



EP700 High Temperature Epoxy Tooling Board

EP700 is a high quality 700kg/m³ epoxy tooling board. This rigid epoxy block is recommended for CNC machining of highly accurate models, patterns or masters as well as production tools/moulds.

Epoxy is the tooling board of choice for elevated temperature applications and is essential when making prepreg composite moulds or components where, at elevated temperature, epoxy tooling board will not inhibit the cure of prepreps in the same way that polyurethane (PU) board will.

Typical Applications

EP700 Epoxy Tooling Board can be used to produce highly accurate patterns and moulds. Patterns can be used to produce high volume composite moulds, including using prepreg tooling systems (with cure temperatures up to 130°C).

For smaller production runs EP700 can be used to produce the working mould itself. In this situation the machined mould - once suitably sealed and prepared - can be used as a mould/tool for the production of composite parts, including the manufacture of prepreg composite components (oven-only or autoclave cure).

Block Sizes

EP700 is held in stock in full board sizes of 1500mm x 500mm in thicknesses of 50mm (2") and 100mm (4"). A range of cut-down block sizes are also available, ideal for smaller projects.

Part numbers are shown below:

	250x250mm	500x250mm	500x500mm	1000x500mm
50mm	EP700-006-50	EP700-025-50	EP700-012-50	EP700-1-50
100mm	EP700-006-100	EP700-025-100	EP700-012-100	EP700-1-100

Key Features

- High dimensional stability; low CTE
- High temperature use up to 130°C
- Compatible with tooling and component prepreps
- Can be used directly as a mould/tool
- Excellent internal consistency for a high quality surface finish

How to Use

Finishing

EP700 can be cut and shaped by hand however it is a high density material and better suited to CNC machining. Once machining is complete, the board can be finished to an excellent satin finish using a range of abrasive papers, typically ranging from 400 to 1200.

Sealing & Release Preparation



Depending on the level of gloss required, once the machined board has been finished to the required standard it can either be coated directly with a suitable chemical release agent (such as Easy-Lease) or it can be first sealed using a specialist board sealer before applying release agent.

When release coating the board without first using a specialist board sealer, numerous application of release agent will be required and the gloss level attainable will be limited to a satin finish.

By using a specialist board sealer, a full gloss can be quickly achieved. Follow the instructions for the board sealer you are using. Easy Composites' S120 Board Sealer is recommended for sealing EP700 board and can be applied by lint-free cloth or by spray. Typically, 3-4 layers of S120 Board Sealer will provide a non-porous, hard-wearing surface for a low volume production mould. Once hardened the S120 Board Sealer finish can be flatted and polished to a high gloss.

After using a suitable board sealer, a compatible release-agent, such as Easy-Lease, is required. Release agent should be applied according to the accompanying instructions.

EP700 Technical Specifications

Physical Properties

Property	Standard	Value
Material Composition		Epoxy
Colour		Green
Specific Gravity (Density) at 23°C	ISO 2781 : 1996	0.70

Mechanical Properties

Property	Standard	Units	Value
Hardness	ISO 2781 : 1996	Shore D1	23°C
			80°C
			100°C
			120°C
			130°C
Flexural Modulus	ISO 178 : 2001	MPa	2,300
Flexural Strength	ISO 178 : 2001	MPa	37
Compressive Strength at Yield	ISO 604 : 2002	MPa	50
Glass Transition Temperature	ISO 11359 : 2002	°C	130
Coefficient of Thermal Expansion (CTE) 10°C to 100°C	ISO 11359 : 1999	10 ⁻⁶ K ⁻¹	35-40

Machining Parameters

	Cut Speed (Vc in m/min)	Feed per tooth (fz in mm/revolution)
Rough Shape	100 to 400	0.35
Fine Finish	400 to 800	0.05 > 0.15

$$n = (1000 \times Vc) / (\pi \times Dc) \quad Vf = n \times fz \times Z$$

Vc : Cutting speed in m/min	fz : Feed per tooth in mm/revolution
Dc : Cutting diameter in mm	Z : Number of teeth
n : Spindle speed	Vf : Feed speed

Health & Safety Precautions

- Wear respiratory protection when cutting or machining
- Always work in a well ventilated environment
- Wear gloves, safety glasses and waterproof clothes
- Do no smoke when machining

For further information, consult the product safety data sheet.

Disclaimer

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum.

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