

RenShape® 5045 Tooling Board



Product Description

RenShape® 5045 board is a terra cotta colored polyurethane tooling board with a low density of approximately 30 lbs. / ft³. The board is easy to machine and features a good surface finish. RenShape® 5045 board can be hand carved as well as CNC machined for the production of visual, styling and temporary master models, architectural master models, prototypes. It is also well suited for CAD design verification.

Applications

- Master Models
- Cubing Models
- Prototypes

Features

- Easy to hand-work and machine
- Suitable for milling with fast cutting speeds
- Non abrasive
- Good edge definition
- Good dimensional stability

Typical Properties*

Property	Units	Limits	Test Method
Appearance	n.a.	Terra Cota	Visual
Density	g/cm ³ (lb. / ft ³ .)	0.49 (31)	ASTM D1622
Hardness	Shore D	52	ASTM D2240
Coefficient of thermal expansion	10 ⁻⁶ K ⁻¹ (in/in/°F)	45 (25)	ASTM D696
Heat distortion temperature, Met. A	°C (°F)	58 - 63 (136 - 145)	ASTM D648
Compressive strength	MPa (psi)	16.2 - 16.8 (2,340 - 2,430)	ASTM D1621
Compressive modulus	MPa (ksi)	375 - 440 (54.3 - 63.8)	ASTM D1621
Flexural strength	MPa (psi)	22.5 (3,260)	ASTM C203
Flexural modulus	MPa (psi)	620 (89,900)	ASTM C203
Tensile strength	MPa (psi)	11.2 - 11.4 (1,620 - 1,650)	ASTM D1623
Tensile modulus	MPa (psi)	62 - 102 (8,990 - 14,800)	ASTM D 1623
Service Temperature**	°C (°F)	-200 / +80 (-328 / +176)	Internal

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

** Actual service temperature limits may vary considerably based on actual conditions and required tolerances.

NOTE : These physical properties are reported as typical test values obtained by our test laboratory and do not constitute a product specification.

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

Machining

Roughing Speed	Roughing	Finishing Speed	Finishing Feed
2,500 RPM	200 IPM (508 cm/min)	15,000 RPM	200 IPM (508 cm/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.

Storage

When stored flat in a dry place in their original sealed packaging at a temperature between +2 °C and +40 °C (+36 °F and 104 °F), the RenShape® 5045 boards have a 10 year shelf life from date of manufacture. 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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