

PRO-SET®

Technical Data

HTP-187

HTP-288

The New
Standard

HIGH TEMPERATURE SURFACE COAT EPOXY

EPOXIES for
Laminating
Infusion
Tooling
Assembly

Wessex Resins & Adhesives

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ISO9001:2015 Certified

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& Adhesives

COMBINED FEATURES

High-temperature, high-performance epoxy formulation for synthetic composite parts and tooling manufacture. Black in colour.

Tg as high as 144°C with proper post cure. Provides excellent temperature stability and great part cosmetics.

Slow cure speed hardener provides 2 to 3 hours of working time at 22°C. A second application can be applied while the first coat is tacky, which is typically after 6-8 hours. After 24 hours cure at 22°C the laminating process can begin.

Medium viscosity enables brush application and air release. Easily applied with a short bristle brush.

Thixotroped to prevent runs and sags at a thickness of 0.25 - 0.30 mm

Elevated temperature cure is required. The surface coat and laminate should be post cured together. See chart for post cure information.

HANDLING PROPERTIES

Property	Standard	Units	22°C
150g Pot Life	ASTM D2471	minutes	160
500g Pot Life	ASTM D2471	minutes	150
Viscosity Mixed	ASTM D2196	mPas	16,000
Viscosity (resin)	ASTM D2196	mPas	33,000
Viscosity (hardener)	ASTM D2196	mPas	900

MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	7.4:1	100:13.5
Volume	6.3:1	100:15.9

DENSITY

State	Units	22°C
Resin	gcm ⁻³	1.23
Hardener	gcm ⁻³	1.06

Test specimens were neat epoxy (without fibre reinforcement).
Typical values not to be construed as specification.

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MECHANICAL PROPERTIES

Property	Standard	Units	RT Gelation + (60°C x 2 hr) + (107°C x 12hr)	RT Gelation + (60°C x 2 hr) + (135°C x 12hr)
Hardness	ASTM D2240	Shore D	89	92
Compression Yield	ASTM D695	MPa	123	140
Tensile Strength	ASTM D638	MPa	26	26
Tensile Modulus	ASTM D638	GPa	3.4	3.9
Tensile Elongation	ASTM D638	%	1.9	0.9
Flexural Strength	ASTM D790	MPa	54	54
Flexural Modulus	ASTM D790	GPa	2.8	2.8

THERMAL PROPERTIES

Property	Standard	Units	RT Gelation + (60°C x 2 hr) + (107°C x 12hr)	RT Gelation + (60°C x 2 hr) + (135°C x 12hr)
Tg DMA Peak Tan Delta	ASTM E1640*1	°C	129	147
Tg DMA Onset Storage Modulus	ASTM E1640*1	°C	112	131
Tg DSC Onset - 1st Heat	ASTM E1356	°C	109*2	144
Heat Deflection Temperature	ASTM E1356	°C	119	119

APPLICATION TIPS

- Stir resin before use; some settling may occur.
- Always evaluate mould release on a test panel that is characterised with your post-cure schedule.
- Apply product using stiff bristle brush. Cut bristles to half of their original length to increase brush stiffness.
- When applying, brush in an alternating pattern of 0 and 90 degrees to a thickness of 0.25 - 0.30 mm. A total of 0.50 - 0.60 mm of surface coat is recommended before laminating.
- Allow surface coat to cure prior to lamination. Wash with water and a Scotch Brite Pad to remove amine blush.
- To repair finished moulds, grind away damaged Surface Coat and grind a "Vee" into any cracks. Sand areas with 80-grit sandpaper and fill with Surface Coat. Post-cure as required.
- 3.8 litres of HTP-187/HTP-288 covers approximately 5.6m² with a final thickness of 0.60mm (2 applications).

*1 1Hz, 3°C per minute.

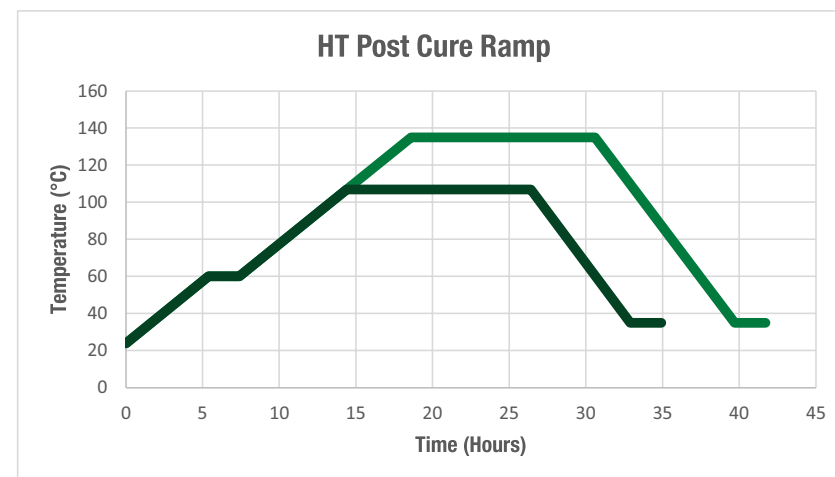
*2 Modulated DSC.

³ 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 or hardener to crystallise. If this occurs, warm the resin or hardener to 50°C 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.

⁴ Test specimens were neat epoxy (without fibre reinforcement).

These are typical properties and cannot be construed as a specification. The end users should test the products to ensure the products are suitable for the intended application. Any information, data, advice or recommendation published by Wessex Resins or obtained from Wessex Resins by other means and whether relating to Wessex Resins' materials or other materials, is given in good faith and believed to be reliable.

POST CURE SCHEDULE



Post cure at 60°C x 2 hr + 135°C x 12 hr with ramp rates no greater than 7°C/hr, to achieve maximum properties. For larger parts, additional dwells may be required.

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