LORD® 7545 URETHANE ADHESIVE

Technical Data Sheet

LORD® 7545 adhesive is an equal-mix, two-component urethane adhesive system used to bond FRP, SMC and other plastics with little surface preparation. This adhesive also bonds primed metals and various combinations of dissimilar substrates. LORD 7545 adhesive system is available in a range of working times to accommodate a wide variety of process requirements.

Features and Benefits

Durable: demonstrates high strength and excellent durability for structural applications.

Non-Flammable: exceeds U.S. DOT requirements for non-flammability and does not require explosion-proof equipment.

Suitable Appearance: off-white color of cured adhesive provides an acceptable appearance when non-painted or visible.

Environmentally Recommended: does not contain ozone depleting chemicals.

Environmentally Resistant: resists weathering, humidity and salt spray.

Chemically Resistant: solvent resistant when cured. Painting and most cleaning processes do not affect bond strength.

Non-Sag: remains in position when applied on vertical or overhead surfaces, allowing for greater process flexibility.

Application

Surface Preparation: Surfaces should be free of grease, dirt and other contaminants. For plastics, clean the surface with a dry rag wipe or a rag dampened with solvent. For metals, prime or grit blast the surface, then solvent wash for optimum bond performance.

Mixing: Mix LORD 7545-A resin with the appropriate curative at a 1:1 ratio, by volume. Handheld cartridges will automatically dispense the correct volumetric ratio of each component. Once mixed, the adhesive cures rapidly.

Applying: Apply adhesive using handheld cartridges or automatic meter/mix/dispense equipment.

- Handheld Cartridges
  1. Load the cartridge into the applicator gun and remove the end caps.
  2. Level the plungers by expelling a small amount of material to ensure both sides are level.
  3. Attach mixing tip and expel a mixer's length of adhesive.
  4. Apply adhesive to substrate and mate the parts within the working time of the adhesive. Clamp in position until adhesive reaches handling strength.
- Meter/Mix/Dispense Equipment
  Contact your Parker Lord representative if assistance is needed using this equipment.

For optimum adhesion, bondline thickness of LORD 7545 adhesive should be 10-40 mil (254-1016 micron). However, large gaps may be filled where mating surfaces are irregular.

Typical Properties*

	7545-A Resin	7545-G Curative	7545-B Curative	7545-C Curative	7545-D Curative	7545-E Curative	7545-F Curative
Appearance	Brown Paste	Black Paste	Off-white or Black Paste	Off-white Paste	Off-white or Black Paste	Off-white Paste	Off-white Paste
Viscosity, cP @ 77°F (25°C) Brookfield	25,000 - 70,000	230,000 - 650,000	230,000 - 650,000	230,000 - 650,000	230,000 - 650,000	230,000 - 650,000	230,000 - 650,000
Density lb/gal (kg/m^3)	12.5 - 12.8 (1498 - 1534)	10.8 - 11.2 (1294 - 1342)	10.8 - 11.2 (1294 - 1342)	10.8 - 11.2 (1294 - 1342)	10.6 - 11.0 (1270 - 1318)	10.6 - 11.0 (1270 - 1318)	10.5 - 11.1 (1258 - 1330)
Flash Point, °F (°C) Closed Cup	>200 (>93)	>200 (>93)	>200 (>93)	>200 (>93)	>200 (>93)	>200 (>93)	>200 (>93)

*Data is typical and not to be used for specification purposes.

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Curing: LORD 7545 adhesive will cure to full strength in 24 hours at 75°F (24°C), depending on the curative used. Cure rate can be accelerated by applying modest heat (temperatures up to 250°F [121°C]).

Cleanup: Clean equipment and tools prior to the adhesive cure with organic solvents such as acetone or methyl ethyl ketone (MEK). Do not use alcohol. Once adhesive is cured, heat the adhesive to 300°F (149°C) or above to soften the adhesive. This allows the parts to be separated and the adhesive to be more easily removed. Some success may be achieved with commercial adhesive strippers.

Shelf Life/Storage

Shelf life is six months from date of shipment when stored in a clean, dry environment at 65-85°F (18-30°C) in original, unopened container.

After opening, protect adhesive from excessive exposure to moisture by installing desiccant cartridges and/or using dry nitrogen as an inert cover.

Cautionary Information

Before using this or any Parker Lord product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Typical Properties* of Resin Mixed with Curative

	7545-A/G	7545-A/B	7545-A/C	7545-A/D	7545-A/E	7545-A/F
Mix Ratio, Resin to Curative by Volume by Weight	 1:1 1:0.87	 1:1 1:0.87	 1:1 1:0.87	 1:1 1:0.85	 1:1 1:0.85	 1:1 1:0.85
Solids Content by Weight, %	100	100	100	100	100	100
Working Time, minutes @ 75°F (24°C)	1.5	3 - 5	6 - 8	11-18	22 - 38	45 - 65
Time to Handling Strength @ 75°F (24°C)	10 minutes	30 minutes	60 minutes	90 minutes	2 - 3 hours	4 - 5 hours

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Typical Cured Properties*

Hardness Shore D	67
Tensile Strength at Break, psi (MPa) ASTM D882	3000 (20.7)
Elongation, % ASTM D882	72
Young's Modulus, psi (MPa) ASTM D882	22,200 (153)
Glass Transition Temperature (Tg), °F (°C) ASTM D3418	116 (47)
Moisture Absorption, % ASTM D570	<1

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Bond Performance*

Substrates	CFRP	ABS	PC/ABS	E-coated Steel
Lap Shear @ 70°F (21°C), psi (MPa)	2900 (20.0)	550 (3.8)	900 (6.2)	2350 (16.2)
Failure Mode	SF	SF	SF	COH
Lap Shear @ -40°F (-40°C), psi (MPa)	2600 (17.9)	400 (2.8)	550 (3.8)	3300 (22.7)
Failure Mode	SF	SF	SF	ADH
Lap Shear @ 150°F (65°C), psi (MPa)	1150 (7.9)	350 (2.4)	550 (3.8)	1100 (7.6)
Failure Mode	COH	COH	COH	COH
Lap Shear after 500 hours @ 150°F (65°C), 85% RH, psi (MPa)	2700 (18.6)	550 (3.8)	750 (5.2)	2400 (16.5)
Failure Mode	SF	SF	COH	COH
Lap Shear after 168 hours Water Immersion @ 150°F (65°C), psi (MPa)	2650 (18.3)	550 (3.8)	650 (4.5)	2450 (16.9)
Failure Mode	COH/SF	SF	COH/SF	COH
Lap Shear after 500 hours Salt Spray Exposure, psi (MPa)	2650 (18.3)	550 (3.8)	650 (4.5)	2400 (16.5)
Failure Mode	SF	SF	SF	COH
Lap Shear after 500 hours @ 150°F (65°C), psi (MPa)	2900 (20.0)	550 (3.8)	850 (5.8)	1500 (10.3)
Failure Mode	SF	SF	SF	COH
T-Peel, pli (N/mm)	–	–	–	33 (5.8)
Failure Mode				COH

Test Specimens	
Carbon Fiber Reinforce Plastic (CFRP)	2x2 twill in epxoy resin matrix 3 mm thick
Acrylonitrile Butadiene Styrene Plastic (ABS)	5 mm thick
Polycarbonate/ABS Blend (PC/ABS)	5 mm thick
E-coated Steel	1008 steel, 8 mm thick coated with PPG E6060C

Failure Mode Definition	Abbreviation
Adhesive Failure	ADH
Cohesive Failure	COH
Stock Failure	SF

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