

# PRODUCT DATA SHEET



TENCATE ADVANCED COMPOSITES

## TenCate 8020 Surface Film Sandable epoxy surface film

### PRODUCT TYPE

70°C (158°F) to 130°C (266°F) cure

Flexible cure, flame retardant,  
toughened epoxy resin system

### TYPICAL APPLICATIONS

- Out-of-autoclave automotive body work

### SHELF LIFE

#### Out life

7 days @ 18°C (64°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 cold storage, allow the surface film to reach room temperature before opening the polythene bag. Typically the thaw time for a full box of material will be 2 to 4 hours.

### PRODUCT DESCRIPTION

TenCate 8020 Surface Film is a grey filled epoxy film designed to enhance the surface finish of moulded laminates. The surface film produces a pin-hole free laminate in vacuum bag and autoclave conditions with a stable sandable surface finish. Once lightly sanded the surface film provides an excellent key for painting. TenCate 8020 Surface Film is compatible for use with all products from the TenCate 8020 thermoset series.

### TENCATE 8020 SURFACE FILM BENEFITS/FEATURES

- Outstanding vacuum-only processing capability
- Excellent surface finish
- Flexible low to medium cure schedules 70°C (158°F) to 130°C (266°F)
- Easy to sand
- Outstanding vacuum-only processing capability
- Significant reduction in print-through
- Resin tack points to aid lay-up on vertical surfaces
- 7 days usable out life at 18°C (64°F)

### TYPICAL SURFACE FILM PROPERTIES

Total area weight ..... 700 g/m<sup>2</sup>

Tg (DMTA) after 30 minute cure at 120°C (248°F)..... Onset: 121°C (250°F);  
Peak Tan δ: 143°C (289°F)

Colour..... Grey

### TENCATE 8020 SURFACE FILM RECOMMENDED CURE TIMES

Cure temperature °C (°F)	Recommended dwell times (hours)
70 (158)	12.0
80 (176)	5.5
100 (212)	2.0
120 (248)	1.0

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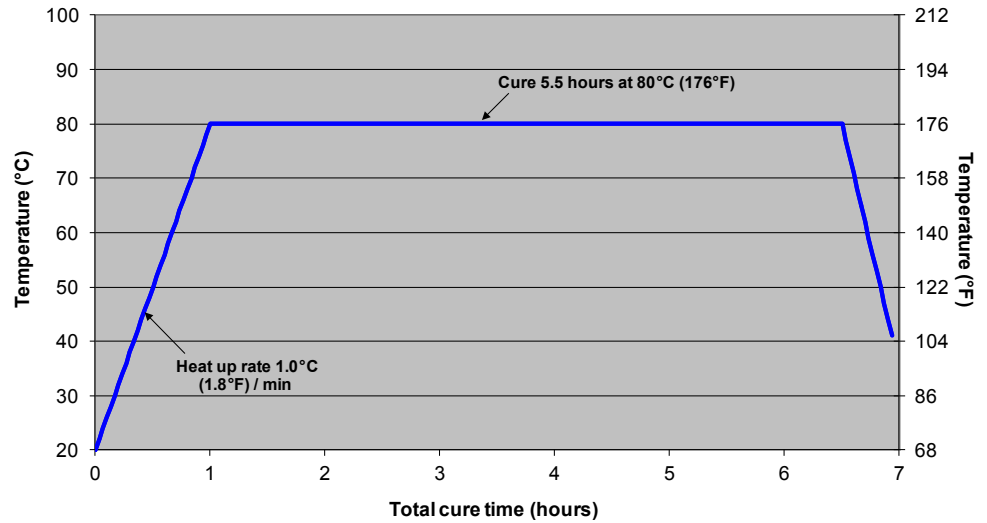
### TYPICAL CURE PROFILES

#### 80°C (176°F) Cure temperature

Total Time: 6½ hours

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

5½ hours dwell @ 80°C (176°F)



#### 120°C (248°F) Cure temperature

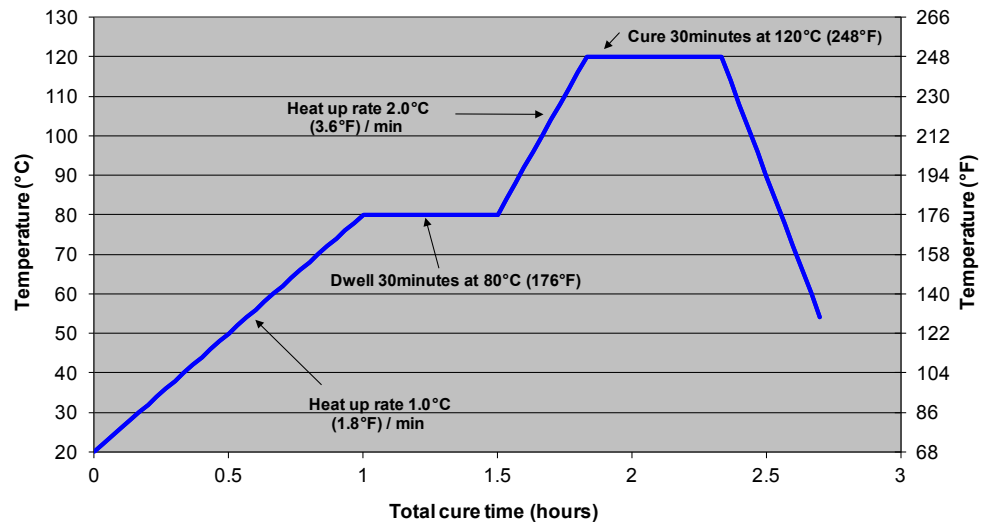
Total Time: 2 hours 20 min.

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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### 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 post-cure.

Ramp from initial cure temperature to 120°C (248°F) at 20°C (36°F) / hour and hold for 30 minutes minimum, this post-cure will result in a Tg of approximately 121°C (250°F).

Laminates may be post-cured unsupported unless the size, shape and laminate thickness would allow excessive distortion under self-weight.

### PROCESSING

Following removal from refrigerated storage, allow the Surface Film to reach room temperature before opening the polythene bag, to avoid moisture condensation. Typically the thaw time for a box of material from storage at -18°C (0°F) will be 2 to 4 hours.

**It is essential that during the cure that air-paths from the surface ply are maintained into the breather pack. This is achieved by extending the surface ply by 15mm beyond the subsequent laminate plies around the entire perimeter of the part.**

A single layer of surface film ply should be applied directly to the tool face. The product has been designed with tack points to allow the lay up of vertical surfaces and it is important to lay this side against the tool face.

Once the mould surface has been covered with surface film, it is advisable to insert dry glass towels at the front face to provide an air evacuation path into the breather. The glass towels should be inserted at approx 0.5m intervals.

### EXOTHERM

In certain circumstances, such as the production of thick section laminates, rapid heat up rates or highly insulating masters, TenCate 8020 Surface Film can undergo exothermic heating leading to rapid temperature rise and component degradation in extreme cases.

Where this is likely, a cure incorporating an intermediate dwell is recommended in order to minimise the risk.

### HANDLING SAFETY

TenCate 8020 Surface Film contains epoxy resin, which can cause allergic reactions by skin contact. Avoid prolonged or repeated contact with skin - wear disposable nitrile gloves.

Wash the skin thoroughly with soap and water or resin removing cream after handling. Do not use solvents for cleaning skin.

TenCate produces a separate full Material Safety Data Sheet for this product. Please ensure that you have the correct Material Safety Data to hand for the materials you are using before commencing work.

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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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