

Park Advanced 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

FAA Accepted Design Allowable Databases

- E-752 Databases generated in cooperation with NCAMP:
 - 145 gsm UniTape (AS7)
 - 3K PW (G30-500)

Global Availability

For Information about Park's materials:

North America

Waterbury, CT +1.203.755.1344

Newton, KS +1.316.281.6231

Asia Pacific +656.861.7117

Europe +33-562-985290

info@parkelectro.com

www.parkelectro.com

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Technical Datasheet

E-752 Epoxy Prepregs

Nominal Prepreg and Laminate Physical Properties

Reinforcement	3K PW G30-500	6K 5HS G30-500	12K 2x2 Twill	IM7 Unitape	12K G30-500 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, 50psi) (%)	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 39 – 42% RC	Climbing Drum Peel	ASTM-D-1781	4.6 in lb/in
	Flatwise Tensile Strength	ASTM-C-297	350 psi (core failure)

Processing Guidelines

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 1.0 bar vacuum for 1 hour before beginning heat cycle
- Heat at 0.3 – 1.5°C/min from room temperature to 110 ± 3°C
- Hold at 71 ± 3°C for 60 minutes
- Heat at 0.3 – 1.5°C/min to 185 +/-3°C and hold for 125± 5 minutes
- Cool to 160°F at no more than 5°C/min

Alternate Cycle: Heat at 0.3 – 1.5°C /min to 110 ± 3°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. The above processing guides are recommendations only and intended for general review purposes. Process adjustments may be required to achieve optimum results in your specific manufacturing environment.

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E-752 Epoxy Prepregs

Laminate Mechanical Properties

Reinforcement	IM7 UniTape	3K PW HTS	6K 5HS G30-500	12K 2X2 TW 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° (Ksi) -54°C Dry 24°C Dry 120°C Dry 120°C Wet ASTM-D-3039	 340 350 356	 132 142 -- 135	 137.2 147.3 130.9	 129.1
Tensile Modulus, 0° (Msi) -54°C Dry 24°C Dry 120°C Dry 120°C Wet ASTM-D-3039	 23.4 24.2 24.6	 9.2 9.3 -- 9.2	 9.8 9.4 9.4	 9.4
Compressive Strength (Ksi) -54°C Dry 24°C Dry 120°C Dry 120°C Wet SACMA 1R-94	 264 190 148	 124 112 91 54	 119 101 78	 117 93
Compressive Modulus (Msi) -54°C Dry 24°C Dry 120°C Dry 120°C Wet SACMA 1R-94	 21.1 27.2 22.8	 8.9 8.5 8.7 8.6	 9.4 9.2 9.5	 8.7 8.5
In-Plane Shear Strength (Ksi) -54°C Dry 24°C Dry 120°C Dry 120°C Wet ASTM-D-3518	 13.2 -- --	 17.5 13.5 -- 5.1	 14.3 12.8 9.3	 11.4 12.5
In-Plane Shear Modulus (Msi) -54°C Dry 24°C Dry 120°C Dry 120°C Wet ASTM-D-3518	 0.69 -- --	 0.82 0.68 -- 0.27	 0.7 0.6 0.6	 0.67 0.52 0.37
Open-Hole Compr. Strength (Ksi) 24°C Dry 120°C Dry ASTM-D-6484	 --	 45.7 29.7	 47.6	 43.2
Comp. Strength After Impact (ksi) 24°C Dry		33.4		

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