

# TECHNICAL DATA



TENCATE ADVANCED COMPOSITES

## TC310 Epoxy Film Adhesive

### PRODUCT TYPE

Toughened Epoxy Film Adhesive

### TYPICAL APPLICATIONS

- Aircraft Structures for:
  - Honeycomb core/skin bonding or/and,
  - Precured composite laminate bonding
  - Cocure composite bonding

### CURE SCHEDULE

- 2 hours at 250°F/121°C, followed by 1 hour at 350°F/177°C
- 2 hours at 350°F/177°C without dwelling at 250°F/121°C

### SHELF LIFE

21 days tack life at 70°F (21°C)

30 days tool life at 70°F (21°C)

12 months at 0°F (-18°C) (1)

<sup>(1)</sup> Unsupported films are more fragile and recommended to be stored no lower than 40°F

Revised 07/2013

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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### PRODUCT DESCRIPTION

TenCate TC310 is a toughened epoxy film adhesive with excellent mechanical properties and toughness. It is ideal for honeycomb or laminate bonding and may be cured in either autoclave or vacuum bag processing.

### PRODUCT FEATURES AND BENEFITS

- Excellent balance of high temperature service and toughness
- Can be cured initially at 250°F/121°C, followed by a 350°F/177°C postcure
- Designed for bonding honeycomb/composite structure or composite to composite laminate
- Can be co-cured with prepreg

### PRODUCT FORMS \*

Unsupported films ..... 0.015 to 0.06 psf  
 Supported films ..... 0.03, 0.05 psf with non woven fiberglass support  
 Typical widths ..... 12-50 in.

\* Additional film areal weights and scrim may be available.

### NEAT RESIN PROPERTIES

Dry Tg (DMA E' Onset) ..... 157°C/315°F

| Property                      | Condition          | Method      | 0.03 psf NWFg supported (150 gsm) |          | 0.05 NWFg Supported (244 gsm) |          |
|-------------------------------|--------------------|-------------|-----------------------------------|----------|-------------------------------|----------|
| Tensile Lap Shear             | RTD                | ASTM D 1002 | 4510 psi                          | 31.1 MPa | 5383 psi                      | 37.1 MPa |
| Tensile Lap Shear             | ETD<br>250°F/121°C | ASTM D 1002 | 4035 psi                          | 27.8 MPa | 4002 psi                      | 27.6 MPa |
| Tensile Lap Shear             | ETD<br>300°F/150°C | ASTM D 1002 | 3090 psi                          | 21.3 MPa | 3440 psi                      | 23.7 MPa |
| Flatwise Tensile <sub>1</sub> | RTD                | ASTM C 297  | 485 psi                           | 3.3 MPa  | 1134 psi                      | 7.8 MPa  |
| Flatwise Tensile <sub>1</sub> | ETD<br>250°F/121°C | ASTM C 297  | 410 psi                           | 2.8 MPa  | 1108 psi                      | 7.6 MPa  |
| Flatwise Tensile <sub>1</sub> | ETD<br>300°F/150°C | ASTM C 297  | 335 psi                           | 2.3 MPa  | 1103 psi                      | 7.6 MPa  |

| Property                      | Condition          | Method      | 0.015 psf unsupported (75 gsm) |          | 0.035 psf unsupported (175 gsm) |          |
|-------------------------------|--------------------|-------------|--------------------------------|----------|---------------------------------|----------|
| Tensile Lap Shear             | RTD                | ASTM D 1002 | 4825 psi                       | 33.3 MPa | 4985 psi                        | 34.4 MPa |
| Tensile Lap Shear             | ETD<br>250°F/121°C | ASTM D 1002 | 3965 psi                       | 27.3 MPa | 3400 psi                        | 23.4 MPa |
| Tensile Lap Shear             | ETD<br>300°F/150°C | ASTM D 1002 | 3130 psi                       | 21.6 MPa | 3080 psi                        | 21.2 MPa |
| Flatwise Tensile <sub>1</sub> | RTD                | ASTM C 297  |                                |          | 755 psi                         | 5.2 MPa  |
| Flatwise Tensile <sub>1</sub> | ETD<br>250°F/121°C | ASTM C 297  |                                |          | 750 psi                         | 5.2 MPa  |
| Flatwise Tensile <sub>1</sub> | ETD<br>300°F/150°C | ASTM C 297  |                                |          | 520 psi                         | 3.6 MPa  |

<sub>1</sub> Core 3/16 cell, 0.5 in. thick, 5052 Al, 4.4 psf

\* Mechanical specimens cured for 2 hours at 350°F (177°C) under 40 psi autoclave pressure, ramp rate 2°F/1.1°C per minute

**Adherends for tensile lap shear testing:** 2024-T<sub>3</sub> Aluminum, 0.063 in., FPL Etched and BR127 Primed

**Flatwise Tensile Facesheets:** 2024-T<sub>3</sub> Aluminum, 0.020 in.

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