

F-554 Phenolic Prepregs

Park's F-554 is a high purity silica filled phenolic resin coated on Commercial or Aerospace grade silica fabric. F-554 is used in the manufacture of intermediate temperature ablative rocket nozzles, heat shields, and combustion chambers in highly oxidative environments.

Key Features & Benefits

- Provides a combination of high-strength and ablative properties for demanding applications
- Low thermal expansion
- Good Tack and Drape properties
- Conforms to MIL-R-9299

Product Forms

- Available in Broadgoods, Chopped Molding Compound and Bias Tape
- Solution coated fabrics up to 60 inches wide
- Compatible with Autoclave or Press Molding processes

Applications / Qualifications

- Rocket Nozzles
- Combustion Chambers
- Heat Shields
- Rocket Motor Throat Sections

For Information about Park's materials:

Newton, KS +1.316.283.6500

info@parkaerospace.com

www.parkaerospace.com

F-554 Phenolic Prepregs

Prepreg Physical Properties

	Commercial Silica Fabric	Aerospace Silica Fabric	Chopped Molding Compound
Nominal Prepreg Weight (oz/sqyd)	31	30	30
Resin Solids Content (%)	29 -35	30 – 36	30 – 36
Filler Content (%)	2 – 4	2 – 4	2 – 4
Resin Flow (325°F, 150 psi) (%)	8 – 17	7 – 17	7 – 17
Volatiles (325°F, 10 min) (%)	2 – 5	2 – 5	2 – 4
Nominal Cured Ply Thickness (in)	0.021	0.021	--

Cured Laminate Physical Properties

Reinforcement	Commercial Silica Fabric	Aerospace Silica Fabric	Chopped Molding Compound
Specific Gravity <i>ASTM-D-792</i>	1.7	1.7	1.7
Hardness (Barcol) <i>ASTM-D-2583</i>	70	70	75
Specific Heat (btu/lb°F) <i>ASTM-C-351</i>	0.24	0.24	0.23
Thermal Conductivity (BTU/ft2hr °F) @ 300°F <i>ASTM-C-177</i>	0.225	0.225	-

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 values based on a nature process of refining our testing equipment and techniques.

F-554 Phenolic Prepregs

Laminate Mechanical Properties

Reinforcement	Commercial Silica Fabric	Aerospace Silica Fabric	Chopped Molding Compound
Cure Cycle	325°F Autoclave	325°F Autoclave	325°F 2000 psi
Tensile Strength, 0° (Ksi) 75°F Dry ASTM-D-638	19	13	9
Tensile Modulus, 0° (Msi) 75°F Dry ASTM-D-638	2.8	2.4	3.8
Compressive Strength (Ksi) 75°F Dry ASTM-D-695	47	24	40
Compressive Modulus (Msi) 75°F Dry ASTM-D-695	3.1	2.4	2.0
Flexural Strength (Ksi) 75°F Dry ASTM-D-790	29	23	16
Flexural Modulus (Msi) 75°F Dry ASTM-D-790	2.6	2.5	3.0
Short Beam Shear (Ksi) 75°F Dry ASTM-D-2344	3.9	--	--

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 values based on a nature process of refining our testing equipment and techniques.

F-554 Phenolic Prepregs

Prepreg Storage Life

- Out Life: 30 days @ 75°F
- Shelf Life: 6 months @ 40°F (dry)

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.

Autoclave Cure Cycle (Broadgoods)

- Apply 24" Hg vacuum (minimum) for 1 hour before beginning heat cycle
- Apply 10 psi autoclave pressure
- Raise product temperature from RT to 250°F at 2 - 5°F/min
- Increase autoclave pressure to 40psi, vent vacuum at 15 – 20 psi
- Hold product at 250 ± 5°F for 30 minutes
- Raise product temperature to 325 ± 5°F at 2 - 5°F/min
- Hold product at cure temperature for 60 – 90 minutes
- Cool to 150°F at no at no more than 8°F/min prior to releasing autoclave pressure

Press Cure Cycle (Chopped Molding Compound)

- Apply 1,000 - 2,000 psi pressure during cure
- Cure product at 325°F for 90 – 120 minutes

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.

Aeroglide®, 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.