



## MULTIPREG HX50

### Low Temperature Curing Epoxy Tooling Prepreg

HX50 is an epoxy resin system that can be pre-impregnated into high performance fibers such as carbon, glass and kevlar. After a suitable post-cure an end-use temperature of 180°C (356°F) is achieved.

#### CHARACTERISTICS:

- > Low initial cure temperature
- > Unsupported post-cure
- > Excellent drape for complex shapes
- > High glass transition temperature
- > 2 to 3 days work life at ambient
- > 6 months storage life
- > Low coefficient of thermal expansion
- > Low volatile content

The processing parameters and instructions contained in this technical datasheet are to be used in accordance with The detailed instructions provided in the document "Autoclave-Cured Tools Using MULTIPREG HX SERIES" available from Amber Composites.

RESIN PROPERTIES	
Density	1.23 g/cm <sup>3</sup> (76.7lbs/ft <sup>3</sup> ) at 23°C (73.4°F)
Tg (DMTA) after 190°C (374°F) post-cure	Onset: 190°C (374°F) Peak Tan δ: 220°C (428°F)
Typical C.T.E. for a carbon tool	3.1*(1.7) X10 <sup>-6</sup> /°C (°F)
Typical C.T.E. for a glass tool	12.7*(7) X10 <sup>-6</sup> /°C (°F)

\*CTE is dependent on construction and processing. Figures quoted are based on standard 1-8-1 quasi-isotropic tooling laminates.



## MULTIPREG HX50

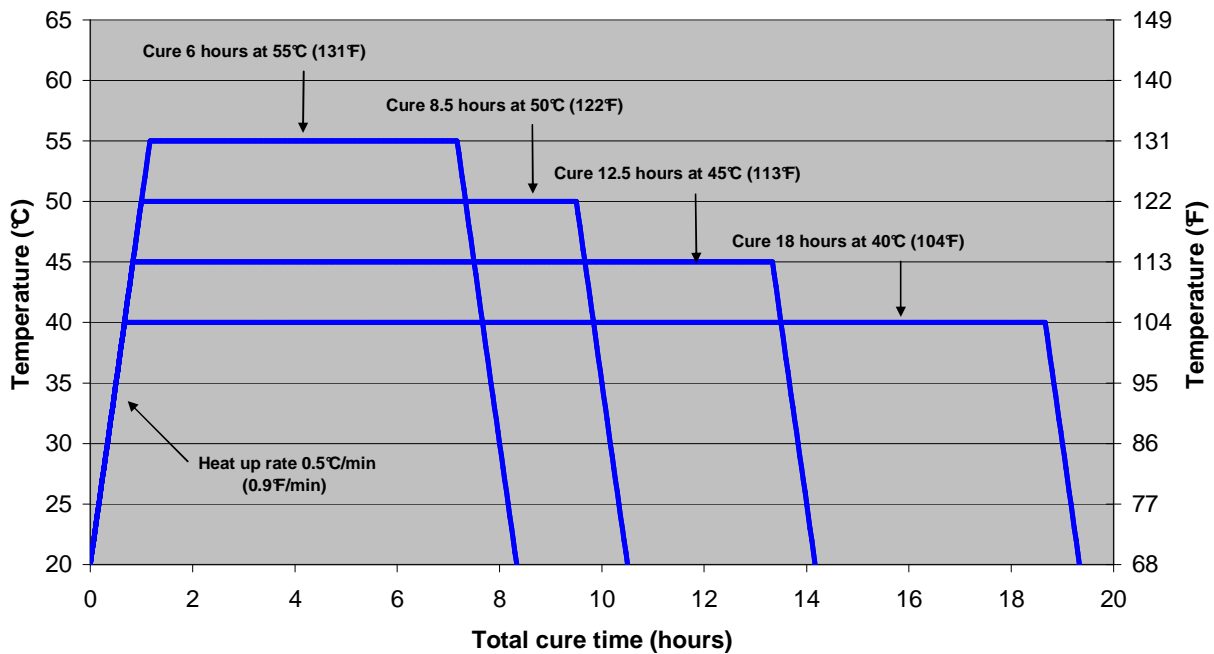
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### INITIAL MINIMUM CURE TIMES

Temperature °C (°F)	Time (hrs)
40 (104)	18
45 (113)	12.5
50 (122)	8.5
55 (131)	6

### CURING CYCLES

**Initial Minimum Cure Schedules - HX50**



Alternative cure cycles at higher temperature may be used e.g. 4hrs at 60°C (140°F) but it should be noted that HX50 prepreg contains a reactive resin system and care must be taken to avoid exothermic heating during the initial cure.



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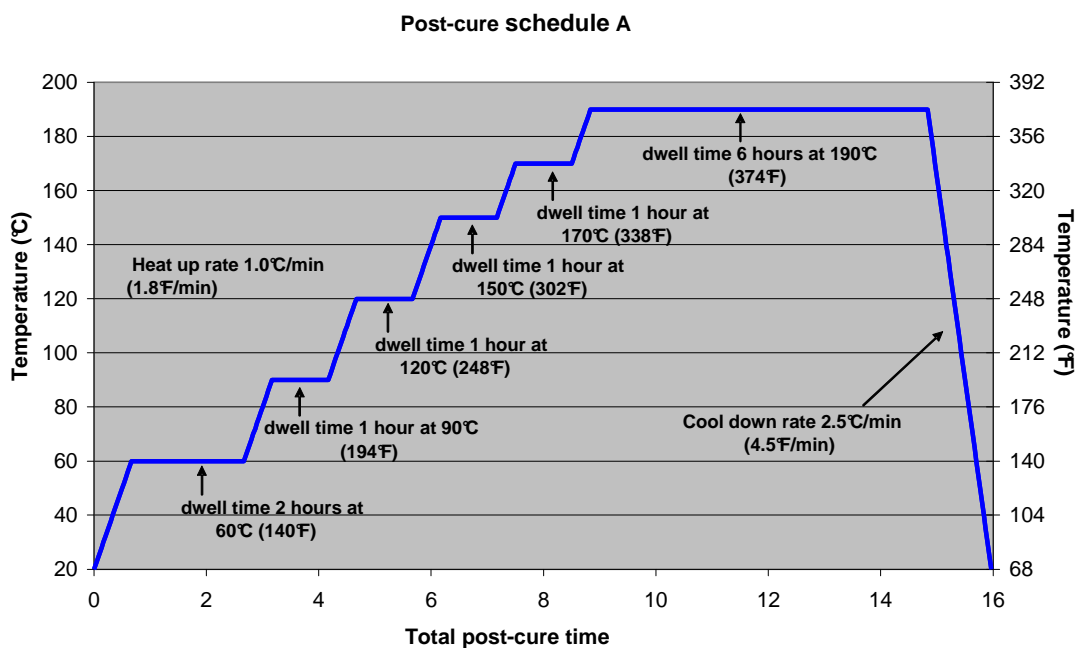
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### POST-CURE

Post-cure schedule A:

Ramp	1°C (1.8°F) / min to 60°C (140°F)	Dwell for 2 hours
Ramp	1°C (1.8°F) / min to 90°C (194°F)	Dwell for 1 hour
Ramp	1°C (1.8°F) / min to 120°C (248°F)	Dwell for 1 hour
Ramp	1°C (1.8°F) / min to 150°C (302°F)	Dwell for 1 hour
Ramp	1°C (1.8°F) / min to 170°C (338°F)	Dwell for 1 hour
Ramp	1°C (1.8°F) / min to 190°C (374°F)	Dwell for 6 hours

Cool to 50°C (122°F) at 2.5°C/min (4.5°F/min)

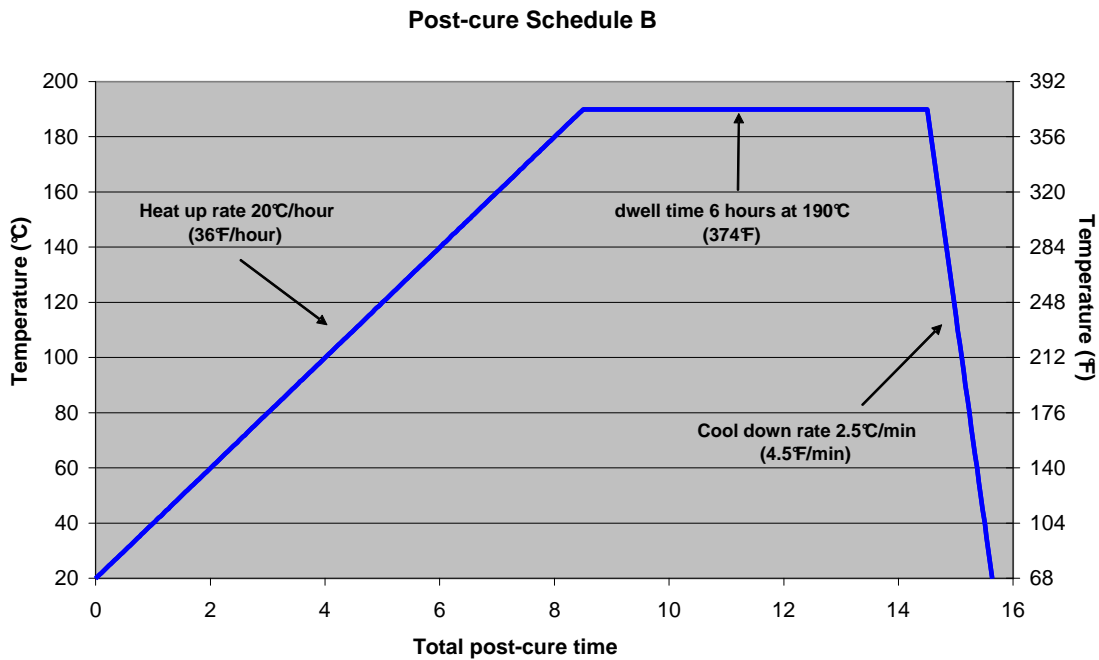




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An alternative post-cure schedule may also be used as follows:



### REINFORCEMENTS AVAILABLE

Fiber type	Weight (gsm)	Weave style	Molded thickness (mm)	Std. resin content w/o
High Strength Carbon 3k	200	2/2 Twill	0.23	46 (surface ply)
High Strength Carbon 12k	650	2/2 Twill	0.62	35
E Glass (EC6 Yarn)	300	8 H Satin	0.24	38 (surface ply)
E Glass (EC9 Yarn)	850	8 H Satin	0.60	28
E Glass (1200 Tex WR)	870	2/2 Twill	0.60	28

Other fabrics and resin weights available on request.



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### CAUTION

MULTIPREG HX50 prepreg contains a reactive resin system and care must be taken to avoid exothermic heating during the initial cure. Avoid exceeding 65°C (149°F) initial cure.

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### STORAGE

Shelf life is 2-3 days at ambient temperature 20°C (68°F)

Refrigerated storage life is 6 months at -18°C (0°F)

To avoid moisture condensation: Following removal from cold storage, allow prepreg to reach room temperature before opening the polythene bag.

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### HANDLING SAFETY

Observe established precautions for handling epoxy resins and fibrous materials. Ensure adequate ventilation, wear gloves, goggles, and protective clothing.

For further information refer to Material Safety Data Sheet.

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### FURTHER INFORMATION

For further processing information refer to, "Autoclave-Cured Tools Using MULTIPREG HX SERIES" available from Amber Composites.

Please contact Amber Composites for additional information.

This is not a specification. The information given in this data sheet in relation to the performance, storage and other characteristics of the product is based on results gained from experience and tests and is believed to be accurate. Given, however, that conditions of use and storage will vary, Amber Composites will not be liable for any loss or damage resulting from reliance upon such information. The purchaser is recommended to carry out his own tests to establish the suitability of the product for its particular purpose. The use of the product in certain processes may require third party consent.