GENERAL GUIDELINES FOR HANDLING COLD POUR POLYURETHANE FOAMS

(Please refer to the individual material technical data sheets for information unique to each system)

Foams, (rigid or flexible) are generally fast reacting once mixed and, as a rule, the lower the density of the foam the faster reaction time a system will have. Due to the nature of foam systems and the diversity of applications, it is highly recommended that materials be "pre-tested" prior to actual casting of parts. This will provide a familiarity with reaction time and mixing requirements of each product and their processing characteristics.

Weighing materials separately rather than pouring together on a scale is the preferred practice. This allows for more time when combining the materials and prevents premature reaction. Weights according to given ratio should be closely held. The "B" component should be gently shaken or stirred to re-blend prior to mixing with part "A".

As a general rule, the 'A' and 'B' components of the BJB flexible and rigid foams should be pre-warmed to between 75°-85°F (24°-29°C). Colder temperatures can cause sluggish and poor expansion of the foam. Too much heat will cause the foams to react very quickly and may cause poor cell structure within the foam.

Mixing is best with a high speed drill or air motor with a "Jiffy Mixer". The blade shears the material and provides a thorough mix within the 5 to 8 second periods generally established for achieving a uniform blend. The material should have a uniform blended appearance. Mixing too long or not enough can result in poor material performance.

Once mixed, the material should be *immediately* poured. If too much time goes by, the foam will rise in the mix container and the batch may be lost.

When pouring the foam, avoid trying to scrape any material from the container sidewalls or bottom. Generally, there isn't enough time to do this and more importantly there may be material that is not well mixed on the container sides.

PIGMENTATION

BJB's 6000 Series Pigments can be added to both rigid and flexible foam systems when coloring is required. Pigment should be added to the "B" side and should not exceed 2% of the total weight of the "B" side. For best results the pigment should be power mixed into the product with a Jiffy Mixer or other comparable blade mixers on a drill motor. This will insure an even dispersion of the pigment into the foam.

MOLD PREPARATIONS

The mold should be well sealed and released. Foams will seek moisture through release waxes and stick to mold surfaces if an insufficient seal exists. Sealing can be accomplished by using lacquer or other similar sealers. The mold should be warmed to between 75°- 85°F (24°-29°C) prior to casting the first part. Once a mold is heated and cycled it will maintain heat for continued production.

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Release systems vary in accordance to the type of mold used, however, as a general product we recommend Challenge 90 Release or Meguiar's #87 paste wax from our line of products. As a rule silicone based releases do not work with either the flexible or rigid foam groups of materials. The silicone migrates and often causes poor surface conditions. Silicone will also inhibit the adhesion of paints and over-coatings.

The best molds for production (rather than prototype or limited production parts) are either machined aluminum molds or epoxy molds. Epoxy molds offer the least expensive method for long term use when cycle times allow slower heat dissipation.

DEMOLDING FOAM MATERIALS:

Most foams can be removed from the mold within a 30-minute timeframe. However, smaller masses will develop lower exothermic reaction and may require a slightly longer cure time.

It is recommended that foam parts be crushed or squeezed after demolding to remove residual gases remaining in the cell structure. This will help to reduce post shrinkage and aid in reducing natural odors from the foam part.

CONTAINERS:

It is recommended that if materials are to be stored after using a portion of a container, that a dry nitrogen blanket be applied prior to re-sealing the container. A dry air purge is readily available from BJB in aerosol cans or dry nitrogen can be purchased in cylinders from welding supply companies. When blanketing from a gas cylinder, use a flexible rubber hose and lower the end of the hose close to the level of the material. Open the tank regulator and allow the nitrogen to flow over the surface of the material, giving adequate time to purge the air from the container before resealing the lid.

STORAGE

Store both resin and hardener components in an area where the temperature is between 70°- 90°F (21°-32°C). When first using the material, a sample should be visually inspected to be sure no crystallization is present. Crystallization of either the resin or hardener can occur during shipment in cold weather. If the resin appears cloudy or the hardener becomes gummy, the component should be warmed with containers open and stirred until the material returns to its proper smooth liquid consistency.

Containers should be stored on pallets to prevent cold flooring from lowering the material temperature.

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