



**BCC PRODUCTS, INC.**

**BLEHM PLASTICS**

FAST CAST – EPOXIES – ADHESIVES - POLYSULFIDES - URETHANES – POLYESTER PASTES – TOOLING BOARDS – RELEASE AGENTS – SILICONES

## EPOXY TOOLING BOARD

(HIGH TEMPERATURE)

**EB6200**

BCC Products **EB6200** is a “grain-free” elevated temperature epoxy modeling material known for its superior surface finish, dimensional stability and the ability to maintain tolerances even after being subjected to temperature variations. EB6200 has excellent dimensional stability results from the low coefficient of thermal expansion and high glass transition temperature.

### Applications

Master Models (Aerospace); Automotive Die Models; Vacuum Forming at Elevated Temperatures; Lay-Up Tools for Medium and High Temperature Curing Prepreg

### Typical Properties

	VALUE	TEST METHOD
Color	Brown	Visual
Hardness, Shore D	72	ASTM D-2240
Density, g/cm <sup>3</sup> (lbs/ft <sup>3</sup> )	0.76 (47)	ASTM D-792
Heat Deflection Temperature, °F	300	ASTM D-648
Glass Transition Temperature, °F	>325	ASTM D-3418
Coefficient of Thermal Expansion, in/in/°F	2.1 x 10 <sup>-5</sup>	TMA
Izod Impact, Notched (Unnotched), ft-lbs/in	0.56 (1.05)	ASTM D-256
Tensile Strength, psi	4,400	ASTM D-638
Flexural Strength, psi	5,150	ASTM D-790
Flexural Modulus, psi	349,000	ASTM D-790
Compressive Strength, psi	4,800	ASTM D-695
Compressive Modulus, psi	342,000	ASTM D-695

Board Dimensions	2 inches x 24 inches x 60 inches
	4 inches x 24 inches x 60 inches
	6 inches x 24 inches x 60 inches

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### Machining Information

Roughing Speed: 1,600 RPM                      Roughing Feed: 40 IPM  
Cutters: 1" Ball End Mill, 2-Flute, High Speed Steel  
(Minimum of 8% Cobalt Suggested)  
Depth: ¼" to 2" deep with a 40% step over

Finishing Speed: 10,000 RPM                      Finishing Feed: 100 IPM  
Cutters: 5/8" Ball End Mill, 4-Flute, Carbide  
Depth: 1/8" deep leaving 0.002" scallop

A continuous air-blast is recommended during the cutting process to assist in cooling and evacuation of waste chips.

- The machining information provided above is a suggested starting point. Individual users should determine the appropriate speeds, feeds, cutters and depths for their specific application.

### Bonding of Boards

Precautions should be taken when selecting an adhesive for bonding tooling board. When selecting an adhesive, choose a product with a gel time that is long enough to provide time to mix the required amount of adhesive and to spread it onto the surfaces that will be bonded. Boards should be wet out on both sides of the stack. Boards should be held in position by light clamping or placing a weighted object over the entire top surface of the stack to ensure equal pressure throughout the board. Over-clamping will cause the adhesive to spread unevenly, which may result in stress build up in the board and lead to stress micro cracking and/or warping. Always allow adequate time for the adhesive to further machining or processing. Always use an adhesive that is capable of meeting the mechanical properties of the board. Precautions should be taken when post curing to ensure that the temperature is ramped up and down slowly. This will prevent thermal shock from occurring to the board and the adhesive, which will result in a poor bond and stress cracking in the board.

### Back up and Framing Structures

Use one of the recommended adhesives for attaching back up or framing structures to the tooling board. Use caution when making mechanical attachments to higher temperature boards as variations in coefficients of thermal expansion may cause warping or micro cracking when subjected to heat. Variations in the coefficients of thermal expansion of boards, adhesives and back up or framing materials may introduce stress into composite structures when they are heated or cooled.

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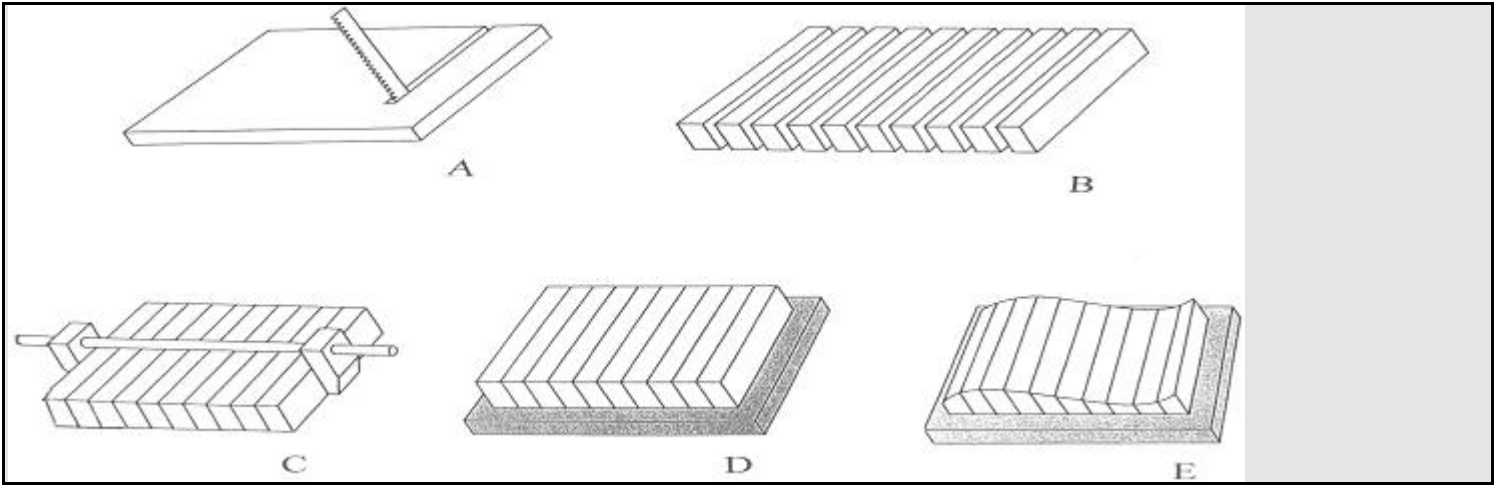
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### Construction with EB6200

- A) Sawing: Cut **EB6200** side to side on a band saw to form the required dimension. Use of carbide or diamond coated saw blades or cutting wheels is recommended.
- B) Bonding: Laminate the cut pieces together using the recommended matched adhesive system. Apply adhesive to both sides of the glue joint.
- C) Clamping: Clamp the board together and cure overnight at room temperature. Excessive clamping pressure will induce stress into the board and produce negative results.
- D) Supporting: Attach the rough model to an appropriate base, ie. **EB6200** board. Removal of material from a large area of one face of a single block should be avoided unless the block is supported by, and bonded to at least two other blocks of equal unmachined thickness, or is otherwise mechanically restrained to avoid distortion.
- E) Machining: Optimum results are generally obtained by cutting from the edge towards the center of a block. However, whenever sharp edges are encountered, the final cut should always move back from the center towards the edge involved. When hand carving, the use of carbide coated rasps and files are recommended. Wood chisels may cause excessive chipping. A high gloss finish can be obtained by the use of successively finer grades of wet and dry abrasive paper and polishing compounds.
- F) Sealing: Apply lacquer sealer to the finished product.

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