PRODUCT BULLETIN

May 2020

STYPOL® 040-3148, 040-3152, 040-3153

Unpromoted, Filled Isophthalic CIPP Resin

DESCRIPTION

Polynt Composites' STYPOL® unpromoted, filled isophthalic polyester resins have been developed with enhanced physical properties and chemical resistance for the cured-in-place-pipe (CIPP) rehabilitation process.

STYPOL® 040-3148 is an unpromoted, filled isophthalic polyester resin. STYPOL® 040-3152 is a version of STYPOL® 040-3148 with reduced gel and cure times. STYPOL® 040-3153 is a version of STYPOL® 040-3148 with rapid cure and high thixotropy for reduced drainage.

These products have been tested and meet or exceed many national standards for pipeline rehabilitation. These standards include:

ASTM F1216	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
ASTM D5813	Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems, sections 6.4.1 and 6.5
ASTM D2990	Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics

BENEFITS & FEATURES

- Premium polymer composition
- Special thixotropic formulation
- Improved inhibitor system
- Improved toughness

PROPERTIES – LIQUID

Property(1)	Unit	040-3148	040-3152	040-3153
Thixotropic Index(2)	%	3.5 (Min.)	4.0 (Min.)	5.0 (Min.)
Viscosity(3)	cps	4,600	5,100	4,500
CIPP Cure (80°F to Gel)	minutes	19(4)	13(4)	9(5)
CIPP Cure (Gel to Peak)	minutes	-	-	5.0
CIPP Peak Exotherm	°C/°F	143/290	-	-
Catalyzed Stability	hours	-	20 (Min.)	-

1) All properties at 25°C/77°F unless otherwise noted
2) Brookfield Viscometer RVF Spindle #4 at 2/20 RPM
3) Brookfield Viscometer RFV Spindle #4 at 20 RPM
4) 1.0% Akzo Nobel Perkadox® 16 & 0.5% Akzo Nobel Trigonox® 42S, reactivity at 140°F
5) 0.7% Akzo Nobel Perkadox® 16 & 0.35% Akzo Nobel Trigonox® 42S, reactivity at 140°F

PROPERTIES – PHYSICAL

Property[1]	Unit	Neat Resin Casting[2]	Laminate[3]	Test Method
Tensile Strength	psi	9,000	5,000	ASTM D 638
Tensile Modulus	psi	930,000	800,000	ASTM D 638
Tensile Elongation	%	1.9	1.8	ASTM D 638
Flexure Strength	psi	18,000	8,000	ASTM D 790
Flexure Modulus	psi	650,000	700,000	ASTM D 790
Heat Deflection Temperature	°C/°F	98/207	N/A	ASTM D 648

1) Physical properties were determined using internal Polynt test methods that are similar to those listed above.
2) Neat resin casting catalyzed with 1% BPO-98. The casting cured at room temperature and post cured for 1 hour at 186.8°F (86°C) and 2 hours at 248°F (120°C).
3) Laminate with 6 mm felt liner.

APPLICATION

STYPOL® 040-3148, 040-3152, and 040-3153 are appropriate for CIPP applications for lining municipal sewers. Hot water and steam cure methods can be used with these products. These resins should be used with appropriate initiator systems and cured using elevated temperatures to achieve the final service properties.

STYPOL® 040-3148 is quality control tested using 1.0% Akzo Nobel Perkadox® 16 and 0.5% Akzo Nobel Trigonox® 42S. Other peroxides can be used but gel times and cure may vary. These are shown in MB-363 STYPOL® 040-3148 CIPP Catalyst Chart and Cure Schedule.

STYPOL® 040-3152 is quality control tested using 1.0% Akzo Nobel Perkadox® 16 and 0.5% Akzo Nobel Trigonox® 42S. Other peroxides can be used but gel times and cure may vary. The cure is shown in MB-371 STYPOL® 040-3152 CIPP Cure Schedule.

STYPOL® 040-3153 is quality control tested using 0.7% Akzo Nobel Perkadox® 16 and 0.35% Akzo Nobel Trigonox® 42S. Other peroxides can be used but gel times and cure may vary.

These products should not be used when temperature conditions are below 60°F, as curing may be adversely affected.

Refer to Polynt's Composites Applications Guide ("Cookbook") for equipment and application recommendations. Each user must determine the suitability of this product to his/her particular mode of operation and intended end-use application. A Polynt representative will be available to assist in the proper selection of all Polynt-Reichhold products available for commercial use.

SHELF LIFE & STORAGE

The shelf life of STYPOL® 040-3148, 040-3152, 040-3153 is 180 days from the date of manufacture from Polynt. To maximize usage life and maintain optimum properties, resins and gel coats should be stored in the original closed container at temperatures below 23°C/73°F and away from ignition sources and sunlight. Keep containers sealed to prevent moisture pick-up and monomer loss.

RELATED DOCUMENTS

- MB-363 STYPOL® 040-3148 CIPP Catalyst Chart and Cure Schedule
- MB-371 STYPOL® 040-3152 CIPP Cure Schedule

SAFETY & WARRANTY

To receive a copy of our safety and warranty information, please email safetyandwarranty@polynt.com.