



PSR133 Phenolic Prepreg

PSR133 is a high performance phenolic resin available in neat resin and prepreg form. Prepregs manufactured with PSR 133 meet the stringent requirements of MIL-R-9299C, Grade B. PSR133 is the most cost effective phenolic available and offers excellent char yield for carbon/carbon applications and does not exhibit micro-cracking in high modulus composite structures.

Properties of 7781-PSR133, 7781 E-Glass Fabric Tested per MIL-R-9299C, Grade B

	Required	Required	Actual	Actual	
	Ultimate Strength	Modulus	Ultimate Strength	Modulus	Test Status
FLEXURAL, psi					
Standard Cond. (75°F)	73,000	3.5 x 10 ⁶	88,560	4.5 x 10 ⁶	Pass
24 Hr. H ₂ O Boil (75°F)	70,000	3.0 x 10 ⁶	91,440	4.6 x 10 ⁶	Pass
1/2 Hr. @ 160°F	69,000	3.3 x 10 ⁶	81,780	4.1 x 10 ⁶	Pass
1/2 Hr. @ 500°F	52,000	3.1 x 10 ⁶	64,990	3.5 x 10 ⁶	Pass
100 Hrs. @ 500°F	45,000	2.9 x 10 ⁶	52,220	3.3 x 10 ⁶	Pass
TENSILE, psi					
Standard Cond. (75°F)	46,000	N/A	61,260	4.6 x 10 ⁶	Pass
24 Hr. H ₂ O Boil (75°F)	44,000	N/A	58,530	4.5 x 10 ⁶	Pass
1/2 Hr. @ 500°F	39,000	N/A	44,310	N/A	Pass
COMPRESSION, psi					
Standard Cond. (75°F)	58,000	N/A	68,910	3.8 x 10 ⁶	Pass
24 Hr. H ₂ O Boil (75°F)	53,000	N/A	66,450	3.6 x 10 ⁶	Pass
1/2 Hr. @ 500°F	32,000	N/A	47,280	N/A	Pass

LEWCOTT CORPORATION

86 Providence Road, Millbury MA 01527
Toll Free 800-225-7725 Tel. 508-865-1791 Fax 508-865-0302

HYDRAULIC OIL	Requirement	Actual	Status
% Weight Change	+/- 0.20 (max)	0.02	Pass
% Thickness Change	+/- 0.20 (max)	0.00	Pass
Flexural Strength, psi	70,000	85,660	Pass

ISOPROPANOL			
% Weight Change	+/- 0.20 (max)	0.01	Pass
% Thickness Change	+/- 0.20 (max)	0.00	Pass
Flexural Strength, psi	70,000	89,880	Pass

ETHYLENE GLYCOL			
% Weight Change	+/- 0.20 (max)	0.00	Pass
% Thickness Change	+/- 0.20 (max)	0.00	Pass
Flexural Strength, psi	70,000	81,420	Pass

HYDAULIC FLUID			
% Weight Change	+/- 0.20 (max)	0.02	Pass
% Thickness Change	+/- 0.20 (max)	0.00	Pass
Flexural Strength, psi	70,000	86,540	Pass

Barcol Hardness	55	82	Pass
Water Absorption (%)	1.25 (max)	0.21	Pass
Flammability	1.0"/minute (max)	Self Exting.	Pass
Cured Resin Content	None	29.20%	N/A
Specific Gravity	None	2.01	N/A

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12K 2 by 2 Twill PSR133 or PSR133G (Carbon Filled)

Fiber	Standard Modulus Graphite
Fabric Areal Weight	20 oz/sq yd
Press Grade	Resin Content: 34 to 40% % Volatiles: 2.5 to 4.5% % Flow: 3 to 15%
Bag Grade	Resin Content: 37 to 43%
% Volatiles:	5.5 to 8%
% Flow:	7 to 25%
Char Yield of PSR133	63 to 67%

3K plain weave PSR133 or PSR133G (Carbon Filled)

Fiber	Standard Modulus Graphite
Fabric Areal Weight	5.9 oz/sq yd
Press Grade	Resin Content: 34 to 44% % Volatiles: 2.5 to 4.5% % Flow: 3 to 15%
Bag Grade	Resin Content: 40 to 46% % Volatiles: 5.5 to 8% % Flow: 7 to 25%
Char Yield of PSR133	63 to 67%

Other prepreg physicals available upon request

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RECOMMENDED STORAGE

- Room Temperature (77°F) Three (3) Weeks
- 40°F Six (6) Months
- 0°F Twelve (12) Months

PROCESS INFORMATION PSR133

Vacuum Bag in Autoclave Cycle

- Draw Vacuum and apply 45-75 psi autoclave pressure
- 5°F/Minute Ramp to 200°F (Optional)
- Hold at 200°F for 30 to 45 Minutes
- 5°F/Minute Ramp to 325°F
- Hold at 325°F for 90 to 120 Minutes
- Cool to less than 180°F at 3 to 5°F/Minute
- Release Pressure/Vacuum and demold

Vacuum Bag in Autoclave Cycle

- Draw Vacuum
- 5°F/Minute Ramp to 200°F (Optional)
- Hold at 200°F for 30 to 45 Minutes
- 5°F/Minute Ramp to 325°F
- Hold at 325°F for 90 to 120 Minutes
- Cool to Less than 180°F at 3 to 5°F/Minute
- Release Pressure/Vacuum and demold

Press Molding Cycle

- Apply 45 – 75 psi
- 300-325°F for 90 to 120 Minutes

NOTE: PSR133 Prepreg is wound with a polyethylene film interliner for easy release. The rolls are sealed in polyethylene film bags to protect prepreg from moisture and other contaminants. The bags should remain sealed while the prepreg is under refrigeration and only removed when the prepreg has had sufficient time to warm to room temperature. When not in use, the prepreg should be returned to refrigerated storage. Care should be exercised to limit out-time of the prepreg in order to insure maximum shelf life. Torn bags should be replaced.

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