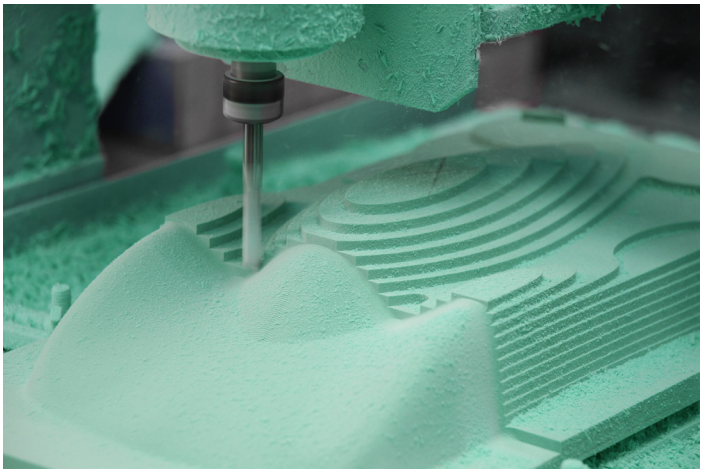
EB700



Key Features

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

EB700 High Temperature Epoxy Tooling Board

EB700 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 prepregs in the same way that polyurethane (PU) board will.

Typical Applications

EB700 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 EB700 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).

How to Use

Bonding & Repair

For larger patterns or more diverse shapes, it is often necessary to bond multiple boards together or to cut and join a board to produce a hollow 'rough shape' prior to machining. In this case, **EA700 Epoxy Tooling Board Adhesive** can be used to bond the tooling board, resulting in machinable bond-line which matches the density and behaviour of the surrounding board.

EA700 Epoxy Tooling Board Adhesive can also be used to repair cracks or damage in tooling board prior to machining or to repair damage from a failed toolpath before re-machining. See EA700 technical datasheet for further details.

Finishing

EB700 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 Advanced Board Sealer** is recommended.

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.

Easy Composites Ltd | Tel +44 (0)1782 454499 | www.easycomposites.co.uk | sales@easycomposites.co.uk

Block Sizes

EB700 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	1500x500mm
50mm	EB700-006-50	EB700-025-50	EB700-012-50	EB700-075-50
100mm	EB700-006-100	EB700-025-100	EB700-012-100	EB700-075-100

EB700 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	23°C	ISO 2781 : 1996	Shore D1	75
	80°C			73
	100°C			72
	120°C			71
	130°C			68
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 X Vc) / (PI X Dc)	Vf = n X fz X 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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Easy Composites Ltd
Unit 39, Park Hall Business Village,
Stoke on Trent, Staffordshire, ST3 5XA
United Kingdom.
Tel. +44 (0)1782 454499
Email sales@easycomposites.co.uk
Web www.easycomposites.co.uk

Easy Composites (Beijing) Ltd
No.20# A , U Gu Mid Area
Liandong, Majuqiao, Beijing
101102, China
Tel. +86 (0) 1057485810
Email sales@easycomposites.asia
Web www.easycomposites.asia