



RenShape®

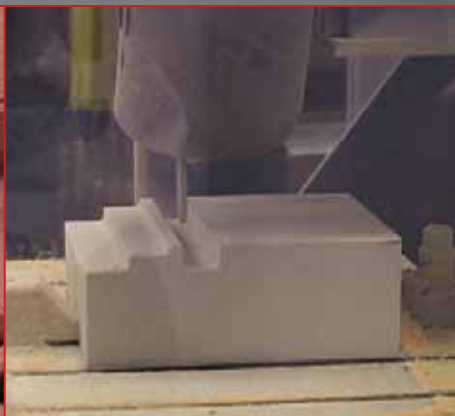
Modeling and Styling Boards



Huntsman Advanced Materials' RenShape Modeling and Styling Boards

The first name worldwide in modeling & styling boards, RenShape is designed and formulated to meet the wide scope of tooling, modeling, prototyping and fabricating applications found throughout industry today.

From the industry standard medium-density modeling boards to the new economical RenShape foams, now available in sizes up to 8" thick and 4' x 8' overall, RenShape continues to lead the industry in providing the perfect balance of machinability, surface finish, edge definition, stability, and durability, all available from the largest modeling board distributor in the world, Freeman.



RenShape Low Density Polyurethane Foam Boards

RenShape 5014 Polyurethane Foam Board

- 4 Pound Density
- Caramel Color
- Lightest Weight

RenShape 5014 features a very low density of 4 pounds per cubic foot. This material is excellent for machining lightweight styling models, appearance models, or as a substructure to apply RenPaste Seamless Model Paste.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. |
|----------------|---------------|-----------|-------|--------|---------|
| 075175 | RenShape 5020 | 2" | 24" | 96" | 32 |

RenShape 5015 Polyurethane Foam Board

- 6 Pound Density
- Blue-Green Color

RenShape 5015 features a very low, 6 pound/cubic foot, density for economical and lightweight styling models. Also excellent for appearance models or as a substructure to apply RenPaste Seamless Model Paste.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. |
|----------------|---------------|-----------|-------|--------|---------|
| 075175 | RenShape 5020 | 2" | 24" | 96" | 32 |
| 075176 | RenShape 5020 | 4" | 24" | 96" | 64 |
| 075177 | RenShape 5020 | 6" | 24" | 96" | 96 |

RenShape 5020 Polyurethane Foam Board

- 10 Pound Density
- Light Gray Color

RenShape 5020 is our lowest density polyurethane foam styling board. This product is the most economical board in the RenShape line but still produces a good machined surface finish. RenShape 5020 also makes an excellent substructure for RenPaste Seamless Modeling Paste applications.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. |
|----------------|---------------|-----------|-------|--------|---------|
| 075175 | RenShape 5020 | 2" | 24" | 96" | 32 |
| 075176 | RenShape 5020 | 4" | 24" | 96" | 64 |
| 075177 | RenShape 5020 | 6" | 24" | 96" | 96 |
| 075178 | RenShape 5020 | 8" | 24" | 96" | 128 |
| 075182 | RenShape 5020 | 4" | 48" | 96" | 128 |
| 075183 | RenShape 5020 | 6" | 48" | 96" | 192 |

RenShape 5025 Polyurethane Foam Board

- 15 Pound Density
- Light Green Color
- Excellent Balance of Cost and Performance

RenShape 5025 is a medium density polyurethane foam styling board that offers a better surface finish than RenShape 5020.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. |
|----------------|---------------|-----------|-------|--------|---------|
| 075119 | RenShape 5025 | 4" | 24" | 16" | 10.67 |
| 075123 | RenShape 5025 | 2" | 24" | 96" | 32 |
| 075124 | RenShape 5025 | 4" | 24" | 96" | 64 |
| 075122 | RenShape 5025 | 6" | 24" | 96" | 96 |
| 075125 | RenShape 5025 | 8" | 24" | 96" | 128 |
| 075135 | RenShape 5025 | 2" | 48" | 96" | 64 |
| 075126 | RenShape 5025 | 4" | 48" | 96" | 128 |
| 075121 | RenShape 5025 | 6" | 48" | 96" | 192 |

RenShape 5030 Polyurethane Foam Board

- 20 Pound Density
- Peach Color
- Excellent Surface Finish

RenShape 5030 is a higher density polyurethane foam styling board. It features excellent edge definition and a superior surface finish compared to either RenShape 5020 or RenShape 5025.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. |
|----------------|---------------|-----------|-------|--------|---------|
| 075264 | RenShape 5030 | 2" | 24" | 96" | 32 |
| 075265 | RenShape 5030 | 4" | 24" | 96" | 64 |
| 075266 | RenShape 5030 | 6" | 24" | 96" | 96 |
| 075267 | RenShape 5030 | 8" | 24" | 96" | 128 |
| 075256 | RenShape 5030 | 2" | 48" | 96" | 64 |
| 075261 | RenShape 5030 | 4" | 48" | 96" | 128 |

RenShape Accessories

RenShape Matched Adhesives

| Product | Matched Adhesive |
|---------------|--|
| RenShape 5014 | Repro UltraLight |
| RenShape 5015 | Repro UltraLight |
| RenShape 5020 | Repro UltraLight, Ren Weld 103 |
| RenShape 5025 | Repro UltraLight, Ren Weld 103 |
| RenShape 5030 | Repro UltraLight, Ren Weld 103 |
| RenShape 5045 | Repro UltraLight, Ren Weld 103 |
| RenShape 440 | Repro Light, Ren Weld 103, RenLam 1700-1 |
| RenShape 5440 | Repro Light, Ren Weld 103, RenLam 1700-1 |
| RenShape 450 | Repro Light, Ren Weld 103, RenLam 1700-1 |
| RenShape 5460 | Repro Light, Ren Weld 103, RenLam 1700-1 |
| RenShape 460 | Repro Light, Ren Weld 103, RenLam 1700-1 |

RenShape Matched Repair Pastes

| Product | Matched Repair Paste |
|---------------|----------------------|
| RenShape 5014 | Freeman Quick-Fil |
| RenShape 5015 | Freeman Quick-Fil |
| RenShape 5020 | Freeman Quick-Fil |
| RenShape 5025 | Freeman Quick-Fil |
| RenShape 5030 | Freeman Quick-Fil |
| RenShape 5045 | Freeman Quick-Fil |
| RenShape 440 | Freeman Quick-Fil |
| RenShape 5440 | Freeman Quick-Fil |
| RenShape 450 | Freeman Quick-Fil |
| RenShape 5460 | Freeman Quick-Fil |
| RenShape 460 | Freeman Quick-Fil |

RenShape Medium Density Modeling and Styling Boards

RenShape 440 Polyurethane Styling Board

- 34 Pound Density
- Light Reddish-brown Color
- Ideal for Many Model and Pattern Applications

RenShape 440 is a medium-low density polyurethane modeling and styling board. Used for master models, CNC styling models, prototypes, and visual models. RenShape 440 machines easily at fast cutting speeds, finishes to a good surface with excellent edge definition and produces very little tool wear. It can also be worked by hand.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. | Boards Per Carton |
|----------------|--------------|-----------|-------|--------|---------|-------------------|
| 075236 | RenShape 440 | 2" | 16" | 60" | 13.33 | 1 |
| 075240 | RenShape 440 | 4" | 16" | 60" | 26.67 | 1 |
| 075146 | RenShape 440 | 1" | 20" | 60" | 8.33 | 1 |
| 075147 | RenShape 440 | 2" | 20" | 60" | 16.67 | 1 |
| 075148 | RenShape 440 | 3" | 20" | 60" | 25 | 1 |
| 075149 | RenShape 440 | 4" | 20" | 60" | 33.33 | 1 |
| 075151 | RenShape 440 | 6" | 20" | 60" | 50 | 1 |

RenShape 5440 Polyurethane Styling Board

- 35 Pound Density
- Light Brown Color
- Ideal For Many Modeling and Styling Applications

RenShape 5440 is higher density version of 440, offering an improved surface finish without sacrificing ease of machining. Like RenShape 440, it minimizes tool wear and can also be worked by hand.

These boards are manufactured in metric sizes (500mm x 1500mm). The English equivalent sizes are provided below.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. | Boards Per Carton |
|----------------|---------------|-----------|-------|--------|---------|-------------------|
| 075501 | RenShape 5440 | 0.98" | 19.7" | 59.1" | 7.92 | 1 |
| 075502 | RenShape 5440 | 1.97" | 19.7" | 59.1" | 15.85 | 1 |
| 075503 | RenShape 5440 | 2.96" | 19.7" | 59.1" | 23.77 | 1 |
| 075504 | RenShape 5440 | 3.94" | 19.7" | 59.1" | 31.69 | 1 |

RenShape 450 Polyurethane Modeling Board

- 41 Pound Density
- Light Brown Color
- Superior Machinability and Stability

RenShape 450 is the original medium density polyurethane modeling and styling board. An ideal material for models and prototypes, master patterns, and tooling aids. This material will produce very stable, dimensionally accurate tools with well-defined edges and surface detail. RenShape 450 can be machined using standard woodworking tools and will not result in objectionable dust particles when planed, milled, sawed or drilled. It resists warping and can be easily painted and finished for appearance and prototype models.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. | Boards Per Carton |
|----------------|--------------|-----------|-------|--------|---------|-------------------|
| 075139 | RenShape 450 | 2" | 15" | 20" | 4.17 | 1 |
| 075202 | RenShape 450 | 2" | 16" | 60" | 13.33 | 1 |
| 075205 | RenShape 450 | 4" | 16" | 60" | 26.67 | 1 |
| 075140 | RenShape 450 | 1" | 20" | 60" | 8.33 | 1 |
| 075141 | RenShape 450 | 2" | 20" | 60" | 16.67 | 1 |
| 075142 | RenShape 450 | 3" | 20" | 60" | 25 | 1 |
| 075143 | RenShape 450 | 4" | 20" | 60" | 33.33 | 1 |
| 075203 | RenShape 450 | 1" | 24" | 60" | 10 | 1 |
| 075206 | RenShape 450 | 2" | 24" | 60" | 20 | 1 |
| 075211 | RenShape 450 | 3" | 24" | 60" | 30 | 1 |

RenShape 5460 Polyurethane Modeling Board

- 43 Pound Density
- Light Brown Color
- High Quality Surface Finish

RenShape 5460 is lower density version of 460, offering excellent surface finish and ease of machining while minimizing the dust prevalent in many other modeling boards in this range.

These boards are manufactured in metric sizes (500mm x 1500mm). The English equivalent sizes are provided below.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. | Boards Per Carton |
|----------------|---------------|-----------|-------|--------|---------|-------------------|
| 075511 | RenShape 5460 | 0.98" | 19.7" | 59.1" | 7.92 | 1 |
| 075512 | RenShape 5460 | 1.97" | 19.7" | 59.1" | 15.85 | 1 |
| 075513 | RenShape 5460 | 2.96" | 19.7" | 59.1" | 23.77 | 1 |
| 075514 | RenShape 5460 | 3.94" | 19.7" | 59.1" | 31.69 | 1 |

RenShape 460 Polyurethane Modeling Board

- 48 Pound Density
- Light Brown Color
- Excellent Surface Finish

RenShape 460 is a medium-high density polyurethane modeling and styling board. It was developed to meet the growing demand for higher-quality, more dimensionally accurate, machined master patterns and prototypes. With a smoother surface finish than RenShape 450, this board is an ideal material for prototype vacuum-forming tools, styling prototypes, master models, tooling aids, and automotive die models. Carbide cutters are recommended, but not necessary.

| Catalog Number | Description | Thickness | Width | Length | Bd. Ft. | Boards Per Carton |
|----------------|--------------|-----------|-------|--------|---------|-------------------|
| 075213 | RenShape 460 | 2" | 16" | 60" | 13.33 | 1 |
| 075214 | RenShape 460 | 4" | 16" | 60" | 26.67 | 1 |
| 075229 | RenShape 460 | 1" | 20" | 60" | 8.33 | 1 |
| 075219 | RenShape 460 | 2" | 20" | 60" | 16.67 | 1 |
| 075221 | RenShape 460 | 3" | 20" | 60" | 25 | 1 |
| 075222 | RenShape 460 | 4" | 20" | 60" | 33.33 | 1 |
| 075169 | RenShape 460 | 1" | 24" | 60" | 10 | 1 |
| 075170 | RenShape 460 | 2" | 24" | 60" | 20 | 1 |
| 075171 | RenShape 460 | 3" | 24" | 60" | 30 | 1 |
| 075172 | RenShape 460 | 4" | 24" | 60" | 40 | 1 |

RenShape Machining Specifications

| | Roughing Speed (RPM) | Roughing Feed (IPM) | Finishing Speed (RPM) | Finishing Feed (IPM) |
|---------------|----------------------|---------------------|-----------------------|----------------------|
| RenShape 5014 | 2,500 | 200 | 15,000 | 200 |
| RenShape 5015 | 2,500 | 200 | 15,000 | 200 |
| RenShape 5020 | 2,500 | 200 | 15,000 | 200 |
| RenShape 5025 | 2,500 | 200 | 15,000 | 200 |
| RenShape 5030 | 2,500 | 200 | 15,000 | 200 |
| RenShape 5045 | 2,500 | 200 | 15,000 | 200 |
| RenShape 440 | 2,000 | 100 | 15,000 | 200 |
| RenShape 5440 | 2,000 | 100 | 15,000 | 200 |
| RenShape 450 | 2,000 | 100 | 15,000 | 200 |
| RenShape 5460 | 2,000 | 100 | 15,000 | 200 |
| RenShape 460 | 1,600 | 40 | 10,000 | 100 |

Cutters Used:

Roughing – 1" Ball End mill, 4-Flute, Carbide
Finishing – 5/8" Ball End Mill, 2-Flute, Carbide

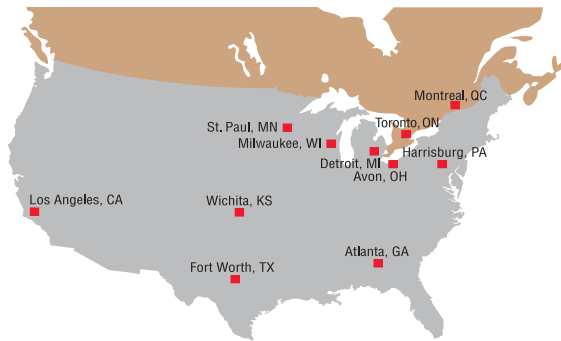
Depth:

Roughing – varied from 1/4" to 2 1/2" deep with a 40% stepover
Finishing – 1/8" deep leaving 0.002 scallop height

RenShape Modeling & Styling Boards Specifications

| | Hardness Shore D | Density (g/cc) | Density (lbs./ft. ³) | Tensile Strength (psi) | Compressive Strength (psi) | Compressive Modulus Elasticity (psi) | Flexural Strength (psi) | Flexural Modulus (psi) | Glass Transition Temp (°F) | Coefficient Thermal Expansion (in/in°F) | Color |
|---|------------------|----------------|----------------------------------|------------------------|----------------------------|--------------------------------------|-------------------------|------------------------|----------------------------|---|-------------|
| Low Density Polyurethane Foam Boards | | | | | | | | | | | |
| RenShape 5014 | - | 0.064 | 4 | 105 | 95 | - | 116 | - | - | 33.0 x 10 ⁻⁶ | Caramel |
| RenShape 5015 | - | 0.13 | 8 | 290 | 230 | - | 310 | - | - | 33.0 x 10 ⁻⁶ | Blue-Green |
| RenShape 5020 | 27 | 0.16 | 10 | 370 | 260 | - | 330 | - | - | - | Light Gray |
| RenShape 5025 | 27 | 0.25 | 15 | 800 | 800 | - | - | - | - | 47.0 x 10 ⁻⁶ | Light Gray |
| RenShape 5030 | 33 | 0.30 | 20 | - | 1,000 | - | 1,000 | 40,000 | - | - | Peach |
| RenShape 5045 | 43 | 0.48 | 30 | 1,400 | 1,700 | - | 2,000 | 64,000 | - | 32.0 x 10 ⁻⁶ | Brown |
| Medium Density Modeling & Styling Boards | | | | | | | | | | | |
| RenShape 440 | 54 | 0.55 | 34 | 1,300 | 1,400 | 105,000 | 2,300 | 106,000 | 203 | 34.4 x 10 ⁻⁶ | Red Brown |
| RenShape 5440 | 55 | 0.56 | 35 | 1,300 | 1,400 | 105,000 | 2,300 | 106,000 | 203 | 34.4 x 10 ⁻⁶ | Light Brown |
| RenShape 450 | 65 | 0.66 | 41 | 2,300 | 2,800 | 135,000 | 4,000 | 144,000 | 205 | 36.0 x 10 ⁻⁶ | Light Brown |
| RenShape 5460 | 65 | 0.69 | 43 | 1,886 | 2,075 | 127,000 | 3,200 | 152,000 | 187 | 34.4 x 10 ⁻⁶ | Light Brown |
| RenShape 460 | 64 | 0.77 | 48 | 1,800 | 2,200 | 181,000 | 3,700 | 185,000 | 219 | 29.9 x 10 ⁻⁶ | Light Brown |
| ASTM | D-2240 | D-792 | D-792 | D-638 | D-695 | D-695 | D-790 | D-790 | D-4065 | D-3386 | |

**Epoxy Board



Freeman Has Eleven Strategic North American Locations and Worldwide Distribution

Ohio (Headquarters)

1101 Moore Rd. • Avon, OH 44011
 TEL 800-321-8511 • TEL 440-934-1902 • FAX 440-934-7200

California

I M C Distribution
 15147 Don Julian Road
 City of Industry, CA 91746
 TEL 800-325-2100
 FAX 440-934-7200

Pennsylvania

909 Strickler Road
 Mt. Joy, PA 17552
 TEL 800-631-4230
 TEL 717-653-5300
 FAX 717-653-7372

Georgia

Shippers Warehouse of Georgia
 9250 S. Main St.
 Jonesboro, GA 30236
 TEL 800-445-0811
 FAX 440-934-7200

Ontario

Voyageur Distribution
 3600B Laird Road, Unit 4
 Mississauga, ON L5L 5Y7
 TEL 800-345-9259
 FAX 586-774-101

Kansas

Garvey Warehouse
 5755 S. Hoover Rd., Bldg. #5
 Wichita, KS 67215
 TEL 800-792-1047
 FAX 817-568-0908

Quebec

13475 boul Pitfeild
 Montreal, QC H4S 1H3
 TEL 800-263-7699
 TEL 514-335-3530
 FAX 514-335-3225

Michigan

27655 Groesbeck Hwy.
 Roseville, MI 48066
 TEL 800-345-9259
 TEL 586-774-1210
 FAX 586-774-1019

Texas

3152 S.E. Loop 820
 Fort Worth, TX 76140
 TEL 800-792-1047
 TEL 817-551-7301
 FAX 817-568-0908

Minnesota

Professional Warehouse
 2117 Charles Ave.
 Saint Paul, MN 55114
 TEL 800-558-0866
 FAX 262-789-5407

Wisconsin

16910 W. Cleveland Ave.
 New Berlin, WI 53151
 TEL 800-558-0866
 TEL 262-789-9800
 FAX 262-789-5407

Terms and Conditions

Returned Goods

To save transportation charges, and facilitate handling of merchandise upon our receipt, we request that no merchandise be returned without prior written authorization.

Damaged Goods

Merchandise given to a transportation firm is their responsibility to deliver in satisfactory condition. If merchandise is delivered damaged, the customer should note as such on freight bill and file a claim with the delivering carrier. Regulations require that hidden damage, identified upon unpacking, must be reported within ten (10) days of delivery in order to file a proper claim.

Liability/Warranty Statement

Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty or merchantability or fitness, nor is protection from any law of patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental, or consequential damages.

© 2006 - 2009 Freeman Manufacturing & Supply Co. All Rights Reserved
 Freeman and logo designs are registered trademarks of Freeman.
 RenShape is a registered trademark of Huntsman Advanced Materials.



FREEMAN MANUFACTURING & SUPPLY CO.

1101 Moore Road, Avon, Ohio 44011
 Phone 800-321-8511 • Fax 440-934-7200
 www.freemansupply.com • contactus@freemansupply.com