

# PRO-SET®

## Technical Data

# M1007~M2032

### HIGH ELONGATION EPOXY ADHESIVE

The New  
Standard

#### COMBINED FEATURES

**Extreme toughness** adhesive for difficult gluing or bonding applications.

**Medium cure speed** hardener provides approximately 60 minutes of working time at 72°F (22°C).

**Room temperature cure** properties suitable for many composite components and structures.

**High Performance** two-part epoxy adhesives for secondary bonding of laminated composites, steel, aluminum, cast iron, concrete, stone, and most wood species. PRO-SET Adhesives will bond these materials, to one another in any combination.

**Shelf life** is 3 years for resin and 2 years for hardener when properly stored<sup>2</sup>.

EPOXIES for  
Laminating  
Infusion  
Tooling  
Assembly

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ISO9001:2008 Certified

Rev 3 / Dec 2015

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#### HANDLING PROPERTIES

Property	Standard	Units	72°F (21°C)
100g Pot Life	ASTM D2471	minutes	40-50
Working Time	ASTM D2471	minutes	54-66
Clamps off cure	-	hours	8-10
Full cure	-	hours	21-27
Minimum Cure Temp	ASTM D2196	°F (°C)	45 (7)

#### MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	1.20:1	100:83.3
Volume	1.00:1	100:100.0

#### DENSITY

State	Units	72°F (21°C)
Resin	lb/gal (g/cc)	9.75 (1.17)
Hardener	lb/gal (g/cc)	8.11 (.972)

#### MECHANICAL PROPERTIES

Property	Standard	Units	72°F (22°C) x 2 wk
Hardness	ASTM D2240	Type D	75
Compression Yield	ASTM D695	psi (MPa)	5,630 (39)
Tensile Strength	ASTM D638	psi (MPa)	3,440 (24)
Tensile Modulus	ASTM D638	psi (GPa)	1.44E+05 (.99)
Tensile Elongation	ASTM D638	%	32.0
Flexural Strength	ASTM D790	psi (MPa)	5,190 (36)
Flexural Modulus	ASTM D790	psi (GPa)	1.56E+05 (1.08)

#### THERMAL PROPERTIES

Property	Standard	Units	72°F (22°C) x 2 wk
Tg DSC Onset- 1st Heat	ASTM E1356	°F (°C)	138 (59)
Tg DSC Ultimate	ASTM E1357	°F (°C)	154 (68) <sup>1</sup>
Heat Deflection Temperature	ASTM D648	°F (°C)	127 (53)

<sup>1</sup> Additional post cure may be required; contact Technical Department for details.

<sup>2</sup> Store PRO-SET® Epoxy resins and hardeners at room temperature in sealed containers until shortly before use. As with many high-performance epoxy resins, repeated exposure to low temperatures during storage may cause the resin to crystallize. If this occurs, warm the resin to 125° F and stir to dissolve crystals. Hardeners may form carbamation when exposed to CO<sub>2</sub> and moisture in the atmosphere for extended periods of time. Prevent carbamation by protecting hardeners from exposure until immediately prior to processing.

Test specimens were neat epoxy (without fiber reinforcement).

Typical values, not to be construed as specification.

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## HIGH ELONGATION EPOXY ADHESIVE

### TENSILE ADHESION PROPERTIES

Substrate	Standard	Units	Surface Preparation	72°F (22°C) x 2 wk
White Oak	ASTM D4541	psi (MPa)	Sanded with 80 grit sandpaper prior to adhesive application.	1,940 (13.4)
Teak	ASTM D4541	psi (MPa)	Sanded with 80 grit sandpaper prior to adhesive application.	1,410 (9.7)
ABS	ASTM D4541	psi (MPa)	Sanded with 80 grit sandpaper prior to adhesive application.	1,690 (11.7)
	ASTM D4541	psi (MPa)	Sanded with 220 grit sandpaper and flame treated prior to adhesive application.	1,670 (11.5)
Galvanized Steel	ASTM D4541	psi (MPa)	Wet sand with 100 grit sandpaper and flame treated prior to adhesive application.	2,560 (17.7)
Tensile Adhesion to Aluminum 2024T3	ASTM D4541	psi (MPa)	Grit blasted and chemical etch prior to adhesive application.	2,170 (15)
Stainless Steel	ASTM D4541	psi (MPa)	Sanded with 80 grit sandpaper prior to adhesive application.	2,170 (15)
	ASTM D4541	psi (MPa)	Grit blasted and cleaned prior to adhesive application.	1,990 (13.7)
	ASTM D4541	psi (MPa)	Grit blasted, cleaned, and abraded with a wire brush after epoxy was applied but while epoxy was still wet.	2,490 (17.2)
	ASTM D4541	psi (MPa)	Sanded with 80 grit and abraded with wire wisk after epoxy was applied but while epoxy was still wet.	2,360 (16.3)

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