

PRODUCT DATA SHEET



TENCATE ADVANCED COMPOSITES

TenCate AmberTool® HX40 Tooling prepreg

PRODUCT TYPE

50-75°C (122-167°F) cure

Low to intermediate temperature curing epoxy tooling prepreg

TYPICAL APPLICATIONS

- High temperature larger scale tooling

SHELF LIFE

Tack life

8 days @ 18°C (64°F)

Storage life

12 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® HX40 is an epoxy resin system that can be pre-impregnated into high performance fibres such as carbon and glass. It offers an extended tack life of 8 days at 18°C (64°F). After a suitable post-cure an end-use temperature of 190°C (374°F) is achieved.

TENCATE AMBERTOOL® HX40 PREPREG BENEFITS/FEATURES

- Versatile curing options 50-75°C (122-167°F)
- Mould tools from low temperature patterns
- Recommended cure of 12 hours at 65°C (149°F)
- Unsupported post-cure
- High end use temperature of 190°C (374°F)
- 8 days tack life at 18°C (64°F)
- 12 months storage life at -18°C (0°F)
- Low volatile content giving excellent surface finish from an autoclave cure
- Excellent drape and tack for complex shapes

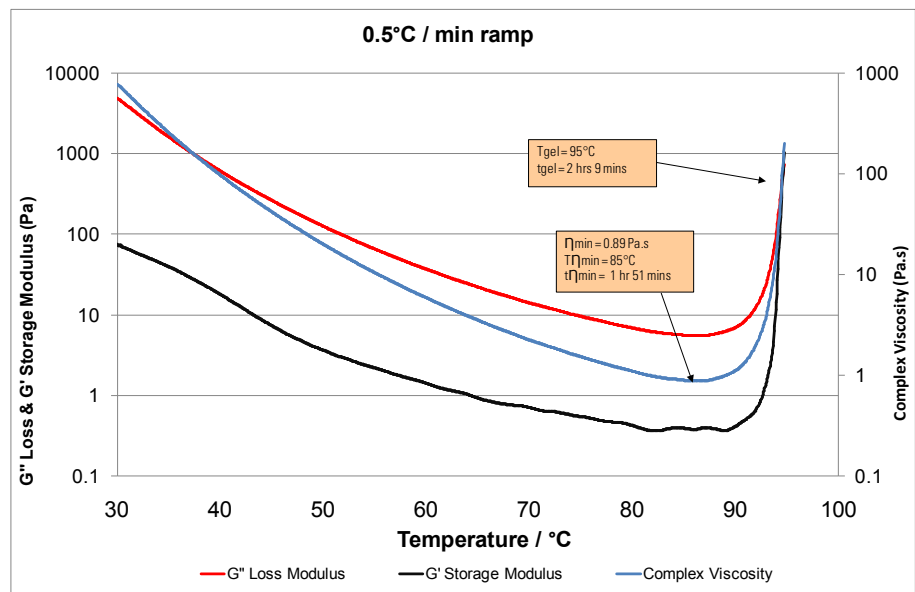
TYPICAL NEAT RESIN PROPERTIES

T_g (DMTA) after 190°C (374°F) post-cure Onset: 203°C (397°F); Peak tan δ: 229°C (444°F)
Typical C.T.E. for a carbon tool..... 3.4 (1.9) x 10⁻⁶/°C (°F)*

*CTE is dependent on construction and processing.

Figures quoted are based on standard 1-8-1 quasi-isotropic tooling laminates.

VISCOSITY PROFILE



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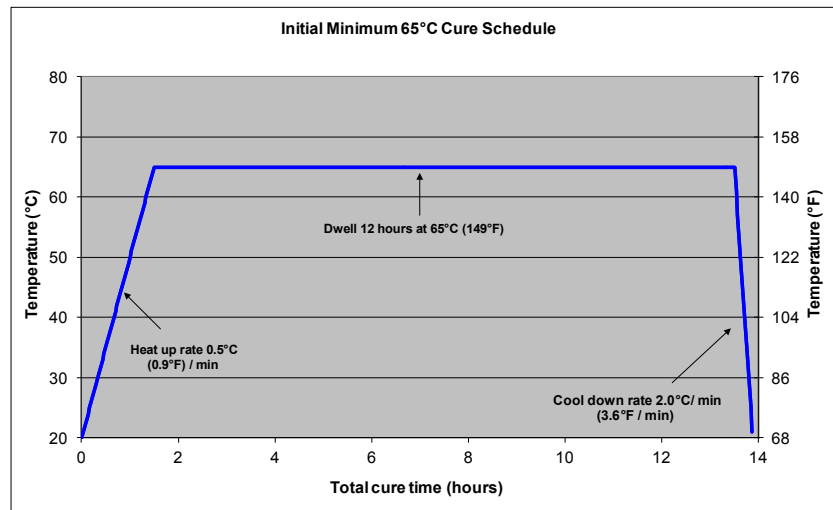
REINFORCEMENTS AVAILABLE

Fibre type	Weight (gsm)	Weave style	Standard resin content w/o
High strength carbon 3k	205	2x2 twill	46 (surface ply)
High strength carbon 12k	650	2x2 twill	35
E glass (EC9 yarn)	280	2x2 twill	38 (surface ply)
E glass (EC6 yarn)	300	8 harness satin	38 (surface ply)
E glass (1200 tex WR)	600	2x2 twill	28
E glass (EC9 yarn)	850	8 harness satin	28
E glass (1200 tex WR)	870	2x2 twill	28

Other fabrics and resin weights available on request.

INITIAL MINIMUM CURE TIMES

Temperature °C (°F)	Time (hrs)
50 (122)	40
55 (131)	24
60 (140)	18
65 (149)	12
70 (158)	9
75 (167)	6



Caution: TenCate AmberTool HX40 contains a reactive resin system and care must be taken to avoid exothermic heating during the initial cure. Avoid exceeding 80°C (176°F) for the initial cure.

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 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

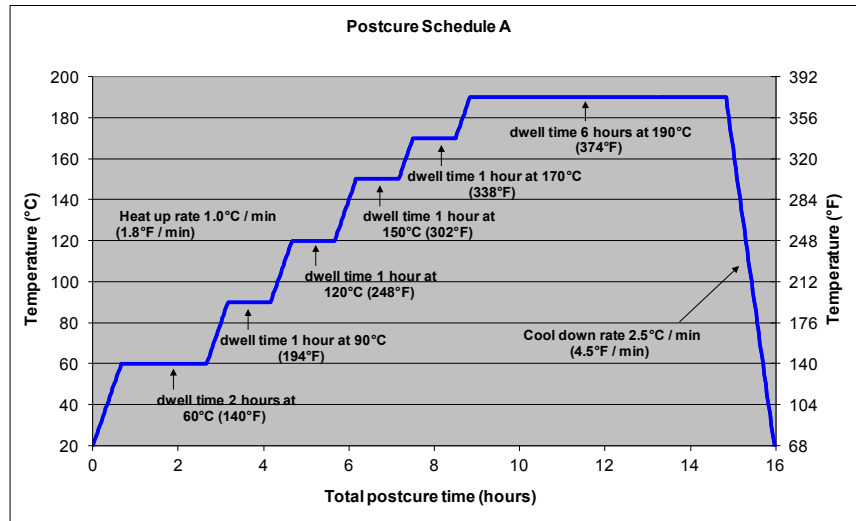
Cool to 50°C (122°F) at 2.5°C / min (4.5°F / min)

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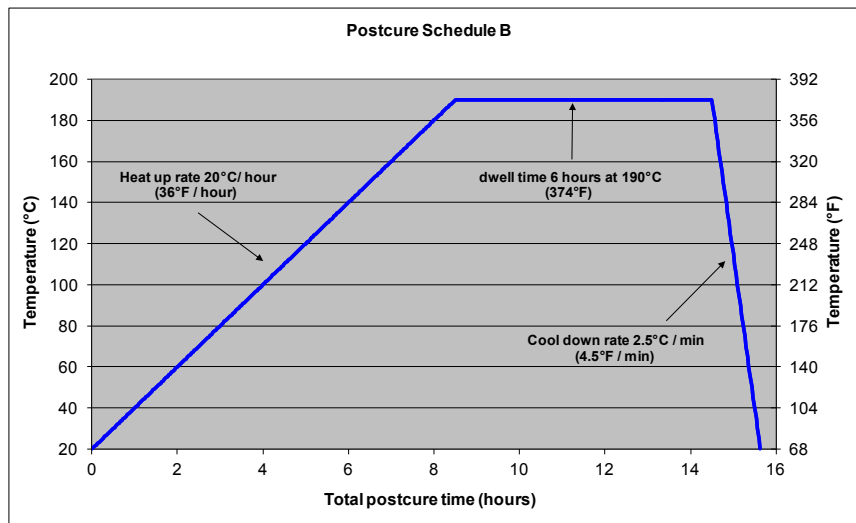


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An alternative post-cure schedule may also be used as follows:



Revised 09/2015

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, Langley Mill.

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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