



RenShape®

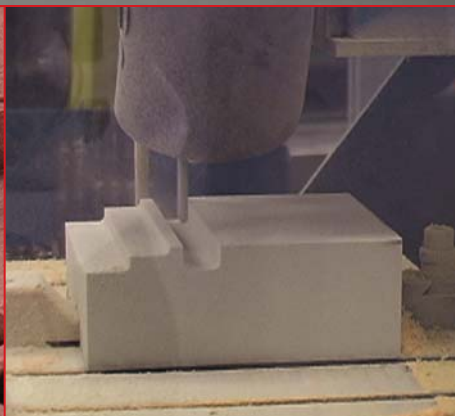
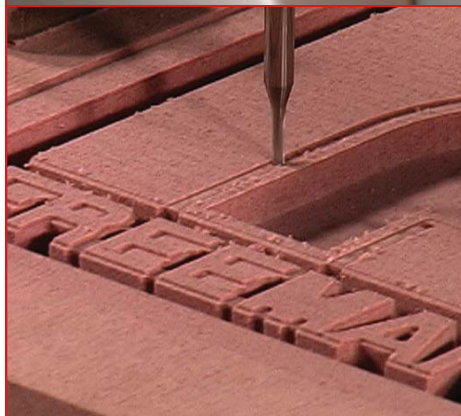
Modeling and Styling Boards



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 5020 Polyurethane Foam Board

- 10 Pound Density
- Light Gray Color
- Lightest Weight, Most Economical

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 5045 Polyurethane Foam Board

- 30 Pound Density
- Light Peach Color
- Best Surface Finish of the RenShape Foam Boards

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.	Boards Per Carton
075521	RenShape 5045	2"	24"	96"	32	1
075522	RenShape 5045	4"	24"	96"	64	1
075523	RenShape 5045	6"	24"	96"	96	1
075525	RenShape 5045	2"	48"	96"	64	1

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
075235	RenShape 440	2"	16"	60"	40	3
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
075200	RenShape 450	2"	16"	60"	40	3
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 Medium Density Modeling and Styling Boards

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
075212	RenShape 460	2"	16"	60"	40	3
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 5003 Epoxy Modeling Board

- 34 Pound Density
- Tan Color
- Prepreg Compatibility

RenShape 5003 is a medium-low density syntactic epoxy modeling and styling board. RenShape 5003 features excellent machinability, superior edge definition, dimensional stability, and excellent surface finish. Also, this epoxy board will not inhibit the curing of prepregs.

Catalog Number	Description	Thickness	Width	Length	Bd. Ft.	Boards Per Carton
075280	RenShape 5003	2"	24"	60"	20	2
075281	RenShape 5003	4"	24"	60"	40	1
075282	RenShape 5003	6"	24"	60"	60	1

RenShape Accessories & Machining Specifications

RenShape Matched Adhesives

Product	Matched Adhesive
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 5003	Freeman 690, Ren Weld 103, RenLam 1700-1

RenShape Matched Repair Pastes

Product	Matched Repair Paste
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, Ren TDT-177-113
RenShape 5460	Freeman Quick-Fil
RenShape 460	Freeman Quick-Fil

RenShape Machining Specifications

	Roughing Speed (RPM)	Roughing Feed (IPM)	Finishing Speed (RPM)	Finishing Feed (IPM)
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
RenShape 5003	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:

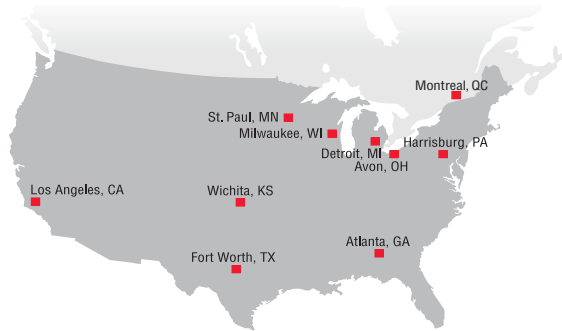
- Roughing – varied from 1/4" to 2 1/2" deep with a 40% stepover
- Finishing – 1/8" deep leaving 0.002 scallop height

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 best parameters for specific applications.

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 5020	27	0.16	10	370	260	–	330	–	–	–	Lt. Gray
RenShape 5025	27	0.25	15	800	800	–	–	–	–	47.0 x 10 ⁻⁶	Lt. Green
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	Lt. Peach
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	Lt. Brown
RenShape 450	65	0.66	41	2,300	2,800	135,000	4,000	144,000	205	36.0 x 10 ⁻⁶	Lt. Brown
RenShape 5460	65	0.69	43	1,886	2,075	127,000	3,200	152,000	187	34.4 x 10 ⁻⁶	Lt. Brown
RenShape 460	64	0.77	48	1,800	2,200	181,000	3,700	185,000	219	29.9 x 10 ⁻⁶	Lt. Brown
RenShape 5003**	62	0.54	34	2,900	3,700	185,000	3,400	188,000	182	32.0 x 10 ⁻⁶	Tan
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 Ten 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

Minnesota

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

Georgia

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

Pennsylvania

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

Kansas

Garvey Warehouse
5755 S. Hoover Rd., Bldg. #5
Wichita, KS 67215
TEL 800-792-1047
TEL 817-551-7301
FAX 817-568-0908

Texas

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

Michigan

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

Wisconsin

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

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