



TECHNICAL DATA

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PROTEC[®] II AM FAST SET URETHANE

Product Description

A 100% solids, two component, fast set, direct to metal, flexible urethane. It is specifically formulated with an EPA registered anti-microbial agent for long term performance in waste water applications. Provides a very hard, tough surface with outstanding adhesion and impact resistance to protect against damage during the process of burying for underground service conditions. It provides outstanding corrosion protection under a wide variety of soil pH levels, chemicals and water. Requires plural component, heated application equipment.

Features

- Excellent adhesion directly to steel and ductile iron.
- Fast curing for increased productivity and short turn around times.
- Zero VOC.
- Extremely tough, durable coating providing high abrasion and impact resistance.
- Meets AWWA C-222 requirements.
- Does not support microbial growth.

Recommended Uses

Ideal protective coating that provides long-term chemical resistance and corrosion protection for steel and ductile iron pipe, sheet piling and many other metal substrates. The addition of the anti-microbial agent makes it an excellent internal lining for steel tanks, steel and ductile iron pipe for service in water, wastewater and saltwater. Note: For pipe with inside diameters less than 24" contact ITW Futura Coatings for specific recommendations.

Primers

Steel: Normally none.
Other: Contact ITW Futura Coatings for recommendations.

Typical Properties

Solids by Volume	100%
Volatile Organic Compounds	0.0 lb/gal (0 g/l)
Theoretical Coverage	1604 ft ² @ 1 mil (3.8 m ² @ 1 mm)
Recommend DFT (Typical)	15 – 50 mils (0.4 – 1.3 mm)
Number of Coats	1 or more
Mix Ratio (by volume)	1"A" : 1"B"
Flash Point (PMCC)	311°F (168°C)
Shelf Life @ 60-90°F (16-32°C)	Part A 12 months Part B 12 months
Color	Standard Gray

Specification Data

Elongation – ASTM D 412	< 10%
Adhesion – ASTM D 4541	> 2500 psi
Abrasion Resistance ASTM D 4060	CS 17 45 mg loss H 10 48 mg loss
Tensile Strength ASTM D 412	4000 psi
Impact Resistance ASTM G 14 – 15 mm ball	125.4 in-lbs (1447 cm/kg)
Hardness – ASTM D 2240	75 Shore "D"
Dielectric Strength ASTM G 62	400 volts / mil
Flexibility 180° Bend over 4" mandrel 90° Bend over 4" mandrel	Pass – 30 mils @ 75°F Pass – 30 mils @ -40°F
Permeability – ASTM E 96 (60 mil dry film thickness)	0.0078 U.S. perms 0.0113 metric perms
Accelerated Weathering ASTM G 23 – Q/UV, 2500 hrs	No cracking, checking or loss of flexibility; slight chalking.
Cathodic Disbondment ASTM G 95 – Average Radius	30 days @ 75°F 7 mm 14 days @ 149°F 8 mm

Ordering Information

Packaging:	10 gal & 110 gal kits
Shipping Weight:	10.5 lb/gal (4.7 kg/gal)

APPLICATION INFORMATION PROTEC II AM

Surface Preparation

Remove all oil, grease or other contaminants from the surface to be coated in accordance with SSPC-SP 1.

Steel and Cast Iron:

Immersion and Non-Immersion: Abrasive blast to a Near White Blast in accordance with SSPC-SP 10 and obtain a 3 -4 mil (75-100µ) angular anchor pattern.

Other: Contact ITW Futura Coatings for specific surface preparation and primer recommendations.

Mixing

Power mix "B" component thoroughly for 15 to 20 minutes to a uniform consistency, "A" component does not require mixing.

DO NOT BATCH MIX.

Thinning

DO NOT THIN

Pot Life

Material Temperature	Time
50-100°F (10-38°C)	< 15 seconds

Application Conditions

	Normal	Minimum	Maximum
Material*	140-150°F (60-65°C)	135°F (57°C)	170°F (77°C)
Surface	75-90°F (24-32°C)	45°F (7°C)	150°F (65°C)
Ambient	75-90°F (24-32°C)	35°F (2°C)	120°F (49°C)
Humidity	30-50%	0%	85%

*Materials must be preheated to 75-90°F (24-32°C) min prior to use. Surface temperature must be 5°F (3°C) above the dew point.

Application Equipment

Heated Plural Component Airless (only)

Applicator training is required and spray equipment must be approved by ITW Futura Coatings Technical Service.

- 1:1 ratio capable of producing a minimum delivery rate of 1¼ gallons per minute at a tip pressure of 2500-3000 psi.
- Proportioner heaters and heated hose capable of maintaining material temperatures of 135-150°F (57-65°C) at the spray tip.
- Drum heaters capable of maintaining material temperatures of 75-90°F (24-32°C) during application
- 2:1 ratio transfer pumps minimum.
- Contact ITW Futura Coatings for specific information.

Clean Up

Consult ITW Futura Coatings "Plural Component Equipment Guide" for specific information.

Cure Time

These times are based on a 30-50% RH. Excessive film thickness, cooler temperatures or inadequate ventilation will require longer cure times and could result in premature failure.

	<u>Surface Temperature</u>		
	50-69°F (10-21°C)	70-89°F (21-32°C)	90-110°F (32-43°C)
Surface dry	4-10 minutes	3-4 minutes	½-2 minutes
Hard Film	10-20 minutes	5-10 minutes	5 minutes
Recoat (min)	4-10 minutes	3-4 minutes	½-2 minutes
Recoat (max)	4 hours	2 hours	30 minutes
Full cure	3 days	2 days	24 hours

- If the maximum recoat time has been exceeded contact ITW Futura Coatings for recommended recoat procedure.
- Holiday testing per NACE RP0188-98 can be started once the cure time shown for "Hard Film" has been achieved.

Repair

- ITW Futura Coatings recommends that repairs or touch-up be completed using **Protec II AM**.
- **Pipemate 1** is the recommended repair material when plural component equipment is not available.
- Contact ITW Futura Coatings for specific information.

Safety Information

- Read the Material Safety Data Sheet (MSDS) and container labels for detailed health and safety information.
- Do not apply material in enclosed areas without adequate air exchange and ventilation.
- All application personnel must use fresh air respirators or fresh air hoods.
- Wear protective clothing, gloves and eye protection.
- Breathing fumes or contact with the skin may cause severe allergic reactions.
- **This product is intended for industrial use by properly trained professional applicators only.**

Storage Conditions

- Urethane coatings need to be protected from moisture contamination. Store drums and pails in a dry location at 60-90°F (16-32°C).
- Drums **must** be kept sealed at all times with a positive feed dry air, nitrogen blanket or desiccant cartridge system.
- Materials **must** be kept above **50°F (10°C)**.

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