

# Technical Datasheet

Bostik, Inc.



## PLIOGRIP™ 7773 (7400 & 7652) Urethane Adhesive System

**Description** PLIOGRIP 7700 two-part systems are high-strength, structural adhesives which are resistant to exposure to elevated temperatures, moisture, fuel, most solvents and chemicals. The adhesive systems are tested using stringent performance specifications of all major automotive manufacturers and heavy truck producers.

PLIOGRIP	7722	7771	7773	7705	7779	7770
Open Time @ 73°F (23°C)	30 sec	1.5 min	3.5 min	5 min	10 min	35 min
Handling Time @ 73°F (23°C)	2.5 min	5 min	15 min	20 min	30 min	1.5 hr
Sanding Time @ 73°F (23°C)	5 min	10 min	30 min	45 min	60 min	2.5 hr

Color versions: Generally available in green, black (B) and/or tan (T). For other colors please contact your sales representative

PLIOGRIP 7773 is a fast curing grade, composed of the single components PLIOGRIP 7400 and PLIOGRIP 7652. The 3.5 minute open time yields an excellent productivity advantage for assembly. With the short open time the assembly must fit fast-cure profile. The cure is complete enough for full handling within 15 minutes. Further processing such as sanding, drilling and painting is possible after 30 minutes.

**Features and benefits**

- Excellent adhesion to thermoset composites (SMC, BMC, RTM), carbon fiber composites (CFRP), engineered thermoplastics (PUR-RIM, ABS-PC, PE/PA, PBT/PC, etc.), coated metals, wood, concrete and many other materials
- Structural bonding, sealing or repairing with one product
- Superior ambient cure response (heat acceleration optional)
- Cure response is NOT dependent on the thickness of the applied adhesive bead as with most other Polyurethane systems
- Well balanced mechanical properties, proven fatigue performance and impact toughness
- Contains no chlorinated compounds
- Robust and easy application
- Gravity feed possible with meter mix dispense

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Nominal component properties

	PLIOGRIP 7400	PLIOGRIP 7652
Chemistry	Isocyanate Prepolymer	Polyol Curative
Color	Tan	Colored
Viscosity, cPs or mPas	15,000	20,500
Specific Gravity, g/ml	1.28	1.23
Ratio by Weight	1.06	1.00
Ratio by Volume	1.00	1.00
Odor	None	Slight Amine

Typical cure characteristics of the mixed adhesive

	Temperature	Time
Open Time (Bostik PGDEV-022)	@73°F (23°C)	3.5 minutes
Handling Time	@73°F (23°C)	15 minutes
Sanding Time	@73°F (23°C)	30 minutes

**Open Time** - also "wet time" or "pot life." The time the adhesive is wet enough to bond to a second substrate being mated in the bed of adhesive. The open time is temperature dependent. All data given were measured at 73°F (23°C). Increasing the ambient temperature by 50°F (10°C) will result in a reaction twice as fast (open time is cut in half).

**Handling Time** - Time when the adhesive is hard enough to hold on its own. The handling strength of freshly bonded parts depends on type and height of outside forces, that impact the bond. Typically, 100 psi (0.7 MPa) is needed. In all cases peel forces that effect the bond need to be reduced as far as possible.

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Physical properties of  
the cured adhesive

	<b>Value</b>	<b>Test Method</b>
Tensile, psi @ 73°F (MPa @ 23°C)	3,770 (26)	ASTM D-638
Young's Modulus, Mpa @ 73°F (23°C)	159,500 (1,100)	ASTM D-638
Elongation, %	65	ASTM D-638
Poisson Ratio, @ 73°F (23°C)	0.498	ASTM E-132
Water Absorption, %	<1.5	ASTM D-570
Shore Hardness, D	69	ASTM D-2240
Shrinkage, %	<1.0	ASTM C-733
CLTE, 10 <sup>-6</sup> /°C @ -30°C to 0°C (-22°F – 32°F)	73.3	ISO MAT-2208
CLTE, 10 <sup>-6</sup> /°C @ 100°C to 130°C (212°F – 266°F)	226.7	ISO MAT-2208
Glass Transition Temperature, °C		
G' Onset	21.0	ASTM E-1640
G'' Peak	20.7	ASTM E-1640
Tan Delta Peak	45.8	ASTM E-1640

Physical properties are values, based on material tested in our laboratories, but are subject to a standard deviation from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot. 1 MPa = approximately 145 psi.

### Application Guide

Cure	Ambient or heat accelerated cure (max 250°F [120°C])
Optimum Bondline Thickness	0.020 inches to 0.060 inches (0.5 mm to 1.5 mm)
Maximum Bondline Thickness	App 0.2 inches (5 mm)
Paint Bake	Max 300°F (150°C)
Gap Filling	Very good
Sag Resistance	For vertical applications
Consumption, ¼" Diameter Round Bead	App 40g/m
Consumption, ½" Diameter Round Bead	App 160g/m

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### Bonding Guide

Substrate	Surface Preparation – Ambient Cure	Surface Preparation – Heat Cure	General Adhesion*	Expected failure mode*
SMC, BMC, RTM, Gel Coat, Wood, HPL, PUR-RIM	Sanding	None	Excellent	Substrate failure
Carbon Fiber Reinforced Plastics (CFRP)	Sanding or peel ply	None	Excellent	Substrate failure
Coated or primed Metals and Metal alloys*	None	None	Excellent	Coating failure
HLU (Hand lay up), HSU (Hand spray up)	Sanding	Mostly sanding	Good	Mixed failures
Thermoplastics A (ABS, PA, PC/PBT, PPO/PA, PET)	Sanding or solvent wipe	Mostly none	Very Good	Substrate failure
Thermoplastics B (PPO, PC/ABS, PP/EPDM)	Solvent, detergent or primer	Solvent, detergent or primer	Good / Fair	Mixed failures
Thermoplastics C (PTFE, PP, PE, PVC, PPS, POM)	Physical pretreatment (flame, plasma, corona)	Physical pretreatment (flame, plasma, corona)	Limited	Adhesive failure

\*General adhesion and expected failure mode WITHOUT adhesion enhancing surface preparation

\*\*Metal surfaces should be protected with a primer or coating prior to bonding with polyurethane adhesives. Even though the adhesion is very good, water migration can cause “bond line corrosion” and failure with progressing time.

### Handling

PLIOGRIP 7773 Adhesive System contains ingredients which could be harmful if improperly handled. Contact with skin and eyes should be avoided and necessary protective equipment and clothing should be worn. Bostik maintains Safety Data Sheets on all of its products. Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers.

### Packaging

PLIOGRIP 7773 adhesive system is supplied in cartridges (50ml, 215ml, 630ml) and in bulk for meter mix dispense (5-gallon pails and 55-gallon drums). Please contact your local sales representative for supply options.

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### PLIOGRIP™ 7773 (7400 & 7652) Urethane Adhesive System

**Shelf Life and Storage** PLIOGRIP 7773 cartridges have a shelf life of 24 months from date of filling when stored indoors at temperatures between 60°F and 90°F (15°C and 32°C). After dispense the used mixer should be left attached to the cartridge to ensure sealing from humidity. PLIOGRIP 7773 bulk components (7400 & 7652) have a shelf life of 365 days from the date of shipment when stored indoors at temperatures between 60°F and 90°F (15°C and 32°C).

**Notice** All information presented herein is believed to be accurate and reliable, and is solely for the user's consideration, investigation and verification. The information is not to be taken as an express or implied representation or warranty for which Bostik, Inc. assumes legal responsibility. Any warranties, including warranties of merchantability, fitness for use or non-infringement of intellectual property rights of third parties, are herewith expressly excluded.

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Bostik requests that the user reads, understands and complies with the information contained herein and the current Safety Data Sheet.