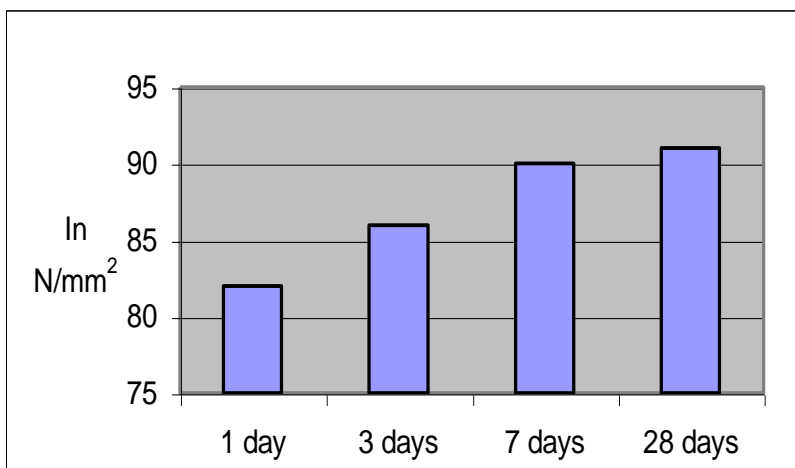
- SAMCRETE<sup>®</sup> EP 1&2 are available in three pack systems – base, hardener and filler.
- SAMCRETE<sup>®</sup> EP3 is two pack systems base and hardener.

## Advantages:

- High flexural strength and adhesion substrate ensures excellent performance under dynamic operating conditions.
- For rapid installation and strength gain.
- Minimum creep and commissioning of plant.
- Useful, where mechanical properties and chemicals resistance, to a wide range of chemicals, acids and alkalies are required
- Resistant to water and frost.

## Mechanical Properties:

- Grain size 0.5 mm
- Mixing time 5 min.
- **Compressive strength**



- Bond Stress after 24 hours = 13 N/mm<sup>2</sup>  
after 7 days = 14 N/mm<sup>2</sup>

## PRODUCT DATA:

**Form:** Grains & Liquid

**Base:** Epoxy Resin

**Bulk Density:** 2100 kg/m<sup>3</sup>

**Chloride content:** Nil

**Colour:** Dark Brown

**Smell:** - Mild

## Coverage/Consumption:

Gives 8 litres volume (when all 16 kg contents are mixed)

**Pot life:** 25 to 40 min.

**Curing:** 3 days (minimum)

## Caution:

For steel base plates, coat of SAMZINC EP should be applied as a primer to prevent rust formation and ensuring bonding with SAMCRETE<sup>®</sup> EP 1,2.

## Storage:

Shelf life 12 months 20°C

## Safety:

Wear goggles and gloves.

## Range:

- 1) SAMCRETE<sup>®</sup> EP 1: for gap width 10-40 mm
- 2) SAMCRETE<sup>®</sup> EP 2: for gap width 35- 70 mm
- 3) SAMCRETE<sup>®</sup> EP 3: for gap width and static joints 0.25 to 10 mm.

**Packing:** 16 kg pack



## **SAMCRETE® EP 1 / 2 / 3**

(2)

### **Method of Use:**

### **2.1 Surface Preparation**

- Clean the substrate surface of oil, grease, laitence, adherent material etc..
- Wash all substrate with clean water and dry.
- For under plate grouting the gap between the perimeter form work and the plate edge should not exceed 150 mm on the pouring side and 50 mm on the opposite side.

### **Mix Preparation**

- Pour entire contents of hardener into base container
- Mix until homogenous.
- Place the mixer into force action mixer.
- Add the aggregate (EP 1 and EP 2) and mix for 2-3 minutes until uniform colour is achieved.

### **Recommended application:**

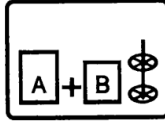
**SAMCRETE® EP 1/ 2** is recommended for the following applications:

- For support beneath crane and transporter rails.
- For high speed turbines and centrifuges, drop forges.
- For reciprocating machinery and other operating or test equipment subject to heavy dynamic or mobile loads.

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

# SAMPRIME 2

## Chemicals Resistant Concrete Surface Primer Coating



### Description:

- **SAMPRIME 2** is an epoxy resin based chemical resistant concrete surface primer coating available in two liquid components as **SAMPRIME 2 PART-I** and **SAMPRIME 2 PART-II**.

### Advantages:

- Provides excellent bonding in between base substrate and epoxy coating/screeding.
- Coating film is thin but flexible with excellent adhesion to concrete, mortar and screed.
- Coating film eliminates porous in concrete surface.

### Properties:

- Dry film thickness        30 microns
- Initial Hardness         24 hours
- Full Curing                7 days

### Method of Use:

- Add the entire contents of the hardner to the base. Mix until an even colour is obtained.
- **SAMPRIME 2** should be immediately applied in a thin continuous film using stiff brushes/ rollers.
- Porous concrete or mortar may require two coats of **SAMPRIME 2**

### Recommended application:

- For strong bonding between concrete and epoxy coating/ screeding.
- For better sealing of concrete screed surface.

### PRODUCT DATA:

#### Form:

Part I - Liquid  
Part II - Liquid

**Base:** Epoxy Resin

**Colour:** Brown

#### Coverage /Consumption:

4.5 to 5.0 sq. m. per kg

#### Pot life:

60 minutes at 20°C

#### Ratio:

Part I – 3.385 kg  
Part II – 1.615 kg

#### Storage:

Shelf life 12 months at 35°C

#### Safety:

Use gloves, goggles

#### Packing:

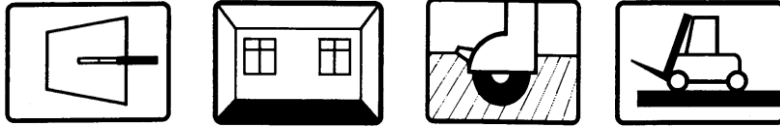
5 kg and 1 kg tin

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**



# SAMMOR<sup>®</sup> E

## Solvent Free, Epoxy Mortar for Repairs



### Description:

- **SAMMOR<sup>®</sup> E** is a blend of silica aggregates bonded together with epoxy resin, designed for speedy and permanent repair to concrete.

### Advantages:

- Early initial hardness, minimising maintenance disruption.
- Provides chemicals resistance to a wide range of acids, alkalis and industrial chemicals.
- Excellent resistance to abrasion and impact – 3 to 4 times stronger than typical concrete.
- Cured surface is impermeable to water.

### Properties:

- **Initial hardness:** 24 hrs
- **Full Cure:** 7 days
- **Chemicals resistance:** Citric acid 10%, Sodium hydroxide 50%, Phosphoric acid 50%, Sulphuric acid 10%, Butanol, Xylene, Salt solution, Car oil, Bleach, White spirit, Hydrochloric acid 50%, Nitric acid 25%.

### Method of Use:

- To produce a trowelable mortar, mix entire quantity of **SAMMOR<sup>®</sup> E**. Apply the prepared mix with a steel trowel and press firmly into primed cracks/surface to ensure positive adhesion.

### Recommended application:

- For spilled or cracked concrete structures
- Bedding of pre-cast concrete beams.
- Repair of concrete structures of acid tanks, sea walls, industrial floors in plating shops, chemical handling and process areas

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

### PRODUCT DATA:

#### Form:

Part I & II - Liquid  
Part III – Grains

**Base:** Epoxy Resin

**Colour:** Brown

#### Coverage/Consumption:

gives 8 litres volume (when all 16.610 kg contents are mixed)

#### Pot life:

45 minutes at 20°C  
30 minutes at 35°C

#### Ratio:

Part – I - 2.316 kg  
Part – II - 0.294 kg  
Part – III - 14.000 kg

#### Strength:

	<u>SAMMOR-E Typical Concrete</u>	
	<u>N/mm<sup>2</sup></u>	<u>N/mm<sup>2</sup></u>
Compressive	44	20

**Dry time:** 8 hrs

**Curing:** 3 days (minimum)

#### Storage:

Shelf life 12 months 25°C

#### Safety:

Wear goggles and gloves.  
In flammable

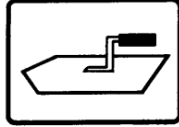
**Packing:** 16.610 kg pack





# SAMCRETE<sup>®</sup> GPM1

## High Performance Polymer Cementitious Mortar



### Description:

- **SAMCRETE<sup>®</sup> GPM1** is a two parts system, part I – mortar is a design mix of portland cement graded fillers, and part II – chosen chemical additives to impart strength, and compensate dual shrinkage, ensures effective contact and support.

### General Specifications:

- Grain size 0 - 3 mm
- Water content (%) 13-15
- Yield (50 kg dry mortar) 25 litres slurry

### Advantages:

- Develop exceptionally high ultimate strength combined with dense impermeable structure.
- Provide trouble free performance.
- No metallic iron content to corrode and cause staining or deterioration due to rust expansion – non-rusting. This mortar also imparts high frost, fire and oil resistance.

### Method of Use:

- Required quantity of water is 4.1 litres per bag of 30 kg of mortar, mix with part II and pour entire mixture to Part I – dry mortar, mix for minimum 3 minutes.

### General Instruction

#### Surface Preparation

- Clean the concrete base (like bolt pocket) of dirt, debris, oil and grease etc.
- Wet the surface thoroughly
- Remove all excess and free water.

### Curing:

- Start immediately after 6 hours from the time of placement.
- 7 days (Minimum) by ponding water or with wet Hessian cloth

The special grade of SAMCRETE<sup>®</sup> GPM1 can also be designed to suit specific needs of special applications

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

### PRODUCT DATA:

#### Form:

Part I – Powder-grain mix (Fillers)  
Part II – Liquid

**Base:** Cementitious

#### Compressive Strength:

3 days: 20.0 N/mm<sup>2</sup>  
7 days: 27.5 N/mm<sup>2</sup>  
28 days: 35.0 N/mm<sup>2</sup>

**Flexural Strength:** 11 N/mm<sup>2</sup>

**Permeability:** 9.8 %  
compared with control

**Bulk Density:** 2170 (kg/m<sup>3</sup>)

#### Chloride content:

Nil (Chloride free)

**Colour:** Grey

#### Caution:

Restrict mixing to quantities, which can be placed in 10 to 15 minutes.

#### Ratio:

Part I – 30 kg  
Part II – 200 ml

**Storage:** In dry and closed place

#### Safety:

Non toxic and non-flammable

#### Packing:

Part I – 30 kg HDPE bags  
Part II – 200 ml bottle,  
6 litres carboy



# SAMCRETE MC

**General Purpose, Non Shrink- Free – Flow cementitious microconcrete**



### Description:

**SAMCRETE MC** is a ready – to – use dry powder requiring only the addition of water. It produces a high strength micro concrete with free flow and non – shrink property. The material is a mixture of specially processed cement and carefully graded fine aggregate. Additives impart controlled expansion characteristics and reduce water. The very low water / cement ratio ensures high early and ultimate strengths.

### General Specifications:

	<b>SAMCRETE MC</b>
➤ Grain size	0 - 3 mm
Water content (%)	15-19
Linear expansion (Max):	(%)
Free	0.20
Restrained	0.12
Yield	25 litres
(50 kg dry SAMCRETE MC)	slurry

### Advantages:

- Gaseous expansion system compensates for shrinkage problems and maintains its original volume during curing.
- Control expansion ensures surface contact after setting.
- Develop exceptionally high ultimate strength combined with dense impermeable structure.
- Provide trouble free performance.
- Facilitates rapid installation and early operation of plant.
- No metallic iron content to corrode and cause staining or deterioration due to rust expansion – non-rusting. SAMCRETE MC also impart high frost, fire and oil resistance.

### Method of Use:

- Mix dry SAMCRETE MC with recommended quantity of water for minimum 3 minutes.  
Water quantity per bag of 30 kg of SAMCRETE MC

Flowable	5.4 litres
Trowable	5.0 litres

### SAMCRETE MC

### PRODUCT DATA:

#### Form:

Powder-grain mix (Fillers)

#### Base:

Cementitious

#### Bulk Density:

2170 (kg/m<sup>3</sup>)

#### Controlled Expansion

<b>Commences</b>	<b>Finishes</b>
20 min	150 min

#### Compressive Strength

( kg/cm<sup>2</sup> ) :

**W/P 0.18 at 30°C, flowable**

<b>1</b>	<b>3</b>	<b>7</b>	<b>28</b>
<b>day</b>	<b>days</b>	<b>days</b>	<b>days</b>
<b>100</b>	<b>280</b>	<b>350</b>	<b>490</b>

#### Chloride content:

Nil

#### Colour: Grey

#### Curing:

7 days (Minimum)

#### Caution:

Restrict mixing to quantities, which can be placed in 10 to 15 minutes.

#### Storage:

In dry and close place.

#### Safety:

Non toxic and non-flammable.

#### Packing:

30 kg HDPE bags.



(2)

## **General Instruction**

### **Surface Preparation**

- Clean the concrete base (like bolt pocket) of dirt, debris, oil and grease etc.
- Wet the surface thoroughly
- Remove all excess and free water.

### **Placement**

- Place or pour micro concrete mix quickly and continuous through holes or from one side only
- Spread and compact by rodding, only if required
- Do not place or pour micro concrete from two or more sides for good ensured quality

### **Curing**

- Curing should be started immediately after 6 hours from the time of placements of SAMCRETE MC
- Cure for minimum seven days by ponding water or with wet hessian cloth
- Cover top and stray holes/openings of restraint formwork with wet sacks for minimum seven days.

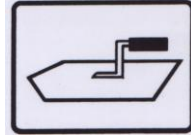
### **Recommended application:**

- Rehabilitation of load bearing components like beam, columns etc
- Repair of marine structures, water

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

# SAMWAL PL

## Ready Mix Polymer Plaster



### Description:

- **SAMWAL PL** is a ready – to – use dry powder requiring only the addition of water. It produces a high strength mortar with non – shrink property. The material is a mixture of specially processed cement and carefully graded fine aggregate. Additives impart high water retaining properties and adhesion to substrate. The very low water / cement ratio ensures high early and ultimate strengths.

### Advantages:

- It gives very high strength – nearly three times harder than the normal mortar.
- Ensures effective bonding and eliminates shrinkage problems associated with conventional cement concrete / mortars.
- Provides a uniform micro cellular material structure and smooth dust – free finish.
- No metallic iron content to corrode and cause staining or deterioration due to rust expansion.

### Method of Use:

- Clean the base by removing dust, loose particles grease, paint and traces of foreign material.
- Dampen dry concrete/rendered surfaces whenever necessary before application of SAMWAL PL.
- Add SAMWAL PL to mixing bucket containing clean potable water.
- Mix until an even homogenous mortar is obtained and allow the mixture to stand for 10 minutes, for additives to dissolve.
- Mix again and paste is ready to use
- Trowel firmly into all edges first and over the entire area.
- SAMWAL PL must be cured immediately as soon as the surface slightly stiffens, for a minimum period of 72 hours.

### Recommended application:

- For plastering on interior and exterior wall.
- Plastering on ceiling.
- For patching and replacement of work areas.
- Filling of holes or depressions in concrete floor slabs in factories, godowns, commercial or domestic buildings etc.

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

### PRODUCT DATA:

**Form:** Powder

**Base:**  
Cement

**Colour:** Grey

**Dosage / Consumption:**  
8-9 litre water/25kgs SAMWAL PL

### Mechanical Properties:

Materials Consist - ency	Temper - ature	Water / powder	Adhesion (N / mm <sup>2</sup> )
Mortar Mix	7° C	.32	.5

**Pot life:**  
2 hours

**Storage:**  
Shelf life 12 months at 25°C

**Safety:**  
Non-toxic

**Caution:**  
**SAMWAL PL** plaster should be stored in dry and closed space.

**Packing:**  
30 kg HDPE bag



# SAMBOND® AE

Concrete Bonding Agent and  
Synthetic Emulsion Cement Modifier (SBR)



## Description:

- **SAMBOND® AE** is a powerful concrete bonding agent recommended for use as a primer for cementitious repair systems.
- **SAMBOND® AE** is a brushable primer for use on concrete. It can also be used in mortar mixes designed for patching and repair jobs. And can be used for old to new concrete jointing compounds.

## Advantages:

- Provides excellent bond to concrete, masonry, stone-work, plaster and boards.
- Improves tensile and compressive strength.
- Aid curing – use as a curing membrane.
- Reduces water loss and good hydration.
- Retains bond strengths for longer time thereby permitting longer intervals between primer application and repair job

## Method of Use:

- **Priming:** Damp the concrete substrate and apply **SAMBOND® AE** on the surface by brush. Apply repair mortar / topping while the substrate surface is steel tacky.
- **Directly into mortar/ plaster mix:** Add **SAMBOND® AE** (4% per 50 kg of cement) in water and stir. Slowly add water to dry mix while mixing. Apply mortar/ plaster mix as usual.
- **For old to new concrete jointing:** Add 1 kg **SAMBOND® AE** into 1 litre of water. Stir well. Add cement to this solution to make cement slurry. Apply this slurry on old concrete surface and immediately cast new concrete.

## Recommended application:

Use as a “PRIMER” for application during repairs of:

- Concrete substrates \* Masonry work
- Plaster patching and repairs \* Block boards
- Concrete Construction Joints \* Stone work

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

## PRODUCT DATA:

**Form:** Liquid

**Specific Gravity:**  
1.010 at 25°C

### Strength:

Curing Control Conditions		SAMBOND AE	
		N/mm <sup>2</sup>	
<u>N/mm<sup>2</sup></u>			
Compressive (BS:6319)	Dry	35	40
	wet	30	30

**Colour:** White

### Storage:

Shelf life 6 months at 25°C

### Safety:

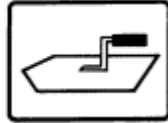
Non-toxic and non-flammable

### Packing:

50 kg, 30 kg, 5 kg carboy and 1 kg bottle

# SAMCRETE<sup>®</sup> 225

Plasticized Expanding Grout Admixture



## Description:

- **SAMCRETE<sup>®</sup> 225** is a plasticised grout admixture.

## Advantages:

- **SAMCRETE<sup>®</sup> 225** has expanding properties, ensures permanent contact and high bond to entire grouted surfaces.
- Plasticising effect facilitates placement and injection.
- Assists production of grouts free from water pockets and bleeding.
- Resistance to frost and fire damages.
- No metallic iron content to corrode and cause staining or deterioration due to rust expansion in the grout.

## Method of Use:

For Grout Mixes

- Place exact amount of specified water in a power operated grout mixer.
- Whilst mixing continuously, slowly add neat cement mix to the water. At the same time sprinkle **SAMCRETE<sup>®</sup> 225**.
- Mix complete grout for 3 – 5 minutes until thorough dispersion is achieved.
- After that, pass all grout through a 5mm sieve to remove lumps.

## *For Mortar or Concrete Filling Mixes*

- Place water and sand in the mixer.
- Whilst mixing continuously, add **SAMCRETE<sup>®</sup> 225** slowly.
- After mixing thoroughly, add the cement and continue mixing for 3 – 5 minutes.

## Recommended Applications

- Bed grouting, duct grouting, non – shrink in-filling and jointing.
- Pressure grouting for tunnels and shaft lining.

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

## PRODUCT DATA:

**Form:** Powder

**UNRESTRAINED EXPANSION:** 1 – 4%

**Base:** Cement

## Dosages

1 pouch of 225 gms / 50 kg bag of cement

## Storage

Shelf life 12 months, if in closed bags

## Safety

Wear protective gloves.

## Packing:

225 gm packs



# SAMSEAL<sup>®</sup> EP

## Chemical Resistant Sealing Products



### Description:

- SAMSEAL<sup>®</sup> EP is an epoxy resin based chemical resistant versatile sealing product available in putty form as SAMSEAL<sup>®</sup> EP Part I and SAMSEAL<sup>®</sup> EP Part II.

### Advantages:

- Provides excellent chemical resistance to a wide range of industrial chemicals and gases.
- Sealed membrane is hard with excellent adhesion to all types of metal and cement based surfaces.
- Sealed membrane is hard-wearing, hygienic, and yet attractive in cosmetic finish.

### Method of Use:

- Mix required quantities of SAMSEAL<sup>®</sup> EP Part I and SAMSEAL<sup>®</sup> EP Part II in equal proportion and kneed till it becomes homogeneous
- Fill the resultant paste into the dry gaps or dry surfaces where required. Use the mix immediately, as it sets to a hard mass within 4-6 hours.

### Recommended application:

- Repairing of broken floors, fixing tiles and nails, building-up broken/chipped parts
- Repairing leaking MS or RCC tanks, over-head flush-tanks, metal buckets etc..
- Patching corroded casings of water coolers, air-conditioners, refrigerators etc..
- Joining broken or building-up chipped parts of household items like chinaware, pressure-cooker handles etc..
- Holding the glass of window, filling gaps between the frame and wall etc.
- Sealing leakage through cracks or joints in tin or AC roof sheets
- Filling gaps in wooden furniture to prevent wobbling.
- Sealing leakage in the radiator, diesel or petrol tanks.
- Making-up dents in metal surfaces of automobiles before painting
- Sealing leakage of pipelines, tap connections etc..
- Sealing loose electric connections as an insulating medium

CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE

### PRODUCT DATA:

#### Form:

Part I - Putty  
Part II - Putty

#### Base:

Epoxy Resin

#### Pot Life:

4-6 hrs @ 30 ° C

#### Ratio:

In equal proportion

#### Colour:

Brown-Grey

#### Storage:

Shelf life 12 months at 25°C

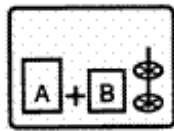
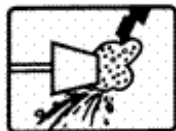
#### Packing:

5 kg and 1 kg of box packing



# SAMSEAL<sup>®</sup> EP 1

## Chemical Resistant Sealing Products



### Description:

SAMSEAL<sup>®</sup> EP 1s an epoxy resin based chemical resistant versatile sealing product available in paste form as SAMSEAL<sup>®</sup> EP 1 Part I and SAMSEAL<sup>®</sup> EP 1 Part II.

### Advantages:

Provides excellent chemical resistance to a wide range of industrial chemicals and gases  
Sealed membrane is hard with excellent adhesion to all types of metal and cement based surfaces.  
Sealed membrane is hard-wearing, hygienic, and yet attractive in cosmetic finish.

### Method of Use:

Mix required quantities of SAMSEAL<sup>®</sup> EP1 Part I and SAMSEAL<sup>®</sup> EP1 Part II in equal proportion and mix till it becomes homogeneous  
Fill the resultant paste into the dry gaps or dry surfaces where required.  
Use the mix immediately, as it sets to a hard mass within 60 minutes (minimum).

### Recommended application:

Repairing of broken floors, fixing tiles, dowel pins and nails, building-up broken/chipped parts  
Repairing leaking MS or RCC tanks, over-head flush-tanks, metal buckets etc..  
Patching corroded casings of water coolers, air-conditioners, refrigerators etc..  
Joining broken or building-up chipped parts of household items like chinaware, pressure-cooker handles etc..  
Holding the glass of window, filling gaps between the frame and wall etc  
Sealing of construction joints in RCC members  
Sealing leakage through cracks or joints in tin or AC roof sheets  
Filling gaps in wooden furniture to prevent wobbling  
Sealing leakage in the radiator, diesel or petrol tanks  
Making-up dents in metal surfaces of automobiles before painting  
Sealing leakage of pipelines, tap connections etc..  
Sealing loose electric connections as an insulating medium

CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE

### PRODUCT DATA:

#### Form:

Part I - Paste  
Part II – Paste

#### Base:

Epoxy Resin

#### Colour:

Brown-Grey, White

**Bulk Density** – 1.423 kg/litre

#### Pot Life:

Mini. 60 minutes @ 30 ° C

#### Ratio:

In equal proportion

#### Storage:

Shelf life 12 months at 25°C

#### Packing:

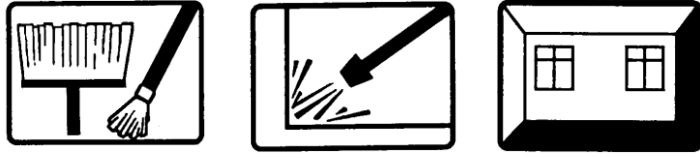
5 kg and 1 kg packing





# SAMBOND<sup>®</sup> CF

## Non Shrink Flexible Crack Filler



### Description:

- **SAMBOND<sup>®</sup> CF** is a one component (Ready to use), flexible crack filling compound recommended for repair in concrete.

### Advantages:

- Easy to fill cracks of Masonry wall, beams, columns and concrete structure
- Resist development of further crack due to minor movements

### Method of Use:

- Make 3 to 5 mm wide and maximum 10 mm deep groove along the crack with cutting machine.
- Clean it with blower.
- Fill the crack with SAMBOND CF

### Recommended application:

Use as crack filler in concrete structures:

- Concrete substrates
- Masonry work
- Plaster patching and repairs
- Stone work

### PRODUCT DATA:

**Form:** Liquid

**Colour:** White

**Setting time:**

Initial setting: 1 hr @ 25<sup>o</sup> C

Final setting: 6 hr @ 25<sup>o</sup> C

**Storage:**

Shelf life 6 months at 25°C

**Safety:**

Non-toxic and non-flammable

**Packing:**

50 kg, 30 kg, 5 kg carboy and 1 kg bottle

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

# SILICON IMPREGNATION S 4



## Description:

- SILICON IMPREGNATION S 4 is an optimal constructed impregnation for facades with extremely high alkali-resistance and long time duration.
- SILICON IMPREGNATION S 4 is a solvent-containing, one-component impregnation based on oligomer siloxane

## Method of Use:

- Substrate shall be dry. Fresh concrete can be treated even 24 hours after dismantling of form work, but it should be regarded that the penetration –depth of SILICON IMPREGNATION S 4 gets higher with the dryness of substrate.
- Cracks and tears with a size above 0,3 mm must be levelled out before treating. Old facades must be cleaned from moss, braids and dirt.
- Prefabricated parts as well as building blocks or roof-tiles can be impregnated by brush, spray or immersion.
- Concrete can be impregnated even 24 hours after dismantling the formwork SILICON IMPREGNATION S 4.

## Processing

- SILICON IMPREGNATION S 4 is best applied by spraying. The mouth of the spraying gun is to hold approximately 10 cm in front of the façade and let there while spraying as long as the solution is not longer absorbed by the façade and is running down. By taking a low spraying – pressure the atomization of the solution can be prevented. Smaller areas can also be treated with a brush.
- Processing temperature: above +5°C air-and substrate-temperature.

## Recommended application:

- Exposed concrete, exposed aggregate concrete, gas-concrete, fresh asbestos cement, natural stones, artificial stones, all sorts of mineral plaster, faced brickwork, clinker.
- As a primer for cement paint, artificial resin paint and dispersion paint.

## PRODUCT DATA:

### Form:

Liquid

### Density:

Approx. 0. 8 g/cm<sup>3</sup>

### Viscosity:

Approx. 120 sec.

### Coverage/ Consumption:

0.1 – 0.5 kg/m<sup>2</sup>  
depending on the substrate

### Colour:

Colourless

### Storage:

App 12 months

### Safety:

Contains: inflammable solvents, while processing take care for the prohibition of smoking and working with open light sources  
Wear gloves to avoid skin contact

### Packing:

30 litres, 50 litres



## SILICON IMPREGNATION S 4

### Advantages:

#### Humidity-protection

- With SILICONIMPREGNATION S 4 the greater part of salt-blooming, frost damages, humid walls, erosion and other damages, which are caused by humidity into brickwork, can be avoided.

#### Clean facades:

- A new or fresh cleaned facade, which has been impregnated with SILICONIMPREGNATION S 4 keeps longer dry and clean.
- The siloxane-effect prevents penetration of dust in the façade. Mould fungus and moss are prevented for a long time.

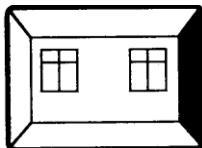
#### Less costs for heating:

- In many buildings a lot of heating energy gets lost through the walls. By absorption of humidity in the brickwork from outside the cladding against loss of heat gets even worse.
- The saving of heat-costs by doing an impregnation of the façade with SILICONIMPREGNATION S 4 is based on the low absorption of humidity of the outer wall. This lowers the conductivity of heat of the outer wall, the inner walls reach higher temperatures and a condensation on the inner walls can be avoided.
- With SILICONIMPREGNATION S 4 impregnated facades stay permeable for water vapour and breathable.

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

# SAMBOND S

High Performance aliphatic acrylate- based protective and decorative coating for concrete and masonry



## Description:

- **SAMBOND S** is a single component. It is aliphatic acrylate, solvent based protective coating, providing outstanding resistance UV light and rain. It protects atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, sulphates, oxygen and water. It is also suitable for use in aggressive marine and coastal environments.

## Advantages:

- Excellent barrier to carbon dioxide, chloride ions, sulphates, oxygen and water.
- Allows water vapour to escape from the structure.
- Highly UV resistant aliphatic acrylate gives exceptional resistance to the effects of long term weathering.
- Highly durable in all climatic conditions.
- Selected range of decorative colours.
- Ease of application-single pack no mixing of separate components.

## Method of Use:

- Apply the primer – **SILICON IMPREGNATION S-4**, based on a silone/siloxane blend, reactive and capable of producing chemically bound hydrophobic barrier.
- **SAMBOND S** should be stirred thoroughly before use.
- **SAMBOND S** may be applied two coats by use of suitable brushes or rollers on primed substrate.
- Apply two coat with wet film thickness not less than 175 micron, keeping and interval of 5 hours in between.

## Recommended application:

- It protects atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, sulphates, oxygen and water.
- It is also suitable to protect all types of structures especially those in aggressive marine and coastal environments.
- It is also suitable to protect other cementitious substrates and masonry.

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

## PRODUCT DATA:

**Form:** Liquid

**Colour:** Grey, Sage green

**Smell:** - Mild

### Coverage/Consumption:

3 sq. m. per Kg (Practical coverage figures may be reduced)

### Properties:

10 % water absorption after 48 hours.

### Storage:

Shelf life 6 months at 25°C

### Safety:

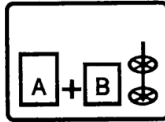
Use gloves protective clothing goggles and suitable respiratory protective equipment.

### Packing:

5 kg and 1 kg tin packing.

# SAMPRIME 2

## Chemicals Resistant Concrete Surface Primer Coating



### Description:

- **SAMPRIME 2** is an epoxy resin based chemical resistant concrete surface primer coating available in two liquid components as **SAMPRIME 2 PART-I** and **SAMPRIME 2 PART-II**.

### Advantages:

- Provides excellent bonding in between base substrate and epoxy coating/screeding.
- Coating film is thin but flexible with excellent adhesion to concrete, mortar and screed.
- Coating film eliminates porous in concrete surface.

### Properties:

- Dry film thickness 30 microns
- Initial Hardness 24 hours
- Full Curing 7 days

### Method of Use:

- Add the entire contents of the hardner to the base. Mix until an even colour is obtained.
- **SAMPRIME 2** should be immediately applied in a thin continuous film using stiff brushes/ rollers.
- Porous concrete or mortar may require two coats of **SAMPRIME 2**

### Recommended application:

- For strong bonding between concrete and epoxy coating/screeding.
- For better sealing of concrete screed surface.

### PRODUCT DATA:

#### Form:

Part I - Liquid  
Part II - Liquid

**Base:** Epoxy Resin

**Colour:** Brown

**Coverage /Consumption:**  
6.5 to 5.0 sq. m. per kg

#### Pot life:

60 minutes at 20°C

#### Ratio:

Part I – 3.385 kg  
Part II – 1.615 kg

#### Storage:

Shelf life 12 months at 35°C

#### Safety:

Use gloves, goggles

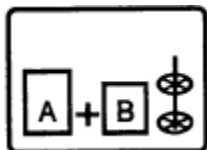
#### Packing:

5 kg and 1 kg tin

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**

# SAMCOAT<sup>®</sup> EP

## Chemical and Abrasion Resistant Epoxy coating



### Description:

- **SAMCOAT<sup>®</sup> EP** is an epoxy resin based chemical resistant coating available in two liquid components as **SAMCOAT<sup>®</sup> EP Part I** and **Part II**.

### Advantages:

- Provides excellent chemical resistance to a wide range of industrial chemicals and gases.
- Coating film is hard but flexible with excellent adhesion to all types of metal and cement based surfaces.
- Coating film can be modified to be non-slip.
- Coating film is hard wearing, hygienic and yet attractive in cosmetic finish.
- Provides dust free and jointless coatings.
- Can be used as a sealer on heavy duty epoxy screeds, provided epoxy screed is at least three days old.

### Properties:

	at 20°C	at 30°C
Cure time	4-6 hrs	2-4 hrs
Time between coats	4-6 hrs	3-5 hrs
Initial hardness	24 hrs	18 hrs
Full cure	7 days	5 days

#### Chemicals resistance

##### Acids:

Hydrochloric 50%, Nitric acid 25%, Sulphuric 50%, Phosphoric 50%, Acetic acid 10%, Lactic acid 10%, Citric acid 10%.

##### Alkali:

Sodium hydroxide 50%, Ammonia(880) 10%.

##### Solvents:

Petrol, Oil, Kerosene, Butanol

##### Other solvent:

Bleach (cons.), Saturated sugar, Urea

### PRODUCT DATA:

#### Form:

Part I – Liquid  
Part II - Liquid

#### Specific Gravity:

1.2 at 25°C

#### Colour:

Grey, Golden yellow, green, clear, off-white

#### Smell: - Mild

#### Coverage/Consumption:

4 sq. m per kg per coat

#### Pot Life:

90 min. at 30°C

#### Ratio:

Part I – 3.7 kg  
Part II – 1.3 kg

#### Volume solid:

45% (mixed material)

#### Storage:

Shelf life 6-8 months at 25°C

#### Safety:

Use gloves protective clothing goggles.

#### Packing:

5 kg and 1 kg tin packing



## **SAMCOAT® EP**

### **Method of Use:**

- Stir **SAMCOAT® EP** Part I & II individually to ensure that no solids settle at bottom of packing containers
- Pour **SAMCOAT® EP** Part II into **SAMCOAT® EP** Part I and stir gently.
- Apply the prepared mix on the substrate surface with a standard paint brush to get a dry film thickness of around 100 microns or as required.

### **Recommended application:**

- Coating of steel structures, leg supports and structural framework exposed to corrosive atmosphere.
- Coating of pipelines, ducts, pipe racks etc. to provide protection against corrosive atmosphere.
- Structural members (like beams, columns), RCC working platforms, machinery foundations etc. exposed to corrosive atmosphere.

**CONSULT OUR PRODUCT APPLICATION DEPARTMENT (PAD) IN CASE OF ANY DIFFICULTY OR FOR TECHNICAL ASSISTANCE**