BD410 Structural Methacrylate Adhesive

1. DESCRIPTION

BD410 is a Low Read -Through two-part acrylic adhesive, designed for the structural bonding of various metals like Aluminum Galvanized Steel, CRS, composites, and Engineered plastics like PC-ABS. Combined at a ratio of 2:1, BD410 has a working time of 10 minutes and achieves nearly 90 percent of its ultimate strength in 30 minutes at room temperature curing.
BD410 bonds flexible substrates with minimum or no bondline read-through.
BD410 generally requires little or no preparation effort, for bonding metals and plastics.
The non sag consistency of this products enables process flexibility for vertical or horizontal applications.

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2. CHARACTERISTICS:

Room Temperature Cure	**Properties**
• Working Time	8 to 12 minutes (at 75°F/ 24°C)
• Fixture Time	15 to 20 minutes (at 75°F/ 24°C)
• Can be Moved In	25 minutes
• Operating Temp.	-40°F to +149°F (-40°F to 300°F)
• Gap Filling	.3 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
• Vinegar	

4. PHYSICAL PROPERTIES:

Uncured:	**Resin**	**Activator**
• Viscosity(cps)	100,000 – 140,000	60,000 – 100,000
• Color	Off White	Gray
• Density (lbs/gal)	9.1	9.7
• 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:

Lap Shear (ASTM D638)	**Substrate**	**Results**	**Failure Type**
• Strength, psi	Galvanized Steel	1500+	Substrate
• Strength, psi	ABS/PVC Sheeting	1,000+	Substrate
• Strength, psi	Steel/Stainless Steel	2000+	Cohesive
• Strength, psi	Aluminum	2000+	Cohesive

6. CURED ADHESIVE PROPERTIES:

Shore Hardness (ASTM D2240)	63 Durometer
Elongation	20-40%
Modulus	130,000
Tensile Strength (PSI)	2,000 - 2500
Impact Resistance	25 ft. lb./in.
Service Temperature	-40 °F to 300 °F

7. HANDLING AND APPLICATION:

BD410 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 BD410 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 BD410 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. BD410 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 BD410 adhesives are affected by temperature.

NOTE: Because of the curing features of BD410 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.