

L-591

Low Heat Release Phenolic Prepreg



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Product Data Sheet

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Description

L-591 is a modified phenolic prepreg with low heat release properties when tested per FAR part 25.853. L-591 has excellent peel strength without the use of additional adhesive films. L-591 is intended to be used as a single ply or multiple ply skin for aramid/phenolic honeycomb in aircraft interior honeycomb sandwich panels.

Advantages of L-591

- ❖ Creates sandwich panels with high peel strength and high toughness for today's modern commercial aircraft interiors.
- ❖ The L-591 system processes easily in most plated presses or autoclaves.
- ❖ The hand lay up grade of L-591 is also an excellent laminating prepreg for air conditioning ducting and other interior laminate requirements.
- ❖ L-591 will allow the designer to create complex structure which meets stringent FAR burn requirements using OSU test apparatus.

Physical Properties on 7781 Glass Fabric

- *Standard Weight:* 0.102 lbs/ft² (498 g/m²)
- *Standard Resin Content:* 39% by weight
- *Volatile Content:* 9% max
- *Standard Tack:* Medium tack
- *Cured Ply Thickness:* 0.010" (0.254 mm)
- *Other Weights, Resin Contents, and Fabrics are Available.*

Availability

- 38", 50", or 60" Rolls 60 Yards in Length (97, 127, or 152 cm x 55 m)

Shelf Life

- 6 months at 40°F (4°C) or below
- 14 days at room temperature (75°F or 24°C)

Cure Cycles

- 60 minutes minimum at 260°F (127°C) with full vacuum pressure or higher pressures using press or autoclave. Cool to 170°F (77°C) under pressure.



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Flammability

- *Self Extinguishing per FAR part 25.853*

Sandwich Properties*

Core: 1/8" cell Aramid Phenolic honeycomb; Adhesive: none

Facings: 2 plies L-591-7781 each side

- *RT Flatwise Tensile Strength: 233 PSI (1.6 MPa)*
- *RT Sandwich Peel Strength: 6 in lb/in (27 Nm/m)*

*Sandwich peel strength varies with the orientation of fibers directly against the core and test direction.

- ❖ Fibers laid up parallel with the test direction produce minimum strengths.
- ❖ Fibers laid up perpendicular to the test direction produce maximum strengths.
- ❖ L-591-7781 sandwich peel strength ranges from 4-8 in lb/in (18-36 Nm/m).

Mechanical Data

PROPERTY	LAMINATE PROPERTIES	
	50 PSI (0.34 MPa) CURE	TEST METHOD
ULTIMATE TENSILE STRENGTH		
Room Temperature	56,000 PSI (386 MPa)	ASTM D638
160°F (71°C)	51,000 PSI (352 MPa)	ASTM D638
TENSILE MODULUS		
Room Temperature	3.5 MSI (24.1 GPa)	ASTM D638
160°F (71°C)	3.5 MSI (24.1 GPa)	ASTM D638
ULTIMATE COMPRESSION STRENGTH		
Room Temperature	55,000 PSI (379 MPa)	ASTM D695
160°F (71°C)	54,000 PSI (372 MPa)	ASTM D695
COMPRESSION MODULUS		
Room Temperature	3.5 MSI (24.1 GPa)	ASTM D695
160°F (71°C)	3.5 MSI (24.1 GPa)	ASTM D695
ULTIMATE FLEXURAL STRENGTH		
Room Temperature	65,000 PSI (448 MPa)	ASTM D790
160°F (71°C)	61,000 PSI (419 MPa)	ASTM D790
FLEXURAL MODULUS		
Room Temperature	3.5 MSI (24.1 GPa)	ASTM D790
160°F (71°C)	3.3 MSI (22.7 GPa)	ASTM D790

PROPERTY	SANDWICH PROPERTIES	
	VACUUM BAG CURE	TEST METHOD
FLATWISE TENSILE	233 PSI (1.6 MPa)	ASTM C297
LONG BEAM FLEXURAL STRENGTH	16,500 PSI (114 MPa)	ASTM C393

NOTICE:

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