

Advanced Materials

RenShape® 472

CNC MACHINABLE BOARD FOR ASSEMBLY AND CHECKING FIXTURES

DESCRIPTION :

RenShape® 472 board is polyurethane-based and designed for CNC machining of production-grade checking and assembly fixtures, tooling aids, prototype foundry p and prototype vacuum-form molds. The board is a lightweight, neutral-colored gray material that is tough and abrasion resistant. Fixtures constructed from RenShape® 472 board are robust and can stand up to the rigors of a production environment. RenShape® 472 board features a good balance of density at 55 lbs./ft.³, a glass transition temperature of 248°F (120°C), and coefficient of thermal expansion of 25.8×10^{-6} in./in./°F. It has advantages including:

| | |
|-------------------|--|
| ADVANTAGES | <ul style="list-style-type: none"> • Lightweight • High flexural strength • Easy machinability • Tough and durable |
|-------------------|--|

| | | |
|--------------------|---|----------------------------------|
| ACCESSORIES | Matched Epoxy Adhesive | Polyurethane Repair Paste |
| | Ren-Weld® 103 | RenCast® 6426-1/DT081 |
| | Ultra-fast Polyurethane Adhesive | |
| | RenPIM® 6456 R/H | |

| ADVANTAGES* | Test Method | Test Values |
|--|-------------|--|
| Color | Visual | Light gray |
| Density, lb./ft. ³ (g/cm ³) | ASTM D-792 | 55 (0.88) |
| Hardness, Shore D | ASTM D-2240 | 81 |
| Ultimate Flexural Strength, psi (MPa) | ASTM D-790 | 9,540 (65.8) |
| Flexural Modulus, psi (MPa) | ASTM D-790 | 416,000 (2,869) |
| Ultimate Tensile Strength, psi (MPa) | ASTM D-638 | 7,000 (48.3) |
| Tg by DMA, E", °F(°C) | ASTM D-4065 | 248 (120) |
| Compressive Strength, 0.2% offset, psi (MPa) | ASTM D-695 | 10,900 (75.2) |
| Compressive Modulus, psi (MPa) | ASTM D-695 | 460,000 (3,172) |
| Coefficient of Thermal Expansion -22° to 86°F, in/in/°F -30° to 30°C, in/in/°C | ASTM D-3386 | 25.8 x 10 ⁻⁶ 46.4 x 10 ⁻⁶ |

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 Quality Control 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

PROCESSING :

Follow standard milling techniques using sharp hardened-steel cutters. Milling speeds of up to 1,800 IPM (45.8m/min.) are possible with an EEW High Speed Production CNC Machining Center (Germany). Conventional milling up to 500 IPM (12.7m) is also possible.

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® 472 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 lengths of 30 in. and 60 in. (76.2cm, 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 :

RenShape® 472 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

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