

PRO-SET®

Technical Data

M1034~M2037

The New
Standard

EXPANDING EPOXY FOAM

COMBINED FEATURES

Expand in place foam that, when mixed creates an in-situ closed cell epoxy foam with very uniform cell size.

Fast cure speed hardener provides approximately 20 minutes of foaming time at 72°F (22°C). Can then be demolded in approximately 2 hours.

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

High performance epoxy foam will bond to FRP, metals, and low density core materials.

High strength foam can be used as a core material or to fill cracks and gaps in concrete.

Optimum properties will be obtained with a post cure of 160°F (71°C) for 6 hours.

Shelf life is 12 months for resin and 12 months for hardener when properly stored¹.

EPOXIES for
Laminating
Infusion
Tooling
Assembly

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ISO9001:2008 Certified

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HANDLING PROPERTIES

| Property | Standard | Units | 77°F (25°C) |
|----------------------|------------|---------|----------------|
| 100g Pot Life | ASTM D2471 | minutes | 20-30 |
| Viscosity Mixed | ASTM D2196 | cP | 4,000 - 6,000 |
| Viscosity (resin) | ASTM D2196 | cP | 8,000 - 15,000 |
| Viscosity (hardener) | ASTM D2196 | cP | 2,500 - 3,000 |
| Foaming Time | - | minutes | 20-25 |
| Demolding Time | - | minutes | 120 |

MIX RATIO

| Method | Resin:Hardener | Resin:Hardener |
|--------|----------------|----------------|
| Weight | 2.50:1 | 100:40.0 |
| Volume | 2.00:1 | 100:50.0 |

DENSITY

| State | Units | 72°F (22°C) |
|-------|---------------------------|-------------|
| Cured | lb/ft ³ (g/cc) | 15.0 (.239) |

MECHANICAL PROPERTIES

| Property | Standard | Units | 72°F (22°C) x 2 wk |
|-------------------------|------------|-----------|--------------------|
| Hardness | ASTM D2240 | Type D | 37 |
| Compression Yield | ASTM D695 | psi (MPa) | 580 (4) |
| Compression Modulus | ASTM D695 | psi (MPa) | 48,000 (331) |
| Tensile Strength | ASTM D638 | psi (MPa) | 500 (3) |
| Tensile Modulus | ASTM D638 | psi (MPa) | 24,600 (170) |
| Lap Shear on 1018 Steel | ASTM D1002 | psi (MPa) | 550 (4) |

THERMAL PROPERTIES

| Property | Standard | Units | 77°F (22°C) x 2 wk | 158°F (70°C) x 15 hrs |
|-----------------------|------------|---------|--------------------|-----------------------|
| Tg DSC Onset-1st Heat | ASTM E1356 | °F (°C) | 139 (59) | 193 (89) |

The total volume, ambient conditions, aspect ratio, and dimensions of the casting will have an effect on the expansion ratio and therefore final density. A tall vertical casting will be generally more expanded and lower density than a casting made in a thinner horizontal format.

Theoretical foam volumetric expansion is 4 times original liquid volume. The actual expansion rate will range between 3 and 4 times original liquid volume.

We recommend testing in the final part configuration to ensure that the cavity is completely filled, especially in a blind casting situation.

¹ 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 CO₂ 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.