Technical Datasheet

EB700

High Temperature Epoxy Tooling Board

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

Description

EB700 is a high quality 700kg/m³ epoxy tooling board recommended for CNC machining of highly accurate models, patterns or masters as well as low volume production tools/ moulds. It offers excellent surface finish, stability and service temperature up to 130°C.

Epoxy tooling board is also highly recommended over PU tooling board when making patterns or moulds for use with epoxy-matrix prepregs.

Typical Uses

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 and 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 grit.

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 our CR1 Easy-Lease) or it can be first sealed using a specialist board sealer before applying release agent.

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 CR1 Easy-Lease, is required. Release agent should be applied according to the accompanying instructions.

Specification

Block Sizes

Thickness (mm)	Block Sizes Available (mm)
50	250 x 250
50	250 x 500
50	500 x 500
50	500 x 1500
100	250 x 250
100	250 x 500
100	500 x 500
100	500 x 1500

Properties

The following table shows the typical properties of the board:

Property	Unit	Test Method	Value
Material Composition	-	-	Epoxy
Colour	-	-	Green
Density	g/cm³	ISO 2781	0.70
Hardness @ 23 °C	Shore D	ISO 2781	75
Hardness @ 80 °C	Shore D	ISO 2781	73
Hardness @ 100 °C	Shore D	ISO 2781	72
Hardness @ 120 °C	Shore D	ISO 2781	71
Hardness @ 130 °C	Shore D	ISO 2781	68
Flexural Modulus	MPa	ISO 178	2300
Flexural Strength	MPa	ISO 178	37
Compressive Strength	MPa	ISO 604	50
Glass Transition Temp.	°C	ISO 11359	130
Linear CTE 10 - 100 °C	10^{-6} x K^{-1}	ISO 11359	35 - 40

Machining Parameters

	Cut Speed (Vc in m/min)	Feed Per Tooth (fz)
Rough Shape	100 - 400	0.35
Fine Finish	400 - 800	0.05 > 0.15

Key:

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

Transport and Storage

Product has un-limited shelf life when stored flat in dry conditions.

During storage and transport of finished tools and models temperature variations should be kept as moderate as could be.

Disclaimer

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