

PLIOGRIP® 5761B epoxy adhesive system

Description

PLIOGRIP 5761B is a two-component structural epoxy adhesive system intended for use in metal and composite panel bonding. Bond line thickness is controlled by 0,25mm glass beads comprised in the adhesive.

The 2:1 adhesive system is available in either 50ml, 220ml side by side or 195ml universal cartridge format. The universal cartridge can be used with a 1-k caulking gun with high trigger ratio (recommended 26:1)

Features and benefits

- Room Temperature curing, heat acceleration possible
- Long open time of 60 min, handling within 4 hours @ 23°C, full cure in 24 hours
- Bond line thickness is controlled by 0,25mm glass beads
- Withstands automotive e-coat, powder prime, and paint oven temperatures up to 230°C
- Spot-weldable (uncured!)
- Excellent corrosion protection
- High energy absorption and very good crash performance

Nominal component properties

	Pliogrip 5401B (A-Part)	Pliogrip 5461 (B-Part)
Chemistry	Epoxy	Amine
Color	Black	Tan
Consistency	Viscous Paste	Viscous Paste
Specific Gravity, g/ml	1,08	1,13
Ratio by Weight	1,9	1,00
Ratio by Volume	2,0	1,00
Odor	none	slight amine

Typical cure characteristics of the mixed adhesive

	Temperature	Time
Open Time	@ 23°C	60 min
Working Time	@ 23°C	90 min
Handling time	@ 23°C	4 hours
Full cure	@ 23°C	24 hours

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 depending. All data given was measured at 23°C.

Working Time - During working time the already joined part can still be re-positioned. Do not take the bonded assembly apart.

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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 0.75 to 1MPa is needed. In all cases peel forces, that effect the bond need to be reduced as far as possible. The part needs to be clamped or fixed until handling strength is reached.

Physical properties of the cured adhesive

	Value	Test Method
Tensile strength, MPa @ 23°C	30	ASTM D-638
Young's Modulus, MPa @ 23°C	4550	ASTM D-638
Elongation, %	3	ASTM D-638
Poisson Ratio, @ 23°C	0,28	ASTM E-132
Water Absorption, %	2,9	ASTM D-570
Shore Hardness, D	80	ASTM D-2240
CLTE, 10-6/°C @ -30°C to 0°C	67	ISO MAT-2208
CLTE, 10-6/°C @ 100°C to 130°C	155	ISO MAT-2208
Glass Transition Temperature, °C		
G' Onset	49	ASTM E-1640
G'' Peak	-80, -50, 57	ASTM E-1640
Tan Delta Peak	-80, -49, 73	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.

Application Guide

Cure	Ambient or heat accelerated cure (max 150°C)
Optimum Bondline Thickness	0,25mm (glass bead incorporated)
Paint Bake	up to 230°C
Gap Filling	Very Good
Sag Resistance	For vertical applications
Consumption, 1/4" Diameter Round Bead	app 35g / m
Consumption, 1/2" Diameter Round Bead	app 141g / m



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Surface Preparation	Substrate	Surface preparation -	Surface preparation -
		Ambient Cure	Heat Cure
	Metal	Abrasion & Degreasing	Abrasion & Degreasing
	Composite (SMC, RTM, CFRP)	Abrasion	Solvent wipe

Lap Shear Strength	Substrate	Lap Shear Value [MPa]	Failure Mode
		Cold Rolled Steel (1,5mm)	27,8
	Cold Rolled Steel (0,8mm)	23,7	Steel Deformation
	Hot Dipped Galvanized Steel (0,7mm)	12,6	Steel Deformation
	Alloyed Galvanized Steel (0,7mm)	18,5	Cohesive Failure
	6111 Aluminium Alloy (0,9mm)	11,3	Mixed Failure (COH/ADH)
	5052 Aluminium Alloy (0,6mm)	12,4	Mixed Failure (COH/ADH)
	ABS	3,0	Substrate Failure
	SMC	8,8	Substrate Failure

Test Conditions: preparation: Solvent wipe, Orbital Abrasion (80rgd), Bond Line: 0,25mm, Cure: 1w@23°C, Test temperature: 23°C, Crosshead speed: 13mm/min

Handling PLIOGRIP 5761B 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. Ried B.V. maintains Material Safety Data Sheets on all of its products. Material Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers.

Packaging PLIOGRIP 5761B adhesive system is supplied in cartridges (50ml, 220ml and 195ml) and in bulk for meter mix dispense (19l pails and 208l drums). Machine dispensing needs to be evaluated carefully as the included glass beads may cause wearing of the delivery system. Please contact Ried B.V. for supply options.

Shelf Life and Storage Pliogrip 5761B cartridges have a shelf life of 24 months from date of filling, when stored indoors between 15° to 32°. After dispense the used mixer should be left attached to the cartridge to ensure sealing from humidity.