CERAMIC EPOXY

FOR DUCTILE IRON PIPE

ELECTROSTEEL USA

GENERAL SPECIFICATIONS

FEATURES & BENEFITS

High abrasion resistance, Flexible film characteristics, High corrosion resistance, high dielectric strength, low permeability, Class 1 fire and smoke rating, machinable film, acceptable for food contact. In pipelines conveying slurries or septic sewage this coating can provide a robust effective protection enhancing the longevity of performance.

MATERIAL

Perma Shield 431 - Amine cured novolac epoxy containing by volume of ceramic quartz pigment.

SURFACE PREPARATION

Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. Any areas with oil, grease, or any substance that can be removed by solvent, shall be solvent cleaned to remove those substances. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be re-blasted.

LINING

After surface preparation and within 12 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness. No lining shall take place when the substrate or ambient temperature is below 40°F. The surface also must be dry and dust free. If flange pipe or fittings are included in the project, the lining shall not be used on the face of the flange.

COATING OF BELL & SPIGOT END

Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum using Perma Shield 431 Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.

NUMBER OF COATS

The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.

TOUCH-UP & REPAIR

Perma Shield 431 Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.

FILM PROPERTIES

TEST	METHOD	CONDITIONS	RESULT
Permeability	ASTM E-96-66, Procedure A	30 Days	0.00
Salt Spray	ASTM 8117 (Measured) ASTM D714 (Rated)	2 years	0.0 Undercutting
20% Sulfuric Acid Immersion	ASTM D714-87	2 years	No Effect
25% Sodium Hydroxide Immersion	ASTM D714-87	2 years at 140°F	No Effect
Distilled Water Immersion	ASTM D714-87	2 years at 160°F	No Effect
Tap Water Immersion	ASTM D714-87	2 years at 120°F	0.0 Undercutting
Abrasion Resistance	European Standard EN 598: 1994 Section 7.8	One million cycles on a ± 22.5° sliding aggregate slurry abrasion tester using a sharp natural siliceous gravel with a particle size between 2mm and 10 mm.	s 3 mils Loss
Cathodic Disbandment	Cathodic Disbandment	1.5 volts at 77"F for 30 days	s 0.5 mm Undercutting
Resistance to Bacteria	ASTMG-22 90	7 Days at 30°C on a minimum of 4 panels	Limited only to trace amounts of Bacteria

HANDLING

Lined pipe must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the fittings for lifting, positioning, or laying. The pipe shall not be dropped or unloaded by rolling. Care should be taken not to let the pipe strike sharp objects while swinging or being off loaded.

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