Technical Data Sheet

B3293 Structural Bonder Revised 03.08.10

BARNWELL
THE SEAL OF APPROVAL

B3293 Structural Bonder

PRODUCT DESCRIPTION

B3293 is a two-component fast setting, room temperature cure structural polyurethane adhesive system. This sand able adhesive system has an excellent adhesion to wide variety of surfaces.

USEFUL NOTES

- Fast setting time with convenient 1:1 mix ratio
- Excellent adhesion to wide variety of surfaces such as Aluminum, Stainless steel, ABS, PVC, Polyurethane, Composites, Thermoplastics, Thermosetting Plastics, Wood, Glass, Concrete without any use of primer.

PROCEDURE FOR APPLICATION

For optimum performance, clean surface by solvent-wiping any deposits of heavy grease, oil, dirt, or other contaminants. Surface can also be cleaned with industrial cleaning equipment such as vapor phase degreasers or hot aqueous baths. If working with metal, abrade or roughen the surface to significantly increase the microscopic bond area and increase the bond strength.

Proper homogenous mixing of resin and hardener is essential for the curing and development of stated strengths.

50 ML/400ML CARTRIDGES:

1. Attach cartridge to 50ml or 400ml manual or pneumatic dispensing systems.
2. Open tip.
3. Burp cartridge by squeezing out some material until both sides are uniform (ensures no air bubbles are present during mixing).
4. Attach mix nozzle to end of cartridge.
5. Apply to surface and attach other substrate quickly, as you have 5 minutes of working time to use the product. Substrates can be clamped with a bond line thickness as small as 0.007".

TYPICAL PROPERTIES

	Part A	Part B	Mixed
Colour	Beige	Black	Black
Viscosity @25ºC Brookfield, cps	30,000	30,000	30,000
Weight per Gallon	11	11	11
Mix Ratio by Volume			1:1
Mix Ratio by Weight			1:1
Working Time			4 - 6 Minutes
Fixture Time			12 - 15 Minutes
Functional Cure			20 - 30 Minutes
Full Cure			24 Hours
Service Temperature			-40ºC to 121.1ºC (-40ºF to 250ºF)
Coverage Per lb.			94 sq. inch per lb @ 1/4"

TYPICAL CURED PROPERTIES

T-Peel Strength	65 – 75 Pli	ASTM D1876
Tensile Elongation	200%	ASTM D638
Shore Hardness	65 – 70	ASTM D 2240
Dielectric Strength	350	volts/mil ASTM D 149
Cure Shrinkage	0.0014 in./in.	ASTM D 2566
Tear Resistance	400 Pli	ASTM D 624
Tensile Strength	2,200 psi	ASTM D 638

Lap Shear Strength after 7 days at 25ºC:

ABS to ABS	1, 250 psi	Aluminum to Aluminum	2,225 psi
Steel to Steel	2050 psi	Concrete to Concrete	1940 psi
Glass to Glass	4100 psi	GBS to GBS	2750 psi
SMC to SMC	1200 psi	Galvanized Metal to Metal	2840 psi

Off ratio Performance

B3293 is designed such a way that off ratio does not affect the final properties of the bond performance. Following table shows the result of the off ratio:

Ratio	Fixture Time	Hardness	Lap Shear Strength
0.8:1	5 - 7 minutes	61D	2,175 psi
1:1	4 - 6 minutes	61D	2,225 psi
1.2:1	3 - 5 minutes	61D	2,300 psi
Aluminum / Aluminum According to ASTM D 1002			

Result

The above data shows that there is minor change in the lap shear strength and curing properties of the adhesive when mixed off ratio.

ENVIRONMENTAL RESISTANCE

B3293 has excellent resistance to harsh environment conditions. The testing data is as follows:

Condition	Lap Shear Strength & Mode of Failure
Initial	2, 225 psi – Cohesive Failure
Environmental Cycle – 30 days	2, 275 psi – Cohesive Failure
Lap Shear Strength ASTM D 1002 – Aluminum / Aluminum Environmental Cycle = 8 hours @ -30 0C, 8 hours @ 85 0C, 8 hours @ 30 0C @ 100% Relative Humidity	

Result

The lap shear strength has increased after environmental cycle. B3293 perform better under these conditions compare to the substrates bonded. Substrates may have less resistance to these conditions compare to adhesive.

STORAGE

Store in cool, dry place.

PRESENTATION

B3293 is available in 50ml twin gun syringe and 400ml twin gun syringe.

PRECAUTIONS: This product and the auxiliary materials normally combined with it are capable of producing adverse health effects ranging from minor skin irritation to serious systemic effects. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheets (MSDS) for this and all other products being used are understood by all persons who will work with the product.

Warranty: All products purchased from or supplied by Bondloc are subject to terms and conditions set out in the contract. Bondloc warrants only that its product will meet those specifications designated as such herein or in other publications. All other information supplied by Bondloc is consider accurate but are furnished upon the express condition the customer shall make its own assessment to determine the product's suitability for a particular purpose. Bondloc makes no other warranty, either express or implied, including those regarding such other information, the data upon which the same is based, or the results to be obtained from the use thereof; that any product shall be merchantable or fit for any particular purpose; or that the use of such other information or product will nor infringe any patent.