BD403 Structural Methacrylate Adhesive

1. DESCRIPTION

BD403 is a two-part Structural acrylic adhesive with high impact and peel strengths. Replace welding, reverting and other mechanical fastening methods. BD403 bonds wide range of metals with no or minimum surface preparation efforts. Combined at a ratio of 4:1, BD403 has a working time of 2-4 minutes and achieves nearly 90 percent of its ultimate strength in 20 minutes at room temperature curing. BD403 has high temperature resistance properties and can withstand baking/powder coating temperature resistance up to 200C for 60 to 90 minutes. BD403 contains glass beads which helps to control the adhesive bondline thickness.

Company Identification: **Big Dog Adhesives LLC.**
435 Harrison Street
Elkhart, IN 46516-2717
Toll-free: 833-BIG-DOGG (833-244-3644)
Fax: 833-BIG-DOGZ (833-244-3649)
Website: www.bigdogadhesives.com lou@bigdogadhesives.com

2. CHARACTERISTICS:

Room Temperature Cure	**Properties**
• Working Time	2 to 4 minutes (at 75°F/ 24°C)
• Fixture Time	6 to 8 minutes (at 75°F/ 24°C)
• Can be Moved In	20 minutes
• Operating Temp.	-40°C to 150°C (-40°F to 300°F)
• Gap Filling	.250 inches
• Mixed Density	8.1 lbs/gal (.96 g/cc)
• Flash Point	59°F (15°C) – See SDS for more safety information

3. CHEMICAL RESISTANCE:

Excellent Resistance to:	**Susceptible to:**
• Hydrocarbons	Polar Solvents
• Acids and Bases	Super Strong Acids and Bases
• Greases	
• Oils, moisture	

4. PHYSICAL PROPERTIES:

Uncured:	**Resin**	**Activator**
• Viscosity(cps)	140,000 – 200,000	80,000 – 120,000
• Color	Off White	Natural
• Density (lbs/gal)	11	9.1
• Mix Ratio (wt or vol)	4.0	1.0
• Mixer Recommendation	Cartridge (375ml):	MGQ 08-24T – Square 24 element Clear Mix Tips

5. MECHANICAL PROPERTIES:

Tensile Strength (ASTM D638)	**Substrate**	**Results**	**Failure Type**
• Strength, psi	Galvanized Steel	1800+	Cohesive
• Strength, psi	ABS/PVC Sheeting	500+	Substrate
• Strength, psi	Steel/Stainless Steel	2,500 – 3,000	Cohesive
• Strength, psi	Aluminum	2,500 – 3,000	Cohesive

6. CURED ADHESIVE PROPERTIES:

Shore Hardness (ASTM D2240)	68 Durometer
Elongation, % (ASTM D638)	30
Modulus	130,000
Tensile Strength (PSI)	2,500 to 3,000
Impact Resistance	25 ft. lb./in.
Service Temperature	-40 °F to 300 °F

7. HANDLING AND APPLICATION:

BD403 resin (Part A) and activator (Part B) are flammable. Contents include Methacrylate ester and acids. Keep containers closed after use. Wear gloves and safety glasses to avoid skin and eye contact. Wash with soap and water after skin contact. In case of eye contact, flush with water for 15 minutes and get medical attention. Harmful if swallowed. Keep out of the reach of children. Keep away from heat, sparks, and open flames. Do not smoke cigarettes or anything else while handling or near the product. Refer to the BD403 Safety Data Sheet for more complete safety instruction. To assure maximum bond strength, surfaces must be mated together within the specified working time, and all clamps affixed within that time. Use sufficient material to ensure that the joint is completely filled when parts are mated and clamped. Avoid over clamping parts, which may cause a dry joint or a joint starved of adhesive. All adhesive application, part positioning, fixturing, and clamping should occur before the working time of the adhesive has expired. After the indicated working time, parts must remain undisturbed until the fixture time is completed. Components bonded, adhesive, and shop temperature can have a significant effect on the work and fixture time of the adhesive. Application of BD403 adhesive at temperatures between 65°F and 85°F (18°C and 30°C) will ensure proper cure. Temperatures below 65°F (18°C) will slow cure and fixture speed. BD403 adhesives will still react, but will take longer. Temperatures above 85°F (18°C and 30°C) will increase cure and fixture speeds, and there's a risk that the adhesive will be hardened or too thick to bond materials. The viscosities of BD403 adhesives are affected by temperature.

NOTE: Because of the curing features of BD403 adhesives, large amounts of heat are generated when large masses of material are mixed at one time. The heat generated by the exotherm resulting from mixing large amounts of adhesive can result in a boiling of the monomer in the adhesive (methyl methacrylate), resulting in the release of trapped air, steam and volatile gasses. To prevent this, use only enough material as needed for use within the working time for the product, and confine the gap or spread out the material to no more than .50 inches.

8. HANDLING AND STORAGE

The shelf life of BD403 is twelve (12) months from the date of manufacture based upon continuous storage at room temperature (77°F or 25°C). Storage of BD403 adhesives in refrigerated compartments will extend the shelf life even more. Do not store BD403 adhesive or any other adhesives in a refrigerator which has food or lunch products in them. Be sure to bring BD403 adhesives to room temperature for 24 hours before use, otherwise longer cure and fixture times may be expected. Long-term storage at temperatures above room temperature will shorten the shelf life of BD406 adhesives considerably. Storage at temperatures above 100°F or 38°C could shorten the shelf life to less than one month. BD403 adhesives contain no water, so freezing of the adhesive for short periods is permissible, but is not encouraged.

9. ADDITIONAL INFORMATION

NOTE: Information contained herein is based on tests we believe to be reliable and accurate. It is offered in good faith for the benefit of the consumer. The Company shall not be liable for any injury, loss, or damage in the use or handling of its chemical products since conditions and use are beyond our control. In every case, we urge and recommend the user conduct tests to determine to their own satisfaction that the product is of acceptable quality and suitability for their particular purpose under their own operating conditions. Statements concerning possible use of our products are not intended as recommendations to use our products in the infringement of any patent, or for any particular purpose or application. These products are intended for industrial use only.