



## Product Data

# RenShape<sup>®</sup> 460 MODELING BOARD

RenShape 460 modeling board features a higher density and lower coefficient of thermal expansion than other boards to produce precision models with better dimensional stability over a broader temperature range. RenShape 460 provides the same good edge definition and accuracy as other RenShape boards. Typical applications include temporary and throwaway master models, styling and visual models, prototypes, prototype foundry patterns and vacuum-form molds, architectural and automotive die models, tooling aids and fixtures. RenShape 460 board machines quickly with carbide cutters producing high-quality model surfaces. It features properties including:

<b>ADVANTAGES</b>	<ul style="list-style-type: none"> <li>• Ultra-fine surface finish</li> <li>• Good reproduction of intricate detail</li> <li>• Good resistance to shrinkage and warping</li> </ul>
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<b>ACCESSORIES</b>	<b>Matched Epoxy Adhesive</b>	<b>Polyurethane Repair Paste</b>
	Ren-Weld <sup>®</sup> 103	RenPatch <sup>®</sup> 177-113/Ren 177-113 or RenPatch 440

TYPICAL PROPERTIES*	Test Method	Test Values
Color	Visual	Light brown
Density, lb./ft <sup>3</sup> (g/cm <sup>3</sup> )	ASTM D-792	48 (0.77)
Hardness, Shore D	ASTM D-2240	64
Ultimate Flexural Strength, psi (MPa)	ASTM D-790	3,700 (25.6)
Flexural Modulus, psi (MPa)	ASTM D-790	185,000 (1,276)
Ultimate Tensile Strength, psi (MPa)	ASTM D-638	1,800 (12.4)
Tg by DMA, E", °F(°C)	ASTM D-4065	219 (104)
Compressive Strength, 0.2% offset, psi (MPa)	ASTM D-695	2,200 (15.2)
Compressive Modulus, psi (MPa)	ASTM D-695	181,000 (1,248)
Coefficient of Thermal Expansion	ASTM D-3386	
-22° to 86°F, in/in/°F		29.9 x 10 <sup>-6</sup>
-30° to 30°C, in/in/°C		53.8 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.

<b>MACHINING</b>	<b>Roughing Speed</b>	<b>Roughing Feed</b>	<b>Finishing Speed</b>	<b>Finishing Feed</b>
	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.

**PACKAGING:**

RenShape 460 board is available in a limited number of standard combinations of 1 in., 2 in., 3 in., 4 in., 5 in. and 6 in. (2.5cm, 5cm, 7.6cm, 10cm, 12.7cm, 15cm) thicknesses, widths of 12 in., 16 in., 20 in and 24 in. (30.5cm, 40cm, 51cm, 60cm) 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.

**STORAGE/HANDLING:**

Store boards flat in original cartons at 60°F to 100°F (15°C to 38°C). In accord with good industrial practice, handle with due care. Avoid dusty conditions, use adequate ventilation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

**SHELF LIFE:**

Provided this material is stored under the recommended storage condition in the original container, it will remain in useable condition for an unlimited amount of time.

**CAUTION:**

Huntsman Advanced Materials Americas Inc. 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. Copies of the latest MSDS may be requested by calling our customer service group at 800-367-8793 or emailing your request to kathy\_dewey@huntsman.com.

**FIRST AID!**

Eyes and skin: Flush eyes with water for 15 minutes. Contact a physician if irritation persists. Wash skin thoroughly with soap and water. Remove and wash contaminated clothing before reuse.

Inhalation: Remove subject to fresh air.

Swallowing: Dilute by giving water to drink and contact a physician promptly. Never give anything to drink to an unconscious person.

**KEEP OUT OF REACH OF CHILDREN**

**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

**IMPORTANT LEGAL NOTICE:**

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