

# Aerospace Composite Materials

## Product Overview

### E-752 Epoxy Prepregs

Park's E-752 is a toughened, 185°C cure epoxy system designed for demanding structural applications up to 130°C/wet. E-752 offers a good balance of toughness, high service temperature and good moisture resistance, as well as excellent tack and drape. Formulated for both oven and autoclave cure, E-752 provides for easy processing with oven cure, without sacrificing mechanical properties.

#### Key Features & Benefits

- Specifically designed to allow both oven cure and autoclave cure
- Service temperatures up to 130°C/wet
- Controlled flow for ease of processing
- Flexible cure temperature 132°C to 185°C
  - o Good mechanical properties can be achieved through oven curing at 132°C, followed by post-cure at 185°C
- Self-adhesive grade for sandwich panel applications

#### Product Forms

- Available on a wide variety of reinforcements, including fiberglass and graphite
- Fabrics and Unidirectional Tape available up to 61 cm wide
- Compatible with Autoclave, Vacuum Bag/Oven or Press Molding processes

#### Applications / Qualifications

- Primary and Secondary Aircraft Structures
- Ducting
- Fairings
- Nacelles

#### For Information about Park's materials:

Newton, KS +1.316.283.6500  
info@parkaerospace.com  
www.parkaerospace.com



### E-752 Epoxy Prepregs

#### Nominal Prepreg and Laminate Physical Properties

| Reinforcement                  | 3K PW<br>G30-500      | 6K 5HS<br>G30-500 | 12K 2x2<br>Twill | IM7<br>Unitape | 12K G30-500<br>Unitape |
|--------------------------------|-----------------------|-------------------|------------------|----------------|------------------------|
| Fabric Area Weight (gsm)       | 193                   | 380               | 380              | 145            | 145                    |
| Prepreg Resin Content (%)      | 32 – 40               | 35 – 43           | 35 – 43          | 35             | 35                     |
| Resin Flow (135°C, 345kPa) (%) | 15                    | 6 – 20            | --               | 15             | 15                     |
| Volatiles (135°C, 8 min) (%)   | < .5                  | < .5              | < .5             | < .5           | < .5                   |
| Gel Time (min)                 | 5 – 12                | 5 – 12            | 5 – 12           | 5 – 12         | 5 – 12                 |
| Dry Tg / Wet Tg (DMA)          | 197°C dry / 182°C wet |                   |                  |                |                        |

*\*Note: All values are nominal, actual values will vary*

#### Sandwich Panel Properties

| Reinforcement                | Property                  | Test Method | Mean Value              |
|------------------------------|---------------------------|-------------|-------------------------|
| 3K PW G30-500<br>39 – 42% RC | Climbing Drum Peel        | ASTM-D-1781 | 20.5 N m/m              |
|                              | Flatwise Tensile Strength | ASTM-C-297  | 2413 kPa (core failure) |

#### Prepreg Storage Life

Tack Life: 21 days @ 24°C  
Out Life: 21 days @ 24°C  
Shelf Life: 12 months @ -18°C

Note: The following guidelines are provided to assist Park material users with general recommendations for successful processing. The recommendations are for general review purposes only and process adjustments may be required to achieve optimum results in your specific manufacturing environment.

#### Vacuum Bag / Oven Cure Cycle

- Apply 100 kPa vacuum for 1 hour before beginning heat cycle
  - Heat at 0.3 – 1.5°C/min from room temperature to 110 ± 5°C
  - Hold at 110°C for 60 minutes
  - Heat at 0.3 – 1.5°C/min to 185 +/-3°C and hold for 125± 5 minutes
  - Cool to 71°C at no more than 5°C/min
- Alternate Cycle: Heat at 0.3 – 1.5°C /min to 127°C and cure for 120 minutes, followed by 120 min free standing post-cure @ 182 +/-3°C.

*All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a company representative directly.*

*Park Aerospace Corp. reserves the right to make changes without notice to any products described herein. Park does not assume any liability arising out of the application or use of any product described herein; and it does not grant any license under its patent or other rights or any such rights of others. Park also disclaims all warranties whether expressed, implied or statutory, including implied warranties of merchantability or fitness for a particular purpose.*

*Aeroglides®, ALPHA STRUT™, CoreFix®, Easycure E-710®, Electroglide®, Electrovue™, Peelcote™, Powerbond™, RadarWave™, SIGMA STRUT™ and Tin City Aircraft WorksSM are trademarks or servicemarks of Park Aerospace Corp.*



### E-752 Epoxy Prepregs

#### Laminate Mechanical Properties

| Reinforcement   | IM7<br>UniTape                      | 3K PW<br>HTS                         | 6K 5HS<br>G30-500                | 12K 2X2 TW<br>HTS            |
|---|-------------------------------------|--------------------------------------|----------------------------------|------------------------------|
| Fiber Area Weight   | 145 gsm                             | 378gsm                               | 378gsm                           | 378gsm                       |
| Cure Cycle  | 185°C Autoclave                     | 185°C Oven                           | 185°C Oven                       | 185°C Oven                   |
| Tensile Strength, 0° (MPa)<br>-54°C Dry<br>24°C Dry<br>120°C Dry<br>120°C Wet<br>ASTM-D-3039    | <br>2344.2<br>2413.1<br>2454.5      | <br>910.1<br>979.0<br>--<br>930.8    | <br>945.9<br>1015.5<br>902.5     | <br>890.1                    |
| Tensile Modulus, 0° (GPa)<br>-54°C Dry<br>24°C Dry<br>120°C Dry<br>120°C Wet<br>ASTM-D-3039     | <br>161.3<br>166.9<br>169.6         | <br>63.4<br>64.1<br>--<br>63.4       | <br>67.6<br>64.8<br>64.8         | <br>64.8                     |
| Compressive Strength (MPa)<br>-54°C Dry<br>24°C Dry<br>120°C Dry<br>120°C Wet<br>SACMA 1R-94    | <br>-<br>1820.2<br>1310.0<br>1020.4 | <br>854.9<br>772.2<br>627.4<br>372.3 | <br>-<br>820.4<br>696.4<br>537.8 | <br>-<br>806.7<br>641.2<br>- |
| Compressive Modulus (GPa)<br>-54°C Dry<br>24°C Dry<br>120°C Dry<br>120°C Wet<br>SACMA 1R-94     | <br>--<br>145.4<br>187.5<br>157.2   | <br>61.3<br>58.6<br>59.9<br>59.2     | <br>--<br>64.8<br>63.4<br>65.5   | <br>--<br>59.9<br>58.6       |
| In-Plane Shear Strength (MPa)<br>-54°C Dry<br>24°C Dry<br>120°C Dry<br>120°C Wet<br>ASTM-D-3518 | <br>--<br>91.0<br>--<br>--          | <br>120.6<br>93.1<br>--<br>35.2      | <br>--<br>98.5<br>88.2<br>64.1   | <br>--<br>78.6<br>86.2       |
| In-Plane Shear Modulus (GPa)<br>-54°C Dry<br>24°C Dry<br>120°C Dry<br>120°C Wet<br>ASTM-D-3518  | <br>--<br>4.7<br>--<br>--           | <br>5.6<br>4.7<br>--<br>1.9          | <br>--<br>4.8<br>4.1<br>4.1      | <br>--<br>4.6<br>3.6<br>2.6  |
| Open-Hole Compr. Strength (MPa)<br>24°C Dry<br>120°C Wet<br>ASTM-D-6484                         | <br>--                              | <br>315.1<br>204.7                   | <br>328.1                        | <br>297.8                    |
| Comp. Strength After Impact (MPa)<br>24°C Dry   |                                     | 230.3                                |                                  |                              |

All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a Park representative directly. Park reserves the right to change these typical values as a natural process of refining our testing equipment and techniques.

