

PRODUCT DATA SHEET



TENCATE ADVANCED COMPOSITES

TenCate AmberTool® HX56 Tooling prepreg

PRODUCT TYPE

40-55°C (104-131°F) cure

Epoxy tooling with improved handling properties

TYPICAL APPLICATIONS

- Small to medium sized autoclave tooling with fast cure and excellent surface finish

SHELF LIFE

Tack life

60 hours @ 18°C (64°F)

Storage life

6 months @ -18°C (0°F)

Tack life is time during which the prepreg retains enough tack, drape and handling for easy tool lay-up.

To avoid moisture condensation:

Following removal from cold storage, allow the prepreg to reach room temperature before opening the polythene bag. Typically the thaw time for a full roll of material will be 4 to 6 hours.

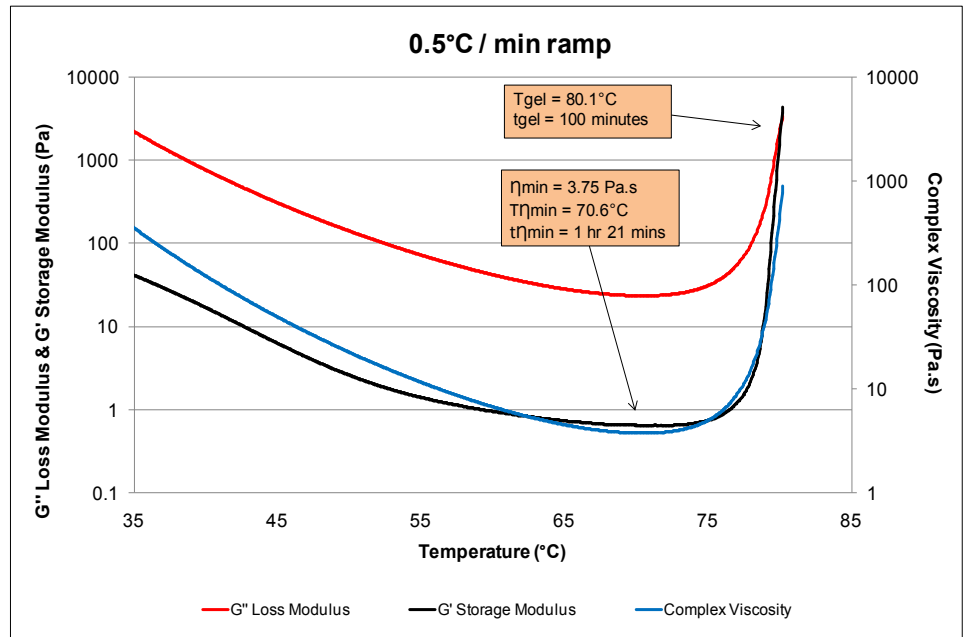
PRODUCT DESCRIPTION

TenCate AmberTool® HX56 is an epoxy resin system that is pre-impregnated into a selection of carbon fibre fabric types. After a suitable post-cure, an end-use temperature of 180°C (356°F) is achieved.

TENCATE AMBERTOOL® HX56 PREPREG BENEFITS / FEATURES

- Excellent surface finish from autoclave curing
- 60 hours tack life at 18°C (64°F)
- High glass transition temperature
- Maximum 180°C (356°F) tool end use temperature
- Capable of unsupported post cure
- 6 months storage life at -18°C (0°F)

VISCOSITY PROFILES



REINFORCEMENTS AVAILABLE

Fibre type	Weight (gsm)	Weave Style	Moulded thickness (mm)	Standard resin content w/o
High strength carbon 3k	205	2x2 twill	0.23	46 (surface ply)
High strength carbon 12k	650	2x2 twill	0.62	35 (bulk ply)

Other fabrics and resin weights available on request.

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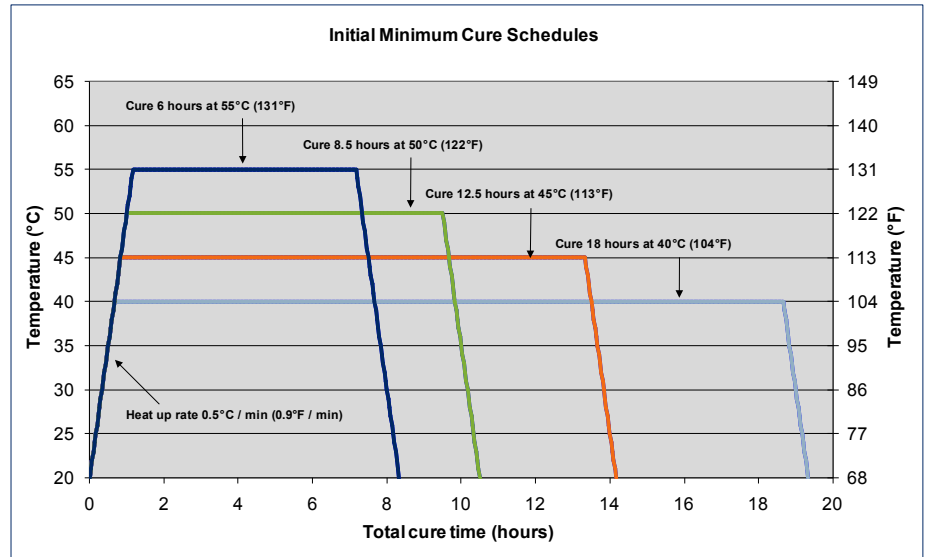
INITIAL MINIMUM CURE TIMES

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

TYPICAL CURE PROFILES

40°C (104°F) cure temperature		
Ramp	0.5°C (0.9°F) / minute to 40°C (104°F)	Dwell for 18 hours
Ramp	2.0°C (3.6°F) / minute to 20°C (68°F)	Followed by demould
Total time: 19 hours		

55°C (131°F) cure temperature		
Ramp	0.5°C (0.9°F) / minute to 55°C (131°F)	Dwell for 6 hours
Ramp	2.0°C (3.6°F) / minute to 20°C (68°F)	Followed by demould
Total time: 7 hours 30 minutes		



Caution: TenCate AmberTool® HX56 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) during the initial cure.

POST-CURE

Following the initial cure it is essential to carry out a postcure in order to develop the glass transition temperature to a level suitable for the end use temperature of the tool. Laminates may be post-cured unsupported, provided that the slow ramp-rates recommended in schedule A are observed. This allows time for the Tg to step ahead of the oven temperature throughout the postcure thus preventing the matrix from softening significantly.

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 hours
Ramp	1°C (1.8°F) / min to 120°C (248°F)	Dwell for 1 hours
Ramp	1°C (1.8°F) / min to 150°C (302°F)	Dwell for 1 hours
Ramp	1°C (1.8°F) / min to 170°C (338°F)	Dwell for 1 hours
Ramp	1°C (1.8°F) / min to 190°C (374°F)	Dwell for 6 hours

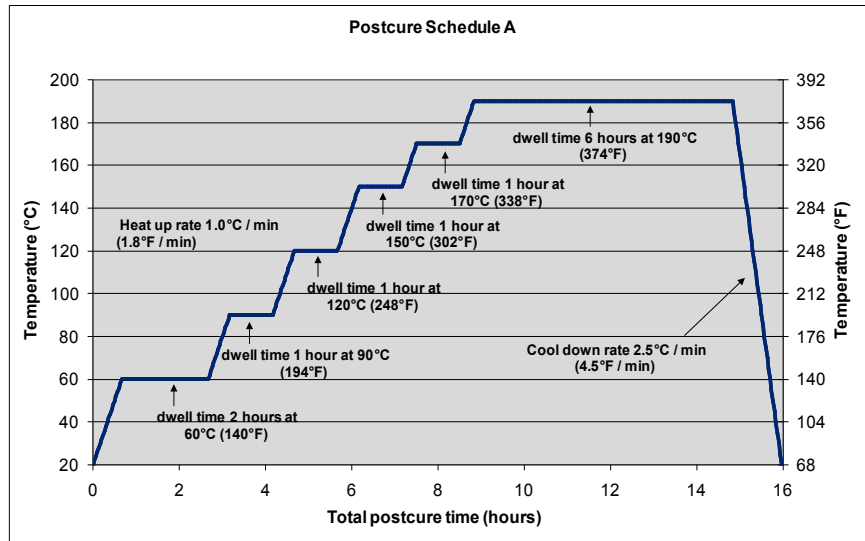
Cool at 2.5°C (4.5°F) / min to 50°C (122°F) before demoulding

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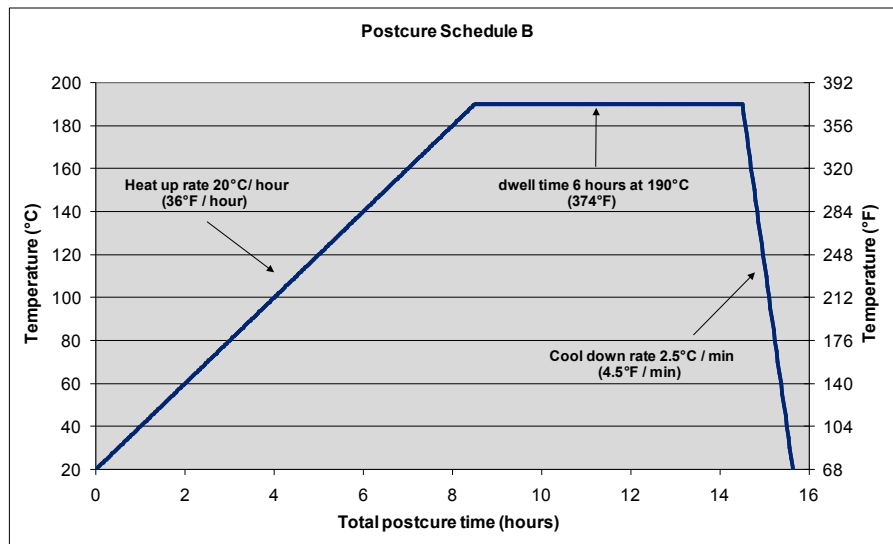


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An alternative post-cure schedule may also be used as follows:



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All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are processed and tested are key to their performance, and TenCate Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties.

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HANDLING SAFETY

Observe established precautions for handling epoxy resins and fibrous materials. Ensure adequate ventilation, wear gloves and protective clothing. For further information refer to our Safety Data Sheet available from TenCate Advanced Composites, UK.

PROCESSING

Processing parameters and instructions are provided in the TenCate AmberTool material processing information guide from TenCate Advanced Composites or at www.tencate.com/tooling

TENCATE ADVANCED COMPOSITES

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