PRO-SET®

LAMINATING EPOXY

ADHESIVES

PROCESS EQUIPMENT

Technical Data

135 Resin/237 Hardener

Laminating Epoxy

The 135/237 Epoxy system is formulated for laminating synthetic composite structures. Use 135/237 for primary laminating applications. The 135/237 mixture will provide a working time of approximately 250 minutes at 72° F. A typical laminate will be gelled in approximately 5-7.5 hours at 72° F.

MIXING

Combine PRO-SET 135 Resin with PRO-SET 237 Hardener following the ratios by weight or volume shown in the table. Stir thoroughly and transfer to impregnator, roller pan, or apply direct to the fabric.

CURING

PRO-SET 135/237 mixtures maintain excellent working properties until gel takes place, and at room temperature, will cure to a brittle B-stage. An elevated temperature cure or post-cure of 125°F to 180°F **is required** for mixture to reach final cure.

We recommend building sample panels using proposed materials and procedures to understand working and curing characteristics under your shop conditions

HANDLING CHARACTERISTICS *(Not for specification purposes)*

Property	**Mixed Resin/Hardener**
Density	9.3 lb/gal
Viscosity @ 72°F (ASTM D-2393-80)	1,200 cps

Mix Ratio (135 Resin:237 Hardener)	**Target**	**Acceptable Range**
by weight	100:25	100:28.3 to 100:22.7
by volume	100:31	100:34.1 to 100:27.2

Pot Life (ASTM D-2427-71)	**100g**	**500g**
@72°F	113 min	64 min
@80°F	68 min	61 min
@88°F	32 min	26 min

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ISO 9001:2000 certified

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PHYSICAL PROPERTIES

135 Resin/237 Hardener

Physical Properties	Test Method	Cure Schedule				
		Room Temp.* Cure	**RT* × 15 hrs + 125°F × 8 hrs**	**RT × 15 hrs + 140°F × 8 hrs**	**RT × 15 hrs + 180°F × 4 hrs**	**RT × 15 hrs + 180°F × 8 hrs**
Hardness (Shore D)	ASTM D-2240	Post Cure Required	85	86	85	85
Compression Yield (psi)	ASTM D-695		17,024	16,825	16,497	16,729
Tensile Strength (psi)	ASTM D-638		8,816	9,933	11,550	10,874
Tensile Elongation (%)	ASTM D-638		4.1	4.6	6.1	5.7
Tensile Modulus (psi)	ASTM D-638		5.30E+05	5.10E+05	5.00E+05	5.10E+05
Flexural Strength (psi)	ASTM D-790		15,711	20,710	20,549	19,096
Flexural Modulus (psi)	ASTM D-790		5.44E+05	5.40E+05	5.55E+05	5.10E+05
Heat Deflection Temperature (°F)	ASTM D-648		141	172	174	196
Glass Transition Temperature (°F)**			147	176	178	189
Ultimate Tg–second heat (°F)**			207	207	207	207
Izod Impact (ft-lbs/in.)	ASTM D-256		0.48	1.03	1.07	0.83

*Room Temperature (70°F–75°F)

** Determined using a Differential Scanning Calorimeter (DSC). Value reported is the onset of the glass transition.

Test specimens were neat epoxy (without fiber reinforcement).

Typical values; not to be construed as specification.

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