

Potable Water and Pressure Pipe Relining System

Technical Bulletin # 4000B

Introduction

IMPAX 296 is a two component, 100% solids epoxy system used in the repair of potable water and other types of pipes using composite technology and the trenchless cured in place pipe repair method. The system is designed to allow quick and complete impregnation of felt-fiberglass liners, give adequate working time and cure completely and timely upon application of heat. The resin is supplied in a yellow color while the hardener is supplied in red to help in the monitoring of mixing.

Liner Saturation

For optimum performance, IMPAX 296 should be stored 24 hours prior to mixing at between 68°F (20°C) and 77°F (25°C). During mixing and impregnation the ambient temperature should also be between 68°F (20°C) and 77°F (25°C) for optimum performance. For further detailed instructions refer to liner manufacturer's technical installation manual.

Mixing

Use appropriately sized variable speed electric or air mixers with a metal mixing blade. Premix Part A resin and Part B hardener for ½ to 1 minute at approximately 250 rpm then pour Part B hardener contents into short filled Part A resin can or appropriate mixing vessel. Mix for 2 to 3 minutes at 250 RPM until the color is uniform; moving blade around can while mixing. Avoid whipping air into material. It is recommended that only full units be used, that both components be thoroughly mixed and that all material from the bottom and sides of the container is mixed. Do not scrape or completely drain the mixing containers after mixing. Do not reduce (add solvents) to this material.

Physical Properties

FLEXURAL STRENGTH:	25,000 psi (172 MPa) in composite
FLEXURAL MODULUS:	550,000 psi (3.792 GPa) in composite
TENSILE STRENGTH:	13,500 psi (in composite) (93 MPa)
TENSILE MODULUS:	820,000 psi (in composite) (5.653 GPa)
COMPRESSIVE STRENGTH:	14,910 psi (in composite) (103 MPa)
ELONGATION:	8.00% (in composite) at break
SHORE D HARDNESS:	80-85
GLASS TRANSITION TEMPERATURE:	173°F (78°C)
WATER ABSORPTION:	0.008% @ 24 hrs. 77°F (25°C)
FLASH POINT:	<300°F (<149°C)
VOLUME SOLIDS:	100% Solvent free
VOC:	0 lbs/gal (0 grams/liter) – No VOCs
VISCOSITY:	Resin @ 77°F (25°C): 8,500-9,500 cps Hardener @ 77°F (25°C): 5-50 cps Mixed @ 77°F (25°C): 500-700 cps
WEIGHT PER GALLON @ 77°F (25°C):	Resin: 9.70-9.85 lbs/gal. (1.16-1.18 kg/L) Hardener: 8-8.5 lbs/gal. (0.96-1.02 kg/L) Mixed – 9.263 lbs/gal (1.11 kg/L) when de-aired @ 77°F (25°C)

Technical Information

COLOR:	Resin – Yellow Hardener – Red Mixed – Orange
CONDITIONING TEMPERATURE:	Store between 68°F (20°C) and 77°F (25°C) for at least 24 hours prior to mixing and impregnating liners. Store in dry environment.
MIXING RATIO:	2.72 to 1 resin / hardener by volume 3.30 to 1 resin / hardener by weight
PACKAGING:	5 Gallon Kit – 45 lbs (20.4 kg) / 4.93 gal (18.64 L) Drum Kit – 1251 lbs (566 kg) / 137 gals (517.9 L) Tote Kit - 8,612 lbs (3906 kg) / 943 gal (3570 L)
COVERAGE:	Refer to liner manufacturers recommendations for resin content per linear foot of liner
WORKING TIME:	Up to 3 hrs @ 77°F (25°C) in a large mass of neat resin - 220 lbs (99.8 kg) Up to 12 hrs @ 77°F (25°C) in a liner
CURING TIME:	2 hours @ 180°F (82.2°C) using steam or hot water
MAX RECOMMENDED OPERATING TEMPERATURE:	162°F (72°C)
CLEAN UP:	IMPAX IXT 59 Solvent or Xylene
SHELF LIFE:	18 months in closed container stored in a dry environment @ 50°F to 90°F (10°C to 32°C)
PRECAUTION:	Maintain good ventilation and avoid breathing vapors. Avoid prolonged and repeated skin contact. Wear safety glasses and impervious gloves. Refer to MSDS for more detailed safety information.

Date

06/2011

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