L&L Products

TECHNICAL DATA SHEET

SOLUTION
L&L Reinforce

PRELIMINARY VERSION
September 2020

L-9015
FST Aircraft Interior High Expansion Core Splice Adhesive.

PRODUCT DESCRIPTION

L&L Reinforce L-9015 is a fire, smoke and toxicity (FST) compliant compound developed for core splice applications.

L-9015 has been developed for autoclave curing and gives an outstanding expansion ratio.

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Key Product Attributes

- Can be cured from 125°C to 165°C with or without ramp up
- 140% to 380% expansion depending on the curing cycle
- Stable at room temperature for 5 months and doesn't require frozen storage or shipments
- Has low tack for easy removal of release paper and an easy positiong within the tool
- Compliant to 12s and 60s vertical burn, smoke density and smoke toxicity tests accordingly to FAR/ JAR-CS 25.853 and Airbus ABD 0031
- Delivered in 560x300mm sheets, 1.27mm thick, other dimensions on request

Technical Data

The following information and data should be considered typical and should not be used for specification.

				L-9015	Test Methods
Physical Properties	Prior to Activation	Weight per unit area		1650 – 1850 g/m^2	
		Thickness		1.2 – 1.4 mm	
		Maximum tack force		14 to 24 N	ASTM D 297
		Storage stability at 23°C (shelf-life)		5 months	
	During Curing Cycle 3°/min + 55 min @125°C	Volatile content		< 1%	EN 2667-3
		Vertical slump		< 0.5 mm	EN 2667-4
		Exothermicity		< 60°C	EN 2667-5
	Curing cycle	**Expansion ratio**		**Shore D hardness**	**Test Methods**
	Ramp 3°C/min + 55 min @ 125°C	135 – 165%		53 – 63	EN 2667-3 (for Expansion ratios)
	Ramp 3°C/min + 55 min @ 140°C	175 – 205%		45 – 55	
	Ramp 3°C/min + 30 min @ 155°C	190 – 220%		43 – 53	
	30 min @ 80°C + (Ramp 3°C/min + 55 min @ 125°C)	130 – 160%		53 – 63	
	30 min @ 100°C + (Ramp 3°C/min + 55 min @ 125°C)	130 – 160%		53 – 63	
	30 min @ 80°C + (Ramp 3°C/min + 55 min @ 140°C)	175 – 205%		49 – 59	
	30 min @ 100°C + (Ramp 3°C/min + 55 min @ 140°C)	150 – 180%		49 – 59	
	15 min @ 165°C Hot in / Hot out	355 – 385%		22 – 32	
		Curing cycle	**Test Temp.**	**Density**	**Test Methods**
Mechanical Properties	Compressive strength	3°/min + 55 min @125°C	-55°C	0.43 g/cm3	14 MPa	ASTM D 695
			23°C		7 MPa	
			85°C		5 MPa	
	Compressive modulus		-55°C		70 MPa	
			23°C		310 MPa	
			85°C		280 MPa	
	Compressive tube shear strength		-55°C	0.87 g/cm3	13 MPa	EN 2667-2
			23°C		8 MPa	
			85°C		7 MPa	

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		Curing cycle	Property	Specification	Results	Test Methods
FST Properties	Vertical burn – 12s 6.35mm sample thickness	3°/min + 55 min @125°C	Burn length	Maximum 203 mm	< 100 mm	FAR 25 Appendix F Part 1 (b.iv)/ AITM 2.0002 B
			After flame time	Maximum 15s	No after flame	
			Dripping time	Maximum 5s	No drips	
	Vertical burn – 60s 6.35mm sample thickness		Burn length	Maximum 152 mm	< 125 mm	FAR 25 Appendix F Part 1 (b.iv)/ AITM 2.0002 A
			After flame time	Maximum 15s	No after flame	
			Dripping time	Maximum 3s	No drips	
	Smoke density – 6.35mm sample thickness		Smoke density	Maximum 200	102	JAR/FAR 25.853 AITM 2.0007 A flaming modes
			Gas			
	Smoke toxicity – 6.35mm sample thickness	3°/min + 55 min @125°C	HF	< 100 ppm	0 ppm	AITM 3.0005
			HCl	< 150 ppm	0 ppm	
			NO_x	< 100 ppm	< 70 ppm	
			SO_2	< 100 ppm	< 10 ppm	
			HCN	< 150 ppm	< 30 ppm	

Typical Cure Schedule

125°C for 60 minutes total time
165°C for 15 minutes total time

Shelf Life & Storage Conditions

Shelf life: 5 months at 23°C, 12 months at -18°C in the original sealed bags.

Health & Safety

Consult product specific safety data sheet.

All our products are REACH compliant and do not contain CMR substances