

PRODUCT DATASHEET



TENCATE ADVANCED COMPOSITES

TenCate EF8020 Modified epoxy structural film adhesive

PRODUCT TYPE

70°C (158°F) to 130°C (266°F) cure
Modified epoxy structural film adhesive

TYPICAL APPLICATIONS

- Metal-to-metal or sandwich core-to-skin bonds
- Has a strong self-filleting action in honeycomb-to-skin bonds

SHELF LIFE

Out life

30 days at @ 20°C (68°F)

Storage life

12 months @ -18°C (0°F)

Out life is the maximum time allowed at room temperature before cure.

To avoid moisture condensation

Following removal from the freezer, allow the TenCate EF8020 to reach room temperature before opening the polythene bag. Typically, the thaw time for a full roll of material from storage at -18°C (0°F) will be 4 to 6 hours.

PRODUCT DESCRIPTION

TenCate EF8020 adhesive film is a high strength epoxy adhesive formulation supplied in the form of a light weight flexible film. It is intended for metal to metal or sandwich core to skin bonds and has a strong self-filleting action in honeycomb-to-skin bonds. The film is protected on one side by a release paper and on the other by a polythene separator. A lightweight polyester net is incorporated into the adhesive film to ensure easy handling whilst cutting and positioning. TenCate EF8020 is compatible for co-cure with TenCate's 8020 RAPI-PLY series.

TENCATE EF8020 BENEFITS/FEATURES

- Flexible low to medium cure schedule 70°C (158°F) to 130°C (266°F)
- Available in a range of surface weights (100g/m², 200g/m² and 300g/m²)
- T_g (DMTA – peak tan δ) 116°C (240°F) after 30 minutes cure at 120°C (248°F)
- High performance bonding in both metallic and composite structures
- Accurate control of adhesive distribution, reduce wastage
- Excellent filleting to honeycomb, ideal for honeycomb sandwich construction
- Suitable for press moulding, autoclave and vacuum bag cure
- 30 days useable outlife at 20°C (68°F), 12 months freezer storage at -18°C (0°F)
- TenCate EF8020 is compatible for co-cure with TenCate 8020 prepreg

TYPICAL NEAT RESIN PROPERTIES

Density1.20 g/cm³ at 23°C (73°F)

T_g after 1hr at 120°C (DMTA).....Onset: 102°C (215°F)

Peak tan δ: 116°C (240°F)

TYPICAL ADHESIVE PROPERTIES

Adhesive Properties	Condition	Method	Result
Climbing drum peel	RTD	DTD 5577	500 N/75 mm
Tensile lap shear	RTD	DTD 557	32 MPa

Moulding conditions for the test samples were as follows:

*Heated 30 min at 120°C (248°F). 60 P.S.I. pressure applied.

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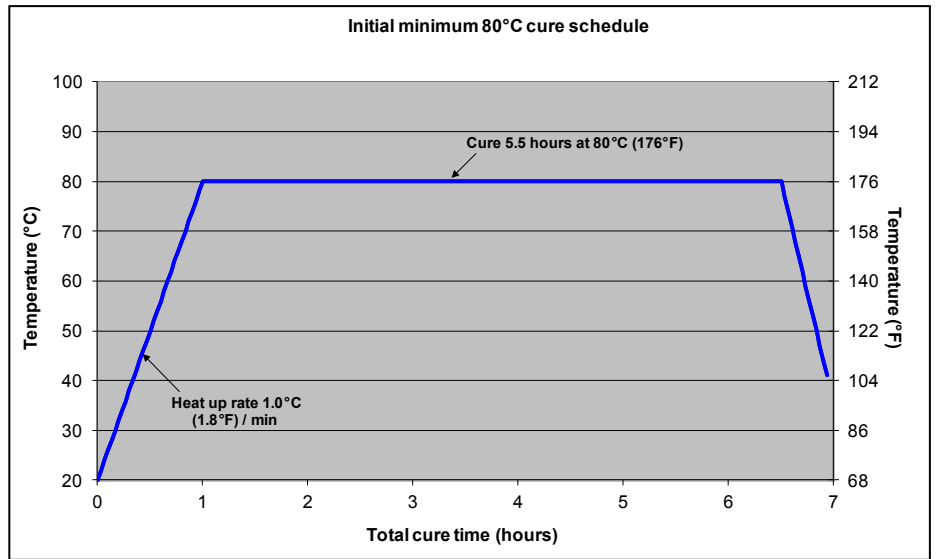
TYPICAL CURE PROFILES

80°C (176°F) Cure temperature

Total Time: 6 ½ hours

1.0°C (1.8°F) / minute ramp to 80°C (176°F)

5 ½ hours dwell @ 80°C (176°F)



120°C (248°F) Cure temperature

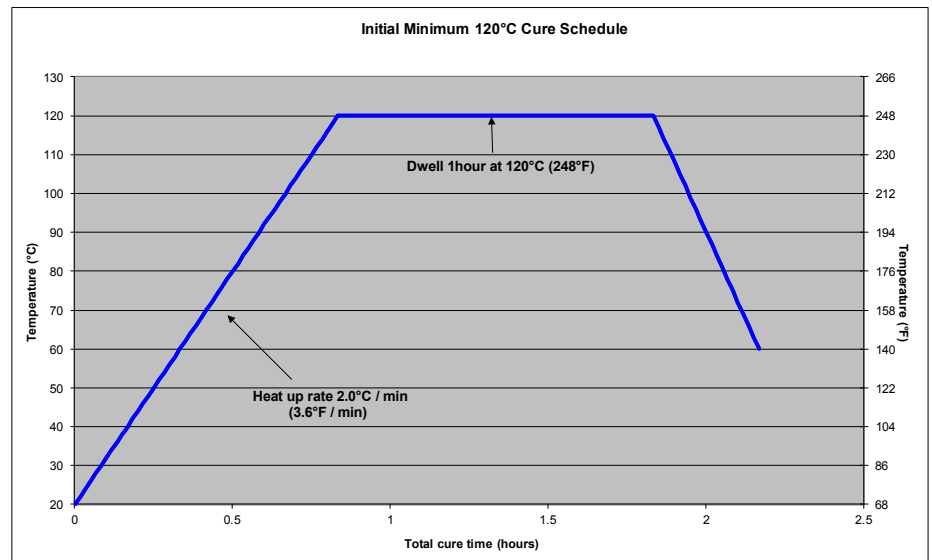
Total Time: 2 hr 20 min

1.0°C (1.8°F) / minute ramp to 80°C (176°F)

30 minute dwell @ 80°C (176°F)

2.0°C (3.6°F) / minute ramp to 120°C (248°F)

30 minute dwell @ 120°C (248°F)



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8020 RECOMMENDED CURE TIMES

Cure temperature °C (°F)	Recommended cure time (hrs)
70 (158)	8
80 (176)	5.5
100 (212)	2
120 (248)	0.5

POST CURE

- In applications demanding maximum temperature or environmental resistance E.g. 120°C (248°F) service temperature, it is essential to develop the glass transition temperature to the maximum level by a suitable postcure.
- Ramp from initial cure temperature to 120°C (248°F) at 20°C /hr and hold for 30 minutes minimum, this postcure will result in a T_g of approximately 116°C (peak tan δ) (240°F).

PROCESSING

- It is important that all substrates to be adhered are de-greased and free from contamination before use.
- TenCate EF8020 can be successfully cured by vacuum-only, autoclave or press moulding processes.

STANDARD ROLL QUANTITIES

Resin film weight incl polyester net (g/m ²)	Roll length [linear m (ft)]	Width (m (ft))
100	20.5 (67)	1.22 (4)
200	20.5 (67)	1.22 (4)
300	20.5 (67)	1.22 (4)

*Other roll lengths are available on request.

*The film is supplied on rolls with a polyester net carrier. The film is protected by release paper on one side and polythene separator on the other.

Caution: TenCate EF8020 resin film contains a reactive resin system and care must be taken to avoid exothermic heating during the initial cure.

HANDLING SAFETY

Observe established precautions for handling epoxy resins and fibrous materials.

For further information refer to Material Safety Data Sheet.

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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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