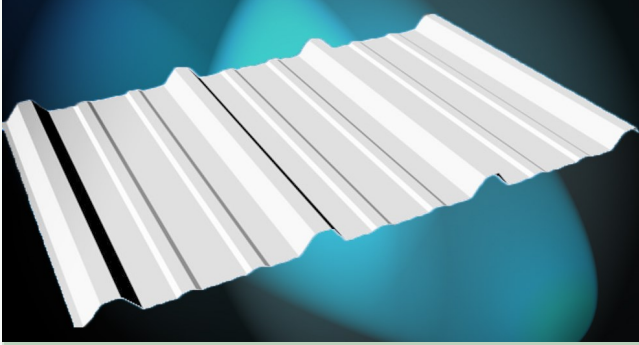


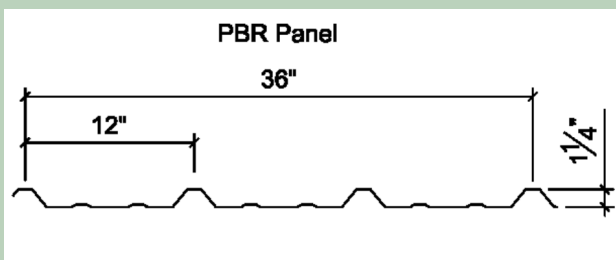
## PBR ROOF SYSTEM



Metal roof systems are an exceptional choice for your next roof. These systems:

- can be used in either new construction or current roof replacement.
- provide years of excellent weather resistance if installed properly.
- are virtually maintenance-free.
- provide an architectural detail not available with traditional roofs.
- are weather resistant.

The **PBR Metal Roof System** by Horizon Structural System, Inc. is one of several roofing options available from Horizon Structural Systems, Inc. Although similar in appearance, each metal roofing system has differing performance specifications. The **PBR Metal Roof System** may be the perfect choice for your next roof project.



Section Properties									
Panel Gauge	Fy	Fu	Weight	Negative Bending			Positive Bending		
	ksi	ksi		Ixe	Sxe	Maxo	Ixe	Sxe	Maxo
	ksi	psf	(in <sup>4</sup> /ft)	(in <sup>3</sup> /ft)	kip-in	(in <sup>4</sup> /ft)	(in <sup>3</sup> /ft)	kip-in	
26	60*	61.5*	0.83	0.0346	0.0603	1.762	0.0403	0.0401	1.504
24	50	65.0	1.11	0.0476	0.0920	1.896	0.0593	0.0610	1.826
22	50	65.0	1.33	0.0566	0.1145	2.183	0.0733	0.0778	2.330

\* = Fy is 80 ksi, Fu is 82 ksi reduced to Fy = 60 ksi, Fu = 61.5 ksi in accordance with the 2010 North American Specification for Cold-Formed Steel Structural Members Section A2.3.2.

**Notes:**

1. All calculations for section properties of PBR panels are calculated in accordance with the 2012 edition North American Specification for Cold-Formed Steel Structural Members.
2. Ixe is for deflection calculation.
3. Sxe is for bending calculation.
4. Maxo is for allowable bending moment calculation.
5. All values are for one foot of panel width.

### PBR ALLOWABLE GRAVITY LOADS

26 gauge (Fy = 50 ksi) #12-14 Fasteners on 12" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	514.9	257.9	123.6	69.9	45.0	31.5	23.4	17.4	12.5
	Live Load/Deflection	361.4	180.3	99.8	55.8	35.4	24.3	17.7	13.3	10.4
2-Span	Negative Wind Load	206.5	103.6	69.4	52.2	35.8	25.4	19.0	14.8	11.9
	Live Load/Deflection	482.1	213.9	107.2	63.2	41.2	28.8	21.1	16.1	12.6
3-Span	Negative Wind Load	234.5	117.7	78.7	53.1	34.3	23.8	17.4	13.1	10.2
	Live Load/Deflection	451.9	217.4	108.2	63.6	41.4	28.9	21.2	16.1	12.6

26 gauge (Fy = 60 ksi) #12-14 Fasteners on 6" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	1029.0	277.2	123.6	69.9	45.0	31.5	23.4	17.4	12.5
	Live Load/Deflection	361.4	180.3	99.8	55.8	35.4	24.3	17.7	13.3	10.4
2-Span	Negative Wind Load	412.1	189.5	92.9	54.6	35.8	25.4	19.0	14.8	11.9
	Live Load/Deflection	482.1	213.9	107.2	63.2	41.2	28.8	21.1	16.1	12.6
3-Span	Negative Wind Load	468.1	220.6	110.3	64.9	42.3	29.6	21.7	16.5	12.9
	Live Load/Deflection	451.9	225.5	128.0	76.8	50.7	35.7	26.3	20.1	15.8

24 gauge (Fy = 50 ksi) #12-14 Fasteners on 12" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	515.1	258.1	142.1	80.4	51.9	36.4	27.0	20.9	16.8
	Live Load/Deflection	517.0	258.0	134.9	75.4	47.9	32.9	23.9	18.0	14.0
2-Span	Negative Wind Load	206.7	103.9	69.6	52.5	42.2	34.7	25.9	20.1	16.2
	Live Load/Deflection	689.7	286.2	133.5	76.1	48.8	33.7	24.6	18.6	14.5
3-Span	Negative Wind Load	234.7	117.9	79.0	59.5	47.1	32.6	23.7	17.9	13.9
	Live Load/Deflection	646.5	288.2	133.9	76.3	48.8	33.7	24.6	18.6	14.5

24 gauge (Fy = 50 ksi) #12-14 Fasteners on 6" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	1029.1	318.3	142.1	80.4	51.9	36.4	27.0	20.9	16.8
	Live Load/Deflection	517.0	258.0	134.9	75.4	47.9	32.9	23.9	18.0	14.0
2-Span	Negative Wind Load	412.3	206.7	131.4	75.8	49.3	34.7	25.9	20.1	16.2
	Live Load/Deflection	689.7	286.2	133.5	76.1	48.8	33.7	24.6	18.6	14.5
3-Span	Negative Wind Load	468.3	234.7	129.6	73.7	47.1	32.6	23.7	17.9	13.9
	Live Load/Deflection	646.5	288.2	133.9	76.3	48.8	33.7	24.6	18.6	14.5

**Notes:**

1. Allowable loads are based on uniform span length and load distribution.
2. Allowable gravity loads is limited by bending, shear or deflection.
3. Allowable gravity load is computed for a maximum total load deflection of L/60.
4. Negative wind load does not include a 33.33% increase.
5. The weight of the panels has already been deducted from the allowable loads shown above.
6. This material is subject to change without notice.
7. This material has been developed in accordance with the 2012 North American Specification for Cold-Formed Structural Steel Members.

\*Twenty-two gauge panel and Allowable Loads chart are also available.\*

### Horizon Structural Systems PBR Panel Approvals

Texas Department of Insurance: EC-432 (26 & 24 Gauge)

### Underwriters Laboratories:

Construction Numbers: 552, 552A and 552B

Uplift UL 580 Class 90

Impact Resistant Class 4

External Fire Exposure Class A

## PBR ALLOWABLE TEXAS DEPARTMENT WIND UPLIFT AND WALL LOADS

Attachment of 26-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 5"-7"-5"

Attachment of Panel to Steel Purlin/Girts (Minimum 16 gauge)	Design Wind Pressure (psf)
5'-0" on center	-42.1
4'-6" on center	-70.1
4'-0" on center	-98.2
3'-6" on center	-126.3
3'-0" on center	-154.3
2'-6" on center	-182.4
2'-0" on center	-210.5

Attachment of 26-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 12"-12"-12"

Attachment of Panel to Steel Purlin/Girts (Minimum 16 gauge)	Design Wind Pressure (psf)
5'-0" on center	-36.9
4'-6" on center	-52.5
4'-0" on center	-68.1
3'-6" on center	-83.7
3'-0" on center	-99.3
2'-6" on center	-114.9
2'-0" on center	-130.5

Attachment of 24-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 5"-7"-5"

Attachment of Panel to Steel Purlin/Girts (Minimum 16 gauge)	Design Wind Pressure (psf)
5'-0" on center	-52.6
4'-6" on center	-77.4
4'-0" on center	-102.3
3'-6" on center	-127.1
3'-0" on center	-152.0
2'-6" on center	-176.8
2'-0" on center	-201.7

Attachment of 24-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 12"-12"-12"

Attachment of Panel to Steel Purlin/Girts (Minimum 16 gauge)	Design Wind Pressure (psf)
5'-0" on center	-31.7
4'-6" on center	-48.1
4'-0" on center	-64.6
3'-6" on center	-81.1
3'-0" on center	-97.6
2'-6" on center	-114.1
2'-0" on center	-130.6

### Physical Description

The PBR panels, designed for roof, exterior wall, soffit and liner panels, in architectural, commercial or industrial settings, consists of fastening the panel utilizing through panel fastening and side lap installation. The panel has 1 ¼" major ribs spaced at 12" o.c., with total coverage of 36". Panels are fabricated from 22, 24 or 26 gauge steel. Galvalume coated or painted sheets will provide a long-lasting weathering membrane and has a proven weather resistance in excess of 20 years.

### Application

Roof covering as well as interior and exterior wall covering for new projects or retrofit construction.

### Panel and Flashing Materials

The PBR panel is formed of 50,000 psi minimum yield strength. PBR panes are made of 26 gauge steel (80,000 psi) and 22 and 24 gauge steel, 50,000 psi minimum yield strength (ASTM A792, Grade 50, Class 1) coated with AZ55 aluminum/Zinc allow for unpainted finish.

The Flashing and trim will be 24 or 26 gauge steel 50,000 psi minimum yield strength (ASTM A792, SS grade 50, Class 1), coated with AZ50(minimum) aluminum/zinc allow for painted finish zinc or AZ55 aluminum zinc for unpainted finish.

### Fasteners

PBR panels may attach to secondary framing (purlins or girts) using self-drilling steel screws, #12 x 1 ¼" hex head w/sealing washer. PBR panels attaching to wood decking use #10 hex head, wood grip w/washers. Fasteners available for use with up to 8" of blanket insulation. PBR stitch screws, screws at side laps, are #14 self drilling screws w/sealing washers.

### Sealants

All sealants are a 100% solids, asbestos-free butyl ape sealant that is highly rubbery, tacky, reinforced compound designed for sealing metal lap joints. Application temperatures of the sealant is -5 F to 120 F and service temperatures from -40 F to 200 F.

### Finishes

PBR panels are available in Silicon Polyester and Flouro-polymer Kynar 500 colors. All ACI 2000 and ACI 3000 KYNAR finishes are provided by VALSPAR and come with extended finish warranties. Upon request, Energy Star LEED, and material safety documentation are available.

### Maintenance

Routine maintenance is required to maximize the life expectancy of the panel. Routine inspections of the roof, walls, flashings, gutter and fasteners insure that the investment will maximize performance of all new products.

### Test Data

The PBR panel has been tested to ASTM E1592.

### Warranty

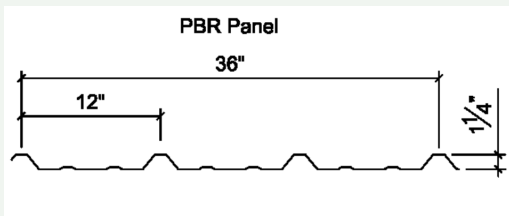
Up to 20-year material and paint finish warranty information available upon request. No weather-tightness warranty available.

### Product notes

"Oil-canning," slight waviness inherent in light gauge metal may exist in this panel. This minor waviness does not affect the finish or structural integrity of the panel and is therefore not a cause for rejection.

UL construction number: 30,79,161,167

*Galvalume is an internationally recognized trademark of BIEC international Inc. and its licensed products.*



Section Properties									
Panel Gauge	Fy	Fu	Weight	Negative Bending			Positive Bending		
				Ixe	Sxe	Maxo	Ixe	Sxe	Maxo
				(in <sup>4</sup> /ft)	(in <sup>3</sup> /ft)	kip-in	(in <sup>4</sup> /ft)	(in <sup>3</sup> /ft)	kip-in
26	60*	61.5*	0.83	0.0346	0.0603	1.762	0.0403	0.0401	1.504
24	50	65.0	1.11	0.0476	0.0920	1.896	0.0593	0.0610	1.826
22	50	65.0	1.33	0.0566	0.1145	2.183	0.0733	0.0778	2.330

## PBR ALLOWABLE GRAVITY LOADS (22 Gauge)

22 gauge (Fy = 50 ksi) #12-14 Fasteners on 12" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	515.3	258.3	171.0	96.7	62.4	43.7	32.5	25.2	20.2
	Live Load/Deflection	713.7	356.2	176.4	98.7	62.7	43.1	31.3	23.7	18.4
2-Span	Negative Wind Load	206.9	104.1	69.9	52.7	42.5	35.6	30.7	26.2	21.0
	Live Load/Deflection	952.1	353.5	162.7	92.3	59.0	40.7	29.6	22.4	17.4
3-Span	Negative Wind Load	234.9	118.1	79.2	59.7	48.1	40.3	31.1	23.5	18.3
	Live Load/Deflection	892.5	355.4	163.1	92.4	59.0	40.7	29.6	22.4	17.5

22 gauge (Fy = 50 ksi) #12-14 Fasteners on 6" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	1029.3	383.0	171.0	96.7	62.4	43.7	32.5	25.2	20.2
	Live Load/Deflection	713.7	356.2	176.4	98.7	62.7	43.1	31.3	23.7	18.4
2-Span	Negative Wind Load	412.5	206.9	138.4	99.2	64.5	45.4	33.8	26.2	21.0
	Live Load/Deflection	952.1	353.5	162.7	92.3	59.0	40.7	29.6	22.4	17.4
3-Span	Negative Wind Load	468.6	234.9	157.1	96.7	61.9	42.7	31.1	23.5	18.3
	Live Load/Deflection	892.5	355.4	163.1	92.4	59.0	40.7	29.6	22.4	17.5

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Up to 20-year material and paint finish warranty information available upon request. No weather-tightness warranty available.

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