



# MACHINABLE MEDIA

*This is the broadest and most diverse offering of machinable media available, carefully selected by Freeman to represent the best in the industry today. These materials are used by leading designers and engineers for everything from styling, modeling, fixtures, and foundry tooling to prototype metal-forming and composite tooling, prototype injection molding, vacuum forming, and rapid product development.*

9-16



RenShape® Boards

17-18



Perfect Plank Engineered Lumber

19-20



Rough Sawn Pattern Lumber

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Richlite Laminate, MDF & more

# THE HISTORY *of* MACHINABLE MEDIA

## From the beginning...

Historically, there were only two choices when selecting materials for projects.

### WOOD

pg. 19

- ✓ Easily workable by hand or machine
- ✓ Economical



### METAL

- ✓ Even more stable & durable
- ✓ Superior finish



## ...to synthetic development...

Because these choices were so extreme in their differences, synthetic materials were developed to bridge the gap in the mid-20th century.

### PERFECT PLANK

pg. 17

- ✓ Uniform in texture
- ✓ Virtually defect-free
- ✓ Ready for use immediately



### RICHLITE

pg. 21

- ✓ Hard & durable
- ✓ Machinable
- ✓ Abrasion, moisture, & chemical resistant



## ...to the ORIGINAL Modeling Board...

In the 1980's, technology took a giant leap forward with synthetic work boards. RenShape 450, the original modeling and tooling board, was developed.

### RENSHAP 450

pg. 13

- ✓ Consistent texture
- ✓ Virtually defect-free
- ✓ Dimensionally Accurate



### MACHINABLE WAX

pg. 69

- ✓ Easily machinable
- ✓ Self-releasing



## ...to the wide range of choices today.

Today, Freeman is proud to offer the widest range of options for your tooling needs. From the original materials to the specialty work boards, Freeman has a product to suit even the most complicated application.

### RENSHAP FOAM BOARDS

Densities ranging from 4-30 lb.  
Offers excellent workability

#### Applications

Modeling  
Aerospace  
Composites  
Architecture & design  
Low-density substrates

pg. 11

### RENSHAP MODELING & STYLING BOARDS

Densities ranging from 34-48 lb.  
Ease of machining & good edge definition  
Excellent dimensional stability

#### Applications

Modeling  
Proofing  
Fabricating

pg. 13

### RENSHAP TOOLING & HIGH-TEMP WORK BOARDS

Ease of machining  
Excellent dimensional stability  
Minimal residual particles for easy cleanup

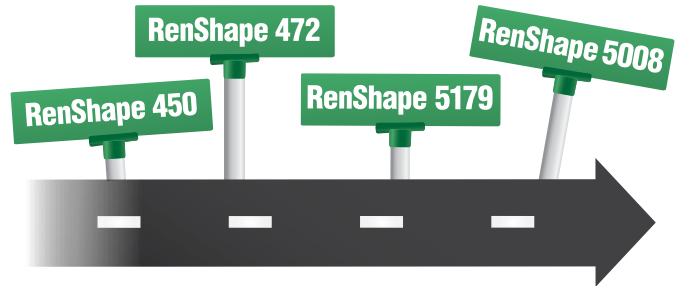
#### Applications

Duplicating aids  
Foundry patterns & hammer-form dies  
Temperature-resistant tooling

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# RENSHAP<sup>®</sup> BOARDS

➔ The original modeling board, RenShape 450, was the catalyst for this diverse line of materials that has grown to meet the needs of nearly every styling, modeling, and tooling application. This versatile line features popular boards such as RenShape 450, 472, 5179 and 5008. Manufactured in the United States to the highest quality standards, RenShape remains the top choice and Freeman is proud to be its number one distributor.



## Specifications

	Hardness (Shore D)	Density (g/cc)	Density (lb./ft. <sup>3</sup> )	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
<b>Foam Boards*</b>											
RenShape 5014	—	0.064	4	105	95	—	116	—	—	33.0 x 10 <sup>-6</sup>	Caramel
RenShape 5015	—	0.10	6	160	148	—	190	—	—	28.0 x 10 <sup>-6</sup>	Blue-Green
RenShape 5018	—	0.13	8	290	230	—	310	—	—	28.0 x 10 <sup>-6</sup>	Lt. Yellow
RenShape 5020	27	0.16	10	350	280	—	350	—	—	28.0 x 10 <sup>-6</sup>	Lt. Gray
RenShape 5025	27	0.25	15	800	800	—	780	—	—	28.0 x 10 <sup>-6</sup>	Lt. Green
RenShape 5030	33	0.30	20	895	1,140	—	1,330	—	—	25.0 x 10 <sup>-6</sup>	Peach
RenShape 5035	48	0.45	28	1,523	2,233	—	2,988	—	—	25.0 x 10 <sup>-6</sup>	Peach
RenShape 5045	42	0.48	30	1,250	2,200	—	2,400	—	—	25.0 x 10 <sup>-6</sup>	Brown
<b>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	60	0.60	37	1,300	2,900	101,526	2,900	106,000	203	30.5 x 10 <sup>-6</sup>	Lt. 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>	Lt. Brown
RenShape BM-70	60	0.67	42	1,570	3,600	139,104	4,340	125,770	185	27.7 x 10 <sup>-6</sup>	Lt. Brown
RenShape 5460	60	0.70	43	1,886	3,625	139,236	4,351	152,000	187	30.5 x 10 <sup>-6</sup>	Lt. 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>	Lt. Brown
<b>Tooling &amp; High-Temperature Work Boards</b>											
RenShape 470	90	1.67	104	4,700	9,500	866,000	8,700	983,000	232	22.7 x 10 <sup>-6</sup>	Lt. Gray
RenShape 472	81	0.88	55	7,000	10,900	460,000	9,540	416,000	248	25.8 x 10 <sup>-6</sup>	Lt. Gray
RenShape 473	72	0.80	50	2,500	3,500	210,000	4,000	200,000	212	30.0 x 10 <sup>-6</sup>	Lt. Gray
RenShape 474	73	0.80	50	6,750	8,000	227,000	8,000	325,000	230	26.5 x 10 <sup>-6</sup>	Lt. Gray
RenShape 5166	90	1.66	103	4,875	9,500	840,000	8,000	965,000	228	22.0 x 10 <sup>-6</sup>	Cream
RenShape 5169	85	1.20	75	9,000	8,800	366,000	14,000	380,000	206	40.8 x 10 <sup>-6</sup>	Red
RenShape 5179	84	1.18	73	10,790	11,600	400,100	14,900	404,000	210	41.7 x 10 <sup>-6</sup>	Red
RenShape 5008**	68	0.67	42	3,500	8,200	350,000	4,600	350,000	253	20.0 x 10 <sup>-6</sup>	Lt. Blue
RenShape 5065**	70	0.79	49	3,076	8,264	203,863	4,900	425,000	470	18.0 x 10 <sup>-6</sup>	Gray
ASTM	D-2240	D-792	D-792	D-638	D-695	D-695	D-790	D-790	D-4065	D-3386	—

\*RenShape Foam Boards have a service temperature up to 176°F. \*\*Epoxy boards

## Machining Specifications

	Roughing Speed (RPM)	Roughing Feed (IPM)	Finishing Speed (RPM)	Finishing Feed (IPM)
<b>Foam Boards</b>				
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
<b>RenShape Modeling &amp; Styling Boards</b>				
440	2,000	200	15,000	200
5440	2,000	100	15,000	200
450	2,000	100	15,000	200
BM-70	2,000	100	15,000	200
5460	2,000	100	15,000	200
460	1,600	40	10,000	100

	Roughing Speed (RPM)	Roughing Feed (IPM)	Finishing Speed (RPM)	Finishing Feed (IPM)
<b>RenShape Tooling &amp; High-Temp Work Boards</b>				
470	1,600	40	10,000	100
472	1,600	40	10,000	100
473	1,600	40	10,000	100
474	1,600	40	10,000	100
5166	1,600	40	10,000	100
5169	1,600	40	10,000	100
5179	1,500	60	10,000	100
5008	1,600	40	10,000	100
5065	1,600	40	10,000	100

### 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 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 machining results. User must determine best parameters for specific applications.

## Application Guide\*

RenShape #	5014	5015	5018	5020	5025	5030	5035	5045	440	5440	BM-70	450	5460	460	470	472	473	474	5166	5169	5179	5008	5065
CNC Profiling	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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

## Matched Adhesives & Repair Materials

Foam Boards									Modeling & Styling Boards						Tooling & High-Temperature Boards								
RenShape #	5014	5015	5018	5020	5025	5030	5035	5045	440	5440	450	BM-70	5460	460	470	472	473	474	5166	5169	5179	5008	5065
Adhesives																							
Repro Ultralight	X	X	X	X	X	X	X	X															
Repro Light						X	X	X	X	X	X	X	X	X									
Fast Set 505	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Fast Set 506															X	X	X	X	X	X	X		
Fast Set 517	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
DunaBond 3140	X	X	X	X	X	X	X	X															
DunaBond 3206	X	X	X	X	X	X	X	X															
Ren-Weld 103	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
RenLam 1700-1									X	X	X	X	X	X	X	X	X	X	X	X	X		
RenLam 4005															X	X	X	X	X	X	X	X	
RenLam 4017																							X
Ren-Weld 5008																						X	
Repair Materials																							
TUF-Carv	X	X	X	X	X	X	X	X	X	X	X	X	X	X									
TUF-Fil															X	X	X	X					
TUF-Fil White															X				X				
Hi-Temp TUF-Fil															X	X	X	X				X	X
RenPatch 5169																				X	X		

	Mix ratio (by weight)	Viscosity (cps)	Gel time (min.) @ 77°F	Light handling time (hr.)	Hardness (Shore D)	Density	Service temp.	Color	Notes
<b>Adhesives</b>									
Repro Ultralight	1:1	1,200	10-11	4	55	0.59	128°F	Tan	Low-density polyurethane with good bond strength
Repro Light	1:1	1,500	6-8	4	68	0.9	132°F	Brown	Low-density polyurethane with good bond strength
Fast Set 505	1:1	10,000	5	0.5	85	1.11	200°F	Clear	Economical 5-minute epoxy
Fast Set 506	1:1	1,500	5	1	80	1.15	266°F	Clear	Epoxy with excellent bond strength and high-service temperature
Fast Set 517	1:1	14,000	15-20	4	80	1.15	200°F	Clear	Epoxy offers longer gel times with short light handling time
DunaBond 3206	N/A	3,500 - 4,000	35-40	2	—	1.07-1.11	176°F	Light Yellow	Polyurethane formulated for RenShape Foam Boards
DunaBond 3140	N/A	1,500-2,000	60-70	3-4	—	1.07-1.09	176°F	Amber	Polyurethane formulated for RenShape Foam Boards
Ren-Weld 103	100:26	2,100	20	10	68	1.08	128°F	Light Yellow	Low-viscosity epoxy with flow control agents to prevent run-out
RenLam 1700-1	100:26	2,000	20	24	90	1.13	128°F	Light Yellow	Low-viscosity epoxy laminating resin with excellent bond strength
RenLam 4005	100:14	1,900	50-60	24	90	1.19	289°F	Amber	Epoxy with excellent bond strength for high-temp applications
RenLam 4017	100:15	8,000	90	3-4	93	1.42	350°F	Black	Hi-Temp epoxy laminating resin for RenShape 5065
Ren-Weld 5008	100:20	-	75	4	68	0.65	200°F	Light Blue	A medium-speed adhesive which is hardness and color matched for use with RenShape 5008
<b>Repair Materials</b>									
TUF-Carv	100:1.5	581,000	10	0.5	71	1.14	128°F	4 options	Easy to machine polyester repair paste
TUF-Fil	100:1.5	912,000	11	0.5	81	1.74	128°F	Brown	81 Shore D polyester repair paste for room-temperature applications
TUF-Fil White	100:1.5	400,000	9	0.5	95	2.5	128°F	White	95 Shore D polyester repair paste for room-temperature applications
Hi-Temp TUF-Fil	100:1.5	581,000	10	0.5	71	1.14	350°F	4 options	Polyester repair paste for high-temperature applications
RenPatch 5169	100:89	Paste	45-75 (sec)	0.25	85	1.12	167°F	Red	Polyurethane repair paste formulated for RenShape 5169 and RenShape 5179



# RENSHAP<sup>®</sup> 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 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.<sup>3</sup> 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 5015 Polyurethane Foam Board

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

- ▶ 6 lb./ft.<sup>3</sup> 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 5018 Polyurethane Foam Board

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

- ▶ 8 lb./ft.<sup>3</sup> 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 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.<sup>3</sup> 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 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.<sup>3</sup> 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.<sup>3</sup> 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	1/2"	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.<sup>3</sup>. It is ideal for master models, prototypes, and CAD design verification.

- ▶ 28 lb./ft.<sup>3</sup> 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.<sup>3</sup> density
- ▶ Brown color

SKU	Thickness	Width	Length	Bd. ft.
075529	3/4"	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	1/2"	48"	96"	16
075861	1"	48"	96"	32
075525	2"	48"	96"	64
075863	3"	48"	96"	96

### SEE ALSO

Product	Page #
Repro Light & Repro Ultra Light for gluing	26
DunaBond	81
Freeman #60 Pattern Coating	121



# RENSHAP<sup>®</sup> MODELING & STYLING BOARDS

## Quick Facts

- Formulated for styling, modeling, prototyping & fabricating applications
- Can be worked by hand or machine
- Less abrasive to cutting tools



## RenShape 5440 Polyurethane Styling Board

RenShape 5440 is a higher density version of 440, offering an improved surface finish without sacrificing ease of machining. These boards are manufactured in metric sizes (500mm x 1500mm). The Imperial equivalent sizes are provided below.

- ▶ 35 lb./ft.<sup>3</sup> density
- ▶ Light brown color
- ▶ Ideal for master patterns

SKU	Thickness	Width	Length	Bd. ft.
075501	0.98"	19.7"	59.1"	7.92
075502	1.97"	19.7"	59.1"	15.85
075503	2.96"	19.7"	59.1"	23.9
075504	3.94"	19.7"	59.1"	31.8

## RenShape 440 Polyurethane Styling Board

RenShape 440 is a medium-low density 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.

- ▶ 34 lb./ft.<sup>3</sup> density
- ▶ Light red-brown color
- ▶ General purpose & economical

SKU	Thickness	Width	Length	Bd. ft.
075236	2"	16"	60"	13.33
075146	1"	20"	60"	8.33
075147	2"	20"	60"	16.67
075148	3"	20"	60"	25
075149	4"	20"	60"	33.33
075151	6"	20"	60"	50



## RenShape 450 Polyurethane Modeling Board

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.

- ▶ 41 lb./ft.<sup>3</sup> density
- ▶ Light brown color
- ▶ Superior machinability and stability

SKU	Thickness	Width	Length	Bd. ft.
075139	2"	20"	15"	4.17
075202	2"	16"	60"	13.33
075205	4"	16"	60"	26.67
075140	1"	20"	60"	8.33
075141	2"	20"	60"	16.67
075142	3"	20"	60"	25
075143	4"	20"	60"	33.33
075203	1"	24"	60"	10
075206	2"	24"	60"	20
075211	3"	24"	60"	30



*RenShape 440, 5440, and 450 offer excellent ease of machining.*



*Well-defined edges are possible with BM-70 due to its excellent surface finish.*



## RenShape BM-70 Medium-Density Modeling Board

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.

- ▶ 42 lb./ft.<sup>3</sup> density
- ▶ Light brown color
- ▶ Excellent edge definition

SKU	Thickness	Width	Length	Bd. ft.
075532	1.97"	19.7"	59.1"	15.9
075533	2.95"	19.7"	59.1"	23.9
075534	3.94"	19.7"	59.1"	31.8
075541	5.9"	19.7"	59.1"	47.7
075535	2"	24"	60"	20.0
075536	3"	24"	60"	20.0
075537	4"	24"	60"	40.0
075539	6"	24"	60"	60.0



## RenShape 5460 Polyurethane Modeling Board

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.

- ▶ 43 lb./ft.<sup>3</sup> density
- ▶ Light brown color
- ▶ High-quality surface finish

SKU	Thickness	Width	Length	Bd. ft.
075518	2"	24"	60"	20
075519	3"	24"	60"	30
075520	4"	24"	60"	40



*RenShape 460 offers an excellent surface finish for many large and lightweight styling applications.*



## RenShape 460 Polyurethane Modeling Board

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.

- ▶ 48 lb./ft.<sup>3</sup> density
- ▶ Light brown color
- ▶ Excellent surface finish

SKU	Thickness	Width	Length	Bd. ft.
075213	2"	16"	60"	13.33
075214	4"	16"	60"	26.67
075229	1"	20"	60"	8.33
075219	2"	20"	60"	16.67
075221	3"	20"	60"	25
075222	4"	20"	60"	33.33
075169	1"	24"	60"	10
075170	2"	24"	60"	20
075171	3"	24"	60"	30
075172	4"	24"	60"	40

## SEE ALSO

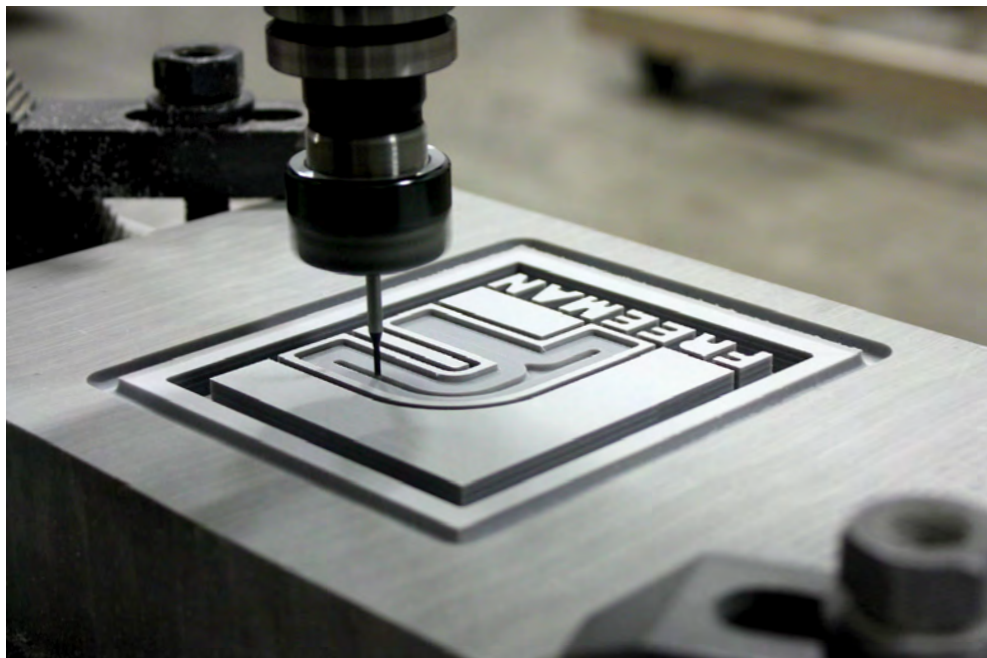
Product	Page #
Ren-Weld 103	81
Freeman #60 Pattern Coating	121
Freeman Wood & Plaster Sealer	121



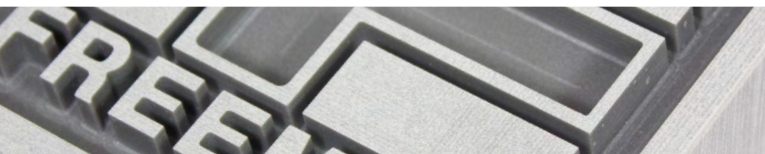
# RENSHAPE® TOOLING & HIGH-TEMP BOARDS

## Quick Facts

- Designed for high-wear and high-temperature applications
- Excellent stability and machined edge definition
- High-quality machined surface finish
- Non-abrasive to cutting tools



Many RenShape boards offer ease of machining while minimizing dust.

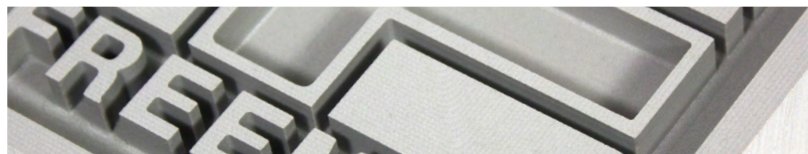


## RenShape 470 Polyurethane Fixture Board

RenShape 470 is a high-density polyurethane board designed for CNC machining of production fixtures. This is the most durable fixture board in the RenShape line for the most demanding applications and is excellent for thermoforming tools designed to produce clear plastic parts.

- ▶ 104 lb./ft.<sup>3</sup> density
- ▶ Light gray color
- ▶ Extremely tough and dense

SKU	Thickness	Width	Length	Bd. ft.
075209	2"	20"	60"	16.67

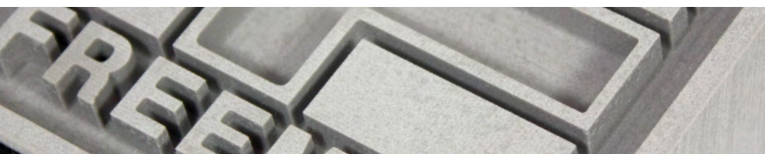


## RenShape 473 Polyurethane Fixture Board

RenShape 473 is an economical board that offers a lighter density than traditional fixture boards. It may be used for check fixtures, model bases, patterns, and thermoform tools where requirements are less demanding.

- ▶ 50 lb./ft.<sup>3</sup> density
- ▶ Light gray color
- ▶ Most economical fixture board

SKU	Thickness	Width	Length	Bd. ft.
075153	2"	16"	60"	13.33
075154	3"	16"	60"	20
075155	4"	16"	60"	26.67
075156	6"	16"	60"	40

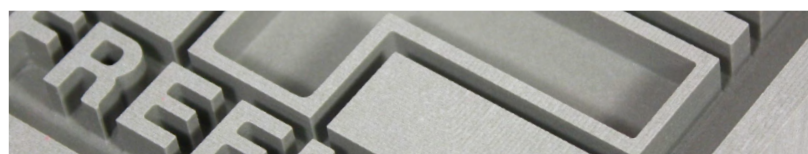


## RenShape 472 Polyurethane Fixture Board

RenShape 472 is a polyurethane board designed for machining of production fixtures capable of withstanding extended use and handling. It combines light weight with toughness and abrasion resistance to withstand typical production environments.

- ▶ 55 lb./ft.<sup>3</sup> density
- ▶ Light gray color
- ▶ Ideal for foundry patterns and thermoform tools

SKU	Thickness	Width	Length	Bd. ft.
075242	1"	20"	60"	8.33
075243	2"	20"	60"	16.67
075245	3"	20"	60"	25
075244	4"	20"	60"	33.33
075238	5"	24"	30"	25
075239	6"	24"	30"	30

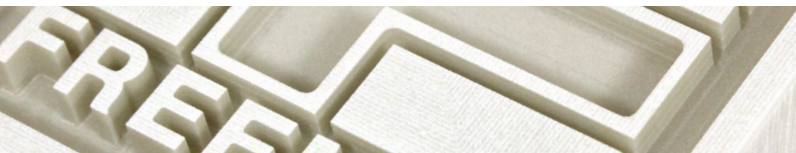


## RenShape 474 Polyurethane Fixture Board

This strong and durable board is engineered to machine well and produce good detail with less dust than other fixture boards. It is ideal for creating economical check fixtures, trim fixtures, and drill fixtures.

- ▶ 50 lb./ft.<sup>3</sup> density
- ▶ Light gray color
- ▶ Excellent combination of durability, surface finish and light weight

SKU	Thickness	Width	Length	Bd. ft.
075614	2"	24"	60"	20
075622	3"	24"	60"	30
075630	4"	24"	60"	40

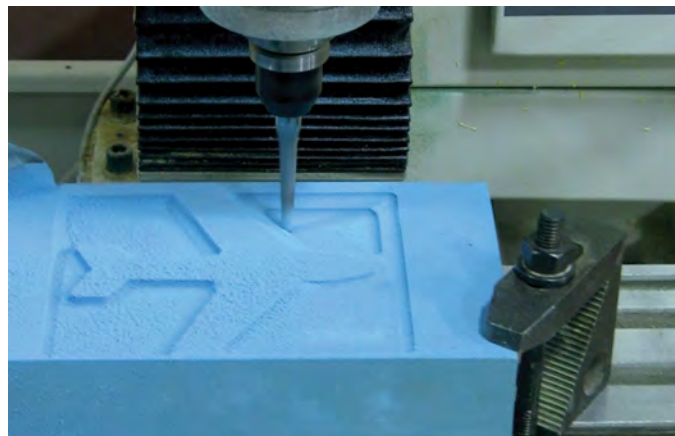


## RenShape 5166 Metal-Forming Board

RenShape 5166 is a polyurethane board that is designed for use in forming metal parts for prototype and low volume production.

- ▶ 103 lb./ft.<sup>3</sup> density
- ▶ Cream color
- ▶ Ideal for metal-forming applications

SKU	Thickness	Width	Length	Bd. ft.
075237	2"	20"	60"	16.67
075199	4"	20"	30"	16.67



*RenShape 5008 is well-suited for designing master models.*



## RenShape 5169 Foundry Pattern & Tooling Board

RenShape 5169 is a polyurethane board that is designed for machining extremely durable and wear resistant foundry patterns, core boxes and other tools that require high wear and impact resistance. Its superior edge definition, dimensional stability and polishing characteristics also make it an excellent material for thermoforming tools designed to produce clear plastic parts.

- ▶ 75 lb./ft.<sup>3</sup> density
- ▶ Red color
- ▶ Highest wear resistance

SKU	Thickness	Width	Length	Bd. ft.
075246	1"	20"	60"	8.33
075232	2"	20"	60"	16.67
075233	3"	20"	60"	25
075234	4"	20"	60"	33.33
075127	5/8"	24"	30"	3.125
075131	3/4"	24"	30"	3.75
075247	5"	24"	30"	25
075248	6"	24"	30"	30
075128	1"	24"	60"	10
075129	1 1/4"	24"	60"	12.5
075130	1 1/2"	24"	60"	15
075164	2"	24"	60"	20
075165	3"	24"	60"	30
075166	4"	24"	60"	40



## RenShape 5008 Epoxy Modeling Board

RenShape 5008 is an epoxy modeling board designed for tooling use up to 230°F (110°C) and is well-suited for building master models, layup tools for low and medium temperature curing preregs, and other heat-resistant tooling. This medium density epoxy material features a very low coefficient of thermal expansion to produce outstanding accuracy and dimensional stability.

- ▶ 42 lb./ft.<sup>3</sup> density
- ▶ Light blue color
- ▶ Dimensional stability & prepreg compatibility

SKU	Thickness	Width	Length	Bd. ft.
075288	1"	24"	60"	10
075289	2"	24"	60"	20
075290	4"	24"	60"	40
075291	6"	24"	60"	60

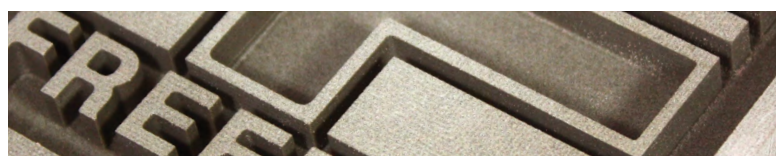


## RenShape 5179 Foundry Pattern & Tooling Board

RenShape 5179 is a red polyurethane board specifically designed for machining highly accurate, dimensionally stable, and wear-resistant foundry patterns. It machines well with minimal chipping and is excellent for thermoforming tools designed to produce clear plastic parts.

- ▶ 73 lb./ft.<sup>3</sup> density
- ▶ Red color
- ▶ Machines well with minimal chipping

SKU	Thickness	Width	Length	Bd. ft.
075546	1"	24"	60"	10
075554	2"	24"	60"	20
075562	3"	24"	60"	30
075570	4"	24"	60"	40
075577	5"	24"	30"	25
075585	6"	24"	30"	30



## RenShape 5065 High-Temperature Epoxy Board

RenShape 5065 High-Performance, High-Temperature Epoxy board was developed for use at temperatures up to 400°F (204°C) in applications such as aerospace master models and lay-up tools for high temperature curing preregs. RenShape 5065 offers good edge definition, good surface finish, and excellent dimensional stability with a high glass transition temperature of 470°F (243°C).

- ▶ 49 lb./ft.<sup>3</sup> density
- ▶ Gray color
- ▶ Ideal for aerospace master modeling

SKU	Thickness	Width	Length	Bd. ft.
075272	2"	24"	60"	20
075273	4"	24"	60"	40
075274	6"	24"	60"	60

### SEE ALSO

Product	Page #
RenPatch 5169 Repair Paste	76
Ren-Weld 5008 Adhesive	81
Ren Tooling Board Adhesives	81
Chemtrend Semi-Permanent Mold Releases	125



# PERFECT PLANK LUMBER

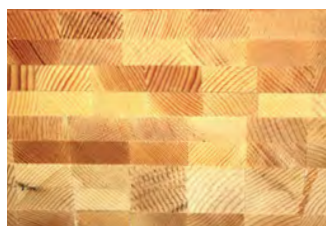
For over 60 years, skilled craftsmen have made Perfect Plank their primary choice when it comes to high quality pattern lumber. Perfect Plank is manufactured to provide a dry, thick, stress-free pattern plank that is uniform in texture, low in moisture and virtually defect-free.

Perfect Plank is designed to free the user from the time-consuming tasks of planing, jointing, sizing, and gluing to assemble larger blocks for pattern construction. Perfect Plank maximizes the skills and efficiency of the pattern maker, mold maker, and model maker because each board is immediately ready for use in a wide variety of sizes.



## Virtually Defect-Free

All Perfect Plank is made from carefully inspected pieces of lumber with very few of the defects that cost the user time and money. This lumber is precisely dried and stress-relieved, then finger-jointed into narrow, vertical-grained strips.



## Accurate Construction

The strips are then accurately machined prior to being glued face-to-face to form the standard width plank. The accuracy of Perfect Plank is especially evident in the glue lines of each piece. Thin lines of water-resistant glue are cured with state-of-the-art electronic gluing equipment to make Perfect Plank easy to carve and machine without causing unnecessary wear of woodworking tools and cutter blades.



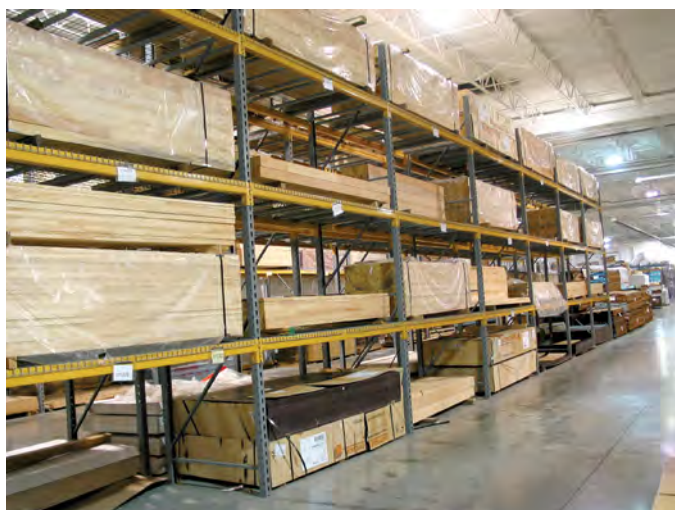
## Superior Stability

The vertical grain construction of Perfect Plank produces a pattern lumber that has much greater dimensional stability than ordinary, straight grain pattern lumber. Vertical grain Perfect Plank will resist twisting and cupping and will produce patterns, molds, and models that are far superior to those made from ordinary rough sawn lumber.



## Properly Stored

All Perfect Plank is stored in climate controlled warehouses, which ensures consistent moisture content regardless of the location or time of year you require your next delivery.



## Features

<b>Virtually defect-free</b>	The pine species is equivalent to select grades of pattern lumber while the mahogany species is equivalent to FAS grades.
<b>Grain</b>	Tight, straight, vertical grain as opposed to the wide, diagonal and/or straight grain commonly found in other products.
<b>Moisture content</b>	Kiln-dried to a low and uniform moisture content throughout. (controlled to 8% - 10%)
<b>Surfacing</b>	Each board is surfaced on four sides.
<b>End gluing</b>	Individual wood strips joined by precision finger-jointing with non-abrasive adhesives.
<b>Edge gluing</b>	Strips are edge-glued with uniformly thin glue lines of water-resistant adhesive.
<b>Immediately usable</b>	Simply select the thickness needed, cut off the required length, and begin to build your pattern. With Perfect Plank, every cubic inch is usable.

## ORDERING INFORMATION

This material is ordered by the full board. Board feet per board is listed as a reference. When ordering, please indicate how many boards are needed.

### Custom orders

Additional sizes are available by custom order in thicknesses from 1" to 6", widths 12" to 48", and lengths up to 16'. Maple Perfect Plank is available by special order. Lead times are based on availability. Please contact customer service for pricing and delivery information on all custom orders.

## Perfect Plank Pine

This popular laminated plank is uniformly dried, virtually free from defects, and planed on all four sides for immediate use. It is an excellent alternative to the select Sugar Pine grades which are becoming increasingly difficult to source.

SKU	Description	Nom.* Thickness	Nom.* Width	Length	Bd. ft./pc.
074005	4/4 Perfect Plank Pine	1"	18"	96"	12
074007	5/4 Perfect Plank Pine	1¼"	18"	96"	15
074010	6/4 Perfect Plank Pine	1½"	18"	96"	18
074012	7/4 Perfect Plank Pine	1¾"	18"	96"	21
074014	8/4 Perfect Plank Pine	2"	18"	96"	24
074015	9/4 Perfect Plank Pine	2¼"	18"	96"	27
074020	10/4 Perfect Plank Pine	2½"	18"	96"	30
074025	12/4 Perfect Plank Pine	3"	18"	96"	36
074028	13/4 Perfect Plank Pine	3¼"	18"	96"	39
074030	14/4 Perfect Plank Pine	3½"	18"	96"	42
074035	16/4 Perfect Plank Pine	4"	18"	96"	48
074040	17/4 Perfect Plank Pine	4¼"	18"	96"	51
074048	20/4 Perfect Plank Pine	5"	18"	96"	60
074050	21/4 Perfect Plank Pine	5¼"	18"	96"	63
074052	22/4 Perfect Plank Pine	5½"	18"	96"	66
074055	24/4 Perfect Plank Pine	6"	18"	96"	72

\*Actual thicknesses are approximately ⅛" less and actual widths are 17" +/- ¼". Other sizes may be available by special order. Please call for details.

## Perfect Plank Mahogany

Constructed from genuine Mahogany, this laminated wood product is the best choice for high-tolerance patterns, models, and fixtures. It is uniformly dried, virtually free from defects, and planed on all four sides for immediate use.

SKU	Description	Thickness	Width	Length	Bd. ft./pc.
074600	4/4 Perfect Plank Mahogany	1"	18"	96"	12
074602	5/4 Perfect Plank Mahogany	1¼"	18"	96"	15
074604	6/4 Perfect Plank Mahogany	1½"	18"	96"	18
074608	8/4 Perfect Plank Mahogany	2"	18"	96"	24
074610	9/4 Perfect Plank Mahogany	2¼"	18"	96"	27
074618	12/4 Perfect Plank Mahogany	3"	18"	96"	36
074620	13/4 Perfect Plank Mahogany	3¼"	18"	96"	39
074626	16/4 Perfect Plank Mahogany	4"	18"	96"	48
074628	17/4 Perfect Plank Mahogany	4¼"	18"	96"	51
074634	20/4 Perfect Plank Mahogany	5"	18"	96"	60
074640	23/4 Perfect Plank Mahogany	5¾"	18"	96"	69
074642	24/4 Perfect Plank Mahogany	5⅞"	18"	96"	72

Other sizes may be available by special order. Please call for details.

## Perfect Plank Jelutong

Due to its extremely fine texture and consistent grain structure, this species of Perfect Plank is the best for hand carving or CNC machining. Constructed from Jelutong, this laminated wood product is uniformly dried, virtually free from defects, and planed on all four sides for immediate use.

SKU	Description	Nom.* Thickness	Nom.* Width	Length	Bd. ft./pc.
074310	6/4 Perfect Plank Jelutong	1½"	18"	96"	18
074314	8/4 Perfect Plank Jelutong	2"	18"	96"	24
074315	9/4 Perfect Plank Jelutong	2¼"	18"	96"	27
074320	10/4 Perfect Plank Jelutong	2½"	18"	96"	30
074325	12/4 Perfect Plank Jelutong	3"	18"	96"	36
074326	13/4 Perfect Plank Jelutong	3¼"	18"	96"	39
074335	16/4 Perfect Plank Jelutong	4"	18"	96"	48
074340	17/4 Perfect Plank Jelutong	4¼"	18"	96"	51
074349	20/4 Perfect Plank Jelutong	5"	18"	96"	60
074350	21/4 Perfect Plank Jelutong	5¼"	18"	96"	63
074355	24/4 Perfect Plank Jelutong	6"	18"	96"	72

\*Actual thicknesses are approximately ⅛" less and actual widths are 17" +/- ¼". Other sizes may be available by special order. Please call for details.

## Perfect Plank Alder

Red Alder is a domestically grown species found primarily on the Pacific coast. Slightly lighter in weight and color than Mahogany, this hardwood offers an excellent alternative to higher priced Mahogany. Perfect Plank constructed from Alder is uniformly dried for stability, virtually free from defects, and planed on four sides for immediate use.

SKU	Description	Thickness	Width	Length	Bd. ft./pc.
074710	9/4 Perfect Plank Alder	2¼"	18"	96"	27
074718	13/4 Perfect Plank Alder	3¼"	18"	96"	39
074724	17/4 Perfect Plank Alder	4¼"	18"	96"	51

Other sizes may be available by special order. Please call for details.

## Perfect Plank Poplar

Constructed from domestically grown poplar, this hardwood plank offers a lower cost alternative to Mahogany Perfect Plank. As with all Perfect Plank products, it is uniformly dried for stability, virtually free from defects, and planed on four sides for immediate use.

SKU	Description	Thickness	Width	Length	Bd. ft./pc.
074810	9/4 Perfect Plank Poplar	2¼"	18"	96"	27
074818	13/4 Perfect Plank Poplar	3¼"	18"	96"	39
074824	17/4 Perfect Plank Poplar	4¼"	18"	96"	51
074832	21/4 Perfect Plank Poplar	5¼"	18"	96"	63

Other sizes may be available by special order. Please call for details.



# ROUGH SAWN PATTERN LUMBER



Freeman offers a complete selection of soft woods and hardwoods graded specifically for pattern and model construction. All of our lumber adheres to accepted grading rules. We take great pride in the quality of our lumber and all of our lumber products are stored inside climate controlled warehouses to maintain specified moisture content and overall quality. Many of our grades of lumber are available surfaced two sides (S2S) for a small additional charge. All dimensions are nominal.

## SOFT WOODS

### Eastern White Pine

Its straight grain and comparatively uniform texture makes Eastern White Pine similar to Sugar Pine, although it is not as easily carvable as Sugar Pine. All of our Eastern White Pine is kiln-dried and ranks high in stability. Eastern White Pine offers an economical alternative to Sugar Pine. It is available as #2 Common, and is stored inside climate controlled warehouses to maintain specified moisture content and overall quality.

#### No. 2 Common

SKU	Description	Thickness	Width	Length
071254	6/4 No. 2 Common	1½"	12"	6'-16'
071251	8/4 No. 2 Common	2"	12"	6'-16'

### Jelutong

Because of its low density, fine texture, and exceptional workability, Jelutong is ideal for pattern shop applications as well as fine detail work and intricate carving. Jelutong is a white wood with approximately the same weight properties as sugar pine and accepts pattern coatings very well. To minimize splitting and checking, all boards are carefully kiln-dried to under 12% moisture content and stored inside climate controlled warehouses to maintain specified moisture content and overall quality.

SKU	Description	Thickness	Width	Length
073007	5/4 Jelutong	1¼"	12"	8'-18'
073010	6/4 Jelutong	1½"	12"	8'-18'
073015	8/4 Jelutong	2"	12"	8'-18'

### Pattern Sugar Pine

All Sugar Pine pattern lumber stocked by Freeman is kiln-dried and selected to meet the exacting specifications and requirements of pattern and model makers. By maintaining an average moisture content of 10% to 12%, and storing in climate controlled warehouses, we ensure that our customers receive boards that are stable and consistent in quality.

#### No. 2 Common

A very popular standard grade for the patternmaker. The entire board can be used in a wide range of applications where tight, sound knots do not affect performance and cost is a major factor. Tight knots are generally limited to 3¾", but most are significantly smaller and well-spaced. Spike knots are permitted, but we purchase our lumber with the objective of minimizing this defect.

SKU	Description	Thickness	Width	Length
071225	4/4 No. 2 Common	1"	12"	8'-16'
071230	5/4 No. 2 Common	1¼"	12"	8'-16'
071235	6/4 No. 2 Common	1½"	12"	8'-16'
071240	8/4 No. 2 Common	2"	12"	8'-16'
071241	10/4 No. 2 Common	2½"	12"	8'-16'
071242	12/4 No. 2 Common	3"	12"	8'-16'

#### No. 3 Common

The most economical choice for the patternmaker. This grade is typically used for medium to large applications where cost of the lumber is of primary importance and surface rework is allowed. The most notable surface imperfections are random knots on both surfaces. Tight knots may be up to 4½" in diameter while loose knots may be up to 2½" in diameter.

SKU	Description	Thickness	Width	Length
071275	8/4 No. 3 Common	2"	12"	8'-16'

## ORDERING INFORMATION

This material is ordered by the board foot. Due to random dimensions, orders will be filled as close as possible to board feet requested, therefore exact board feet and pricing cannot be guaranteed. Please make us aware if you have specific requirements for boards with random lengths.

### Calculate board feet

$$\frac{\text{Length} \times \text{Width} \times \text{Thickness (inches)}}{144} = \text{Board Feet}$$

## Mahogany

Genuine Mahogany is the most popular and best known of the hardwoods used for pattern and model work. It is extremely stable, withstands abrasion, and wears well. It has straight and close grain and carves easily. All Mahogany Pattern Lumber stocked by Freeman is kiln-dried and stored inside our climate controlled warehouses to maintain specified moisture content and overall quality. Freeman has been providing the trade with straight-grained Pattern Mahogany for over 50 years.

### FAS Pattern Mahogany

The highest grade of Mahogany available (virtually defect-free) that is selected for its straight grain and used for producing high-quality patterns and models. We also offer FAS Mahogany in 6' to 7' lengths which provides a lower cost option for those jobs that do not require the longer length.

SKU	Description	Thickness	Width	Length
072005	4/4 FAS Mahogany	1"	6"+	8'-16'
072015	6/4 FAS Mahogany	1½"	6"+	8'-16'
072020	8/4 FAS Mahogany	2"	6"+	8'-16'
072025	10/4 FAS Mahogany	2½"	6"+	8'-16'
072030	12/4 FAS Mahogany	3"	6"+	8'-16'
072035	16/4 FAS Mahogany	4"	6"+	8'-16'
072120	4/4 FAS Mahogany	1"	6"+	6'-7'
072130	6/4 FAS Mahogany	1½"	6"+	6'-7'
072135	8/4 FAS Mahogany	2"	6"+	6'-7'

### Freeman Pattern Mahogany

Similar to our FAS Pattern Mahogany, but at a lower cost, this grade is selected for straight grain but allows for a small number of pin worm holes and other minor defects. Though widths are somewhat narrower than our FAS grade, our stock is typically 6" and wider.

SKU	Description	Thickness	Width	Length
072150	4/4 Pattern Mahogany	1"	6"+	8'-16'
072155	5/4 Pattern Mahogany	1¼"	6"+	8'-16'
072160	6/4 Pattern Mahogany	1½"	6"+	8'-16'
072165	8/4 Pattern Mahogany	2"	6"+	8'-16'
072172	16/4 Pattern Mahogany	4"	6"+	6'-7'

## ORDERING INFORMATION

This material is ordered by the board foot. Due to random dimensions, orders will be filled as close as possible to board feet requested, therefore exact board feet and pricing cannot be guaranteed. Please make us aware if you have specific requirements for boards with random lengths.

## Hard Maple

A hard, strong, white-colored wood with excellent wear-resistant characteristics. Kiln dried for stability and consistent quality.

SKU	Description	Thickness	Width	Length
075015	4/4 Hard Maple FAS	1"	6"+	8'-16'
075025	6/4 Hard Maple FAS	1½"	6"+	8'-16'
075030	8/4 Hard Maple FAS	2"	6"+	8'-16'

## Poplar

Poplar is a domestically-grown, economical hardwood species that offers good workability and hardness characteristics. This pattern lumber is relatively clear and free of most defects. Stocked in "Face & Better", this species offers the patternmaker affordable performance compared to Sugar Pine and Mahogany.

SKU	Description	Thickness	Width	Length
075046	4/4 Poplar	1"	6"+	8'-16'
075047	5/4 Poplar	1¼"	6"+	8'-16'
075048	6/4 Poplar	1½"	6"+	8'-16'
075050	8/4 Poplar	2"	6"+	8'-16'
075051	10/4 Poplar	2½"	6"+	8'-16'
075052	12/4 Poplar	3"	6"+	8'-16'
075053	16/4 Poplar	4"	6"+	8'-16'

## Calculate board feet

$$\frac{\text{Length} \times \text{Width} \times \text{Thickness (inches)}}{144} = \text{Board Feet}$$

## SEE ALSO

Product	Page #
TUF-Fil® (for repairing Mahogany and Poplar)	74
TUF-Carv® (for repairing Pine and Jelutong)	74
Freeman White & Gold Wood Glues	83
Wood Screws	115
Abrasives	111
Pattern Coatings (Primers, Paints & Sealers)	121



# RICHLITE® FIBER-LAMINATE SHEETS

*Richlite Fiber-Laminate Sheets offer excellent machinability and dimensional stability. They are abrasion, moisture and chemical resistant. This remarkably strong material resists warping and maintains a uniform flatness and thickness.*

## User tips

**Sawing** – Carbide-tipped saw blades are recommended for both circular and table saw cutting applications. The proper feed rate, combined with a sharp blade will result in coarse sawdust. All sawing should be performed dry.

**Milling, Routing, & Machining** – Carbide cutters are recommended. The proper feed rate, combined with a sharp cutter will result in coarse sawdust. All machining should be performed dry.

**Drilling & Tapping** – The use of high speed steel drills and taps are recommended for short production runs and shallow holes. For longer production runs and deeper holes, use carbide-tipped drills and taps. When tapping Richlite, use a slightly smaller pilot drill than specified for the size tap required. This will assure optimum thread strength. Whenever possible, the piece to be machined should be backed up by another piece of scrap material to prevent chipping around the holes. Lift the drill frequently to allow chips to be removed and to prevent the build-up of excess heat. Holes drilled parallel to the lamination should be clamped or secured in a vise. All drilling and tapping should be performed dry.

**Sanding & Buffing** – Sanding can be performed by using a belt or disc sander, or by hand. Sand using the same procedures and techniques as used with wood. Dry sanding is recommended.

**Bonding Richlite Fiber-Laminate Sheet** – Lightly sand the mating surfaces to be glued. Use an epoxy adhesive, such as RenLam 1700-1.

## Physical properties

Specific Gravity	1.24
Water Absorption (% @ 1"/25 hr.)	1.45
Impact Strength (ft. lb./in.)	1.17
Tensile Strength (lb./sq. in.)	19,000
Flexural Strength (lb./sq. in.)	22,000
Compressive Strength (lb./sq. in.)	30,650
Abrasion-Resistance (Taber CS-17-% loss/1,000 revolutions)	0.0107
Hardness (Shore D)	86
Coefficient of Thermal Expansion (in./in. °F)	$1.1 \times 10^{-6}$
Density (lb./cu. ft.)	77.4
UL Classified	Class A
Color	Oak

## ORDERING INFORMATION

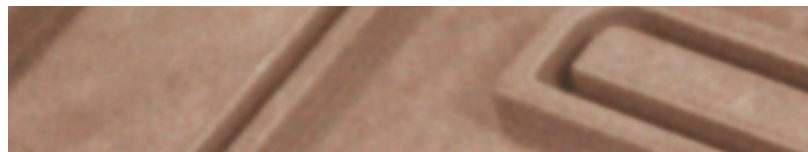
Richlite is available in thicknesses ranging from ½" to 3", widths 16" to 48", and lengths 48" or 96". Some sizes are special order and subject to extended lead times. Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), or contact Customer Service for complete information.

# MDF – MEDIUM DENSITY FIBERBOARD

*Medium Density Fiberboard (MDF) is a low cost machinable media for producing master patterns, models, and prototypes. This product features a uniform density for smooth machining and low tool wear. MDF will accept a wide range of sealers, primers, and coatings to produce a hard, durable tool surface.*

## Physical Properties

Color	Beige
Density	38 lb./ft. <sup>3</sup> +/-2 lb.
Internal Bond	90 lb./in. <sup>2</sup>
Moisture Content	5-8%
Hardness (Shore D)	45-55



SKU	Thickness	Width	Length	Board foot/piece
076225	2"	24"	96"	32
076230	4"	24"	96"	64
076226	2"	49"	97"	66
075231	4"	49"	97"	132

Other sizes may be available by special order. Please call for details.

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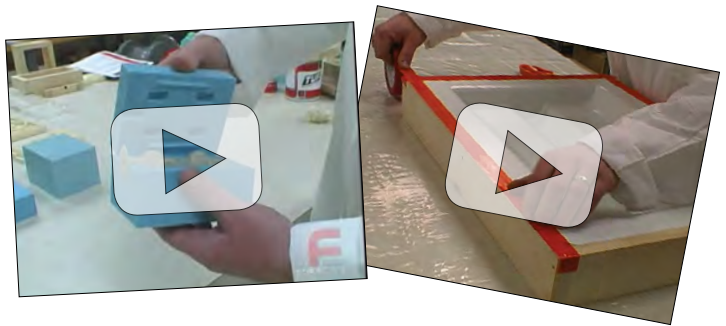
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1Z4720310358314894	Completed

*Keep track of your order from start to finish*



Description	Unit Price	Total
Repro 83 Blue Gal Unit	\$82.62	\$82.62
	Sub Total	\$82.62

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