

PENTALAM PANELS



Pentalam Panels PLP were introduced by Foard Panel to meet the architecture community's desire for thinner eave and rake profiles. These panels allow for a very thick profile roof panel to become thinner for the exterior eave and rake overhangs. While only the perimeter panels need be Pentalam, the connection point between Pentalams and the main roof still has to be far enough from the eave to provide sufficient back span (2:1 back span to overhang).

Interior, Middle, and Exterior Skins:

7/16" thick HUD-PS2-grade Oriented Strand Board (OSB)

Core Materials:

EPS: Expanded Polystyrene, 1.0 lb/cuft, 1 in. is R-3.8

NEO: Neopor Polystyrene, 1.15 lb/cuft, 1 in. is R-4.7

PIR: Polyisocyanurate foam, 2.0 lb/cuft, 1 in. is R-5.7

* PIR is used in combination with EPS or NEO, because of limited thickness options PIR.

Features:

Reduces Heating and Cooling Costs

Fast Installation Reduces Labor Costs

Uses Renewable Wood

Recycled / Recyclable Foam Insulation

Availability:

8.25 through 25.0 inches thick

(Depending on Core types)

4ft by 6, 7, 8, 9, 10, 12, 14, & 16ft

Optional pre-cut services

Optional embedded nailers

Optional wire chases

Optional custom skins

Optional Code Listing

Manufacturing & Quality Control:

Foard Panel manufacturing meets ICC-ES AC-10.

Independent review and approval of procedures and plant operations by registered, third party, ISO Guide 65/17065:2012 accredited inspection agency.

Regular SIP Panel

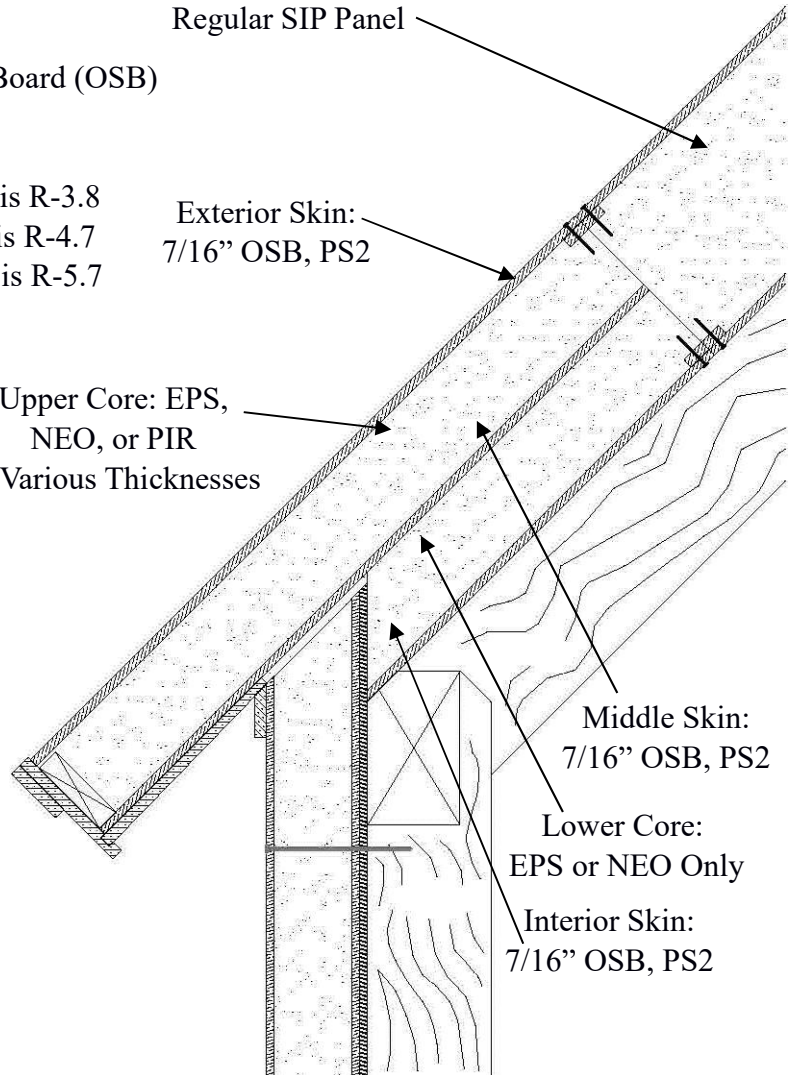
Exterior Skin:
7/16" OSB, PS2

Upper Core: EPS,
NEO, or PIR
In Various Thicknesses

Middle Skin:
7/16" OSB, PS2

Lower Core:
EPS or NEO Only

Interior Skin:
7/16" OSB, PS2



20 Year Limited Warranty:

Foard Panel Inc. warrants to the buyer that Foard Panels will not delaminate in normal use as the result of a defect in materials or manufacturing for 20 years from the date of purchase. See full warranty for details.

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SIP Properties at Standard Thicknesses

Overall Thickness (in)	2.88	4.50	6.50	8.25	10.25	10.50	12.25	12.88	15.00	16.00	17.00	19.00	25.00	
Core Thickness (in)	2.00	3.63	5.63	7.38	9.38	9.63	11.38	11.88	14.13	15.13	16.13	17.13	24.13	
EPS	R-Value @75°	7.5	14	22	28	36	37	44	46	54	58	62	70	93
	R-Value @40°	8.1	15	23	31	39	40	47	50	59	63	67	76	101
	Permeance (perm)	0.55	0.47	0.39	0.35	0.30	0.30	0.27	0.26	0.24	0.23	0.22	0.20	0.16
	Weight (lb/sqft)	4.3	4.5	4.6	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.7	6.2
	Size Availability 4ft Widths	4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, and 24ft												
	Size Availability 8ft Widths	8, 10, 12, 14, 16, 18, 20, and 24ft												
NEO	R-Value @75°	8.9	17	26	34	44	45	53	56	66	71	75	85	113
	R-Value @40°	9.3	17	27	36	46	47	56	59	70	75	80	90	120
	Permeance (perm)	0.50	0.40	0.32	0.27	0.23	0.22	0.20	0.19	0.17	0.16	0.15	0.14	0.11
	Weight (lb/sqft)	4.4	4.7	5.0	5.2	5.5	5.6	5.8	5.9	6.3	6.4	6.6	6.9	7.8
	Size Availability 4ft Widths	4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, and 24ft												
	Size Availability 8ft Widths	8, 10, 12, 14, 16, 18, 20, and 24ft												
PIR	R-Value	PIR used in combination with EPS or NEO so R-values is based on custom configuration												
	Permeance (perm)	PIR used in combination with EPS or NEO so permeance is based on custom configuration												
	Weight (lb/sqft)	4.5	4.7	5.1	5.4	5.7	-	6.0	-	-	-	-	-	-
	Size Availability 4ft Widths	4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, and 24ft												
	Size Availability 8ft Widths	8, 10, 12, 14, 16, 18, 20, and 24ft												

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Foam Core Properties

		Test Method	EPS	NEO	PIR
General	Density (lb/cuft)	ASTM D1622 or C303	1.0	1.15 ¹	2.0
	Dimensional Stability (% Change)	ASTM D2126	2 ²	<1.5 ¹	2 ⁴
	Max. Custom SIP Thickness (in.)	-	25.00	25.00	12.25
Thermal	R-Value of 1 inch thickness (75 °F)	ASTM C518	3.8 ^{2,3}	4.7 ¹	5.7 ⁴
	R-Value of 1 inch thickness (40 °F)	ASTM C518 or C578	4.2 ^{2,3}	5.0 ¹	-
	U-Value of 1 inch thickness (75 °F)	ASTM C518	0.26 ^{2,3}	0.21	0.17
	U-Value of 1 inch thickness (40 °F)	ASTM C518 or C578	0.24 ^{2,3}	0.20	-
Strength	Compressive 10% Deformation (lbs/sqin)	ASTM D1621 or C165	10 ^{2,3}	14 ¹	20 ⁴
	Permeability (perm inches)	ASTM E96	5.0 ^{2,3}	3.1 ¹	<1.0 ⁴
	Absorption (% volume)	ASTM C272	4.0 ²	1.1 ¹	<1.0 ⁴
	Application Limiting Temperature (°F)	ASTM D3278	167 ^{2,3}	165 ¹	250 ⁴
Fire Characteristics	Rating	-	Class I	Class I	Class I
	Smoke Developed	E84	450 ²	25 ¹	220 ⁵
	Flame Spread	E84	25 ²	5 ¹	50 ⁵
	Toxicity of Combustion Products	Same as wood or Cardboard			

¹ Opcore G Thermal Insulation, NEO 5300plus from opcodirect.com/library accessed 7/22/2020

https://7b3594cf-cefc-42f2-baa2-29e9e14e3022.filesusr.com/ugd/1c896f_023e9eff61ce41078ace42059431c500.pdf

² Opcore Thermal Insulation, EPS from opcodirect.com accessed 7/22/2020

https://7b3594cf-cefc-42f2-baa2-29e9e14e3022.filesusr.com/ugd/1c896f_b44302207ddf4a52b4b47377df847924.pdf

³ Polar Industries, EPS Data Sheet from polarcentral.com/knowledge-base accessed 7/22/2020

<http://polarcentral.com/wp-content/uploads/2016/09/Polar-EPS-Properties.pdf>

⁴ Hunter Panel H-Shield Data Sheet (April 2020)

<https://www.hunterpanels.com/docman-categories/product-documents/hpanels/flat-products/39-h-shield-flat-polyiso>

⁵ Hunter Panel Technical Department, October 31, 2014