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## Advanced Materials

# RenShape® 470

### PRODUCTION FIXTURE BOARD

#### DESCRIPTION :

RenShape® 470 board is a high-density, premium-quality polyurethane material designed for CNC-machining of production fixtures capable of withstanding extended use and handling. The board exhibits a low coefficient of thermal expansion and a high glass-transition temperature to help maintain dimensional stability even when exposed to temperature and humidity extremes. RenShape® 470 board is well suited for machining tooling aids and fixtures, prototype foundry patterns and prototype vacuum-form molds. It features properties including:

<b>ADVANTAGES</b>	<ul style="list-style-type: none"> <li>• Good impact and abrasion resistance</li> <li>• High compressive and flexural strength</li> <li>• Easy machinability</li> <li>• Good edge definition</li> </ul>
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<b>ACCESSORIES</b>	<b>Matched Epoxy Adhesives</b>	<b>Polyurethane Repair Paste</b>
	Ren-Weld® 100 or Ren-Weld® 103	RenCast® 6470/Ren® 6470/DT082

TYPICAL PROPERTIES*	Test Method	Test Values
Color	Visual	Light gray
Density, lb./ft <sup>3</sup> (g/cm <sup>3</sup> )	ASTM D-792	104 (1.67)
Hardness, Shore D	ASTM D-2240	90
Ultimate Flexural Strength, psi (MPa)	ASTM D-790	8,700 (60)
Flexural Modulus, psi (MPa)	ASTM D-790	983,000 (6,779)
Ultimate Tensile Strength, psi (MPa)	ASTM D-638	4,700 (32.4)
Tg by DMA, E", °F(°C)	ASTM D-4065	232 (111)
Compressive Strength, 0.2% offset, psi (MPa)	ASTM D-695	9,500 (65.5)
Compressive Modulus, psi (MPa)	ASTM D-695	866,000 (5,972)
Coefficient of Thermal Expansion	ASTM D-3386	
-22° to 86°F, in/in/°F		22.7 x 10 <sup>-6</sup>
-30° to 30°C, in/in/°C		40.9 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.



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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**PACKAGING :**

RenShape<sup>®</sup> 470 board is available in a limited number of standard combinations of 1 in., 2 in. and 4 in. (2.5cm, 5cm, 10cm) thicknesses, widths of 10 in. and 20 in. (25cm, 51cm) and length of 60 in. (152cm). Boards are finished on top and bottom faces and on all edges. Please contact Customer Service (800) 367-8793 for currently available options, price and availability.

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**STORAGE :**

RenShape<sup>®</sup> 470 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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