

# Freeman T-5060 High Temperature Epoxy Board

### Description

The Freeman T-5060 (formerly Renshape BM-5060) is a high-performance epoxy tooling board that offers exceptional machinability, a very fine surface structure, high dimensional stability, and notable heat resistance. Able to withstand up to 284F <u>with post cure</u> (see below), this board is well suited to applications such as high temperature curing prepreg, draping tools for prepreg, and master models.

## **Physical Properties**

Color	Blue
Hardness (Shore D)	75
Density (g/cc)	0.72
Density (lb./ft. <sup>3</sup> )	45
Compression Strength (psi)	9,790
Flexural Strength (psi)	5,366
Flexural Modulus (psi)	369, 850
Deflection Temperature (°F)	284*
Coefficient Thermal Expansion (in/in/°F)	19.5 x 10 <sup>-6</sup>

**\*Post-cure of parts on Freeman T-5060 tools**: The temperature differential (delta T) between the center of the tool and the external surface must never exceed 50°F on either ramp up or cool down. To achieve this, a temperature soak of 6 hours every 50°F up and down in the oven and temperature ramp rates of no more than 1°F/min are recommended, but if the temperature differential would exceed 50°F then these parameters need to be adjusted until it does not. Leave the tool in the oven for at least 6 hours below 100°F before opening the doors and exposing the tool to room temperature conditions.

### Preparation of board surface for bonding

Prior to bonding, all surfaces should be sanded using 80 grit sandpaper or coarser. The surfaces to be glued must be clean, dry, and dust free, which may be achieved using either compressed air or vacuum. The surfaces to be bonded must also be cleaned with suitable solvents to ensure they are free of oil and/or dirt residue. Suitable solvents for cleaning will be any materials that evaporate quickly, such as acetone or isopropanol, as they will minimize the risk of affecting adhesive power.

### **Bonding and Machining**

Once material is cleaned, it may be bonded. It is recommended to use Fre-Weld 5060 for bonding, applying adhesive to both surfaces. Secure material with sufficient clamps or presses and allow to cure for (24) hours at room temperature. It is recommended to run the tool through intended application cure (see cure schedule above) prior to machining to desired dimensions.

The user shall determine the suitability of this product for their application and assumes all risks and liabilities associated with the use of this product. The exclusive remedy for all proven claims is replacement of our materials only and in no event shall Freeman Mfg. & Supply Co. be liable for special, incidental, or consequential claims.

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