

RENSHAP FOAM BOARDS

RenShape Foam Boards are designed and formulated to offer excellent workability with a broad range of densities to be used in a variety of applications, such as modeling, aerospace, composite, architectural and design industries, signage and low density substrates. 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.

How to Choose a Foam Board

Consider your project requirements and refer to the chart below for recommended applications. More specifications tables can be found on the last page.

Application Guide*

RenShape #	440	5440	BM-70	450	5460	460
CNC Proofing	●	●	●	●	●	●
Models (Architectural, styling, temporary)	●	●	●	●	●	●
Low-density substructure	●	●	●	●	●	●
Tooling aids & fixtures	●	●	●	●	●	●
Intermediate-temp master & lay-up tools	○	○	○	○	○	○
High-temp master & lay-up tools	○	○	○	○	○	○
Foundry patterns	○	○	○	○	○	◐
Vacuum-form molds	○	○	○	○	○	◐
Metalfforming tools	○	○	○	○	○	○

● Ideal ◐ Acceptable ○ Not recommended

*Results may vary depending on your specific project

Machining Parameters

Cutters

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

Please Note

These machining parameters are starting points. Cutter type, material, spindle speed, feed rate, machine power, and rigidity all affect results. User must determine best parameters for specific applications.

	Roughing Speed (RPM)	Roughing Feed (IPM)	Finishing Speed (RPM)	Finishing Feed (IPM)
5014	2,500	200	15,000	200
5015	2,500	200	15,000	200
5018	2,500	200	15,000	200
5020	2,500	200	15,000	200
5025	2,500	200	15,000	200
5030	2,500	200	15,000	200
5035	2,500	100	15,000	200
5045	2,500	100	15,000	200



RENSHAP[®] FOAM BOARDS

Quick Facts

- Closed-cell polyurethane foam boards formulated for styling, modeling, prototyping and fabricating applications
- Can be worked by hand or machine
- Non-abrasive to cutting tools
- Not compatible with addition-cure silicone rubbers
- Compatible with condensation-cure silicone rubbers



RenShape 5018 Polyurethane Foam Board

RenShape 5018 is a rigid, low density, closed-cell urethane foam. This product has an 8 lb./ft.³ density for making economical, lightweight styling and appearance models.

- ▶ 8 lb./ft.³ density
- ▶ Light yellow color

SKU	Thickness	Width	Length	Bd. ft.
075851	4"	18"	96"	48
075856	8"	24"	96"	128
075854	4"	48"	96"	128
075855	6"	48"	96"	192
075852	8"	48"	96"	256
075860	18"	48"	96"	576



RenShape 5014 Polyurethane Foam Board

RenShape 5014 is our lightest weight and most economical foam styling board. It is excellent for appearance models.

- ▶ 4 lb./ft.³ density
- ▶ Caramel color

SKU	Thickness	Width	Length	Bd. ft.
075805	6"	24"	96"	96
075800	2"	48"	96"	64
075801	4"	48"	96"	128
075806	6"	48"	96"	192



RenShape 5020 Polyurethane Foam Board

Although this board provides a better surface finish than RenShape 5018, it is used in many of the same applications. The light gray color makes RenShape 5020 a great choice for architectural models.

- ▶ 10 lb./ft.³ density
- ▶ Light gray color

SKU	Thickness	Width	Length	Bd. ft.
075175	2"	24"	96"	32
075176	4"	24"	96"	64
075177	6"	24"	96"	96
075178	8"	24"	96"	128
075174	2"	48"	96"	64
075182	4"	48"	96"	128
075183	6"	48"	96"	192
075180	8"	48"	96"	256



RenShape 5015 Polyurethane Foam Board

RenShape 5015 features a very low density of 6 lb./ft.³. This material is excellent for machining lightweight styling models and appearance models.

- ▶ 6 lb./ft.³ density
- ▶ Blue-green color

SKU	Thickness	Width	Length	Bd. ft.
075836	2"	48"	96"	64
075844	4"	48"	96"	128
075846	6"	48"	96"	192



RenShape Foam Boards range in densities from 4 to 30 lb., making them suitable for lightweight models.

FOAM BOARDS CONTINUED



RenShape 5025 Polyurethane Foam Board

Improving on the RenShape 5020's surface finish, RenShape 5025 is used in many large and lightweight styling applications.

24" x 16" boards are also available for smaller projects.

- ▶ 15 lb./ft.³ density
- ▶ Light green color

SKU	Thickness	Width	Length	Bd. ft.
075119	4"	24"	16"	10.67
075123	2"	24"	96"	32
075124	4"	24"	96"	64
075122	6"	24"	96"	96
075125	8"	24"	96"	128
075135	2"	48"	96"	64
075132	3"	48"	96"	96
075126	4"	48"	96"	128
075121	6"	48"	96"	192



RenShape 5030 Polyurethane Foam Board

With an even better surface finish than RenShape 5025, RenShape 5030 is budget-friendly while offering a very good surface finish with excellent edge definition.

- ▶ 20 lb./ft.³ density
- ▶ Peach color

SKU	Thickness	Width	Length	Bd. ft.
075264	2"	24"	96"	32
075265	4"	24"	96"	64
075266	6"	24"	96"	96
075267	8"	24"	96"	128
075252	½"	48"	96"	16
075254	1"	48"	96"	32
075256	2"	48"	96"	64
075261	4"	48"	96"	128
075259	8"	48"	96"	256



RenShape 5035 Polyurethane Foam Board

RenShape 5035 features a medium low density of 28 lb./ft.³.

It is ideal for master models, prototypes, and CAD design verification.

- ▶ 28 lb./ft.³ density
- ▶ Peach color

SKU	Thickness	Width	Length	Bd. ft.
075115	8"	24"	96"	128



RenShape 5035 and RenShape 5045 (pictured) work extremely well on the CNC. They create flakes rather than dust when machined, allowing for fast, easy clean-up.



RenShape 5045 Polyurethane Foam Board

RenShape 5045 provides the best surface finish and edge definition of all RenShape foam boards.

- ▶ 30 lb./ft.³ density
- ▶ Brown color

SKU	Thickness	Width	Length	Bd. ft.
075529	¾"	24"	96"	12
075530	1"	24"	96"	16
075521	2"	24"	96"	32
075528	3"	24"	96"	48
075522	4"	24"	96"	64
075524	5"	24"	96"	80
075523	6"	24"	96"	96
075864	½"	48"	96"	16
075861	1"	48"	96"	32
075525	2"	48"	96"	64
075863	3"	48"	96"	96

General Specifications

	Hardness (Shore D)	Density (g/cc)	Density (lb./ft. ³)	Tensile Strength (psi)	Compressive Strength (psi)	Compressive Modulus (psi)	Flexural Strength (psi)	Flexural Modulus (psi)	Glass Transition Temp (°F)	C.T.E. (in./in./°F)	Color
RenShape 5014	–	0.064	4	105	95	–	116	–	–	33.0 x 10 ⁻⁶	Caramel
RenShape 5015	–	0.10	6	160	148	–	190	–	–	28.0 x 10 ⁻⁶	Blue-Green
RenShape 5018	–	0.13	8	290	230	–	310	–	–	28.0 x 10 ⁻⁶	Lt. Yellow
RenShape 5020	27	0.16	10	350	280	–	350	–	–	28.0 x 10 ⁻⁶	Lt. Gray
RenShape 5025	27	0.25	15	800	800	–	780	–	–	28.0 x 10 ⁻⁶	Lt. Green
RenShape 5030	33	0.30	20	895	1,140	–	1,330	–	–	25.0 x 10 ⁻⁶	Peach
RenShape 5035	48	0.45	28	1,523	2,233	–	2,988	–	–	25.0 x 10 ⁻⁶	Peach
RenShape 5045	42	0.48	30	1,250	2,200	–	2,400	–	–	25.0 x 10 ⁻⁶	Brown
ASTM	D-2240	D-792	D-792	D-638	D-695	D-695	D-790	D-790	D-4065	D-3386	–

*Epoxy boards

Matched Adhesives & Repair Materials Guide

	RenShape 5014	RenShape 5015	RenShape 5018	RenShape 5020	RenShape 5025	RenShape 5030	RenShape 5035	RenShape 5045	Mix Ratio (by wt.)	Viscosity (cps)	Gel time (min.) @ 77°F	Light handling time (hr.)	Hardness (Shore D)	Density	Service temp. (°F)	Color	Notes
Adhesives																	
Repro UltraLight	X	X	X	X	X	X	X	X	1:1	1,200	10-11	4	55	0.59	128°F	Tan	Low-density polyurethane with good bond strength
Repro Light						X	X	X	1:1	1,200	10-11	4	55	0.59	128°F	Tan	Low-density polyurethane with good bond strength
Fast Set 505	X	X	X	X	X	X	X	X	1:1	10,000	5	0.5	85	1.11	200	Clear	Economical 5-minute epoxy
Fast Set 517	X	X	X	X	X	X	X	X	1:1	14,000	15-20	4	80	1.15	200	Clear	Epoxy w/longer gel times and short light handling time
Ren-Weld 103	X	X	X	X	X	X	X	X	100:26	2,100	20	10	68	1.08	128	Lt. Yellow	Low-viscosity epoxy, flow control agents prevent run-out
Repair Materials																	
Quik-Fil	X	X	X	X	X	X	X	X	100:1.5	208,000	11	0.5	70	0.89	128°F	Brown	Low-density and low-viscosity polyester repair paste
TUF-Carv	X	X	X	X	X	X	X	X	100:1.5	581,000	10	0.5	71	1.14	128°F	4 options	Easy to machine polyester repair paste

LOCATIONS & TERMS

FREEMAN **FREEMAN MANUFACTURING & SUPPLY CO.**
 1101 Moore Road, Avon, Ohio 44011
 Phone 800-321-8511 • Fax 440-934-7200
 www.FreemanSupply.com
 contactus@freemansupply.com



Please see our website, www.FreemanSupply.com/aboutus for complete details and contact information on all of our locations.

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