

## Advanced Materials

# RenShape® 5179 Foundry and Tooling Board

### DESCRIPTION

RenShape® 5179 is a red colored polyurethane board that is specifically designed for the machining of highly accurate, dimensionally stable, and wear resistant foundry patterns. This board machines well with minimal chipping.

ADVANTAGES	
	• Wear resistant
	• Dimensionally stable
	• Good machinability / Minimal chipping

ACCESSORIES	Matched Epoxy Adhesive	Repair Paste
	Ren-Weld™ 5169	Ren Patch® 5169

TYPICAL PROPERTIES*	Test Method	Test Values
Color	Visual	Red
Density, lb./ft <sup>3</sup> (g/cm <sup>3</sup> )	ASTM D-792	73.3 (1.18)
Hardness, Shore D	ASTM D-2240	84
Ultimate Flexural Strength, psi	ASTM D-790	14,900
Flexural Modulus, psi	ASTM D-790	404,000
Ultimate Tensile Strength, psi	ASTM D-638	10,790
Tensile Modulus, psi.	ASTM D-638	376,100
Compressive Strength, Ultimate, psi.	ASTM D-695	21,900
Compressive Strength, 0.2% offset, psi	ASTM D-695	11,600
Compressive Modulus, psi	ASTM D-695	400,100
Tg by DMA, E", °F(°C)	ASTM D-4065	210 (99)
Heat Deflection Temperature, 66 psi, °F (°C)	ASTM D-648	167 (75)
Heat Deflection Temperature, 264 psi, °F (°C)	ASTM D-648	159 (70.5)
Izod Impact – Notched, ft. lb/in of notch	ASTM D 256	.765
Coefficient of Thermal Expansion	ASTM D-3386	↓
-22° to 86°F, in/in/°F		41.7 x 10 <sup>-6</sup>
-30° to 30°C, in/in/°C		75.0 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>
	1,500 RPM	60 IPM	10,000 RPM	100 IPM

**Cutters : Roughing** 1 in. (2.5cm) Hog Ball End Mill 2-Flute HS Steel 8% minimum cobalt  
**Finishing** 5/8 in (16mm) Ball End Mill 4-Flute Carbide  
**Depth** Roughing varies from 0.25 in. to 2 in. 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<sup>®</sup> 5179 board is available in a limited number of standard combinations of 1 in., 2 in., 3 in., 4 in., 5 in., 6 in., (2.5cm, 5cm, 7.6cm, 10cm, 12.7cm, 15.24) thicknesses, width of 20 in. (50.8 cm), and 24 in. (61cm), length of 60 in. (152.4cm) for 1 in., 2 in., 3 in., 4 in. boards. Length of 30 in. (76.2 cm) for 5 in. and 6 in. boards. 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 :**

RenShape<sup>®</sup> 5179 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.

---

**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**

---

**IMPORTANT LEGAL NOTICE**

Sales of the product described herein ("Product") are subject to the general terms and conditions of sale of either Huntsman Advanced Materials LLC, or its appropriate affiliate including without limitation Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., or Huntsman Advanced Materials (Hong Kong) Ltd. ("Huntsman"). The following supercedes Buyer's documents.

Huntsman warrants that at the time and place of delivery all Products sold to Buyer shall conform to the specifications provided to Buyer by Huntsman.

While the information and recommendations included in this publication are, to the best of Huntsman's knowledge, accurate as of the date of publication, NOTHING CONTAINED HEREIN (EXCEPT AS SET FORTH ABOVE REGARDING CONFORMANCE WITH SPECIFICATIONS PROVIDED TO BUYER BY HUNTSMAN) IS TO BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS, OR WARRANTIES AS TO QUALITY OR CORRESPONDENCE WITH PRIOR DESCRIPTION OR SAMPLE, AND THE BUYER ASSUMES ALL RISK AND LIABILITY WHATSOEVER RESULTING FROM THE USE OF SUCH PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

No statements or recommendations made herein are to be construed as a representation about the suitability of any Product for the particular application of Buyer or user or as an inducement to infringe any patent or other intellectual property right. Buyer is responsible to determine the applicability of such information and recommendations and the suitability of any Product for its own particular purpose, and to ensure that its intended use of the Product does not infringe any intellectual property rights.

The Product may be or become hazardous. The Buyer should obtain Material Safety Data Sheets and Technical Data Sheets from Huntsman containing detailed information on Product hazards and toxicity, together with proper shipping, handling and storage procedures for the Product, and should comply with all applicable governmental laws, regulations and standards relating to the handling, use, storage, distribution and disposal of, and exposure to the Product. Buyer shall also take all steps necessary to adequately inform, warn and familiarize its employees, agents, direct and indirect customers and contractors who may handle or be exposed to the Product of all hazards pertaining to and proper procedures for safe handling, use, storage, transportation and disposal of and exposure to the Product, and the containers or equipment in which the Product may be handled, shipped or stored.

Ren, RenShape, RenPatch and RenWeld are registered trademarks of Huntsman LLC or an affiliate thereof in one or more countries, but not all countries.

© 2014 Huntsman Advanced Materials Americas Inc.

Main Offices :  
**Huntsman Corporation**  
10003 Woodloch  
Forest Dr. The  
Woodlands  
Texas 77380  
(281) 719-  
6000

**Huntsman Advanced Technology  
Center**  
8600 Gosling  
Rd. The  
Woodlands  
Texas 77381  
(281) 719-  
7400