



HexBond™ ST1480

Epoxy Film Adhesive



Product Data Sheet

Description

HexBond™ ST1480 is a modified epoxy film adhesive. This 180°C/356°F cure film adhesive is specially designed for bonding metal-to-metal and composite-to-composite structures. Its formulation, based on epoxy resin, provides high peel strength and toughness with high sheer strength.

Features

- Excellent metal-to-metal peel strength and composite-to-composite bonding
- 180°C/356°F cure
- Service temperature from -55°C to 150°C (-67°F to 302°F)
- Excellent moisture resistance in high humidity environments
- Available in a wide range of film thicknesses

Applications

- Metal-to-metal bonding
- Sandwich construction
- Composite-to-composite bonding

Form

	Areal Weight (psf // g/m ²)	Color	Support	Roll Width (mm)
ST1480.03 NW	0.03 / 146	Grey	Polyester non-woven (17g/m ²)	915
ST1480.06 NW	0.06 / 292	Grey	Polyester non-woven (17g/m ²)	915
ST1480.03 UNS	0.03 / 146	Grey	-	915
ST1480.02 UNS	0.02 / 100	Grey	-	915
ST1480.015 UNS	0.015 / 75	Grey	-	915

Instructions For Use

Refer to the Material Safety Data Sheet before handling.

- Store at or below -18°C/0°F
- To avoid any moisture, allow the adhesive to warm at room temperature before opening the waterproof polyethylene bag
- Bonding surfaces should be clean, dry and properly prepared
- Remove protective liners before bonding (release paper and polyethylene film)
- Typical cure cycle:
 - 90 min at 180°C/350°F
 - Heat-up rate: 2°C/min
 - Pressure: 3 bar (44 psi) during whole cycle
 - 4 hours at 150°C/302°F acceptable
- Shelf-life: 12 months from date of shipment at recommended storage conditions



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Bond Strength Performance After Cure ⁽¹⁾

Test	Test Temperature (°C / °F)	ST1480.03 NW 146g/m ² (0.03psf)		ST1480.06 NW 292g/m ² (0.06psf)	ST1480.03 UNS 146g/m ² (0.03psf)	ST1480.02 UNS 100g/m ² (0.02psf)	ST1480.015 UNS 75g/m ² (0.015psf)
Curing Cycle	-	90 min at 180°C / 356°F	4h at 150°C / 302°F	90 min at 180°C / 356°F			
Single Lap Shear Strength Composite/ Composite ⁽²⁾ (MPa / psi)	23 / 73	33.8 / 4900	-	32.6 / 4700	-	-	-
	80 / 176	29.7 / 4300		30.1 / 4300			
	135 / 275	21.1 / 3060		24.4 / 3500			
Single Lap Shear Strength Metal/Metal ⁽³⁾ (MPa / psi)	-55 / -67	27.2 / 3950	-	29.3 / 4200	-	-	-
	23 / 73	22.3 / 3230		21.2 / 3070	28.5 / 4100	29.1 / 4200	26.8 / 3900
	80 / 176	-		-	27 / 3900	-	-
	120 / 248	19.8 / 2870	-	20 / 2900	25.8 / 3740	23.3 / 3350	20.2 / 2900
	150 / 302	16.1 / 2300		16 / 2300	23.1 / 3350	19.9 / 2900	17.4 / 2500
	180 / 356	9.9 / 1450		10.2 / 1480	-	13.5 / 1950	11.7 / 1700
Floating Roller Peel ⁽⁴⁾ (N / 25mm)	23 / 73	125		113	85	100	75
Glass Transition Temperature Tg Onset (°C/F)	-	193 / 379 (curing cycle 90 min at 180°C / 356°F) 180 / 356 (curing cycle 4h at 150°C / 302°F)					

⁽¹⁾ Cure cycle: 90 min at 180°C/356°F - Heat-up rate: 2°C/min - Pressure: 3 bar (44 psi)

⁽²⁾ According to AITM 1-0019, on HexPly® UD/M21/35%/268/T700GC (Hexcel) co-bonded

⁽³⁾ According to EN 2243-1, on aluminum 2024T3 clad treated with sulfo-chromic acid etch

⁽⁴⁾ According to EN 2243-2, on aluminum 2024T3 clad treated with sulfo-chromic acid etch



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Humidity Exposure

Test	Test Temperature (°C / °F)	Exposure	ST1480.03 NW 146g/m ² (0.03psf)	ST1480.06 NW 292g/m ² (0.06psf)	ST1480.03 UNS 100g/m ² (0.03psf)	ST1480.02 UNS 100 g/m ² (0.02psf)	ST1480.015 UNS 75g/m ² (0.015psf)		
			90 min at 180°C / 356 °F						
Single Lap Shear Strength Composite/Composite ⁽²⁾ (MPa / psi)	23 / 73	2000 hours 70°C / 158°F 85% RH	30.3 / 4400	-	29.9 / 4300				
	80 / 176		26.5 / 3800	-	21.8 / 3100				
			21.2 / 3100	22.0 / 3200	-	25.6 / 3700	24.5 / 3500	22.5 / 3250	
Single Lap Shear Strength Metal/Metal ⁽³⁾ (MPa / psi)	120 / 248	2000 hours 70°C / 158°F 85% RH	14.5 / 2100	14.2 / 2050	-	15.5 / 2250	14.8 / 2150	13.7 / 2000	
	150 / 302		7.2 / 1050	7.1 / 1030	-	7.9 / 1150	8.6 / 1250	7.1 / 1030	
Glass Transition Temperature Tg Onset (°C / °F)	-	2000 hours 70°C / 158°F	119 / 246						
Single Lap Shear Strength Composite/Composite ⁽²⁾ (MPa / psi)	23 / 73		28.9 / 4200	30.5 / 4400					
	80 / 16		21.3 / 3100	22.8 / 3300					
Glass Transition Temperature Tg Onset (°C / °F)	-	24 hours 23°C in solvent	111 / 232						

Fluid Exposure

Test	Test Temperature (°C / °F)	Exposure	ST1480.03 NW 46g/m ² (0.03psf)	ST1480.06 NW 292g/m ² (0.06psf)
Single Lap Shear Strength Metal/Metal ⁽³⁾ (MPa / psi)	23 / 73	2000 hours 70°C in hydraulic fluid	18 / 2600	25.9 / 3800
	80 / 176		14.2 / 2060	18.6 / 2700
Single Lap Shear Strength Metal/Metal ⁽³⁾ (MPa / psi)	23 / 73	2000 hours 50°C in hydraulic fluid/ water mixture	20.4 / 300	28.2 / 4100
	80 / 176		19.1 / 2770	23.5 / 3400
Single Lap Shear Strength Metal/Metal ⁽³⁾ (MPa / psi)	23 / 73	24 hours 23°C in solvent	23.2 / 3300	28.2 / 4100
	80 / 176		21.7 / 3150	25.6 / 3700

⁽¹⁾ Cure cycle: 90 min at 180°C/356°F - Heat up rate: 2°C/min - Pressure: 3 bar (44 psi)

⁽²⁾ According to AIMT 1-0019, on HexPly® UD/M21/35%/268/T700GC (Hexcel) co-bonded

⁽³⁾ According to EN 2243-1, on aluminum 2024T3 clad treated with sulfo-chromic acid etch

⁽⁴⁾ According to EN 2243-2, on aluminum 2024T3 clad treated with sulfo-chromic acid etch



Physical-Chemical Properties

Rheometer TA instrument AR2000

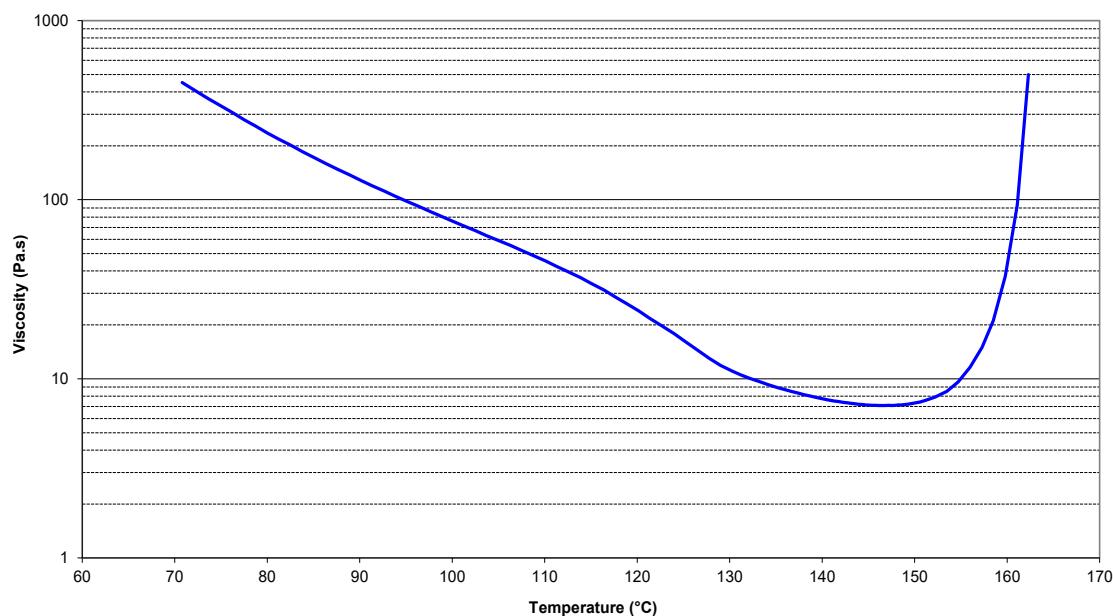
Test settings: Parallel plate 25mm

Temperature ramp: 2°C/min, 10% strain

Frequency: 10 rad/s

Gap: 600µm

ST1480 viscosity profile



This information is provided for informal purposes only, without legal responsibility and does not constitute a specification. Users are expected to perform adequate verification and testing to ensure that materials meet required specification.

For more information

Hexcel is a leading worldwide supplier of composite materials to aerospace and industrial markets. Our comprehensive range includes:

- HexTow® carbon fibers
- HexForce® reinforcements
- HiMax™ multiaxial reinforcements
- HexPly® prepgs
- HexAM™ additive manufacturing
- HexMC® molding compounds
- HexFlow® RTM resins
- HexTool® tooling materials
- HexWeb® honeycombs
- Engineered core
- Acousti-Cap® sound attenuating honeycomb
- Engineered products
- Polyspeed™ laminates

For US quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list, please go to:

<http://www.hexcel.com/contact/salesoffice>

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