



# Ultra high temperature epoxy tooling board

## TC460

Trelleborg TC460 is an ultra high temperature, low density syntactic epoxy tooling board designed to produce a high-strength, dimensionally stable tooling board for building precise models and patterns, tooling jigs, checking fixtures and prepreg lay-up molds.

### Applications:

TC460 can be used for the following:

- Master models.
- Direct to part manufacturing.
- Use as an alternative to metal.
- Lay-up tools for low and medium temperature curing epoxy prepregs.
- Light weight coring materials.

### Features & Benefits:

TC460 is designed to meet the specific needs of mold makers for a lightweight, CNC machinable board that produces close-tolerance, durable tools.

- **Smooth, non-porous surface finish**  
Can be machined to a high-quality surface that requires virtually no secondary finishing or polishing.
- **Excellent dimensional stability and temperature resistance**  
Maintains precise geometries and dimensional accuracy. Suitable for use with temperatures up to 240 °C.
- **Low coefficient of thermal expansion**  
Ensures good compatibility with intermediate temperature curing prepregs.
- **Consistent, reliable performance**  
Tools are durable to withstand fabrication of multiple parts . Finished parts can be made direct from the tooling.



TECHNICAL PROPERTIES		
PROPERTY	TYPICAL DATA	TEST METHOD
Color	Purple	
Density	740 kg/m <sup>3</sup>	
Heat Distortion Temperature	232 °C	BS 2782
Coefficient of Thermal Expansion	31 x 10 <sup>-6</sup> / °C	BS EN ISO 11359-2
Compressive Strength	51 MPa	BS EN ISO 604
Shore Hardness	78 D	

## Product Sizes

TC460 is available in standard board sizes of 24" x 60" at the following thicknesses: 2, 4 and 6".

	Length	Width	Thickness
Type 1	24" / 610mm	60" / 1,524mm	2" / 50.8mm
Type 2	24" / 610mm	60" / 1,524mm	4" / 101.6mm
Type 3	24" / 610mm	60" / 1,524mm	6" / 152.4mm

## Storage

The board should be stored in a dry warehouse.

## Health & Safety

Eye protection and a face mask should be worn when working with Trelleborg TC460. Please refer to the Trelleborg MSDS.

## Cutting Guidelines

TC460 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 661A/B 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 24 hours at ambient temperature for best results.

The recommended adhesive has matched characteristics to the TC460 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 the 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	3,000 - 3,500 rpm
Roughing Feed	380 - 510 mm / min
Cut Depth	6 mm maximum
Cutter Type	Carbide or high speedsteel. Maintain sharp edge with slight chip breaker
Flutes	2 - 3 for optimum performance

## Curing

TC460 should be heated up and cooled down to the desired cure temperature at a rate not exceeding 0.15 °C /min to avoid cracking.

## 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.



Worldwide: +44 1706 716610  
United States: +1 774 719 1402



Email: [appliedtechnologies@trelleborg.com](mailto:appliedtechnologies@trelleborg.com)



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