



LR1400 Ablative Prepreg

LR1400 is a composite produced from Lewcott PSR133G carbon filled MIL-R-9299 phenolic resin matrix on an eight harness (8HS) rayon precursor carbon fabric. The material is designed to meet and/or exceed the thermal and insulation requirements of solid propulsion rockets.

Chemical Properties of LR1400

| Property | Value | Test Method |
|--|-------|-------------|
| Resin Solids, % | 31-37 | QCP-R-5 |
| Volatile, % | 3-7 | QCP-V-1 |
| Laminar Flow @ 150 psi, % | 10-20 | QCP-F-1 |
| Filter Content, % | 8-15 | QCP-R-5 |
| Uncured Thickness, x10 ⁻³ in. | 0.022 | QCP-T-2 |
| Areal Weight, lb./ln. yd. | 1.2 | |
| Prepreg Width, in. | 44 | |

Physical Properties of LR1400

| Property | Value | Test Method |
|--|--------|---------------|
| Specific Gravity | 1.45 | ASTM-D-792 |
| Tensile Strength, psi | 27,500 | ASTM-D-638 |
| Tensile Modulus, msi | 2.5 | ASTM-D-638 |
| Tensile Elongation, % | 1 | ASTM-D-638 |
| Flexural Strength, psi | 45,000 | ASTM-D-790 |
| Flexural Modulus, msi | 2.5 | ASTM-D-790 |
| Compression Strength, psi | 49,000 | ASTM-D-695 |
| Interlaminar Shear Strength, psi | 7,000 | FTMS 401/1041 |
| Thermal Conductivity (with ply), BTU/ft.-hr.-°F | 0.61 | ASTM-C-177 |
| Specific Heat @ 150° F, BTU/lb. °F | 0.29 | ASTM-C-351 |
| CTE (across ply) (80-500 ° F), 10 ⁻⁶ in./in.° F | 6.3 | ASTM-D-696 |
| Cured Ply Thickness, in. | 0.013 | |

Laminate Cure

Press cured at 325° F using 1000 psi pressure for 2 hours.