



PBR & PBU PANELS

Technical/Installation Information

IMPORTANT NOTICE

READ THIS MANUAL COMPLETELY PRIOR TO BEGINNING THE INSTALLATION OF THE Retro-R® PANELS. THE MANUFACTURER DETAILS MUST BE FOLLOWED AS A MINIMUM TO INSURE APPROPRIATE WARRANTIES WILL BE ISSUED.

ALWAYS INSPECT EACH AND EVERY PANEL AND ALL ACCESSORIES BEFORE INSTALLATION. NEVER INSTALL ANY PRODUCT IF ITS QUALITY IS IN QUESTION. NOTIFY MBCI IMMEDIATELY IF ANY PRODUCT IS BELIEVED TO BE OUT OF TOLERANCE, SPECIFICATION OR HAS BEEN DAMAGED DURING SHIPMENT.

IF THERE IS A CONFLICT BETWEEN PROJECT INSTALLATION DRAWINGS PROVIDED OR APPROVED BY THE MANUFACTURER AND DETAILS IN THIS MANUAL, PROJECT INSTALLATION DRAWINGS WILL TAKE PRECEDENCE.

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The Engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.

Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, MBCI reserves the right to discontinue products at any time or change specifications and/or designs without incurring obligations. To ensure you have the latest information available, please inquire or visit our website at www.mbc.com. Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs, or panel profiles. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices. Insulation is not shown in these details for clarity.

For complete performance specifications, product limitations, and disclaimers, please consult MBCI's Paint and Galvalume Plus® warranties. Upon receipt of payment in full, these warranties are available upon request for all painted or Galvalume Plus® prime products. Sample copies can be found at www.mbc.com or contact your local MBCI Sales Representative.

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PRODUCT INFORMATION

ARCHITECT/ENGINEER INFORMATION

1. PBR panel is a structural roof and wall panel. This panel can be installed directly over purlins or joists. Several different UL 90 construction numbers are available for this panel.
2. PBR panel is recommended for ½:12 or greater roof slopes.
3. Field applied tape sealant is required at panel sidelaps and endlaps.
4. PBR panel is a through-fastened panel. For proper fastener application, see page 9 and page 10.
5. The information in this manual is believed to be correct and accurate. It should not be used for any specific application without being reviewed by a registered professional engineer.
6. Galvalume material must not come in contact with concrete or pressure treated lumber.

FACTORY MUTUAL APPROVALS

RATING	PROFILE	WIDTH (IN)	GAUGE	PURLIN SPACING	PURLIN GA.	FASTENER TYPE	NUMBER OF FASTENERS	STITCH FASTENER	STITCH FASTENER SPACING
1-135	PBR1	36	24	5'-3 1/4"	16	1/4-14 X 1 1/4 ZAC3	3	1/4-14 X 7/8 ZAC11	20" o.c.
1-165	PBR1	36	24	5'-3 1/4"	16	1/4-14 X 1 1/4 ZAC3	6	1/4-14 X 7/8 ZAC11	20" o.c.

NOTES:

¹ All roofs are Class 4471.

³ Fastener #1E.

¹¹ Fastener #4.

State of Florida Approval Numbers: FL1904.2 (roof), FL4191.3 (wall), FL5222 (light transmitting panels).

Miami Dade County NOA: 02.1016.04 (roof), 01.0417.12 (wall), see special installation instructions, www.miamidade.gov

PRODUCT INFORMATION

UL 90 REQUIREMENTS PBR PANEL

Construction #30

26 MSG Min. Gauge PBR Panel over Purlins at 5'- 0 ¼" O.C.

1. **For Class 90** - Panel to purlin connections to be #14 Hex Head with a 5/8" O.D. washer in a 4-8-4-8 in. pattern. Panel to panel connection to be 20" O.C. with fastener located over each purlin.
2. **Purlins** - No. 14 MSG min. gauge steel, (55,000 psi min. yield strength.)

Construction #79

26 MSG Min. Gauge PBR Panel over Purlins at 5'- 0 ¼" O.C.

1. **Panel Fasteners** - Panel to purlin connections to be #14 Hex Head with a 5/8" O.D. washer, 6" O.C. in 5-7-5-7 in. pattern. Endlap spacing to be 6 in. O.C. Spacing for panel to panel connection to be 20" O.C.
2. **Purlins** - No. 16 MSG min. gauge steel. (55,000 psi min. yield strength); or min. H series open web steel joists.

Construction #161

26 MSG Min. Gauge PBR Panel over Purlins at 5'- 0 ¼" O.C.

1. **Panel Fasteners** - Panel to purlin connections to be 12-14 x 1" self-drilling Hex Head with a 5/8" O.D. washer, 12" O.C. Spacing at endlap to be in a 5-7-5-7 in. patterns. Spacing for panel to panel connection to be 20" O.C. with a fastener located over each purlin.
2. **Purlins** - No. 14 MSG min. gauge steel, (55,000 psi min. yield strength.)

Construction #542

26 MSG Min. Gauge PBR Panel over Purlins at 5'- 0 3/16" O.C.

1. **Panel Fasteners** - Panel to purlin connections to be 12-14x1" self-drilling Hex Head with a 5/8" O.D. washer, 12" O.C. Spacing at endlap to be in a 5-7-5-7 in. pattern. Spacing for panel to panel connection to be 20" O.C. with a fastener located over each purlin.
2. **Building Units** - Translucent Panels.
3. **Translucent Panel Rib and Purlin Reinforcement** - See UL 90 light transmitting panel installation instructions.
4. **Purlins** - No. 16 MSG min. gauge steel. (55,000 psi min. yield strength).

IMPACT RESISTANCE

PBU panels carry a Class 4 rating under UL-2218 "Test Standard For Impact Resistance"

FIRE RESISTANCE RATING

1. Deck: NC

Class A

Incline: Unlimited

The panel qualifies for a Class A Fire Rating in compliance with Underwriters Laboratories Standard UL-263 when installed over a non-combustible substrate. A Class C Fire Rating will be qualified for over a combustible substrate.

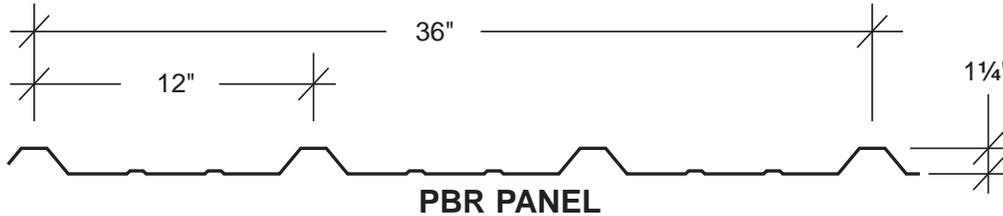
Look for classification marking on product.

CAUTION

The above listings are summaries of Construction Numbers. For UL 90 rated roof requirements and complete design information, see the Underwriters Laboratories Building Materials Directory. If you have any questions, call MBCI before proceeding.

PRODUCT INFORMATION

GENERAL DESCRIPTION



Coverage Width - 36"

Minimum Slope - 1/2:12

Panel Attachment - See page 8

Panel Substrate - Galvalume®

Gauge - 26 standard - 29, 24 and 22 also available

Coatings - Galvalume Plus® , Signature® 200* and Signature® 300*

PRODUCT SELECTION CHART

GAUGE	GALVALUME PLUS®	SIGNATURE® 200*	SIGNATURE® 300*
22 gauge	●	■	■
24 gauge	●	■	■
26 gauge	●	●	●
29 gauge	●	●	■

● - Available in any quantity.

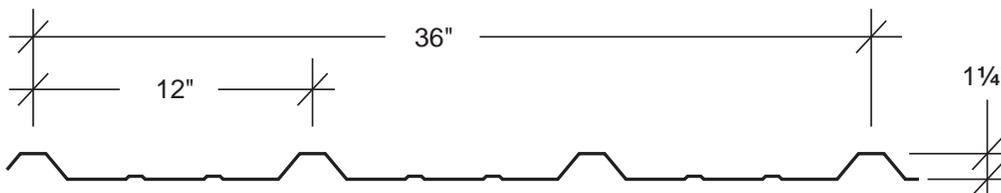
■ - Minimum quantity may be required.

*See Commercial/Industrial color chart for available colors.

Signature is a registered trademark of Metal Building Components, L.P. Galvalume Plus is a registered and protected trademark of BIEC International, Inc. ❖ The Galvalume Plus® coating is subject to variances in spangle from coil to coil which may result in noticeable shade variation in installed panels. The Galvalume Plus® coating is also subject to differential weathering after panel installation. Panels may appear to be different shades due to this weathering characteristic. If a consistent appearance is required, MBCI recommends that pre-painted panels be used in lieu of Galvalume Plus®. Shade variation in panels manufactured from Galvalume Plus® coated material do not diminish the structural integrity of the product. These shade variations should be anticipated and are not a cause for rejection.

PRODUCT INFORMATION

PBR PANEL



SECTION PROPERTIES

PANEL	Fy	WEIGHT	NEGATIVE BENDING			POSITIVE BENDING		
			I _{xe}	S _{xe}	Maxo	I _{xe}	S _{xe}	Maxo
GAUGE	(KSI)	(PSF)	(IN.4/FT.)	(IN.3/FT.)	(KIP-IN.)	(IN.4/FT.)	(IN.3/FT.)	(KIP-IN.)
29	60*	0.75	0.0215	0.0325	1.2656	0.0238	0.0230	0.9859
26	60*	0.94	0.0309	0.0449	1.8019	0.0382	0.0381	1.6759
24	50	1.14	0.0420	0.0570	1.7060	0.0551	0.0567	1.6968
22	50	1.44	0.0567	0.0739	2.2119	0.0754	0.0787	2.3553

* Fy is 80-ksi reduced to 60-ksi in accordance with the 2012 edition of the North American Specification For Design Of Cold-Formed Steel Structural Members - A2.3.2.

NOTES:

1. All calculations for the properties of PBR Roof panels are calculated in accordance with the 2012 edition of the North American Specification For Design Of Cold-Formed Steel Structural Members.
2. I_{xe} is for deflection determination.
3. S_{xe} is for bending.
4. Maxo is allowable bending moment.
5. All values are for one foot of panel width.

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PRODUCT INFORMATION

PBR ROOF PANEL ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

29 Gauge (0.0133"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	93.75	52.73	33.75	23.44	17.22	13.18	10.42
	LIVE LOAD/DEFLECTION	67.01	32.53	16.66	9.64	6.07	4.07	2.86
2-span	NEGATIVE WIND LOAD	61.91	37.19	24.61	17.42	12.96	10.00	7.94
	LIVE LOAD/DEFLECTION	70.40	45.18	30.41	21.75	16.28	12.62	9.40
3-span	NEGATIVE WIND LOAD	73.01	44.74	29.96	21.37	15.96	12.36	9.84
	LIVE LOAD/DEFLECTION	80.00	53.43	36.52	22.73	14.32	9.59	6.74
4-span	NEGATIVE WIND LOAD	69.51	42.31	28.22	20.08	14.97	11.58	9.21
	LIVE LOAD/DEFLECTION	77.00	50.82	34.56	24.74	15.58	10.44	7.33

26 Gauge (0.0181"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	133.48	75.08	48.05	33.37	24.52	18.77	14.83
	LIVE LOAD/DEFLECTION	119.08	52.22	26.74	15.47	9.74	6.53	4.58
2-span	NEGATIVE WIND LOAD	114.41	66.59	43.33	30.37	22.44	17.24	13.66
	LIVE LOAD/DEFLECTION	105.60	71.09	46.37	32.55	24.07	18.51	13.88
3-span	NEGATIVE WIND LOAD	138.49	81.62	53.46	37.61	27.86	21.44	17.00
	LIVE LOAD/DEFLECTION	120.00	86.91	57.11	34.86	21.95	14.71	10.33
4-span	NEGATIVE WIND LOAD	130.70	76.70	50.12	35.22	26.06	20.05	15.89
	LIVE LOAD/DEFLECTION	115.50	81.75	53.58	37.71	23.77	15.93	11.18

24 Gauge (0.0223"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	126.37	71.08	45.49	31.59	23.21	17.77	14.04
	LIVE LOAD/DEFLECTION	125.69	70.70	38.51	22.28	14.03	9.40	6.60
2-span	NEGATIVE WIND LOAD	120.59	69.04	44.56	31.09	22.91	17.57	13.90
	LIVE LOAD/DEFLECTION	117.33	69.40	44.80	31.25	23.03	17.66	13.97
3-span	NEGATIVE WIND LOAD	148.17	85.44	55.34	38.68	28.53	21.90	17.34
	LIVE LOAD/DEFLECTION	133.33	85.87	55.62	38.89	28.68	19.34	13.58
4-span	NEGATIVE WIND LOAD	139.13	80.03	51.77	36.16	26.66	20.46	16.19
	LIVE LOAD/DEFLECTION	128.33	80.43	52.04	36.35	26.81	20.57	14.45

22 Gauge (0.0286"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	163.85	92.16	58.98	40.96	30.09	23.04	18.21
	LIVE LOAD/DEFLECTION	174.46	98.14	52.70	30.50	19.21	12.87	9.04
2-span	NEGATIVE WIND LOAD	168.30	96.14	61.98	43.21	31.83	24.41	19.31
	LIVE LOAD/DEFLECTION	158.71	90.50	58.30	40.63	29.91	22.94	18.14
3-span	NEGATIVE WIND LOAD	207.24	119.12	77.03	53.80	39.67	30.44	24.09
	LIVE LOAD/DEFLECTION	195.75	112.25	72.50	50.61	37.24	24.95	17.52
4-span	NEGATIVE WIND LOAD	194.44	111.53	72.04	50.29	37.06	28.43	22.50
	LIVE LOAD/DEFLECTION	183.56	105.06	67.79	47.29	34.84	26.54	18.64

Notes:

- Strength calculations based on the 2012 AISI Standard "North American Specification for the Design of Cold-formed Steel Structural Members.
- Allowable loads are applicable for uniform loading and spans without overhangs
- LIVE LOAD/DEFLECTION load capacities are for those loads that push the panel against its supports. The applicable limit states are flexure shear, combined shear and flexure, web crippling at end and interior supports, and a deflection limit of L/180 under strength-level loads
- NEGATIVE WIND LOAD capacities are for those loads that pull the panel away from its supports. The applicable limit states are flexure shear, combined shear and flexure, and a deflection limit of L/60 under 10-year wind loading
- Panel pullover and Screw pullout capacity must be checked separately using the screws employed for each particular application when utilizing this load chart.
- Effective yield strength has been determined in accordance with section A2.3.2 of the 2012 NAS specification.
- The use of any accessories other than those provided by the manufacturer may damage panels, void all warranties and will void all engineering data.
- This material is subject to change without notice. Please contact MBCI for most current data

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PRODUCT INFORMATION

PBR WALL PANEL ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

29 Gauge (0.0133"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	93.75	52.73	33.75	23.44	17.22	13.18	10.42
	LIVE LOAD/DEFLECTION	67.01	41.08	26.29	18.26	13.41	10.27	8.11
2-span	NEGATIVE WIND LOAD	61.91	37.19	24.61	17.42	12.96	10.00	7.94
	LIVE LOAD/DEFLECTION	70.40	45.18	30.41	21.75	16.28	12.62	10.06
3-span	NEGATIVE WIND LOAD	73.01	44.74	29.96	21.37	15.96	12.36	9.84
	LIVE LOAD/DEFLECTION	80.00	53.43	36.52	26.39	19.89	15.50	12.40
4-span	NEGATIVE WIND LOAD	69.51	42.31	28.22	20.08	14.97	11.58	9.21
	LIVE LOAD/DEFLECTION	77.00	50.82	34.56	24.89	18.72	14.56	11.63

26 Gauge (0.0181"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	133.48	75.08	48.05	33.37	24.52	18.77	14.83
	LIVE LOAD/DEFLECTION	119.08	69.83	44.69	31.04	22.80	17.46	13.79
2-span	NEGATIVE WIND LOAD	114.41	66.59	43.33	30.37	22.44	17.24	13.66
	LIVE LOAD/DEFLECTION	105.60	71.09	46.37	32.55	24.07	18.51	14.66
3-span	NEGATIVE WIND LOAD	138.49	81.62	53.46	37.61	27.86	21.44	17.00
	LIVE LOAD/DEFLECTION	120.00	86.91	57.11	40.25	29.85	22.99	18.24
4-span	NEGATIVE WIND LOAD	130.70	76.70	50.12	35.22	26.06	20.05	15.89
	LIVE LOAD/DEFLECTION	115.50	81.75	53.58	37.71	27.93	21.50	17.05

24 Gauge (0.0223"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	126.37	71.08	45.49	31.59	23.21	17.77	14.04
	LIVE LOAD/DEFLECTION	125.69	70.70	45.25	31.42	23.09	17.68	13.97
2-span	NEGATIVE WIND LOAD	120.59	69.04	44.56	31.09	22.91	17.57	13.90
	LIVE LOAD/DEFLECTION	117.33	69.40	44.80	31.25	23.03	17.66	13.97
3-span	NEGATIVE WIND LOAD	148.17	85.44	55.34	38.68	28.53	21.90	17.34
	LIVE LOAD/DEFLECTION	133.33	85.87	55.62	38.89	28.68	22.02	17.43
4-span	NEGATIVE WIND LOAD	139.13	80.03	51.77	36.16	26.66	20.46	16.19
	LIVE LOAD/DEFLECTION	128.33	80.43	52.04	36.35	26.81	20.57	16.28

22 Gauge (0.0286"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	163.85	92.16	58.98	40.96	30.09	23.04	18.21
	LIVE LOAD/DEFLECTION	174.46	98.14	62.81	43.62	32.04	24.53	19.38
2-span	NEGATIVE WIND LOAD	168.30	96.14	61.98	43.21	31.83	24.41	19.31
	LIVE LOAD/DEFLECTION	158.71	90.50	58.30	40.63	29.91	22.94	18.14
3-span	NEGATIVE WIND LOAD	207.24	119.12	77.03	53.80	39.67	30.44	24.09
	LIVE LOAD/DEFLECTION	195.75	112.25	72.50	50.61	37.29	28.61	22.64
4-span	NEGATIVE WIND LOAD	194.44	111.53	72.04	50.29	37.06	28.43	22.50
	LIVE LOAD/DEFLECTION	183.56	105.06	67.79	47.29	34.84	26.72	21.14

Notes:

- Strength calculations based on the 2012 AISI Standard "North American Specification for the Design of Cold-formed Steel Structural Members.
- Allowable loads are applicable for uniform loading and spans without overhangs
- LIVE LOAD/DEFLECTION load capacities are for those loads that push the panel against its supports. The applicable limit states are flexure shear, combined shear and flexure, web crippling at end and interior supports, and a deflection limit of L/60 under 10-year wind loading
- NEGATIVE WIND LOAD capacities are for those loads that pull the panel away from its supports. The applicable limit states are flexure shear, combined shear and flexure, and a deflection limit of L/60 under 10-year wind loading
- Panel pullover and Screw pullout capacity must be checked separately using the screws employed for each particular application when utilizing this load chart.
- Effective yield strength has been determined in accordance with section A2.3.2 of the 2012 NAS specification.
- The use of any accessories other than those provided by the manufacturer may damage panels, void all warranties and will void all engineering data
- This material is subject to change without notice. Please contact MBCI for most current data

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PRODUCT INFORMATION

PRODUCT CHECKLIST

<p>Inside Corner Trim</p> <p>COLOR</p> <p>FL-800 <input type="checkbox"/></p>	<p>Downspouts</p> <p>FL-31 - Straight <input type="checkbox"/></p> <p>FL-31A - With Kick-Out <input type="checkbox"/></p>	<p>Corner Trim - Outside</p> <p>COLOR</p> <p>FL-830 <input type="checkbox"/></p>
<p>Base Trim (With Sheeting Notch)</p> <p>COLOR</p> <p>FL-72 <input type="checkbox"/></p>	<p>Base Trim (Without Sheeting Notch)</p> <p>COLOR</p> <p>FL-530 <input type="checkbox"/></p>	<p>Jamb Trim</p> <p>COLOR</p> <p>FL-23 <input type="checkbox"/></p>
<p>Fasteners</p> <p>#17A 12-14 X 1 1/4" Driller <input type="checkbox"/></p> <p>#12A 12-14 x 1" Pancake Head Driller <input type="checkbox"/></p> <p>#3 12-14 X 1 1/4" Long Life Driller <input type="checkbox"/></p> <p>#4 1/4"-14 X 7/8" Long Life Lap Tek <input type="checkbox"/></p> <p>#43L 1/4"-14 X 1 1/4" Long Life Driller with 1 1/8" O.D. washer <input type="checkbox"/></p> <p>#44L 1/4"-14 X 7/8" Long Life Lap Tek with 1 1/8" O.D. Washer <input type="checkbox"/></p> <p>#14 1/8 X 3/16" Stainless Steel Pop Rivet <input type="checkbox"/></p>	<p>LTP</p> <p>High Strength Fiberglass <input type="checkbox"/></p> <p>High Strength Fiberglass <input type="checkbox"/></p> <p>U.V. Resistant</p>	<p>Head Trim</p> <p>COLOR</p> <p>FL-26 <input type="checkbox"/></p>
	<p>Sealant</p> <p> 1/2" X 3/32" HW-507 <input type="checkbox"/></p> <p> 1" X 3/32" HW-506 <input type="checkbox"/></p> <p> Triple Bead HW-502 <input type="checkbox"/></p> <p> URETHANE SEALANT 11 OZ.</p> <p>Color Part No.</p> <p>White HW-540 <input type="checkbox"/></p> <p>Gray HW-540 <input type="checkbox"/></p> <p>Almond HW-540 <input type="checkbox"/></p> <p>Bronze HW-540 <input type="checkbox"/></p> <p>NOTE: 25' Per tube at 1/4" bead</p>	<p>Closures</p> <p>HW-455 <input type="checkbox"/></p> <p>Inside </p> <p>Outside </p> <p>HW-456 <input type="checkbox"/></p> <p>Beveled Inside* </p> <p>Beveled Outside* </p> <p>*Special order - requires two-week lead time</p>

Note: It is the users responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railings, or other acceptable safety controls that prevent fall-through.

PRODUCT INFORMATION

PBR PANEL FASTENER LOCATIONS



NOTES:

1. The PBR panel has an unsymmetrical purlin bearing side lap leg. Panel side lap with extended foot to bear on frame. However, where possible, the panel should be lapped against prevailing wind.
2. The above are typical fastener spacings. However, they may not be appropriate for all applications. Consult a professional engineer for use on any specific application.
3. Minimum $\frac{1}{2}$ " x $\frac{3}{32}$ " tape sealer required at panel side laps when used as roof panels.
4. Side lap fasteners are required. Typical spacing is 20" O.C. However, this spacing may not be appropriate for all applications. Consult a professional engineer for use on any specific application.

PRODUCT INFORMATION

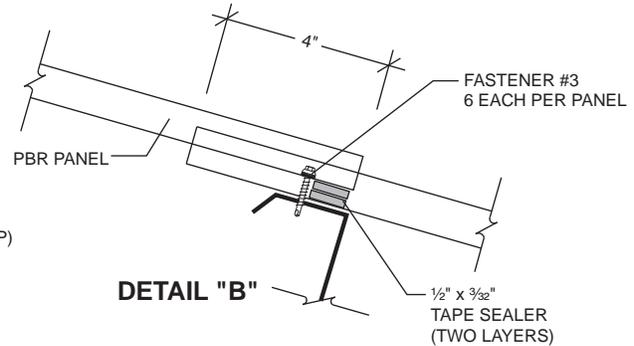
PBR PANEL ATTACHMENT

1/4" - 14 X 7/8" LONG- LIFE LAPTEK W/WASHER (FASTENER #4) @ 20" O.C.

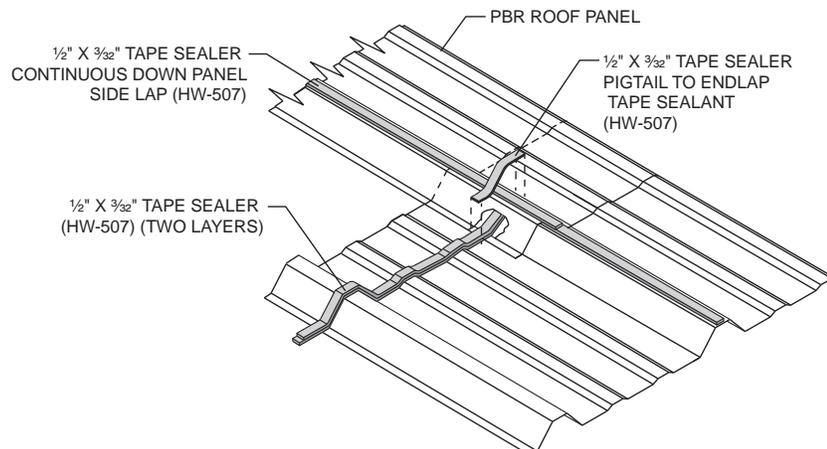
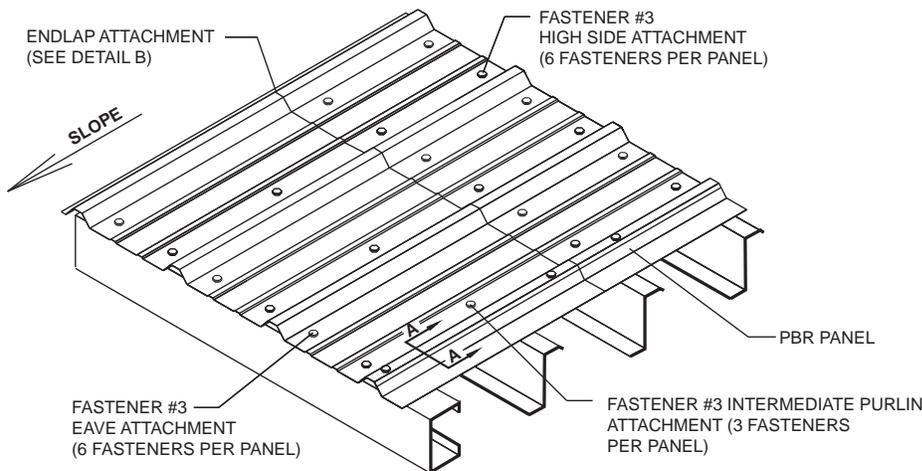
1/2" X 3/32" TAPE SEALER PIGTAIL TO ENDLAP

1/2" X 3/32" TAPE SEALER (CONTINUOUS@ ENDLAP)

DETAIL "A"



DETAIL "B"



NOTES:

Sidelap

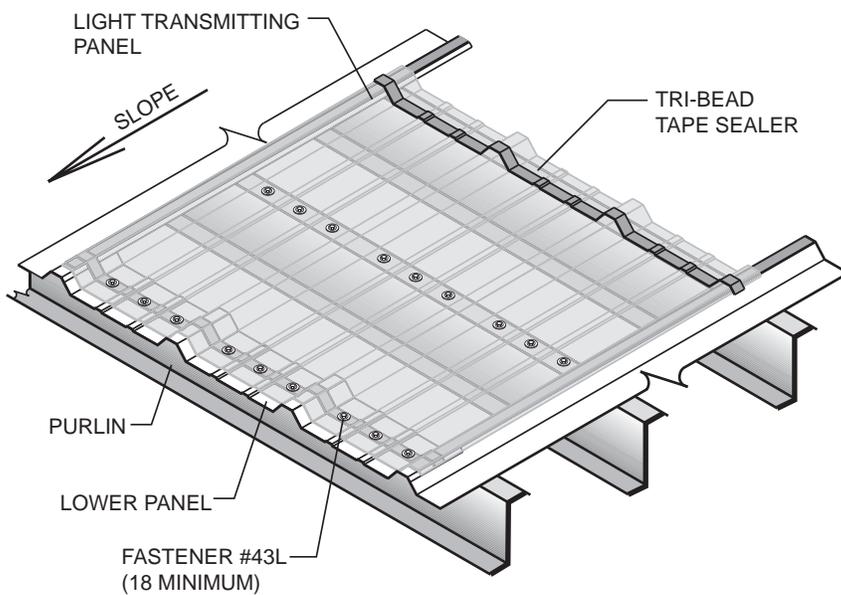
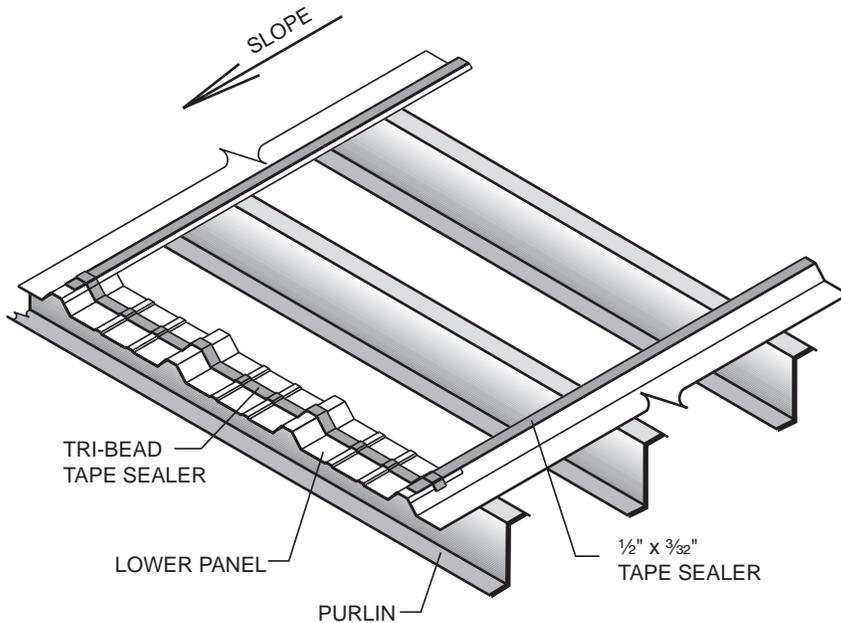
1. 1/2" X 3/32" tape sealer must be installed between weather infiltration point and fastener.
2. Install Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) at 20" O.C. at roof panel side laps and 24" O.C. at wall panel side laps.
3. When possible, install panels such that sidelaps are nested away from prevailing winds.
4. Fastener #4A (1/4"-14 X 7/8" Lap Tek) are available as an alternate when long life fasteners are not desired.

Endlap

1. Stack 2 continuous layers of 1/2" X 3/32" tape sealer on top of each other and must be installed between weather infiltration point and fastener.
2. Install a 1/2" X 3/32" tape sealer pigtail to complete the seal between the side lap tape sealant and the end lap tape sealant.
3. Install Fastener #3 (12-14 X 1 1/4" Long Life driller) on each side of major ribs of panel (two fasteners per foot).
4. Fastener #17A (12-14 X 1 1/4" self-driller) are available as an alternate when long life fasteners are not desired.

PRODUCT INFORMATION

CONSTRUCTION NO. 542 UL 90 LIGHT TRANSMITTING PANEL INSTALLATION



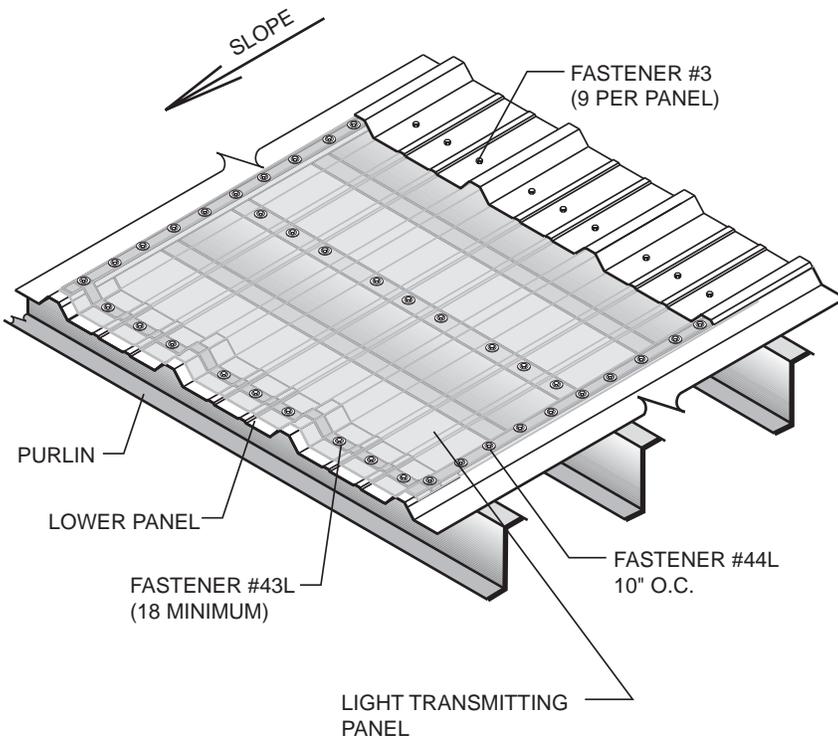
Install roof panels, leaving the light transmitting panel run open, except for lower light transmitting panel run metal panel. Install tape sealer to panel sidelaps and across panel width as normal.

Attach light transmitting panels at the low and mid-slope connection to the purlin with nine Fastener #43L (1/4" - 14 x 1 1/4" Long Life Driller with 1 1/8" O.D. washer) per connection.

PRODUCT INFORMATION

CONSTRUCTION NO. 542 UL 90 LIGHT TRANSMITTING PANEL INSTALLATION (Continued)

Be sure the light transmitting panel sidelaps have complete run of ($\frac{1}{2}$ " x $\frac{3}{32}$ ") tape sealer between the light transmitting panel and the PBR panel. See Page 9 for side lap detail.



Fasten light transmitting panel with Fastener #44L ($\frac{1}{4}$ " - 14 x $\frac{7}{8}$ " Long Life Lap Tek with $\frac{1}{8}$ " O.D. washer) at 10" O.C. down each side lap.

Install upper metal panel in light transmitting panel run and fasten as at a normal endlap with nine Fastener #3 (12 - 14 X $\frac{1}{4}$ " Long Life driller).



PRODUCT INFORMATION

ARCHITECT/ENGINEER INFORMATION

1. PBU panel is a structural roof and wall panel. This panel can be installed directly over purlins or joists. PBU panel is UL 90 rated per construction number 39.
2. PBU panel is recommended for 1:12 or greater roof slopes.
3. Field applied tape sealant is required at panel sidelaps and endlaps.
4. PBU panel is a through-fastened panel. For proper fastener application, see page 21 and page 22.
5. The information in this manual is believed to be correct and accurate. It should not be used for any specific application without being reviewed by a registered professional engineer.

PRODUCT INFORMATION

UL 90 REQUIREMENTS PBU PANEL

Construction #39

26 MSG Min. Gauge PBU Panel over Purlins at 5'- 0 ¼" O.C.

1. Panel Fasteners - Panel to purlin connections to be #14 self-drilling, Hex Head with a 5/8" O.D. washer, 6" O.C. Spacing at endlaps to be 6" O.C. Spacing for panel to panel connections to be 12" O.C.
2. Purlins - No. 16 MSG min gauge steel. (55,000 psi min. yield strength)

IMPACT RESISTANCE

PBU panels carry a Class 4 rating under UL-2218 "Test Standard For Impact Resistance"

FIRE RESISTANCE RATING

1. **Deck: NC** **Class A**

Incline: Unlimited

The panel qualifies for a Class A Fire Rating in compliance with Underwriters Laboratories Standard UL-263 when installed over a non-combustible substrate. A Class C Fire Rating will be qualified for over a combustible substrate.

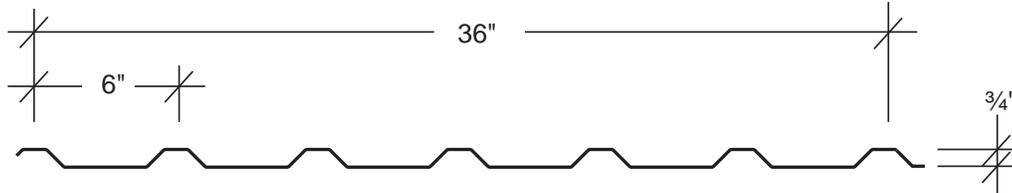
Look for classification marking on product.

CAUTION

The above listings are summaries of Construction Numbers. For UL 90 rated roof requirements and complete design information, see the Underwriters Laboratories Building Materials Directory. If you have any questions, call MBCI before proceeding.

PRODUCT INFORMATION

GENERAL DESCRIPTION



PBU PANEL

Coverage Width - 36"

Minimum Slope - 1:12

Panel Attachment - See page 17

Panel Substrate - Galvalume®

Gauge - 26 standard - 29, 24 and 22 also available

Coatings- Galvalume Plus®, Signature® 200* and Signature® 300*

PRODUCT SELECTION CHART

GAUGE	GALVALUME PLUS®	SIGNATURE® 200*	SIGNATURE® 300*
22 gauge	●	■	■
24 gauge	●	■	■
26 gauge	●	●	●
29 gauge	●	●	■

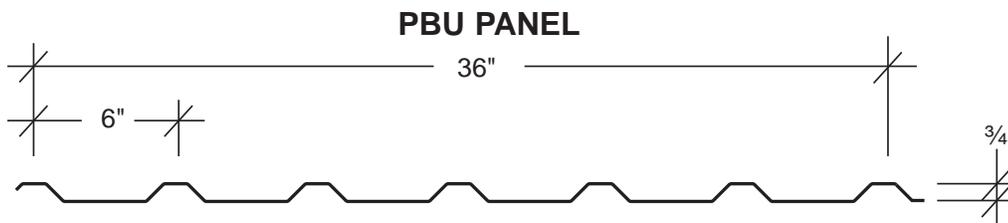
● - Available in any quantity.

■ - Minimum quantity may be required.

*See Commercial/Industrial color chart for available colors.

Signature is a registered trademark of Metal Building Components, L.P. Galvalume Plus is a registered and protected trademark of BIEC International, Inc.
 ❖ The Galvalume Plus® coating is subject to variances in spangle from coil to coil which may result in noticeable shade variation in installed panels. The Galvalume Plus® coating is also subject to differential weathering after panel installation. Panels may appear to be different shades due to this weathering characteristic. If a consistent appearance is required, MBCI recommends that pre-painted panels be used in lieu of Galvalume Plus®. Shade variation in panels manufactured from Galvalume Plus® coated material do not diminish the structural integrity of the product. These shade variations should be anticipated and are not a cause for rejection.

PRODUCT INFORMATION



SECTION PROPERTIES								
			NEGATIVE BENDING			POSITIVE BENDING		
PANEL	Fy	WEIGHT	Ixe	Sxe	Maxo	Ixe	Sxe	Maxo
GAUGE	(KSI)	(PSF)	(IN.4/FT.)	(IN.3/FT.)	(KIP-IN.)	(IN.4/FT.)	(IN.3/FT.)	(KIP-IN.)
29	60*	0.75	0.011	0.024	0.911	0.015	0.025	1.091
26	60*	0.94	0.016	0.037	1.432	0.023	0.041	1.807
24	50	1.14	0.022	0.053	1.574	0.032	0.057	1.718
22	50	1.44	0.031	0.070	2.105	0.042	0.077	2.310

* Fy is 80-ksi reduced to 60-ksi in accordance with the 2012 edition of the North American Specification For Design Of Cold-Formed Steel Structural Members - A2.3.2.

NOTES:

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

The Engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.



PRODUCT INFORMATION

PBU ROOF PANEL ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

29 Gauge (0.0133"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	67.49	37.96	24.30	16.87	11.91	7.98	5.60
	LIVE LOAD/DEFLECTION	48.81	20.59	10.54	6.10	3.84	2.57	1.81
2-span	NEGATIVE WIND LOAD	78.35	44.67	28.77	20.05	14.76	11.32	8.95
	LIVE LOAD/DEFLECTION	66.02	37.49	24.10	16.78	11.80	7.91	5.55
3-span	NEGATIVE WIND LOAD	96.65	55.41	35.78	24.97	18.40	14.12	11.17
	LIVE LOAD/DEFLECTION	81.75	46.61	24.37	14.10	8.88	5.95	4.18
4-span	NEGATIVE WIND LOAD	90.63	51.85	33.46	23.34	17.19	13.19	10.43
	LIVE LOAD/DEFLECTION	76.56	43.59	26.23	15.18	9.56	6.40	4.50

26 Gauge (0.0181"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	106.10	59.68	38.20	26.52	17.48	11.71	8.22
	LIVE LOAD/DEFLECTION	75.46	31.84	16.30	9.43	5.94	3.98	2.79
2-span	NEGATIVE WIND LOAD	130.50	74.21	47.74	33.24	24.46	18.75	14.83
	LIVE LOAD/DEFLECTION	104.42	59.14	37.97	26.19	16.49	11.05	7.76
3-span	NEGATIVE WIND LOAD	161.40	92.19	59.43	41.44	30.45	23.31	17.07
	LIVE LOAD/DEFLECTION	129.63	68.21	34.92	20.21	12.73	8.53	5.99
4-span	NEGATIVE WIND LOAD	151.20	86.23	55.55	38.71	28.50	21.85	17.28
	LIVE LOAD/DEFLECTION	121.28	68.83	37.30	21.58	13.59	9.11	6.40

24 Gauge (0.0223"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	116.62	65.60	41.98	29.15	21.42	15.90	11.17
	LIVE LOAD/DEFLECTION	102.37	43.19	22.11	12.80	8.06	5.40	3.79
2-span	NEGATIVE WIND LOAD	124.52	70.69	45.44	31.63	23.27	17.84	14.10
	LIVE LOAD/DEFLECTION	114.52	64.93	41.71	29.02	20.38	13.65	9.59
3-span	NEGATIVE WIND LOAD	154.22	87.90	56.61	39.45	29.04	22.26	17.61
	LIVE LOAD/DEFLECTION	142.04	80.80	43.73	25.31	15.94	10.68	7.50
4-span	NEGATIVE WIND LOAD	144.41	82.20	52.90	36.85	27.12	20.79	16.44
	LIVE LOAD/DEFLECTION	132.94	75.53	46.46	26.89	16.93	11.34	7.97

22 Gauge (0.0286"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	155.91	87.70	56.13	38.98	28.64	21.93	15.67
	LIVE LOAD/DEFLECTION	136.57	57.62	29.50	17.07	10.75	7.20	5.06
2-span	NEGATIVE WIND LOAD	167.07	94.95	61.06	42.51	31.28	23.98	18.96
	LIVE LOAD/DEFLECTION	152.86	86.72	55.73	38.78	26.14	17.51	12.30
3-span	NEGATIVE WIND LOAD	206.75	117.99	76.04	53.00	39.03	29.93	23.67
	LIVE LOAD/DEFLECTION	189.46	107.88	56.18	32.51	20.47	13.72	9.63
4-span	NEGATIVE WIND LOAD	193.65	110.35	71.06	49.52	36.45	27.95	22.10
	LIVE LOAD/DEFLECTION	177.36	100.86	59.64	34.52	21.74	14.56	10.23

Notes:

- Strength calculations based on the 2012 AISI Standard "North American Specification for the Design of Cold-formed Steel Structural Members."
- Allowable loads are applicable for uniform loading and spans without overhangs.
- LIVE LOAD/DEFLECTION load capacities are for those loads that push the panel against its supports. The applicable limit states are flexure, shear, combined shear and flexure, web crippling at end and interior supports, and a deflection limit of L/180 under strength-level loads.
- NEGATIVE WIND LOAD capacities are for those loads that pull the panel away from its supports. The applicable limit states are flexure, shear, combined shear and flexure, and a deflection limit of L/60 under 10-year wind loading.
- Panel pullover and Screw pullout capacity must be checked separately using the screws employed for each particular application when utilizing this load chart.
- Effective yield strength has been determined in accordance with section A2.3.2 of the 2012 NAS specification.
- The use of any accessories other than those provided by the manufacturer may damage panels, void all warranties and will void all engineering data.
- This material is subject to change without notice. Please contact MBCI for most current data.

The Engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the *North American Specification for the Design of Cold-Formed Steel Structural Members* published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.

PRODUCT INFORMATION

PBU WALL PANEL ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

29 Gauge (0.0133"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	67.49	37.96	24.30	16.87	11.91	7.98	5.60
	LIVE LOAD/DEFLECTION	80.84	45.47	29.10	20.21	14.85	11.03	7.75
2-span	NEGATIVE WIND LOAD	78.35	44.67	28.77	20.05	14.76	11.32	8.95
	LIVE LOAD/DEFLECTION	66.02	37.49	24.10	16.78	12.34	9.46	7.48
3-span	NEGATIVE WIND LOAD	96.65	55.41	35.78	24.97	18.40	14.12	11.17
	LIVE LOAD/DEFLECTION	81.75	46.61	30.02	20.92	15.40	11.81	9.34
4-span	NEGATIVE WIND LOAD	90.63	51.85	33.46	23.34	17.19	13.19	10.43
	LIVE LOAD/DEFLECTION	76.56	43.59	28.05	19.54	14.39	11.03	8.72

26 Gauge (0.0181"), Fy = 60 ksi, Fu = 61.5 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	106.10	59.68	38.20	26.52	17.48	11.71	8.22
	LIVE LOAD/DEFLECTION	133.83	75.28	48.18	33.46	24.58	17.05	11.98
2-span	NEGATIVE WIND LOAD	130.50	74.21	47.74	33.24	24.46	18.75	14.83
	LIVE LOAD/DEFLECTION	104.42	59.14	37.97	26.42	19.43	14.89	11.77
3-span	NEGATIVE WIND LOAD	161.40	92.19	59.43	41.44	30.45	23.31	17.07
	LIVE LOAD/DEFLECTION	129.63	73.64	47.35	32.96	24.26	18.59	14.70
4-span	NEGATIVE WIND LOAD	151.20	86.23	55.55	38.71	28.50	21.85	17.28
	LIVE LOAD/DEFLECTION	121.28	68.83	44.23	30.79	22.65	17.36	13.72

24 Gauge (0.0223"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	116.62	65.60	41.98	29.15	21.42	15.90	11.17
	LIVE LOAD/DEFLECTION	127.22	71.56	45.80	31.81	23.37	17.89	14.14
2-span	NEGATIVE WIND LOAD	124.52	70.69	45.44	31.63	23.27	17.84	14.10
	LIVE LOAD/DEFLECTION	114.52	64.93	41.71	29.02	21.35	16.36	12.93
3-span	NEGATIVE WIND LOAD	154.22	87.90	56.61	39.45	29.04	22.26	17.61
	LIVE LOAD/DEFLECTION	142.04	80.80	51.98	36.20	26.64	20.42	16.15
4-span	NEGATIVE WIND LOAD	144.41	82.20	52.90	36.85	27.12	20.79	16.44
	LIVE LOAD/DEFLECTION	132.94	75.53	48.57	33.81	24.88	19.07	15.08

22 Gauge (0.0286"), Fy = 50 ksi, Fu = 60 ksi								
SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		3.0	4.0	5.0	6.0	7.0	8.0	9.0
1-span	NEGATIVE WIND LOAD	155.91	87.70	56.13	38.98	28.64	21.93	15.67
	LIVE LOAD/DEFLECTION	171.09	96.24	61.59	42.77	31.42	24.06	19.01
2-span	NEGATIVE WIND LOAD	167.07	94.95	61.06	42.51	31.28	23.98	18.96
	LIVE LOAD/DEFLECTION	152.86	86.72	55.73	38.78	28.53	21.86	17.29
3-span	NEGATIVE WIND LOAD	206.75	117.99	76.04	53.00	39.03	29.93	23.67
	LIVE LOAD/DEFLECTION	189.46	107.88	69.44	48.37	35.61	27.30	21.59
4-span	NEGATIVE WIND LOAD	193.65	110.35	71.06	49.52	36.45	27.95	22.10
	LIVE LOAD/DEFLECTION	177.36	100.86	64.88	45.18	33.25	25.49	20.15

Notes:

- Strength calculations based on the 2012 AISI Standard "North American Specification for the Design of Cold-formed Steel Structural Members."
- Allowable loads are applicable for uniform loading and spans without overhangs.
- LIVE LOAD/DEFLECTION load capacities are for those loads that push the panel against its supports. The applicable limit states are flexure, shear, combined shear and flexure, web crippling at end and interior supports, and a deflection limit of L/60 under strength-level loads.
- NEGATIVE WIND LOAD capacities are for those loads that pull the panel away from its supports. The applicable limit states are flexure, shear, combined shear and flexure, and a deflection limit of L/60 under 10-year wind loading.
- Panel pullover and Screw pullout capacity must be checked separately using the screws employed for each particular application when utilizing this load chart.
- Effective yield strength has been determined in accordance with section A2.3.2 of the 2012 NAS specification.
- The use of any accessories other than those provided by the manufacturer may damage panels, void all warranties and will void all engineering data.
- This material is subject to change without notice. Please contact MBCI for most current data.

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PRODUCT INFORMATION

PRODUCT CHECKLIST

<p>PBU Panel</p> <p>PBU Panel <input type="checkbox"/></p>	<p>Ridge Cap</p> <p>Maximum Roof Pitch 5:12 Specify Pitch</p> <p>FL-50 2'-6" <input type="checkbox"/> FL-52 3'-0" <input type="checkbox"/></p>	<p>Sculptered High Side Eave</p> <p>COLOR</p> <p>Specify Roof Slope</p> <p>FL-17 <input type="checkbox"/></p>
<p>Flat Ridge/Hip Flashing</p> <p>COLOR</p> <p>SPECIFY ANGLE</p> <p>FL-38 <input type="checkbox"/></p>	<p>Valley Flashing</p> <p>SPECIFY ANGLE</p> <p>Standard</p> <p>FL-556 <input type="checkbox"/></p> <p>SPECIFY ANGLE</p> <p>Extended</p> <p>FL-558 <input type="checkbox"/></p>	<p>Sculptered Rake</p> <p>COLOR</p> <p>FL-15 <input type="checkbox"/></p>
<p>Parapet High Eave</p> <p>COLOR</p> <p>Specify Roof Slope</p> <p>FL-874 <input type="checkbox"/></p>	<p>Parapet Rake</p> <p>COLOR</p> <p>FL-954 <input type="checkbox"/></p>	<p>Eave Trim</p> <p>COLOR</p> <p>Specify Roof Slope</p> <p>FL-19 <input type="checkbox"/></p>
<p>Sculptered Hang-On Gutter</p> <p>90°+° of Roof Pitch</p> <p>DIM "A"</p> <p>COLOR</p> <p>Specify Roof Slope</p> <p>FL-512B <input type="checkbox"/></p>	<p>Sculptered Eave Gutter</p> <p>90°+° of Roof Pitch</p> <p>DIM "A"</p> <p>COLOR</p> <p>Specify Roof Slope</p> <p>FL-512 <input type="checkbox"/></p>	<p>Gutter Strap</p> <p>FL-893 <input type="checkbox"/></p> <p>Gutter End</p> <p>Specify Left or Right Specify Gutter part no.</p> <p>FL-18A <input type="checkbox"/></p>

PRODUCT INFORMATION

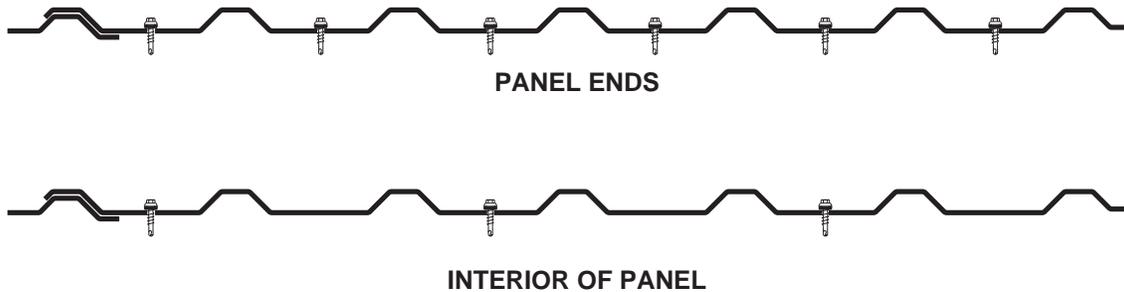
PRODUCT CHECKLIST

<p>Inside Corner Trim</p> <p>FL-810 <input type="checkbox"/></p>	<p>Downspouts</p> <p>FL-31 - Straight <input type="checkbox"/></p> <p>FL-31A - With Kick-Out <input type="checkbox"/></p>	<p>Corner Trim - Outside</p> <p>FL-840 <input type="checkbox"/></p>
<p>Base Trim (With Sheeting Notch)</p> <p>FL-72 <input type="checkbox"/></p>	<p>Base Trim (Without Sheeting Notch)</p> <p>FL-530 <input type="checkbox"/></p>	<p>Jamb Trim</p> <p>FL-21 <input type="checkbox"/></p>
<p>Fasteners</p> <p>#17A 12-14 X 1 1/4" Driller <input type="checkbox"/></p> <p>#12A 12-14 x 1" Pancake Head Driller <input type="checkbox"/></p> <p>#3 12-14 X 1 1/4" Long Life Driller <input type="checkbox"/></p> <p>#4 1/4"-14 X 7/8" Long Life Lap Tek <input type="checkbox"/></p> <p>#43L 1/4"-14 X 1 1/4" Long Life Driller with 1 1/8" O.D. washer <input type="checkbox"/></p> <p>#44L 1/4"-14 X 7/8" Long Life Lap Tek with 1 1/8" O.D. Washer <input type="checkbox"/></p> <p>#14 1/8 X 3/16" Stainless Steel Pop Rivet <input type="checkbox"/></p>	<p>LTP</p> <p>High Strength Fiberglass <input type="checkbox"/></p> <p>High Strength Fiberglass <input type="checkbox"/></p> <p>U.V. Resistant</p>	<p>Head Trim</p> <p>FL-514A <input type="checkbox"/></p>
	<p>Sealant</p> <p> 1/2" X 3/32" HW-507 <input type="checkbox"/></p> <p> 1" X 3/32" HW-506 <input type="checkbox"/></p> <p> Triple Bead HW-502 <input type="checkbox"/></p> <p> URETHANE</p> <p>Color Part No.</p> <p>White HW-540 <input type="checkbox"/></p> <p>Gray HW-540 <input type="checkbox"/></p> <p>Almond HW-540 <input type="checkbox"/></p> <p>Bronze HW-540 <input type="checkbox"/></p> <p>NOTE: 25' Per tube at 1/4" bead</p>	<p>Closures</p> <p>HW-459 <input type="checkbox"/></p> <p>Inside</p> <p>HW-460 <input type="checkbox"/></p> <p>Outside</p> <p>Beveled Inside* <input type="checkbox"/></p> <p>Beveled Outside* <input type="checkbox"/></p> <p>*Special order - requires two-week lead time</p>

Note: It is the users responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railings, or other acceptable safety controls that prevent fall-through.

PRODUCT INFORMATION

PBU PANEL FASTENER LOCATIONS

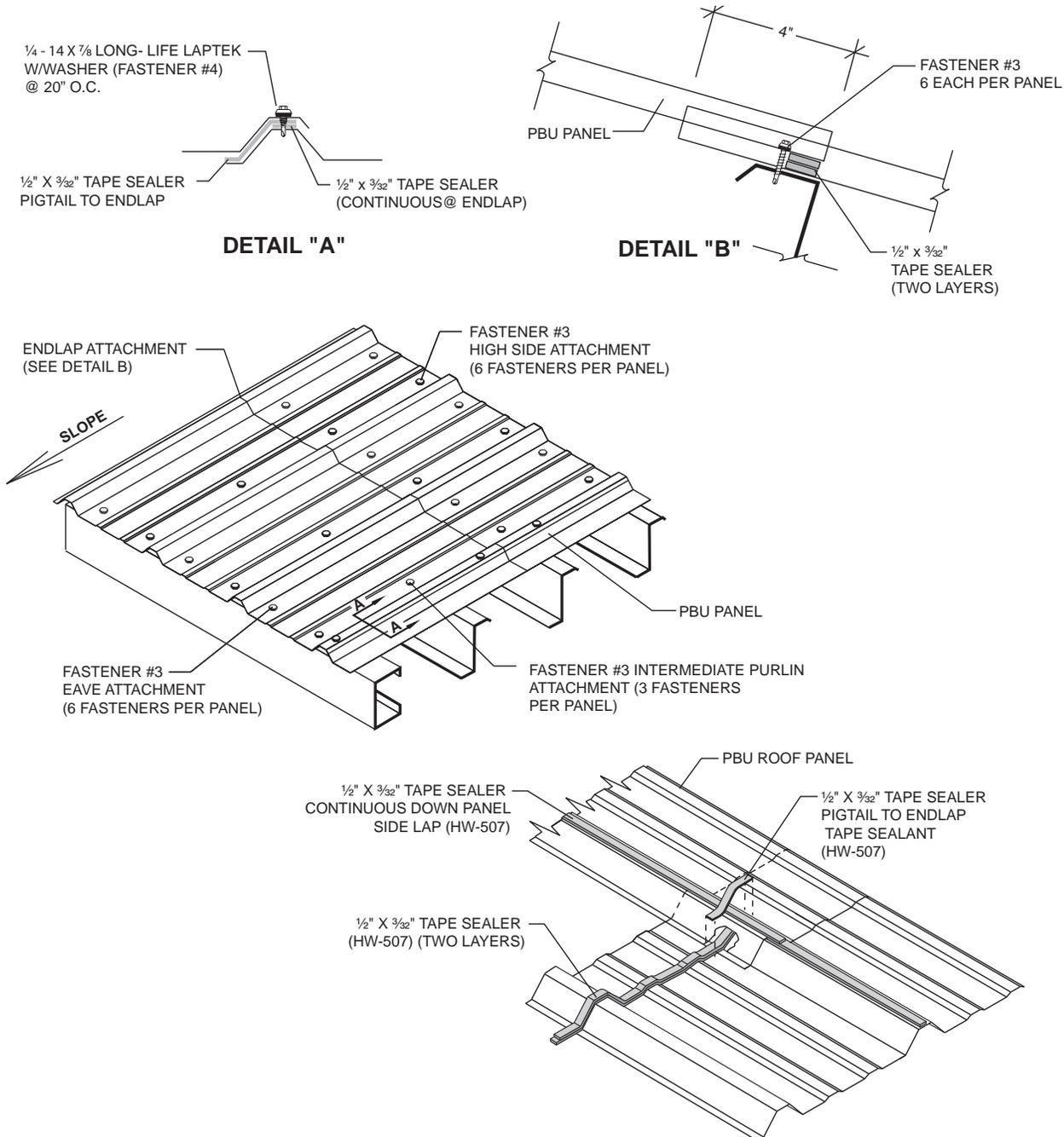


NOTES:

1. The PBU panel has an unsymmetrical purlin bearing side lap leg. Panel side lap with extended foot to bear on frame. However, where possible, the panel should be lapped against prevailing wind.
2. The above are typical fastener spacings. However, they may not be appropriate for all applications. Consult a professional engineer for use on any specific application.
3. Minimum $\frac{1}{2}$ " X $\frac{3}{32}$ " tape sealer required at panel side laps when used as roof panels.
4. Side lap fasteners are required. Typical spacing is 20" O.C. However, this spacing may not be appropriate for all applications. Consult a professional engineer for use on any specific application.

PRODUCT INFORMATION

PBU PANEL ATTACHMENT



NOTES:

Sidelap

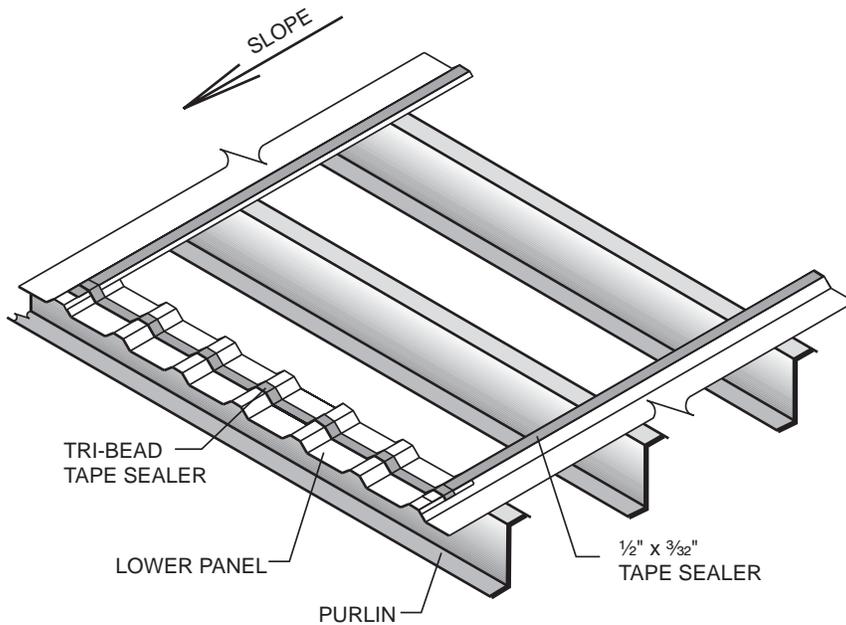
1. 1/2" X 3/32" tape sealer must be installed between weather infiltration point and fastener.
2. Install Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) at 20" on center.
3. When possible, install panels such that sidelaps are nested away from prevailing winds.
4. Fastener #4A (1/4"-14 X 7/8" Lap Tek) are available as an alternate when long life fasteners are not desired.

Endlap

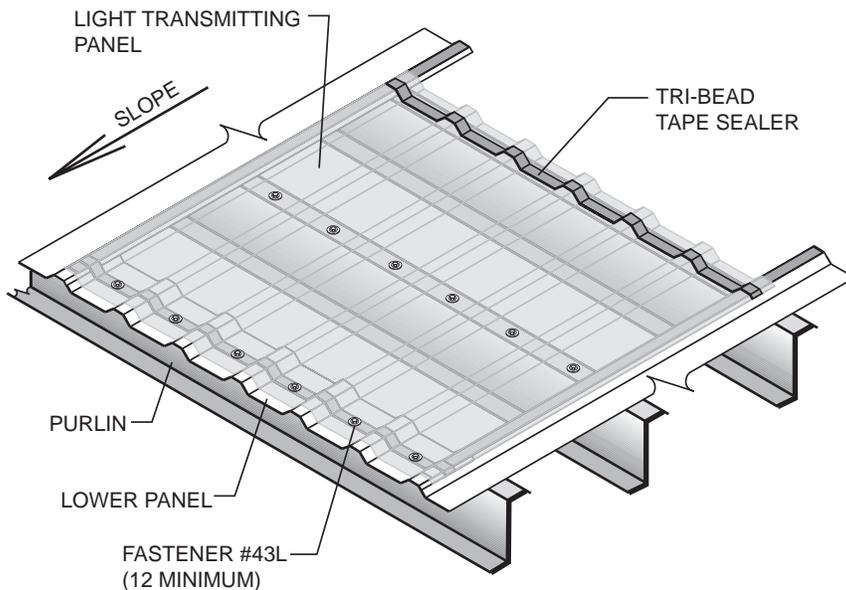
1. Stack 2 continuous layers of 1/2" X 3/32" tape sealer on top of each other and must be installed between weather infiltration point and fastener.
2. Install Fastener #3 (12-14 X 1 1/4" Long Life driller) on each side of major ribs of panel (two fasteners per foot).
3. Fastener #17A (12-14 X 1 1/4" self-driller) are available as an alternate when long life fasteners are not desired.

PRODUCT INFORMATION

LIGHT TRANSMITTING PANEL INSTALLATION



Install roof panels, leaving the light transmitting panel run open, except for lower light transmitting panel run metal panel. Install tape sealer to panel sidelaps and across panel width as normal.

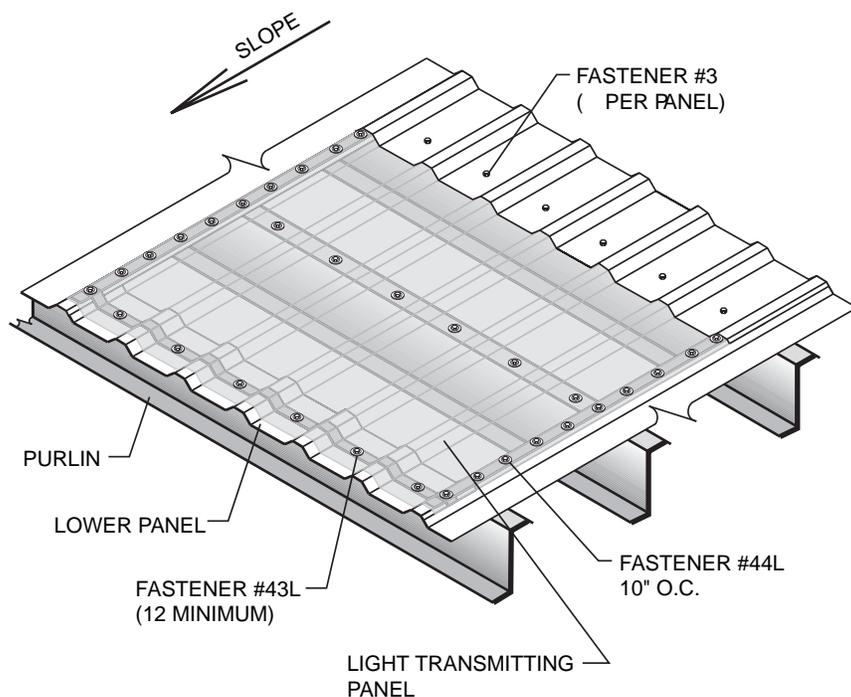


Attach light transmitting panels at the low and mid-slope connection to the purlin with six Fastener #43L (1/4" - 14 x 1 1/4" Long Life Driller with 1 1/8" O.D. washer) per connection.

PRODUCT INFORMATION

LIGHT TRANSMITTING PANEL INSTALLATION (Continued)

Be sure the light transmitting panel sidelaps have complete run of ($\frac{1}{2}$ " x $\frac{3}{32}$ ") tape sealer between the light transmitting panel and the PBU panel. See Page 19 for side lap detail.



Fasten light transmitting panel with Fastener #44L ($\frac{1}{4}$ " - 14 x $\frac{7}{8}$ " Long Life Lap Tek with $1\frac{1}{8}$ " O.D. washer) at 10" O.C. down each side lap.

Install upper metal panel in light transmitting panel run and fasten as at a normal endlap with six Fastener #3 (12 - 14 X $1\frac{1}{4}$ " Long Life drill).

DETAILS

INSTALLATION GUIDELINES

I. Pre-Order

- A. Prior to ordering panels, all dimensions should be confirmed by field measurement.

II. Job Site Storage and Handling

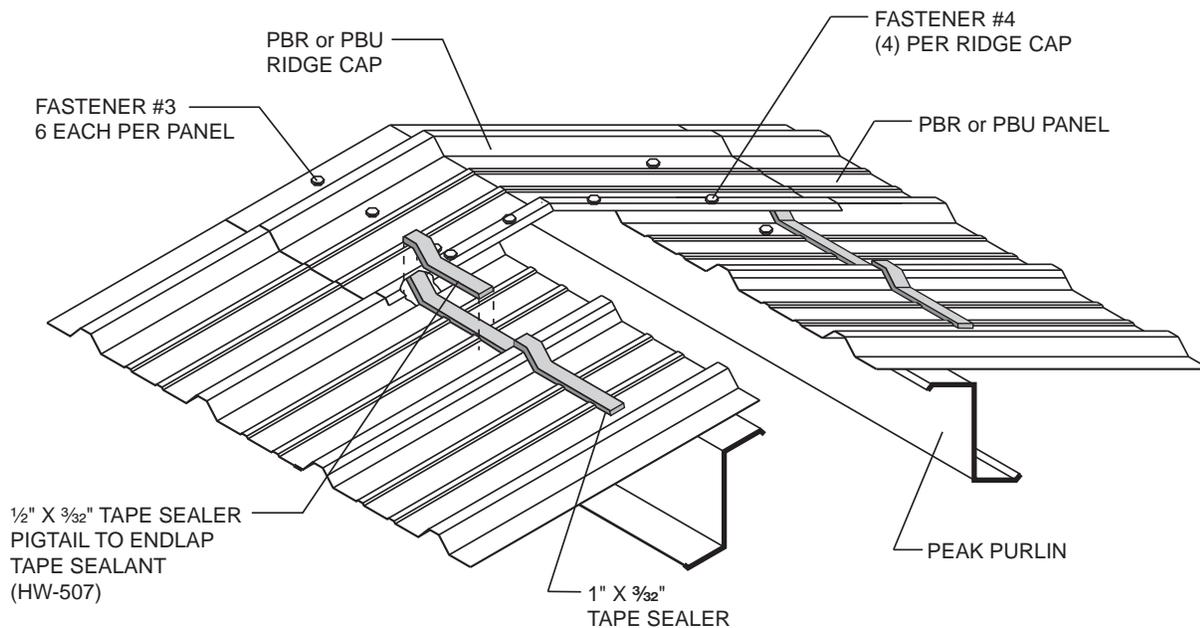
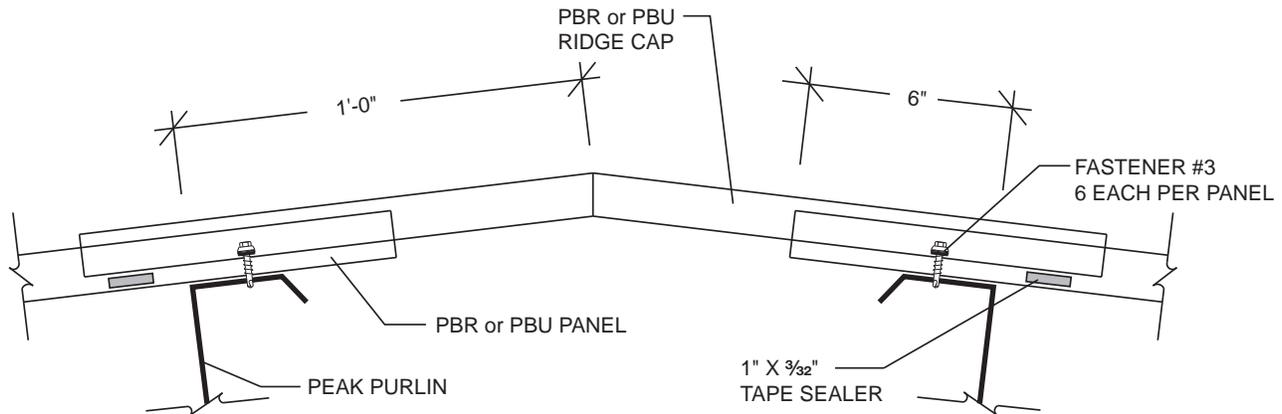
- A. Check the shipment against the shipping list.
- B. Damaged material must be noted on bill of lading.
- C. Panels should be handled carefully. A spreader bar of appropriate length is recommended for hoisting.
- D. Check to see that moisture has not formed inside the bundles during shipment. If moisture is present, panels should be wiped dry, then restacked and loosely covered so that air can circulate between the panels.

III. Application Checklist

- A. Check substructure for proper alignment and uniformity to avoid panel distortion.
- B. Periodic check of panel alignment is crucial to proper panel installation.
- C. For proper appearance, ribs should line up at hips, valleys and ridges.
- D. Panels should be cut on ground to minimize cut filings on roof. Keep panels clean during installation. Do not allow panels to come into contact with water runoff from lead, copper or graphite.

DETAILS

TYPICAL DETAILS Ridge

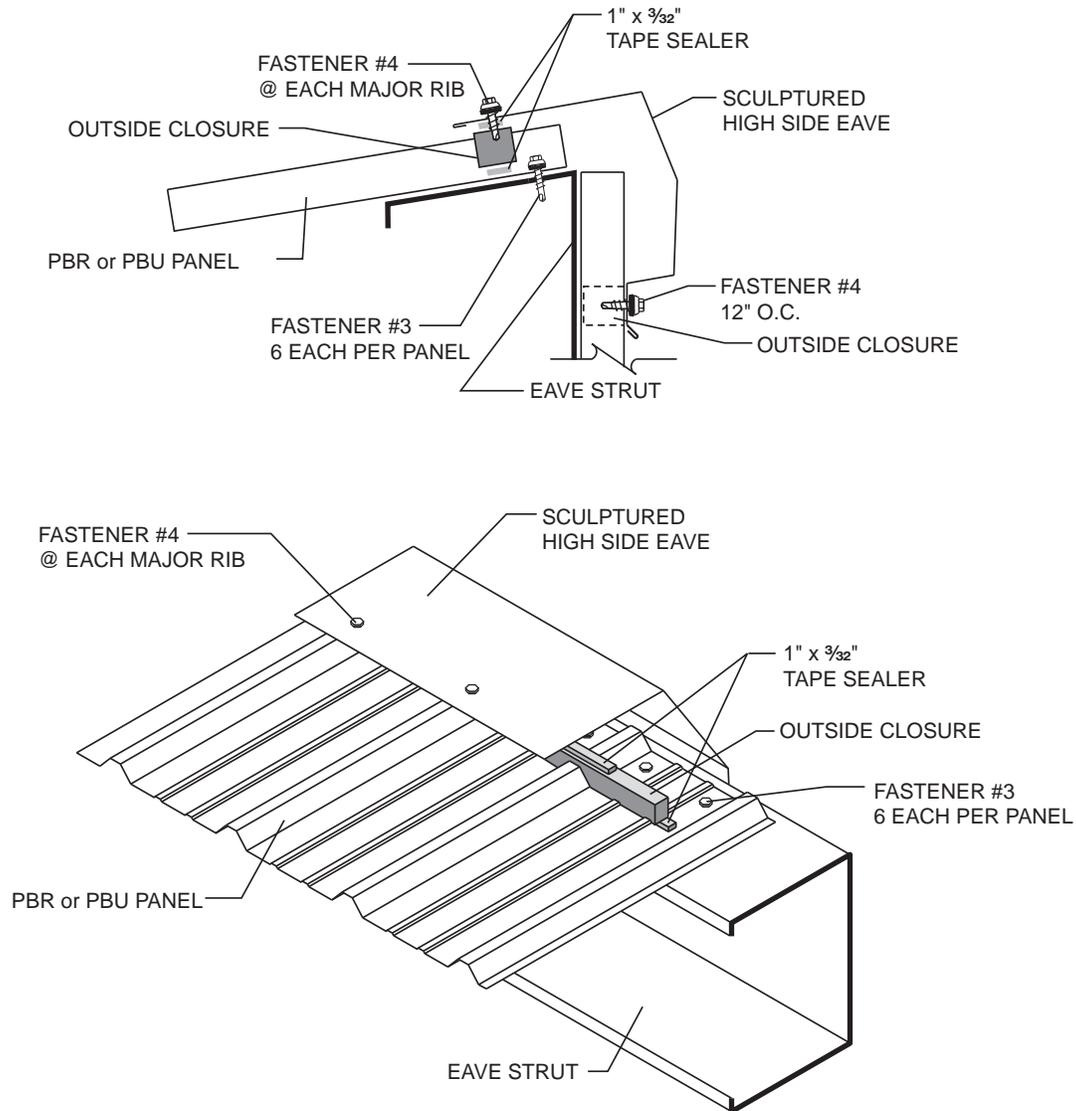


NOTES:

1. When ordering ridge caps, specify roof slope. Refer to MBCI price pages for maximum slope for each ridge cap.
2. Install 1" x 3/32" tape sealer across full width of ridge cap on both sides. Tape sealer must be installed between weather infiltration point and fasteners.
3. Install 1" x 3/32" tape sealer to the sidelap of the ridge cap that will lap onto adjacent ridge cap. Tape sealer must be installed between weather infiltration point and fasteners.
4. Install Fastener #3 (12-14 X 1 1/4" Long Life driller) on both sides of major ribs (two per foot).
5. Install four Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) in each ridge cap sidelap. Place (1) one Lap Tek in high rib on each side of the ridge cap centerline and one in line with purlin fastener on each side of ridge line.

DETAILS

TYPICAL DETAILS High Side Eave

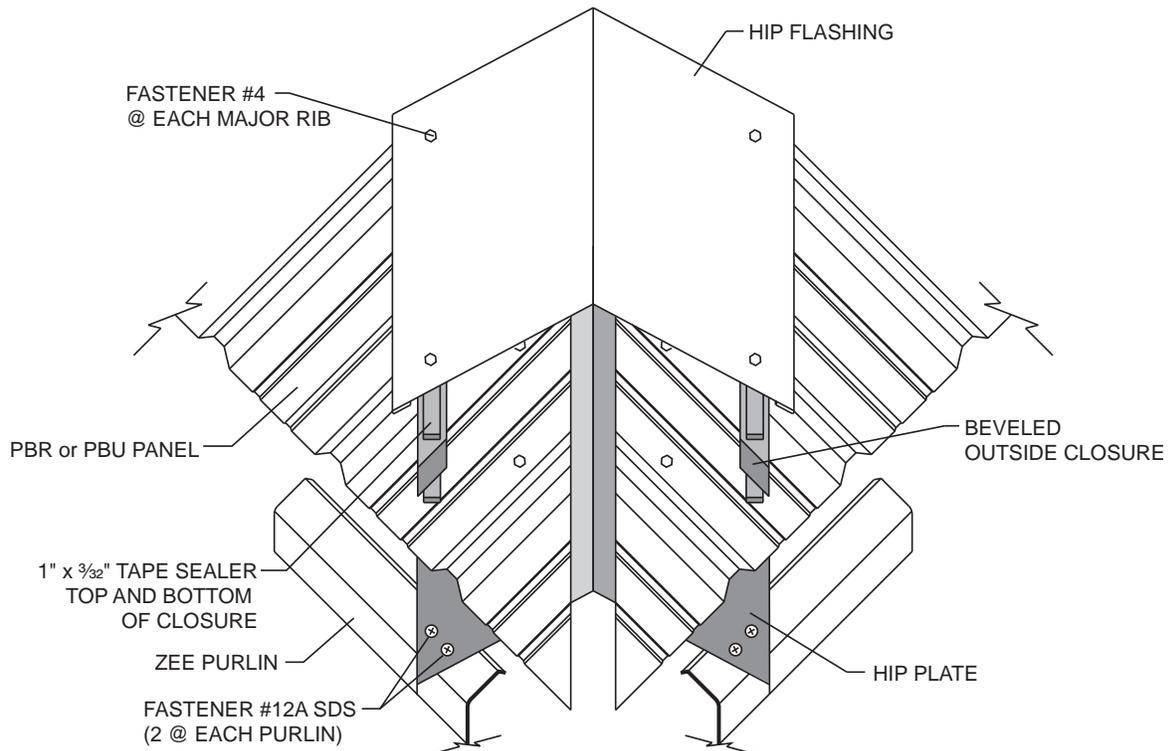
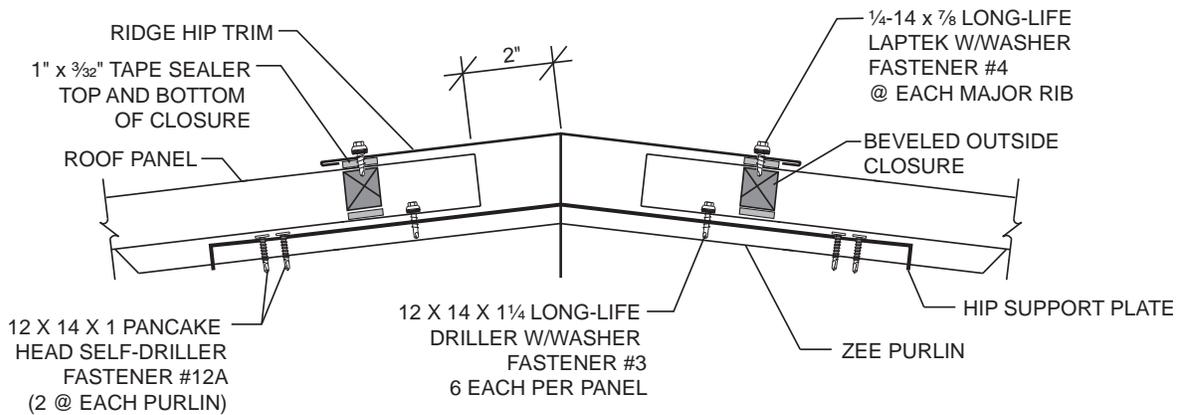


NOTES:

1. Install outside closure, with 1" x 3/32" tape sealer top and bottom, across width of PBR or PBU panels.
2. Install Sculptured High Side Eave to PBR or PBU panels at each major rib with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek). Sculptured high side eave trim should overhang outside closures 1/2" - 1".
3. Attach front face of sculptured high side eave trim to wall with fasteners or cleat as required for wall substrate.
4. Trim laps should be approximately 3" with sufficient amount of Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) to hold lap together. Apply bead of urethane sealant between trim at 3" lap.

DETAILS

TYPICAL DETAILS Hip

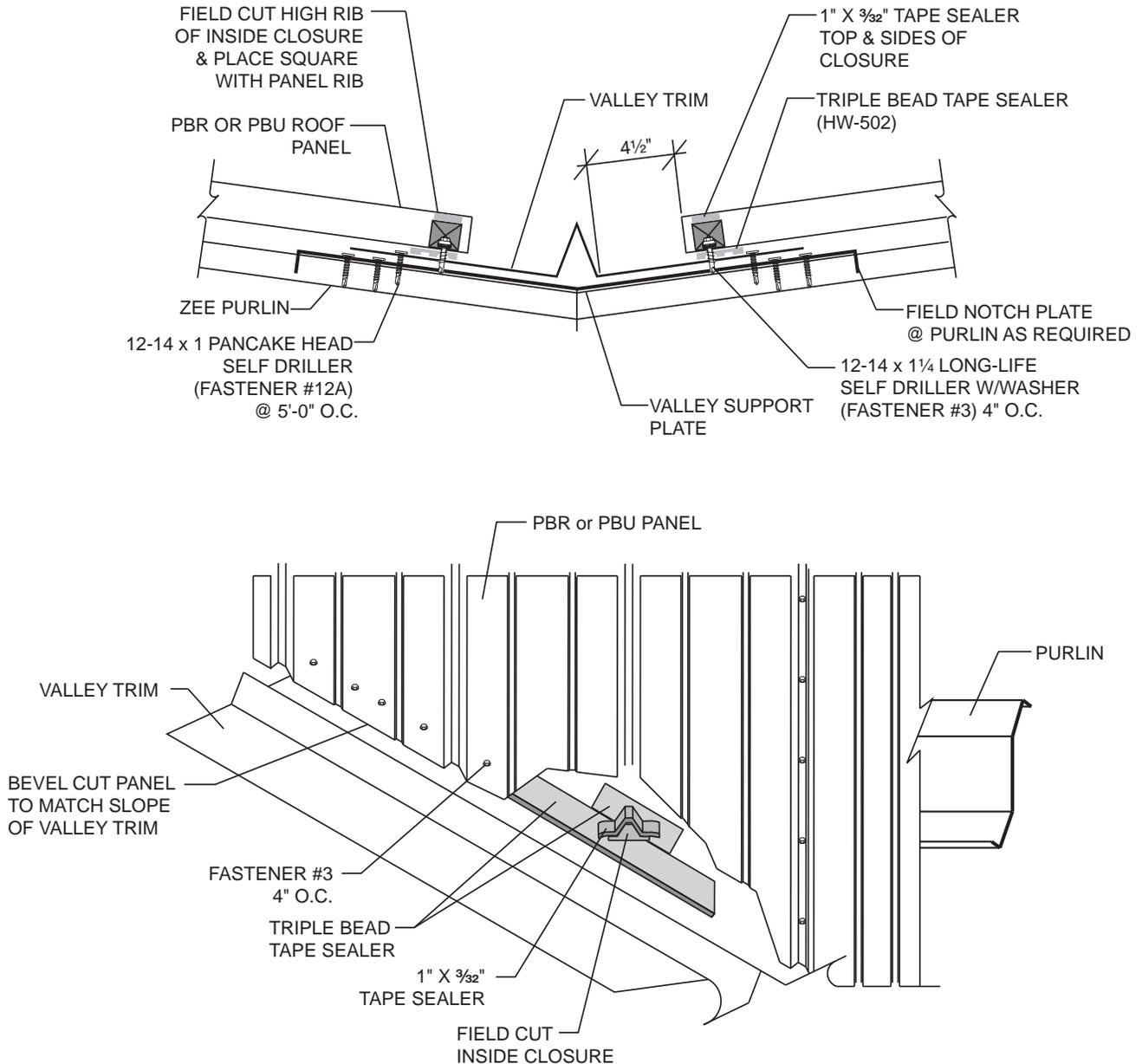


NOTES:

1. Bevel cut and install PBR or PBU panels to follow bevel of hip.
2. Install beveled outside closures to panels, with 1" x 3/32" tape sealer top and bottom, following bevel of hip. Beveled closures must be special ordered and require a two week lead time.
3. Install hip flashing to panel at each major rib with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek). Hip flashing should overlap outside closures 1/2"-1".
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) to hold lap together.

DETAILS

TYPICAL DETAILS Valley



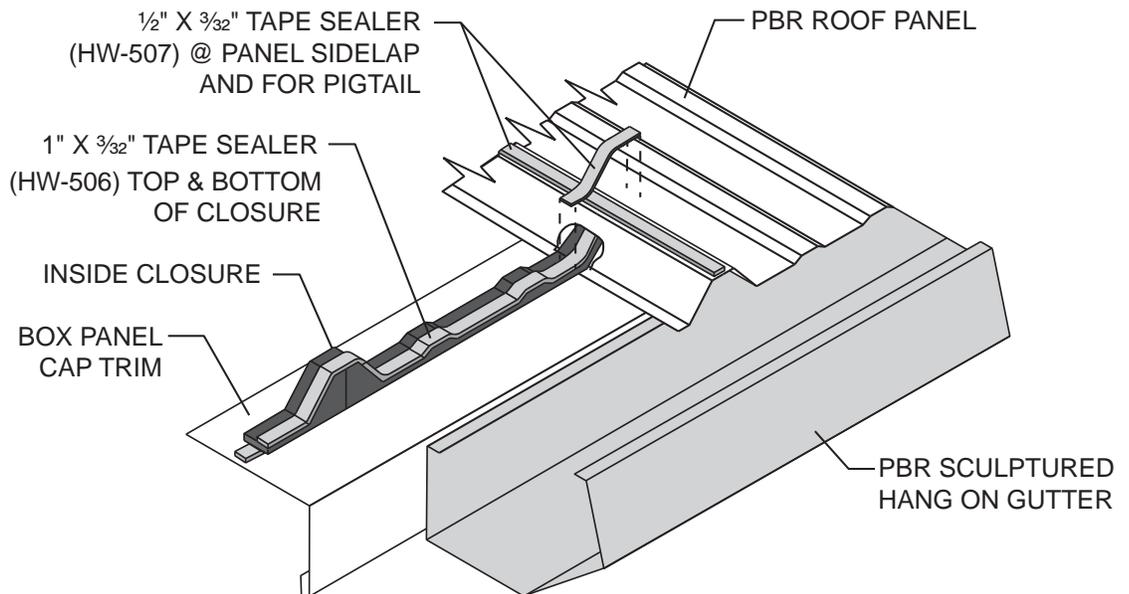
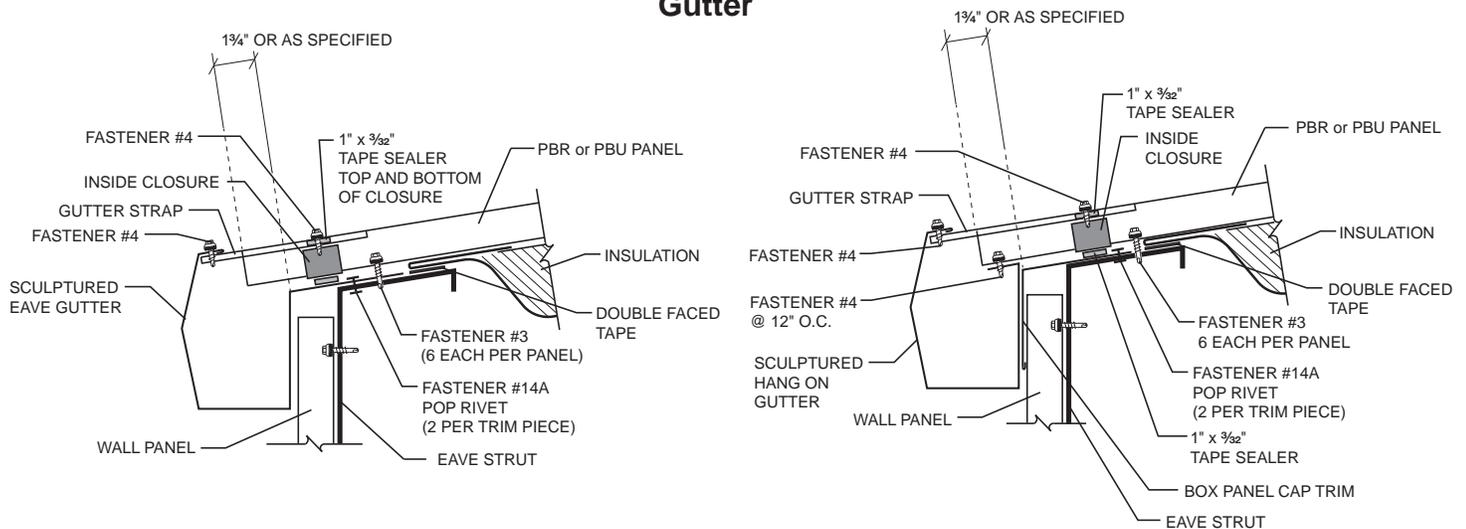
NOTES:

1. For valleys 30' or less in length, use standard valley trim. Valleys over 30' in length require extended valley trim.
2. Apply triple bead tape sealer to valley trim parallel to the slope of the valley. Lower edge of tape sealer should be 4 1/2" from center of valley for standard valleys and 9" from the center of the valley for extended valleys.
3. Install high rib section of inside closure that has been field cut from standard 3'-0" straight closure. Place the cut closure square with the rib of the panel. Install 1" x 3/32" tape sealer to top of inside closure prior to laying panel edge down on top of the cut closure. The triple bead tape with proper fastener sequence will seal the minor ribs of the panel that are between the major ribs.
4. Bevel cut PBR or PBU panels to fit slope of valley and install to valley with Fastener #3 (12-14 X 1 1/4" Long Life driller) at 4" on center. Fasteners must be installed through the the triple bead tape sealer.
5. Trim laps should overlap approximately 6" with a bead of urethane sealant in between. Do not rivet valley laps together. If laps gap open, install Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) into each side of water diverter while holding lap tightly together.

DETAILS

TYPICAL DETAILS

Gutter



NOTES:

Eave Gutter

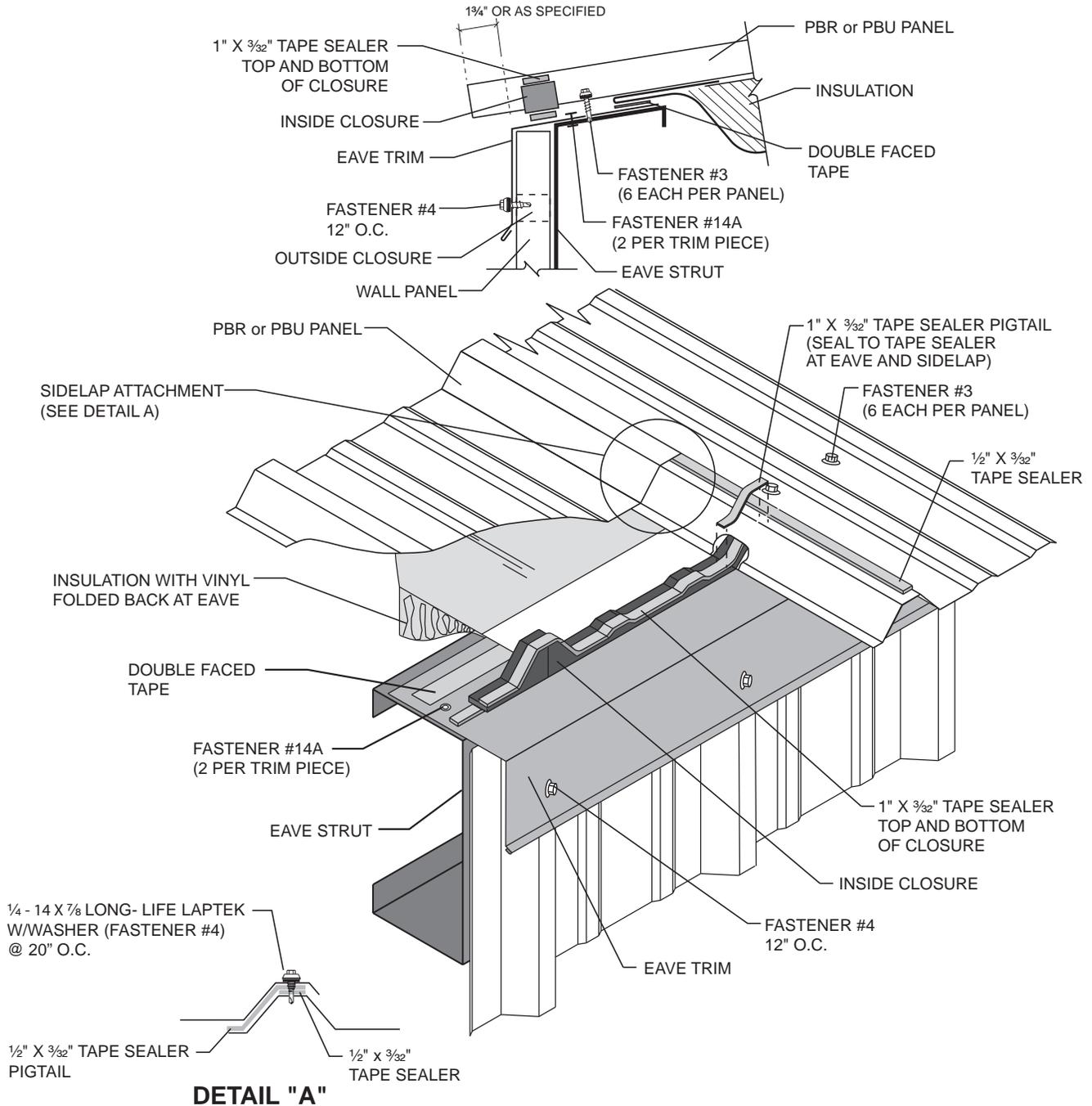
1. Attach gutter to eave strut with two Fastener #14A pop rivets per section.
2. Install inside closures to top leg of gutter with 1" x 3/32" tape sealer top and bottom.
3. Install PBR or PBU panel with Fastener #3 (12-14 X 1 1/4" Long Life driller) on each side of major ribs (two fasteners per foot). Fasteners must be installed up slope from inside closures.
4. Gutter laps should be approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of pop rivets to hold lap together.
5. Install gutter straps 3'-0" on center with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) fasteners at each end.

Hang-on Gutter

1. Attach Box Panel Cap Trim to top of eave strut with pop rivet #14A (two per 10'-0" section).
2. Install inside closure on top of Box Panel Cap Trim with 1" x 3/32" tape sealer top and bottom of closure.
3. Install PBR or PBU panels with Fastener #3 (12-14 X 1 1/4" Long Life driller) on each side of the major ribs (two fasteners per foot). Fasteners must be installed up slope from inside closures.
4. Attach gutter to roof panels with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) at 12" O.C.
5. Gutter laps should be approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #14 (pop rivets) to hold lap together.
6. Install gutter straps 3'-0" on center with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) at each end.

DETAILS

TYPICAL DETAILS Eave Trim

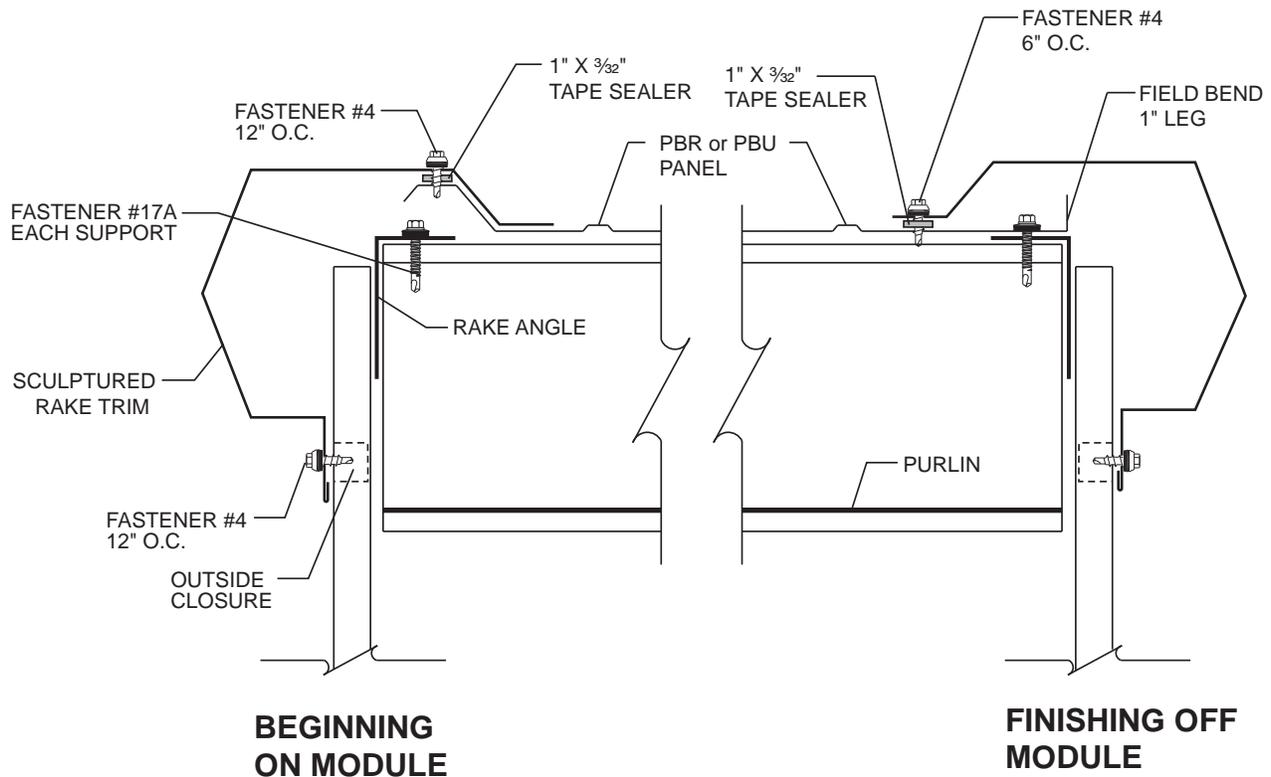


NOTES:

1. Install eave trim to structure with two pop rivets per section.
2. Install inside closures along top leg of eave trim with 1" x 3/32" tape sealer top and bottom.
3. Install PBR or PBU panel with Fastener #3 (12-14 X 1 1/4" Long Life driller) on each side of major ribs (2 fasteners per foot) allowing panel to overhang 1 3/4" plus wall thickness. Fasteners must be installed up slope from inside closures.
4. Attach front face of eave trim to wall with fasteners or cleat as required for wall substrate.
5. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) to hold lap together.

DETAILS

TYPICAL DETAILS Rake



NOTES:

Beginning on Module

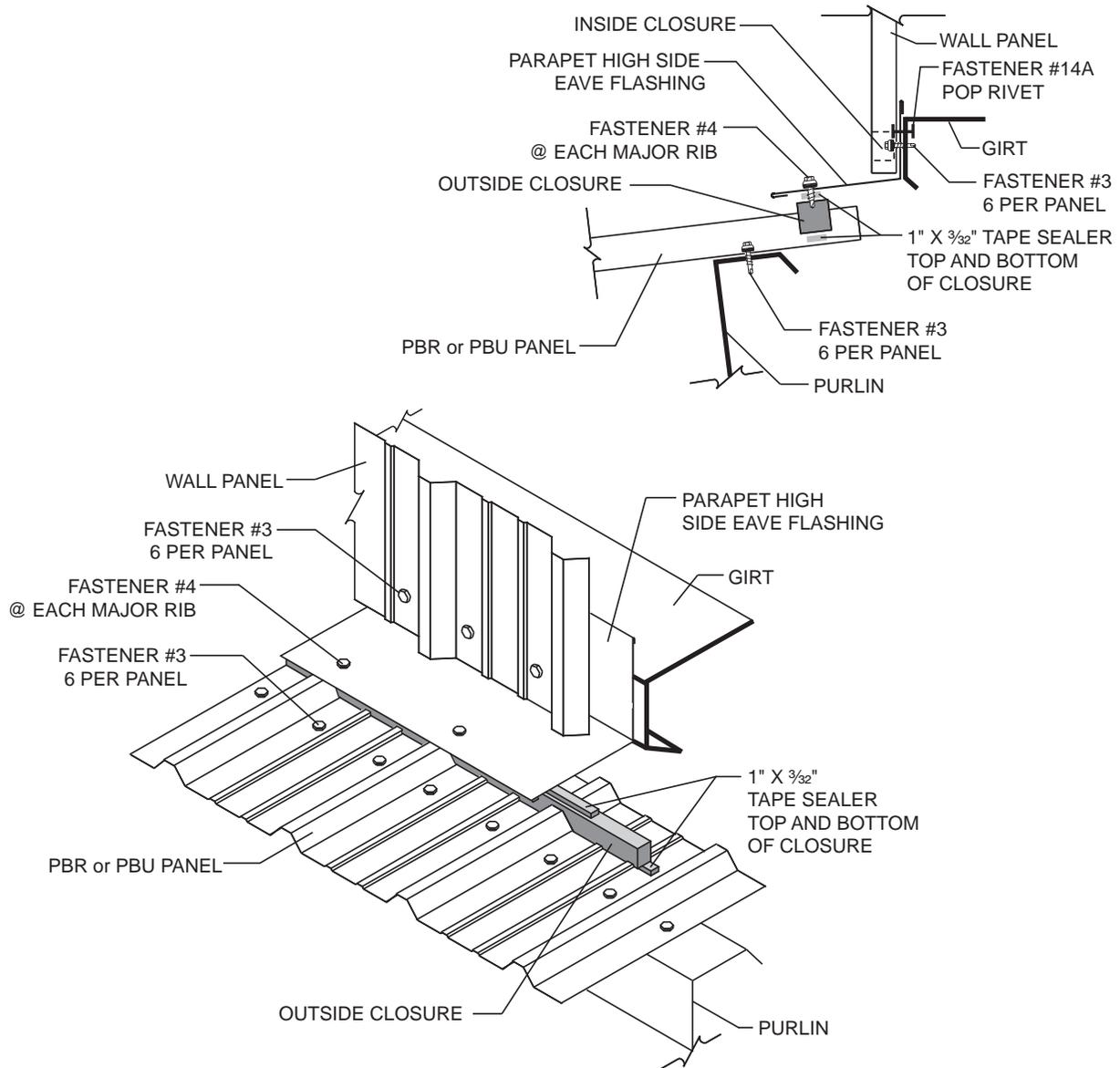
1. Install 1" x $\frac{3}{32}$ " tape sealer to top of PBR or PBU panel rib.
2. Install rake trim to PBR or PBU panel rib with Fastener #4 ($\frac{1}{4}$ "-14 X $\frac{7}{8}$ " Long Life Lap Tek) at 1'-0" on center.
3. Attach front face of rake trim to wall with fasteners or cleat as required for wall substrate.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #14 pop rivets to hold lap together.

Finishing off Module

1. Cut and bend a 1" leg on PBR or PBU Panel.
2. Install 1" x $\frac{3}{32}$ " tape sealer to top of PBR or PBU panel.
3. Install rake trim to PBR or PBU panel with Fastener #4 ($\frac{1}{4}$ "-14 X $\frac{7}{8}$ " Long Life Lap Tek) at 6" on center.
4. Attach front face of rake trim to wall with fasteners or cleat as required for wall substrate.
5. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #14 pop rivets to hold lap together.

DETAILS

TYPICAL DETAILS Parapet High Side Eave

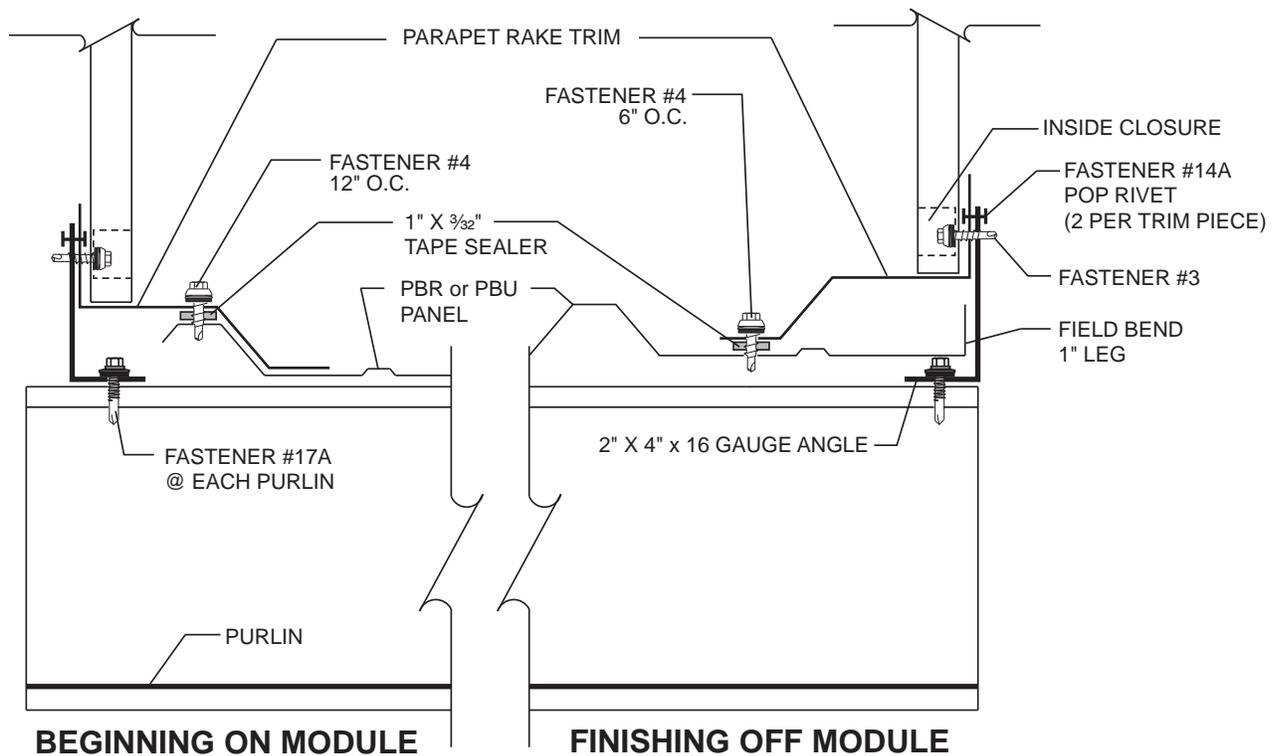


NOTES:

1. Install outside closure, with 1" x 3/32" tape sealer top and bottom, across width of PBR or PBU panels.
2. Install parapet high side trim to PBR or PBU panels at each major rib with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek). Trim should overhang outside closures 1/2" - 1".
3. Attach top leg of parapet high side trim to wall with fasteners as required for wall substrate.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) to hold lap together.

DETAILS

TYPICAL DETAILS Parapet Rake



NOTES:

Beginning on Module

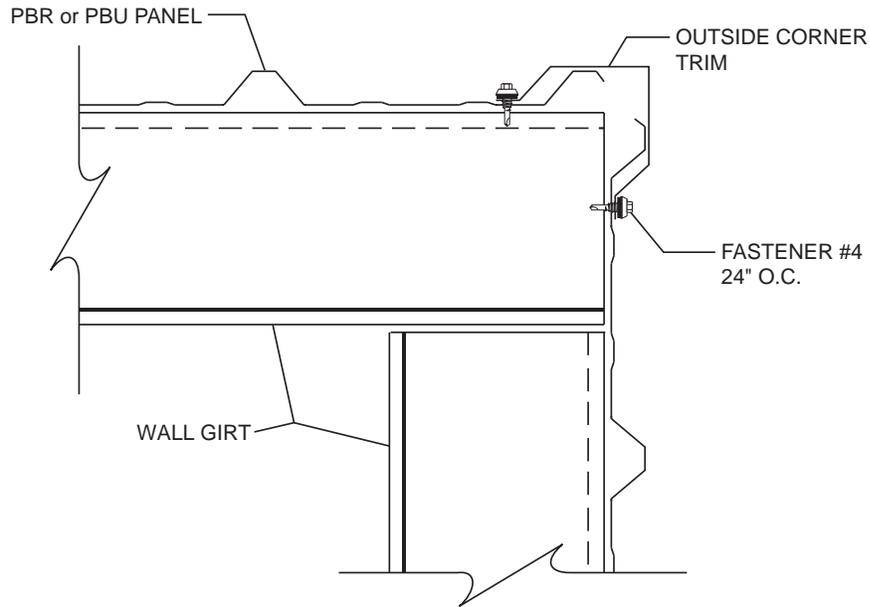
1. Install 1" x 3/32" tape sealer to top of PBR or PBU panel rib.
2. Install parapet rake trim to PBR or PBU panel rib with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) at 1'-0" on center.
3. Attach top leg of parapet rake trim to 2" X 4" angle with Fastener #14A pop rivet. Elevate horizontal leg of parapet trim slightly, to provide for positive drainage of water.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) to hold lap together.

Finishing off Module

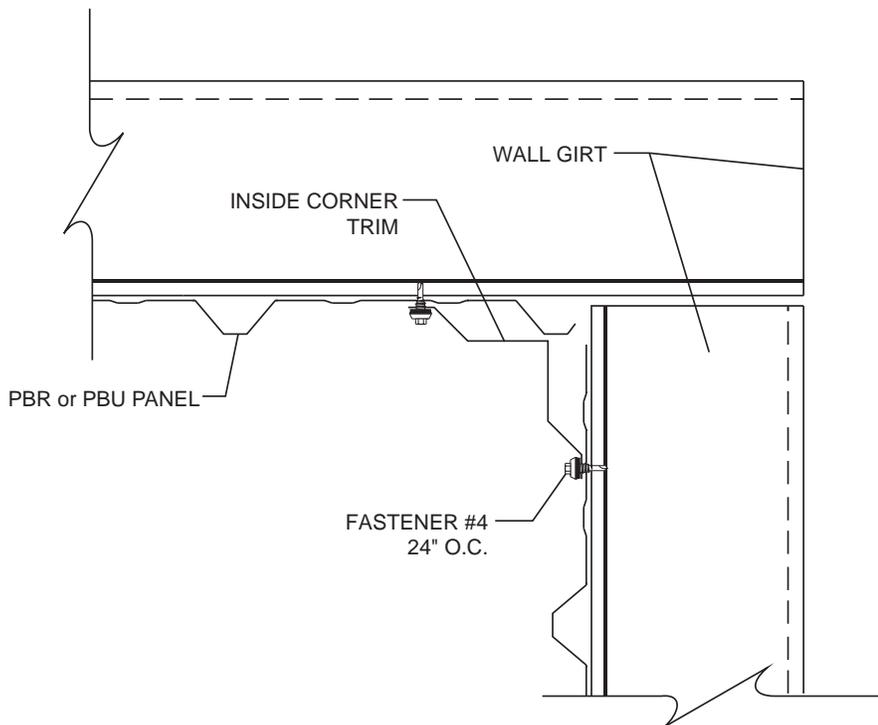
1. Cut and bend a 1" leg on PBR or PBU Panel.
2. Install 1" x 3/32" tape sealer to top of PBR or PBU panel.
3. Install parapet rake trim to PBR or PBU panel with Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) at 6" on center.
4. Attach top leg of parapet rake trim to 2" X 4" angle with pop rivets. Elevate horizontal leg of parapet trim slightly, to provide for positive drainage of water.
5. Trim laps should overlap approximately 3" with a bead of urethane sealant in between. Install a sufficient amount of Fastener #4 (1/4"-14 X 7/8" Long Life Lap Tek) to hold lap together.

DETAILS

TYPICAL DETAILS Corner



OUTSIDE CORNER DETAIL



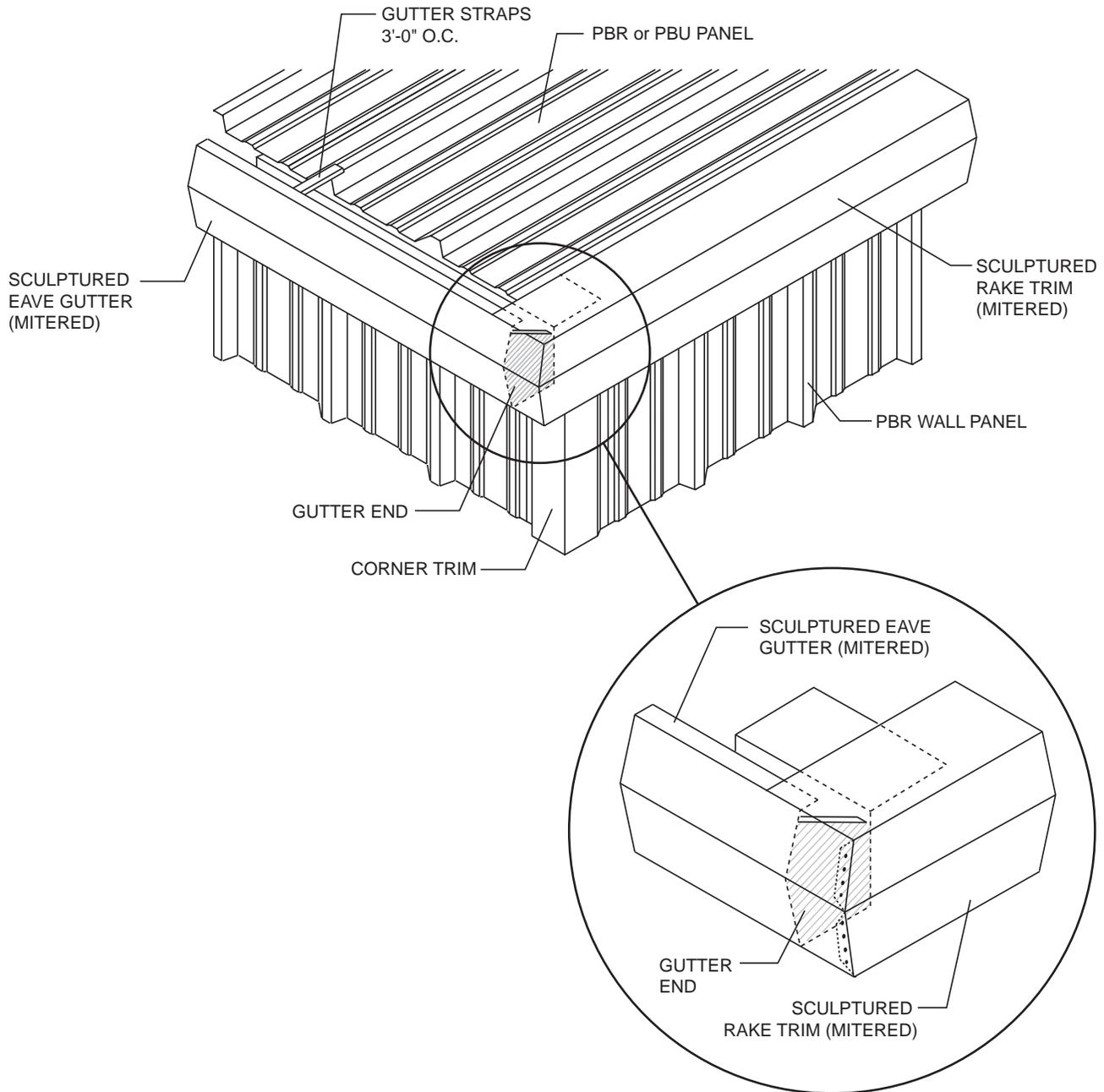
INSIDE CORNER DETAIL

NOTES:

1. Install corner trim with Fastener #4 (1/4 - 14 X 7/8" Long Life Lap Tek) at 2'-0" O.C.

DETAILS

TYPICAL DETAILS Corner Box

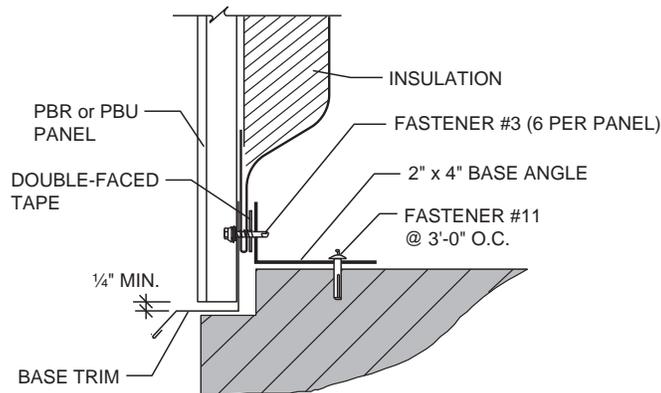
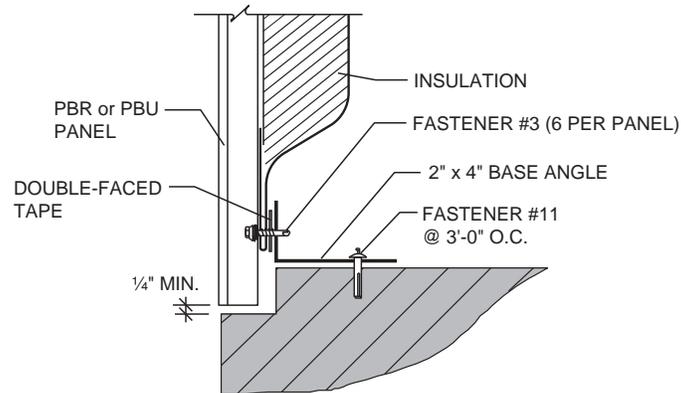


NOTES:

1. Gutter and rake trim must be ordered with a left and right mitered end. To determine left or right, stand on ground and look toward eave. **Roof slope must also be specified.**

DETAILS

TYPICAL DETAILS Base

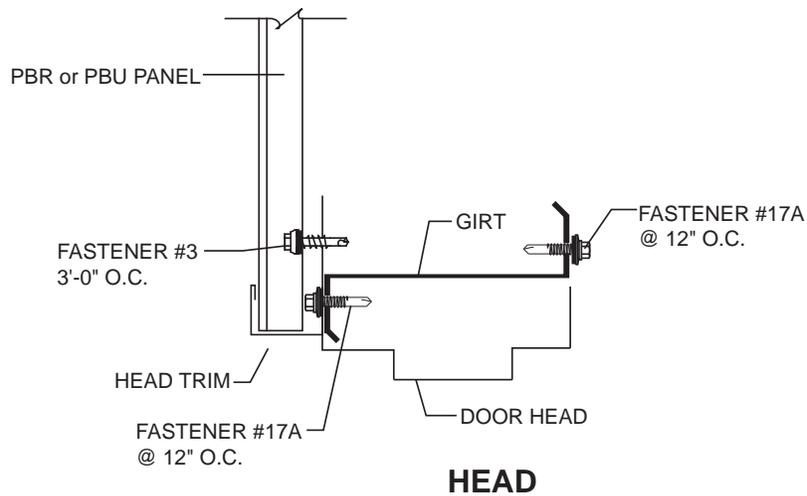
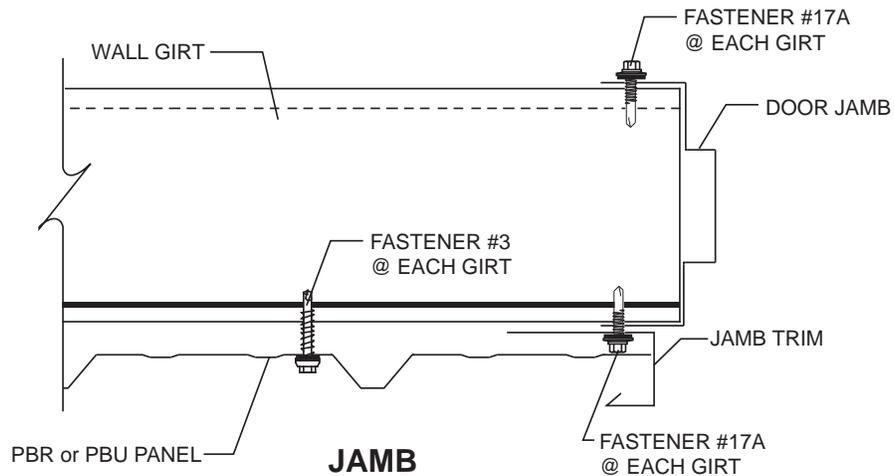


NOTES:

1. Wall with vinyl insulation, pull back fiberglass approximately 4" pull over end and staple. Apply double face tape to base angle and stick insulation to it before applying panel and fastening with Fastener #3 (1/4" - 14 x 1 1/4" Long Life Driller), six each per panel.
2. Should base trim be desired, temporarily attach trim to base angle with two Fastener #14 pop rivets until panels are installed.

DETAILS

TYPICAL DETAILS Head Jamb



NOTES:

1. Install Jamb and Head Trim with pop rivets as required to support flashing during panel installation.



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