PROTECH
COATINGS & CONSTRUCTION CHEMICALS

PROTECTVE COATING SYSTEM

PROMASTIC STE-87

A two-pack high build surface tolerant polyamide cured epoxy paint, which gives high film thickness at one coat and gives excellent adhesion on ferrous and nonferrous metals. Used as a heavy duty, durable protection for steel structures, steel supports of bridges, tank lining, decks and floors.

DESCRIPTION

- PROMASTIC STE-87 is two-pack high build surface tolerant polyamide cured epoxy.
- PROMASTIC STE-87 is cured by a new series of reactive polyamides developed especially for use in the curing of epoxy resins in coatings and adhesives to give high film thickness at one coat. And gives excellent adhesion on ferrous and nonferrous metals.
- PROMASTIC STE-87 is used as primer, high build coat or finish coat.
- PROMASTIC STE-87 offers excellent handling and physical properties and adhesion to various substrates.
- PROMASTIC STE-87 offers greater than 30% higher tensile strength and greater than 80% higher tensile elongation without any adverse effect on tensile modulus.
- This behavior indicates that PROMASTIC STE-87 provides inherent toughness to the cured epoxy resin.

COLOURS AND APPEARANCE

- PROMASTIC STE-87 is two-pack high build surface tolerant polyamide cured epoxy with semi-gloss and smooth appearance
- PROMASTIC STE-87 available in aluminum color, white, grey, silver and wide ranges of other required colors

PROPERTTIES & BASIC DATA AT 23°C

Appearance	Grey-semi gloss
Volume solids	87 ± 1 %
Specific gravity	1.33 ± 0.03
Voc	126 gm/l
Pot life	2-3 hours at 20ºc
Induction time	none
Touch dry	5 hours
Dry to handle	none
Minimum over coating interval	9 hours at 20ºc 5 hours at 30ºc 3 hours at 40ºc
Maximum over coating interval	9 months at 0ºc 5 months at 30ºc 3 months at 40ºc
Recommended DFT	125: 200 µm for airless spray 80: 100 µm for brush roller
Theoretical spreading rate	7.00 m²/l for 125 µm 4.5 m² for 200 µm
Flash point	27ºc
Curing time	7 days
Shelf life	12 months at least
Mixing ratio	85: 15 by weight

Film Properties after 10 Days Cure @ 23 °C

Direct impact [cm.kg]	40
Reverse impact [cm.kg]	10
Flexibility Cylindrical Mandrel	(Mm pass) 3

All previous results obtained and applied according to ASTM D 1544-80 by using off the following
Brookfield RVTD, Spindle 4 - Perchloric Acid Titration
BK Drying Recorder Phase II - Erichsen mandrel tester

PHYSICAL PROPERTIES (after 7 days / 23°C

Tensile Strength and Elongation

Tensile Strength, N/mm2	59.3
Tensile elongation at failure, %	3.4
Tensile Modulus, kN/mm2	2.84
Tg, C	50

After 30 minutes @ 120 °C Cure

Tensile Strength, N/mm2	57.2
Tensile elongation at failure, %	7.0
Tensile Modulus, kN/mm2	2.36
Tg, C	96

Shear and peel strength
After 7 days @ 25 °C cure

CRS/CRS shear strength, N/mm2	11.7
ABS/ABS shear strength, N/mm2	2.5
Polycarbonate Shear strength, N/mm2	1.7
CRS/CRS peel strength, N/m	1715

After 30 minutes @ 120 °C cure

CRS/CRS shear strength, N/mm2	14.1
CRS/CRS peel strength, N/m	2362

Property	STE-87 351A(*)	STE-87 350A(*)
Direct Impact	40	10
Reverse Impact	40	10
Cross Hatch Adhesion (dry)	Gt0	Gt0

WHERE TO USE

- Uses for steel, concrete structure exposed to atmospheric land or marine conditions.
- Uses as primer, build coat, finish coat for general purposes of steel protection.
- Used as a heavy duty, durable protection for steel supports of bridges, tank lining, decks and floors.
- Structural adhesives
- Solvent based and solvent free marine & protective coatings
- Primers, sealers and coatings for concrete.
- As a waterproofing coating for waste water structures, to use on foundations below and above, and any structure subjected to aggressive environment, like offshore, Marine environment, inside crude oil tanks , Sewage treatment plants, lining of tanks pipes and ducting.

ADVANTAGES

- Very high durability with high and fast strength.
- High chemical resistance.
- Very good resistance against sudden change of temperature.

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- Excellent adhesion on ferrous and nonferrous metal (Copper, Aluminum, Zinc, nickel, stainless steel and galvanized steel without any surface treatment prior to bonding.
- PROMASTIC STE-87 Exhibit higher peel strength compared to the other type of epoxies.
- PROMASTIC STE-87 results in demonstrated performance that was slightly improved versus the other type of epoxies.
- The mode of failure for CRS was 100% cohesive and adhesive for thermoplastic substrates.
- Excellent water resistance.
- PROMASTIC STE-87 has large mixing ratio tolerance. PROMASTIC STE-87 exhibits a good degree of flexibility.
- PROMASTIC STE-87 exhibits excellent corrosion resistance.
- PROMASTIC STE-87 exhibits no sign of field blisters have been detected.
- PROMASTIC STE-87 exhibits no scribe creep in the salt spray test.
- PROMASTIC STE-87 demonstrated excellent water and salt water resistance with no signs of field blistering being observed.
- Good flexibility and surface tolerance for lower grade of steel preparation.
- Excellent adhesion with concrete.
- High compatibility and recoatability with different type of coatings.
- Very good chemical resistance, oil, grease, chemical splashes and corrosion resistance.
- Good color and light stability
- Compatible with wide range of solvents
- All substrates were used without any surface treatment prior to bonding.

SYSTEM SPECIFICATION

PROTECTVE COATING SYSTEM

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

INSTRUCTIONS FOR USE

▪▪ SURFACE PREPARATION

- For excellent corrosion protection: Steel and nonferrous metals properly prepared and blast cleaned to ISO-Sa2½.
- For good corrosion protection: Steel and nonferrous metals properly prepared and blast cleaned to ISO-Sa2.
- For Concrete it should be free from contamination, dust and efflorescence, and properly prepared.
- Bare steel: Cleanliness: Blast – cleaning to Sa2 1/2 (ISO-8501-1:2007). Power tool cleaning to min. St2 (ISO 8501-1:2007) may be acceptable, subject to exposure conditions.
- Shopprimed steel: Clean, dry and undamaged approved shop primer
- Coated surfaces: Clean, dry and undamaged compatible primer.
- Other surfaces: For aluminium substrate, thorough washing and sweeping with a nonmetallic blast medium is required

APPLICAION:

- Mixing ratio by weight (base : hardener) 85 : 15
- Application temperature should not be less than 10°C and not more than 40°C.
- Substrate temperature should be 10°C or above for application and during cure and a minimum of 3°C above the dew point. Adequate dry air ventilation is recommended for optimum drying.
- Thinner should be added after mixing the component
- Too much thinner results in sagging and curtains
- There is no induction time, pot life is 2 hours
- Substrate temperature should be 3°C above the dew point.
- Steel substrate should be clean, dry, dust and oil free and should remove rust and mill scale by sand blasting to 75 micrometer profile.
- Mix thoroughly and slowly, avoid air entrapment.
- Let the system 24 hours to get cured system which is dry to handle.
- Gloves and fresh air mask recommended.
- Thinning should only take place after the two components have been thoroughly mixed.

SALT SPRAY & CORROSION RESISTANCE

- PROMASTIC STE-87 was evaluated in 5% salt spray, distilled water immersion at room temperature and NaCl 3.5% immersion at room temperature, following a 10 day ambient cure of applied coatings.
- Coatings were applied to grit blasted, hot rolled steel (SA2.5), using conventional spray equipment, in double coats to give coatings with a 75-100µ dry film thickness (DFT).
- In salt spray, (ASTM B-117) panels were scribed and evaluated for field blisters using the US Federal Standard Test Method 141a, Method 6461 and the scribe creep was rated in accordance with ASTM D-1654.
- Similar evaluations were made for panels placed in NaCl 3.5% immersion at room temperature and distilled water immersion.
- Panels exposed to distilled water immersion were not scribed and coatings were assessed for blistering only.
- These tests also included evaluations for changes in visual appearance.

Corrosion Resistance

- PROMASTIC STE-87 were evaluated for salt spray, distilled water and NaCl 3.5% immersion at room temperature.
- The results obtained are presented in Table 4, 5 and 6 on the following page. After 1000hrs salt fog exposure.
- PROMASTIC STE-87 exhibit excellent resistance comparing favorably to that of coatings

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AIRLESS SPRAY

- Thin with 0 - 5 % Paint Thinner PROTECH Thinner EP, as required
- Tip size - 0.58-.79 mm approximately
- Tip pressure - 2100 psi (15Mpa) approximately

AIR SPRAY

- Thin with 5-10% OF Paint with Thinner PROTECH Thinner EP, as required.
- Tip size - 2.0 mm
- Tip pressure - 60 psi (0.4Mpa) approximately

BRUSH / ROLLER

Thin if required with 0-5% Paint Thinner PROTECH Thinner EP.

CLEANING

Equipment should be cleaned immediately after use with Paint Thinner PROTECH thinner CL.

PACKAGING:

5 kg &20 kg for (A+B)

DRYING TIME:

Drying times are affected by air ventilation, temperature, film thickness and number of coats.

Substrate Temp	10° C	25° C	40° C
Surface Dry	8	4	2
Through Dry	16	8	6
Dry to recoat, minimum	24	12	8

The given data serve as guideline only. The actual drying time differs according to film thickness, ventilation, humidity and underlying paint system.

THEORETICAL COVERAGE:

	Min	Max	Typical
Film thickness, dry (µm)	200	500	250
Film Thickness, wet (µm)	235	588	294
Spreading Rate (m^2 /L)	4.25	1.7	3.4

STORAGE:

12 months within their original packaging enclosed in a proper storage conditions. Keep the containers in a dry, cool, well ventilated space and away from source of heat and ignition. Containers must be kept tightly closed.

HEALTH AND SAFETY:

- All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety & Environmental standards and regulations.
- Prior to use, obtain, consult and read well the Material Safety Data Sheet for this product and follow all precautionary notices.
- Proper ventilation and protective measures must be provided during application and drying to keep solvent vapor concentrations within safe limits and to protect against toxic or oxygen deficient hazards.
- This product may contains hazard materials or aggressive solvent.
- Take precautions to avoid inhalation of spray mist, skin, mucous membrane and eye contact by the use of safety equipment (gloves, goggles, face masks, barrier creams etc.) and other personal protection.
- If skin comes in contact, it should be thoroughly flushed and washed with fresh water and proprietary cleanser and soap and medical attention obtained. With the need to consult a doctor immediately.
- Eyes should be cautiously washed with fresh water or proprietary wash and medical attention obtained with the need to consult a doctor immediately.
- Don't use solvents for skin cleaning.
- Equipment and tools to be cleaned immediately after use with PROTHINNER CL.
- Don't dispose of water or soil but according to local regulations.
- PROMASTIC STE-87 is class 4 according to health and safety codes.
- Keep labelled until decontaminated.
- Get rid of the remaining materials according to the environmental laws in your country.
- Product is flammable, no sparks or flames and no smoking.

ADDITIONAL INFORMATIONS

PROTECH provides all type of coatings and construction chemicals which answers the queries of modern engineers for trouble free durable structure.

PROTECH create special and specific products when there are critical applications that require specific requirements (tailor made designs)

PROTECH technical office gives this information and recommendations relating to the application of products in this data sheet representing test results & practical experience obtained under a good and controlled conditions when properly stored, handled and applied under normal condition.

However, as products are often used under different conditions, we can only guarantee the quality of our product, and reserve the right to change data without further notice

PROTECH data are correct to the best of our knowledge and experience of products.

The differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose.

All orders are accepted subject to our current terms of sale and delivery.

PROTECH users should always refer to the most recent issue of the technical data sheet for the product concerned, copies of which will be supplied on request.

PROTECH technical services department is ready to provide our customers with more information and after sales support to assist our customers in a proper application, so don't hesitate to consult us.

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