



## Advanced Materials

# RenShape® 5008

### HIGH PERFORMANCE, INTERMEDIATE TEMPERATURE EPOXY BOARD

#### DESCRIPTION :

RenShape® 5008 board is an epoxy material that is designed for use at temperatures up to 230°F (110°C). The board is well suited for building aerospace master models, lay-up tools for low and medium-temperature curing prepregs, and other heat-resistant tooling. RenShape® 5008 board features a low coefficient of thermal expansion to produce models and tools with good accuracy and dimensional stability. Among the key benefits of RenShape® 5008 board are:

ADVANTAGES	
	• Easy to CNC machine
	• Good edge definition
	• Good dimensional stability
	• Good surface finish
	• Prepreg compatible

#### ACCESSORIES

**Matched Epoxy Adhesive**  
Ren-Weld® 5008 Adhesive

TYPICAL PROPERTIES*	Test Method	Test Values
Color	Visual	Light Blue
Density, lb./ft. <sup>3</sup> (g/cm <sup>3</sup> )	ASTM D-792	42 (0.67)
Hardness, Shore D	ASTM D-2240	68
Ultimate Flexural Strength, psi (MPa)	ASTM D-790	4,600
Flexural Modulus, psi (MPa)	ASTM D-790	350,000
Ultimate Tensile Strength, psi (MPa)	ASTM D-638	3,500
Tg by DMA, E', °F (°C)	ASTM D-4065	231 (111)
Tg by DMA, E'', °F (°C)	ASTM D-4065	253 (123.3)
Tg by TMA, °F (°C)	ASTM D-3386	228 (109.4)
Compressive Strength, 0.2% offset, psi (MPa)	ASTM D-695	8,200
Compressive Modulus, psi (MPa)	ASTM D-695	350,000
Surface Roughness, fly cut, Ra/Rz		3.7/22
Coefficient of Thermal Expansion -22° to 86°F, in/in/°F -30° to 30°C, in/in/°C	ASTM D-3386	19 - 21 x 10 <sup>-6</sup> 34 - 38 x 10 <sup>-6</sup>

\* Tested @ 77°F (25°C) unless otherwise noted.

**NOTE :** These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with our Product Management Department.

Use Ren-Weld 5008 adhesive for bonding. Let cure 24 hrs. @ R.T. initially. It is recommended to run tool or model through the intended application cure before final machining to the dimensions needed.

**IMPORTANT!**

**Post-Cure of parts on RS 5008 Tools:** The temperature differential ( delta T) between the center of the tool and the external surface must never exceed 50°F on either ramp up or cool down. To achieve this, a temperature soaks of 6 hours every 50°F up and down in the oven and temperature ramp rates of no more than 1°F/min are recommended, but if the temperature differential would exceed 50°F then these parameters need to be adjusted until it does not. Leave the tool in the oven for at least 6 hours below 100°F before opening doors and exposing the tool to room temperature conditions.

Use of RenShape High Performance Sealer is recommended. When used along with a release system, it greatly helps surface sealing and release.

MACHINING	Roughing Speed	Roughing Feed	Finishing Speed	Finishing Feed
	1,600 RPM	40 IPM (101cm/min.)	10,000 RPM	100 IPM (254cm/min.)

**Cutters: Roughing** 1 in. (2.5cm) Hog Ball End Mill 4-Flute HS Steel 8% cobalt  
**Finishing** 5/8 in (16mm) Ball End Mill 2-Flute Carbide  
**Depth** Roughing varies from 0.25 in. to 2.5 in. (6mm to 6.35cm) with a 40% stepover  
Finishing depth is 1/8 in. (3mm) leaving a 0.002 in. (0.05mm) scallop height

**These machining parameters are represented as starting points.** Cutter type and material, spindle speed, feed rate, machine power and rigidity all affect machining results. User must determine the best parameters for specific situations.

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**STORAGE :**

RenShape® 5008 boards should be stored flat in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and 104°F). Under these storage conditions, the shelf life is 10 years. The product should not be exposed to direct sunlight.

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**PRECAUTIONARY STATEMENT :**

Huntsman Advanced Materials Americas LLC maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

**First Aid!**

Refer to MSDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN**

**FOR PROFESSIONAL**

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