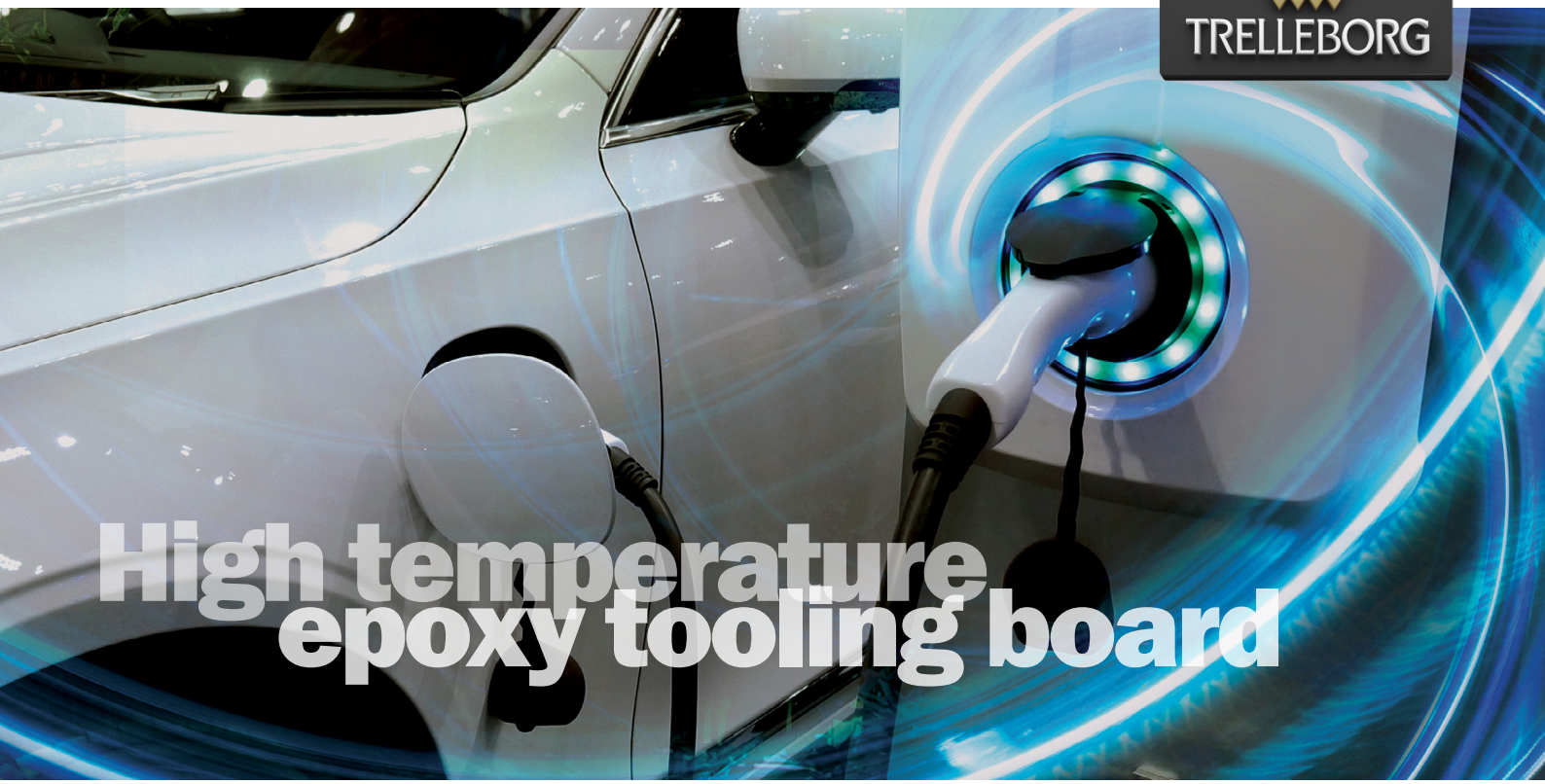

High temperature epoxy tooling board

TC350

Dimensionally stable in an autoclave up to 180°C, TC350 is a specialized high temperature tooling board. TC350 supports the creation of parts for use in extreme temperature processes such as aircraft manufacturing, is suitable for use in electronic applications and is compatible with newer lightweight materials used in electric vehicle manufacturing. Carbon fiber, polypropylene and glass fibre reinforced plastics (GFRP) materials have a high-quality finish when produced using TC350.

TC350 is specifically engineered to produce high strength, tooling for direct to part manufacturing, precise models and patterns and prepreg lay-up molds. Multiple parts can be made from the tooling as the material provides excellent toughness and durability, maintaining its shape at elevated temperatures.

Applications

- Direct to part tooling
- High temperature curing for extreme temperature processes
- Master models
- Components for electronic applications

Benefits

TC350 is a premium high temperature tooling board offering a wide range of benefits:

- Suitable for operation temperature use up to 180°C
- Multiple finished parts can be made direct from tooling
- Supports the manufacture of lightweight materials for electric vehicle production
- Parts can be used for extreme temperature processes
- Consistent, reliable performance
- Excellent toughness and durability
- Can be cast to any shape required
- Can be used to create parts out of autoclave

TECHNICAL PROPERTIES		
PROPERTY	TYPICAL DATA	TEST METHOD
Color	Light grey	
Density	620 kg/m³	BS ISO 1183-3:1999
Shore Hardness	70° D	ISO 868:1998
Uniaxial Compressive Strength	56 MPa	ASTM D695-02a
Heat Distortion Temperature	180° C	ASTM E 2092
Glass Transition Temperature	175° C	BS EN ISO 113 57-2
Coefficient of Thermal Expansion	42 ppm/° C	ASTM E 228-95
Flexural Strength	40 MPa	BS 2782, Part 3, Method 335A
Flexural Modulus	2,240 MPa	BS 2782, Part 3, Method 335A

Product Sizes

TC350 is available in a standard board size of 1,470mm x 600mm at the following thicknesses:

	Length	Width	Thickness
Type 1	1,470mm	600mm	25.4mm
Type 2	1,470mm	600mm	50.8mm
Type 3	1,470mm	600mm	76.2mm
Type 4	1,470mm	600mm	101.6mm
Type 5	1,470mm	600mm	152.4mm

Storage

Boards should be stored in a dry warehouse.

Health & Safety

Eye protection and a face mask should be worn when working with Trelleborg TC350. Please refer to the Trelleborg MSDS.

Cutting Guidelines

TC350 can be sawn using carbide or diamond coated saw blades or cutting wheels.

Bonding Guidelines

Large patterns can be constructed from boards using the appropriately selected epoxy adhesive system. Trelleborg adhesive system EP661 Is recommended. The adhesive system must offer adequate pot life and be capable of meeting the mechanical and thermal properties of the tooling board.

To ensure good bonding:

- The adhesive should be applied to both surfaces (dust free) using a notched spatula.
- The surfaces should be brought together and a uniform clamping pressure applied by either mechanical or vacuum means.
- Any surplus adhesive that extrudes from bond lines after curing can be machined off.
- Bonded joints should be left to cure for 72 hours at ambient temperature for best results.

The recommended adhesive has matched characteristics to the TC350 material.

Machining Advisory

In order to avoid board distortion, it is recommended that stock removal should be taken equally from opposing faces. Where this is not possible, then the board should be supported by and bonded to additional layers.

To minimize distortion when machining large flat boards, it is advisable to rough cut one face, invert the board and machine the rear face, re-invert and complete machining. The board can be finished by the use of successively finer grades of wet and dry abrasive paper.

Machining Guidelines

The machining information provided is for guidance purposes only. It is advised that individual users should determine the appropriate speeds, feed, cutters and depths for their own specific application.

TYPICAL PROPERTIES	
Roughing Speed	8,000 rpm
Roughing Feed	20,000mm per min
Cutter Type	40mm Dia MTC Ball nose
Step Down	5 mm
Step Over	35 mm
Finishing Speed	12,000 RPM
Finishing Feed	30,000mm per min
Cutter Type	20mm Solid Carbide Ball nose
Step Down	1.0mm
Step Over	0.5mm

*Figures are for guidance purposes only

Contact Us

Trelleborg's Applied Technologies division is an industry expert in delivering innovative and reliable solutions that maximize performance for our customers. Our vast range of specialized, customizable materials ensure peace of mind at every stage of your project. With reliable and efficient project management and manufacturing we endeavor to take performance to new levels by achieving your goals safely, on time and within scope.

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