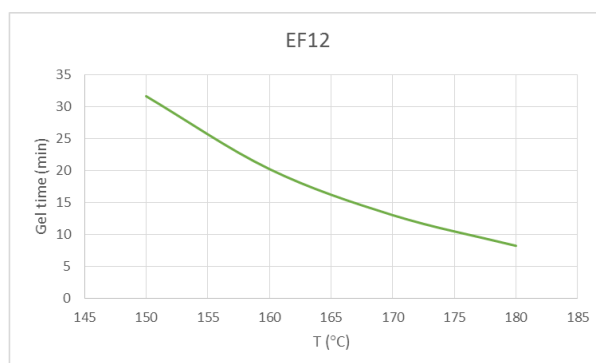
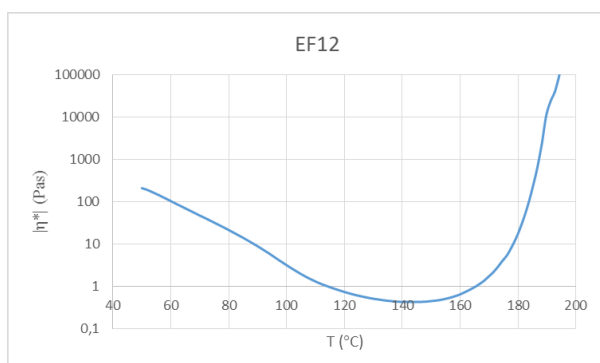


## TECHNICAL DATA SHEET

|                                      |                                                           |
|--------------------------------------|-----------------------------------------------------------|
| <b>Resin System</b>                  | EF12                                                      |
| <b>Applications</b>                  | Aerospace                                                 |
| <b>Key Features</b>                  | Structural; high temperature and performance applications |
| <b>Cure Temperature</b>              | 180°C                                                     |
| <b>Work Life</b>                     | 28 days @ RT                                              |
| <b>Storage Life</b>                  | 1 year @ -18°C                                            |
| <b>Fiber</b>                         | Carbon, S2 glass                                          |
| <b>Weaving Style</b>                 | Plain, twill, UD                                          |
| <b>Dry Fabric Areal Weight (gsm)</b> | 193 - 600                                                 |
| <b>%Resin Content (by weight)</b>    | 34 - 44 ± 2                                               |

### Resin Matrix Properties



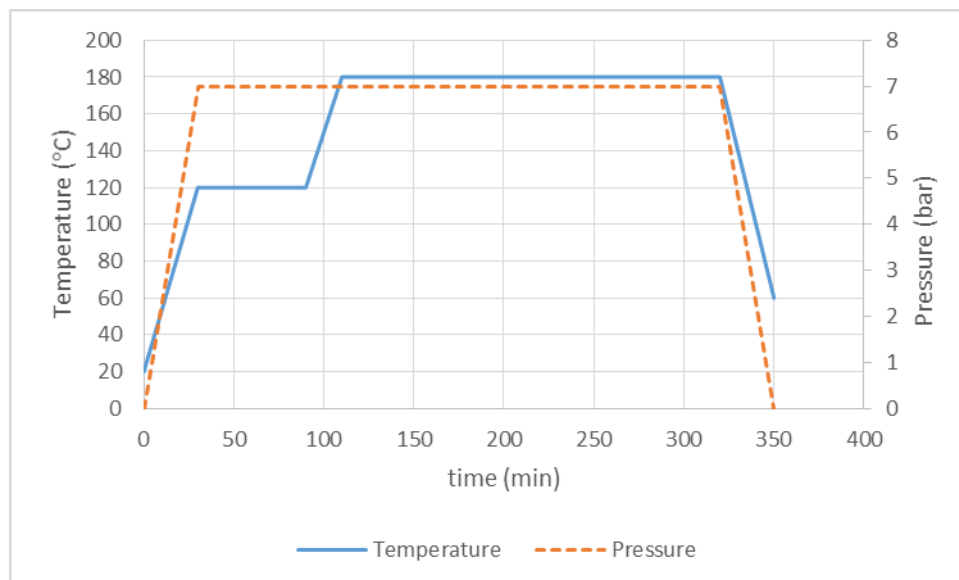
## Cure Profile

### Autoclave Molding

#### Recommended Curing Cycle at 180 °C

A typical autoclave cure cycle for a thin laminate is 60 minutes at 120°C.

- 1) Apply full vacuum (1 bar).
- 2) Apply 7 bar gauge autoclave pressure.
- 3) Reduce the vacuum to a safety value of 0.2 bar when the autoclave pressure reaches approximately 1 bar gauge.
- 4) Heat-up at 1 – 3 °C/minute to 120°C.
- 5) Hold at 120°C for 60 minutes  $\pm$  5 minutes.
- 6) Heat-up at 1 – 3 °C/minute to 180°C.
- 7) Hold at 180°C for 120 minutes  $\pm$  5 minutes.
- 8) Cool at 2 – 5 °C per minute.
- 9) Vent autoclave pressure when the component reaches 60°C or below.



**CFRP Panels (Autoclave Cured Laminates)**

| <b>Fabric</b> | <b>Fiber</b> | <b>Prepreg Resin Content %</b> |
|---------------|--------------|--------------------------------|
| KCF3K PL193   | Toray T300   | 38                             |

| <b>Test</b>              | <b>Standard</b>   | <b>Property</b>        | <b>KCF3K PL193</b> |
|--------------------------|-------------------|------------------------|--------------------|
| <b>0° Tensile</b>        | <b>ASTM D3039</b> | <b>Strength (MPa)</b>  | 844                |
|                          |                   | <b>Modulus (GPa)</b>   | 62                 |
|                          |                   | <b>Strain (%)</b>      | 1.3                |
|                          |                   | <b>Poisson's ratio</b> | 0.05               |
| <b>0° Compression</b>    | <b>ASTM D3410</b> | <b>Strength (MPa)</b>  | 623                |
|                          |                   | <b>Modulus (GPa)</b>   | 59                 |
|                          |                   | <b>Strain (%)</b>      | 2.6                |
| <b>0° 4 Pt Bending</b>   | <b>ASTM D790</b>  | <b>Strength (MPa)</b>  | 1000               |
|                          |                   | <b>Modulus (GPa)</b>   | 85                 |
|                          |                   | <b>Strain (%)</b>      | 1.2                |
| <b>0° ILSS</b>           | <b>ASTM D2344</b> | <b>Strength (MPa)</b>  | 75                 |
| <b>0° V-notch shear</b>  | <b>ASTM D5379</b> | <b>Strength (MPa)</b>  | 100                |
| <b>90° Tensile</b>       | <b>ASTM D3039</b> | <b>Strength (MPa)</b>  | 723                |
|                          |                   | <b>Modulus (GPa)</b>   | 60                 |
|                          |                   | <b>Strain (%)</b>      | 1.2                |
| <b>90° Compression</b>   | <b>ASTM D3410</b> | <b>Strength (MPa)</b>  | 590                |
|                          |                   | <b>Modulus (GPa)</b>   | 63                 |
|                          |                   | <b>Strain (%)</b>      | 2.1                |
| <b>90° 4 Pt Bending</b>  | <b>ASTM D790</b>  | <b>Strength (MPa)</b>  | 908                |
|                          |                   | <b>Modulus (GPa)</b>   | 90                 |
|                          |                   | <b>Strain (%)</b>      | 1.1                |
| <b>90° ILSS</b>          | <b>ASTM D2344</b> | <b>Strength (MPa)</b>  | 77                 |
| <b>90° V-notch shear</b> | <b>ASTM D5379</b> | <b>Strength (MPa)</b>  | 104                |
| <b>DMA Tg</b>            | <b>ASTM D7028</b> | <b>Tg (°C)</b>         | 220                |

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