

**HUNTSMAN**

Enriching lives through innovation



# RenShape®

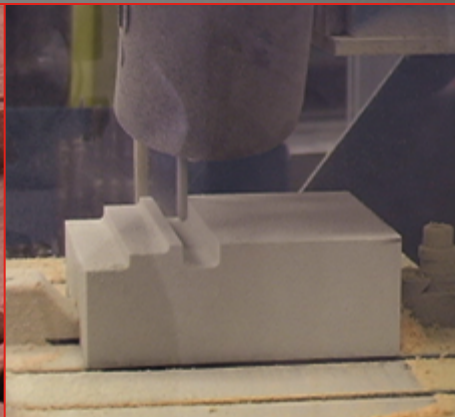
## Modeling and Styling Boards



### 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.
075805	RenShape 5014	6"	24"	96"	96

### 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.
075836	RenShape 5015	2"	48"	96"	64
075844	RenShape 5015	4"	48"	96"	128
075846	RenShape 5015	6"	48"	96"	192

### RenShape 5018 Polyurethane Foam Board

- 8 Pound Density
- Light Yellow Color

Ren Shape 5018 is a rigid, low-density, closed-cell urethane foam. This product has an eight pound per cubic foot density for making economical, lightweight styling and appearance models.

Catalog Number	Description	Thickness	Width	Length	Bd. Ft.
075851	RenShape 5018	4"	18"	96"	48
075854	RenShape 5018	4"	48"	96"	128
075855	RenShape 5018	6"	48"	96"	192
075856	RenShape 5018	8"	24"	96"	128
075852	RenShape 5018	8"	48"	96"	256
075860	RenShape 5018	6"	48"	96"	192

### RenShape 5020 Polyurethane Foam Board

- 10 Pound Density
- Light Gray Color

RenShape 5020 provides a better surface finish than RenShape 5015 and is used in most of the same applications. Like all RenShape foam boards, it is often sealed with Freeman Wood & Plaster Sealer, Freeman No. 60 pattern coating, or the Duratec line of sealers.

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 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 5018	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 5025 Polyurethane Foam Board

- 15 Pound Density
- Light Green Color

RenShape 5025 provides a better surface finish than RenShape 5020 and is used in many large and lightweight styling applications.

Freeman also offers a smaller 24" x 16" size for smaller projects.

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

RenShape 5030 provides a better surface finish than RenShape 5025 and is used in most of the same applications.

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 5035 Polyurethane Foam Board

- 28 Pound Density
- Peach Color

Ren Shape 5035 features a low density of 28 pounds per cubic foot. Ren Shape 5035 can be hand carved as well as CNC machined, is non-abrasive, and offers a good surface finish and edge definition. RenShape 5035 is ideal for master models, prototypes, and CAD design verification.

Catalog Number	Description	Thickness	Width	Length	Bd. Ft.
075115	RenShape 5035	8"	24"	96"	128

### RenShape 5045 Polyurethane Foam Board

- 30 Pound Density
- Brown Color

RenShape 5045 is our highest density polyurethane foam board. It features the best edge definition and surface finish available in a foam styling board.

Catalog Number	Description	Thickness	Width	Length	Bd. Ft.
075521	RenShape 5045	2"	24"	96"	32
075522	RenShape 5045	4"	24"	96"	64
075523	RenShape 5045	6"	24"	96"	96
075525	RenShape 5045	2"	48"	96"	64

#### 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 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 BM-70 Medium-Density Modeling Board

- 42 Pound Density
- Light Brown Color
- Excellent Edge Definition

RenShape BM-70 is a polyurethane modeling board that features excellent machinability, while holding precise tolerances and well defined edges. Applications include master patterns, models, prototype foundry patterns, and automotive and architectural models.

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 Machining Specifications

	Roughing Speed (RPM)	Roughing Feed (IPM)	Finishing Speed (RPM)	Finishing Feed (IPM)
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 BM70	2,000	100	15,000	200
RenShape 5460	2,000	100	15,000	200
RenShape 460	1,600	40	10,000	100

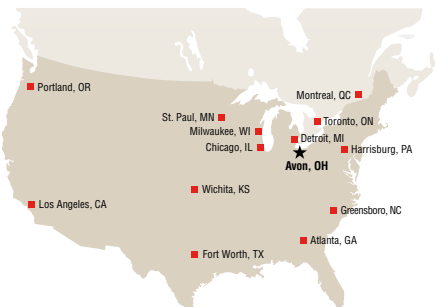
# RenShape Modeling & Styling Boards Specifications

	Hardness Shore D	Density (g/cc)	Density (lbs/ft. <sup>3</sup> )	Tensile Strength (psi)	Compressive Strength (psi)	Compressive Modulus (psi)	Flexural Strength (psi)	Flexural Modulus (psi)	Glass Transition Temp (°F)	Coefficient Thermal Expansion (in/in/°F)	Color
<b>Low Density Polyurethane Foam Boards</b>											
RenShape 5014	–	0.064	4	105	95	–	116	–	–	33.0 x 10 <sup>-6</sup>	Caramel
RenShape 5015	–	0.096	6	160	130	–	190	–	–	33.0 x 10 <sup>-6</sup>	Blue-Green
RenShape 5018	–	0.13	8	290	220	–	310	–	–	33.0 x 10 <sup>-6</sup>	Light Yellow
RenShape 5020	27	0.16	10	350	260	–	350	–	–	33.0 x 10 <sup>-6</sup>	Light Gray
RenShape 5025	27	0.25	15	600	560	–	780	–	–	33.0 x 10 <sup>-6</sup>	Light Gray
RenShape 5030	33	0.30	20	895	1,130	–	1,330	–	–	33.0 x 10 <sup>-6</sup>	Peach
RenShape 5035	48	–	28	1,523	21,456	–	2,988	–	–	40.0 x 10 <sup>-6</sup>	Peach
RenShape 5045	43	0.48	30	1,250	2,200	–	2,400	–	–	33.0 x 10 <sup>-6</sup>	Brown
<b>Medium Density Modeling &amp; Styling Boards</b>											
RenShape 440	54	0.55	34	1,300	1,400	105,000	2,300	106,000	203	34.4 x 10 <sup>-6</sup>	Red Brown
RenShape 5440	54	0.55	35	1,300	1,400	105,000	2,300	106,000	203	34.4 x 10 <sup>-6</sup>	Light Brown
RenShape 450	65	0.66	41	2,300	2,800	135,000	4,000	144,000	205	36.0 x 10 <sup>-6</sup>	Light Brown
RenShape BM70	57	0.67	42	1,570	1,930	120,720	2,590	125,770	185	36.4 x 10 <sup>-6</sup>	Light Brown
RenShape 5460	65	0.69	43	1,886	2,075	127,000	3,200	152,000	187	34.4 x 10 <sup>-6</sup>	Light Brown
RenShape 460	64	0.77	48	1,800	2,200	181,000	3,700	185,000	219	29.9 x 10 <sup>-6</sup>	Light Brown
ASTM	D-2240	D-792	D-792	D-638	D-695	D-695	D-790	D-790	D-4065	D-3386	

## RenShape Accessories

	440	5440	BM-70	450	5460	460
Repro Light	X	X	X	X	X	X
Ren-Weld 103	X	X	X	X	X	X
Fast Set 505	X	X	X	X	X	X
Fast Set 517	X	X	X	X	X	X
RenLam 1700-1	X	X	X	X	X	X
Quick-Fil	X	X	X	X	X	X
TUF-Carv	X	X	X	X	X	X

	5014	5015	5018	5020	5025	5030	5035	5045
Repro Ultra Light						X	X	X
Repro Light						X	X	X
Ren-Weld 103	X	X	X	X	X	X	X	X
Fast Set 505	X	X	X	X	X	X	X	X
Fast Set 517	X	X	X	X	X	X	X	X
Quick-Fil	X	X	X	X	X	X	X	X
TUF-Carv	X	X	X	X	X	X	X	X



## Fourteen strategic North American locations and worldwide distribution

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 FAX 440-934-7200

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 Roseville, MI 48066  
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 FAX 586-774-1019

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 FAX 817-568-0908

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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.

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