

RenShape® 5018 Tooling Board



Product Description

RenShape® 5018 board is a light yellow-colored, syntactic polyurethane board with a density of approximately 8 lbs./ft³. RenShape® 5018 is easy to machine and features a good surface finish. RenShape® 5018 board can be hand carved as well as CNC machined for the production of visual, styling and temporary master models, architectural master models and prototypes. It is also well suited for CAD design verification.

Applications

- Temporary and architectural master models
- Prototyping
- CAD design verification

Features

- Easy to hand carve or machine
- Suitable for high speed milling
- Non-abrasive
- Good edge definition
- Good dimensional stability

Typical Properties

Property	RenShape® 5018	Test Method
Color	Light yellow	Visual
Density, lb./ft ³ (g/cm ³)	8.0 (0.128)	ASTM D-1622
Ultimate Flexural Strength, psi (MPa)	310 (2.1)	ASTM C-203
Ultimate Tensile Strength, psi (MPa)	290 (2.0)	ASTM D-1623
Compressive Strength: Parallel to Rise, psi (MPa)	230 (1.6)	ASTM D-1621
Perpendicular to Rise, psi (MPa)	210 (1.5)	
CTE	33 x 10 ⁻⁶ °F 59 x 10 ⁻⁶ °C	ASTM D-696
Shore A Hardness	50	ASTM D-2240
Service Temperature °F (°C) **	-328 / +176 (-200 / +80)	Internal

* Tested @ 74°F (23°C) unless otherwise noted.

** Actual service temperature limits vary considerably based on actual conditions and on client tolerance

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
2,500 RPM	200 IPM (508cm/min)	15,000 RPM	200 IPM (508cm/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.

Bonding

Ren-Weld® 103 System

Mix Ratio by weight: 100 Resin to 26 Hardener
 By volume: 100 Resin to 28 Hardener

Property	Units	Limits	Test Method
Color	n.a.	Resin: Light blue Hardener: Clear Amber Cured: Light Yellow	Visual
Density	g/cm ³ (lb. / gal.)	Resin 1.10 (9.16) Hardener: 1.04 (8.66)	ASTM D-1963
Mixed Viscosity	cp.	2,100	ASTM D-2393
Gel time (160 g mass)	minutes	~20	ASTM D-2471

Repair

Quik-Fil System

Mix ratio by weight: 100 Resin to 1.5 Hardener

Storage

RenShape® 5018 board should be stored flat in original cartons in a dry place at temperatures between 36°F to 104°F (2°C to 40°C). 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 Safety Data Sheets (SDS) 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 SDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

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