



PBR-Panel

Metal Roof and Wall Panel

Installation Manual

The application and detail drawings in this manual are strictly for illustration purposes and may not be applicable to all building designs or product installations. All projects should conform to applicable building codes for that particular area. It is recommended to follow all building regulations and standard industry practices.

Metal Sales Manufacturing Corporation is not responsible for the performance of the roof system if it is not installed in accordance with the suggested instructions referenced in this manual. If there is a conflict between this manual and the approved Metal Sales' erection drawings, the approved erection drawings are to take precedence.

Prior to ordering and installing materials, all dimensions should be verified by field measurements.

Oil canning is not a cause for rejection. Oil canning can be described as the amount of waviness found in the flat areas of metal panels. Oil canning is an inherent characteristic of light gauge cold formed metal products, particularly those with broad flat areas. There are many factors which may contribute to oil canning that Metal Sales is not able to control. These factors include: misalignment of the support system, over driving of fasteners used on the panels, stress (whether inherent in the panel or induced), thermal expansion and contraction of the panel, material handling, width, gauge, length, color of panels, and installation. (Reference Metal Construction Association "Oil Canning Position Paper" - Appendix A).

Metal Sales reserves the right to modify, without notice, any details, recommendations or suggestions. Any questions you may have regarding proper installation of the Magna-Loc roofing system should be directed to your Metal Sales representative, (see pages 2 and 3).

Consult Metal Sales for any additional information not outlined in this manual.

This manual is designed to be utilized as a guide when installing Magna-Loc roofing system. It is the responsibility of the erector to ensure the safe installation of this product system.

SAFETY

STUDY APPLICABLE OSHA AND OTHER SAFETY REQUIREMENTS BEFORE FOLLOWING THESE INSTRUCTIONS.

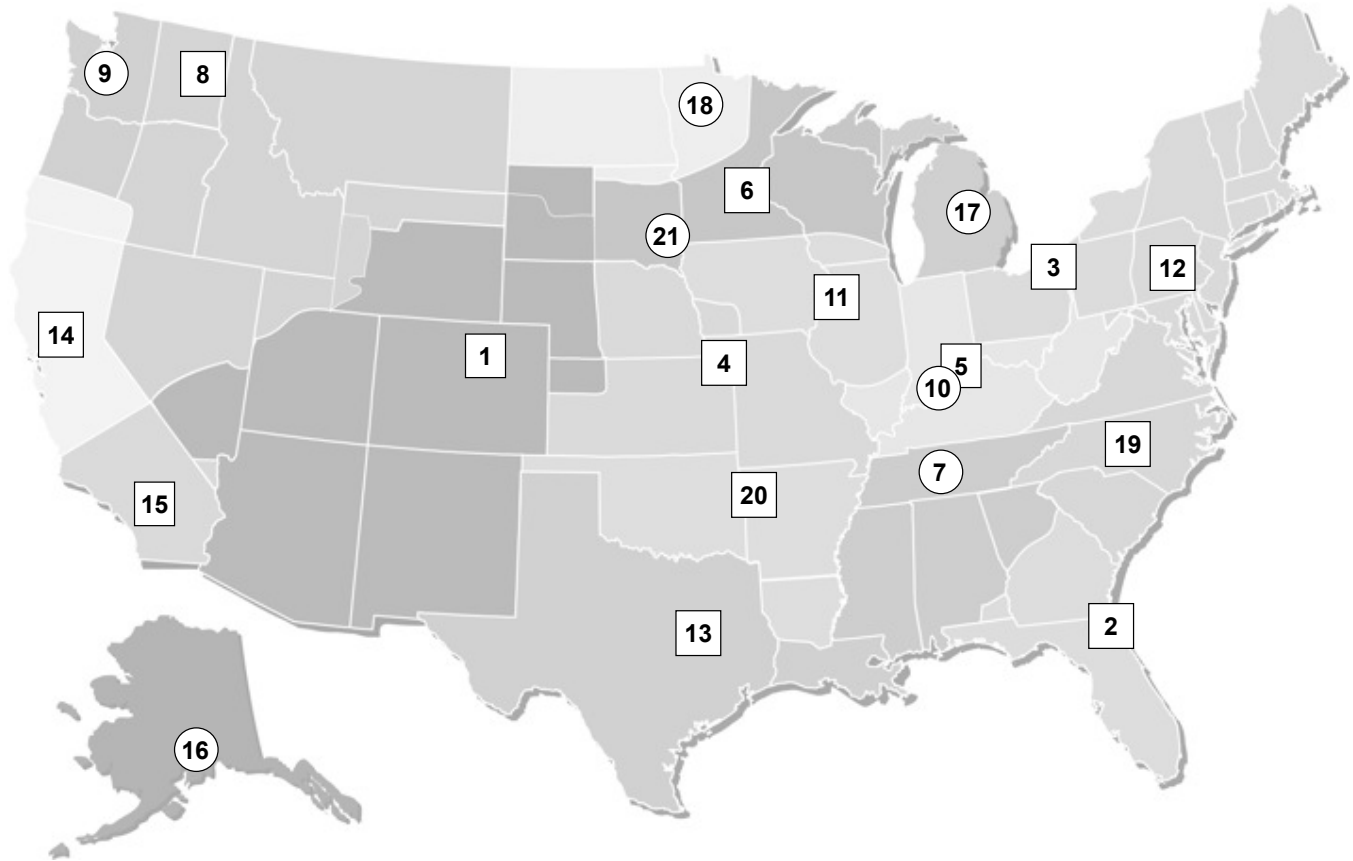
The installation of metal roof systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. **USE EXTREME CARE WHILE INSTALLING ROOF PANELS.** It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to exist. The erector of the roof system is responsible for reading these instructions and determining the safest way to install the roof system.

These instructions are provided only as a guide to show a knowledgeable, trained erector the correct parts placement one to another. If following any of the installation steps would endanger a worker, the erector should stop work and decide upon a corrective action.

Provide required safety railing, netting, or safety lines for crew members working on the roof.

Do not use the roof panel as a walking platform. The roof panels will not withstand the weight of a person standing at the edge of the panel.

Do not stand on any part of a roof panel until the panel has been completely attached.



NOTE: Shaded areas represent regions served by each location.

Branches that manufacture PBR-Panel and/or R-Panel

Metal Sales offers a complete line of metal roof, wall, and fascia panel systems for the commercial, architectural, industrial, residential, and agricultural markets. Metal Sales offers over 75 profiles with a wide selection of widths, colors, and gauges - new construction or retrofit.

1.) DENVER BRANCH

7990 E. I-25 Frontage Road
Longmont, CO 80504
303.702.5440 Phone
800.289.7663 Toll Free
800.289.1617 Toll Free Fax

2.) JACKSONVILLE BRANCH

7110 Stuart Avenue
Jacksonville, FL 32254
904.783.3660 Phone
800.394.4419 Toll Free
904.783.9175 Fax
800.413.3292 Toll Free Fax

3.) JEFFERSON BRANCH

352 East Erie Street
Jefferson, OH 44047
440.576.9070 Phone
800.321.5833 Toll Free
440.576.9242 Fax
800.233.5719 Toll Free Fax

4.) INDEPENDENCE BRANCH

1306 S. Powell Road
Independence, MO 64057
816.796.0900 Phone
800.747.0012 Toll Free
816.796.0906 Fax

5.) SELLERSBURG BRANCH

7800 State Road 60
Sellersburg, IN 47172
812.246.1866 Phone
800.999.7777 Toll Free
812.246.0893 Fax
800.477.9318 Toll Free Fax

6.) ROGERS BRANCH

22651 Industrial Blvd.
Rogers, MN 55374
763.428.8080 Phone
800.328.9316 Toll Free
763.428.8525 Fax
800.938.9119 Toll Free Fax

7.) NASHVILLE BRANCH

4314 Hurricane Creek Blvd.
Antioch, TN 37013
615.641.7100 Phone
800.251.8508 Toll Free
615.641.7118 Fax
800.419.4372 Toll Free Fax

8.) SPOKANE BRANCH

East 2727 Trent Avenue
Spokane, WA 99202
509.536.6000 Phone
800.572.6565 Toll Free
509.534.4427 Fax

9.) SEATTLE BRANCH

20213 84th Avenue, South
Kent, WA 98032
253.872.5750 Phone
800.431.3470 Toll Free (Outside WA)
800.742.7900 Toll Free (Inside WA)
253.872.2008 Fax

11.) ROCK ISLAND BRANCH

8111 West 29th Street
Rock Island, IL 61201
309.787.1200 Phone
800.747.1206 Toll Free
309.787.1833 Fax

12.) DEER LAKE BRANCH

29 Pinedale Industrial Road
Orwigsburg, PA 17961
570.366.2020 Phone
800.544.2577 Toll Free
570.366.1648 Fax
800.544.2574 Toll Free Fax

13.) TEMPLE BRANCH

3838 North General Bruce Dr.
Temple, TX 76501
254.791.6650 Phone
800.543.4415 Toll Free
254.791.6655 Fax
800.543.4473 Toll Free Fax

14.) WOODLAND BRANCH

1326 Paddock Place
Woodland, CA 95776
530.668.5690 Phone
800.759.6019 Toll Free
530.668.0901 Fax

15.) FONTANA BRANCH

14213 Whittram Avenue
Fontana, CA 92335
909.829.8618 Phone
800.782.7953 Toll Free
909.829.9083 Fax

16.) ANCHORAGE BRANCH

4637 Old Seward Hwy.
Anchorage, AK 99503
907.646.7663 Phone
866.640.7663 Toll Free
907.646.7664 Fax

17.) BAY CITY BRANCH

5209 Mackinaw Road
Bay City, MI 48706
989.686.5879 Phone
888.777.7640 Toll Free
989.686.5870 Fax
888.777.0112 Toll Free Fax

18.) DETROIT LAKES BRANCH

1435 Egret Avenue
Detroit Lakes, MN 56501
218.847.2988 Phone
888.594.1394 Toll Free
218.847.4835 Fax
888.594.1454 Toll Free Fax

19.) MOCKSVILLE BRANCH

188 Quality Drive
Mocksville, NC 27028
336.751.6381 Phone
800.228.6119 Toll Free
336.751.6301 Fax
800.228.7916 Toll Free Fax

20.) FORT SMITH BRANCH

7510 Ball Road
Fort Smith, AR 72908
479.646.1176 Phone
877.452.3915 Toll Free
479.646.5204 Fax

21.) SIOUX FALLS BRANCH

2700 West 3rd Street, Suite 4
Sioux Falls, SD 57104
605.335.2745 Phone
888.297.0024 Toll Free

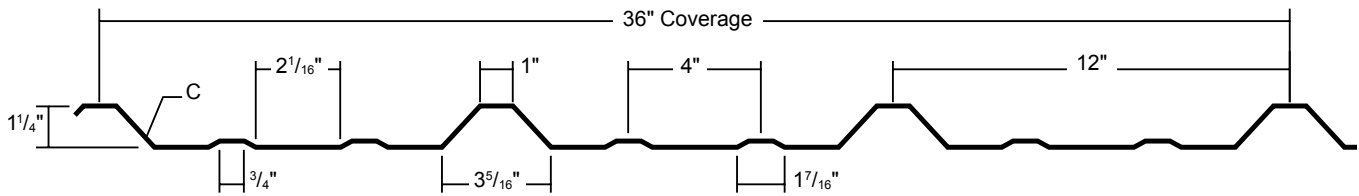
TECHNICAL SUPPORT**TECHNICAL SERVICES**

545 South 3rd Street
Louisville, KY 40202
502.855.4300 Phone
800.406.7387 Toll Free
502.855.4290 Fax
800.944.6884 Toll Free Fax

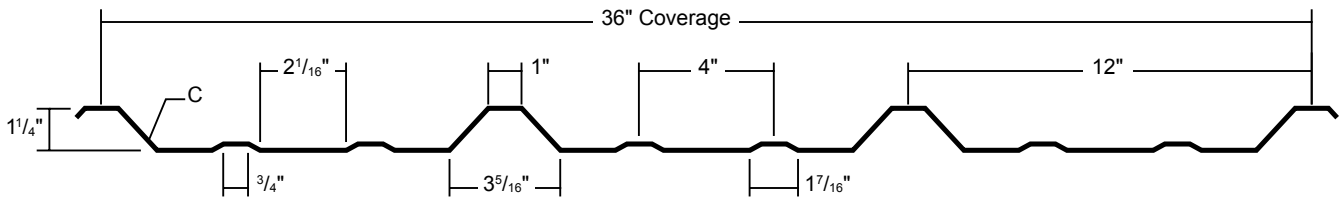
PBR-PANEL

PANEL OVERVIEW

PBR-PANEL PROFILE



R-PANEL PROFILE



SLOPE

The minimum recommended slope for any "R" and "PBR"-Panel is 1:12. Metal Sales recommends that in all roof applications sealant be used on sidelaps.

SUBSTRATE

R-Panel is designed to be utilized over open structural framing, but can easily be used with a solid substrate. The recommended substrate is 5/8" plywood with a 30 pound felt moisture barrier. To avoid panel distortion, use a properly aligned and uniform substructure. **PBR-Panel is recommended for roof applications.**

COVERAGE

Each panel has a coverage of 36".

LENGTH

Lengths under 5'-0" are available with some cutting restrictions. Maximum recommended panel length is 45'-0". Longer panels require additional consideration in packaging, shipping, and erection. Please consult your Metal Sales branch for recommendations.

AVAILABILITY

Panels are available in 26, 24, and 22 gauge. Minimum quantities may apply.

APPLICATION

Commercial, Industrial, and Architectural panels.

PERFORMANCE TEST

UL 580, UL 2218, UL 790, Texas Department of Insurance, Cantilever Diaphragm.

FASTENING SYSTEM

Direct Fastened (exposed).

FASTENERS

The fastener selection guide should be consulted for choosing proper fasteners for specific applications. Quantity and type of fastener must meet necessary loading and code requirements (see PGI-12-14).

MATERIALS

Steel grade 50 per ASTM A-792
Steel grade 80 per ASTM A-792 or ASTM A-653

FINISH

- ▶ Acrylic Coated Galvalume® (ACG) / ASTM A-792 - AZ55
- ▶ Pre-painted Galvalume / ASTM A-792 - AZ50
- ▶ MS Colorfast45®
- ▶ PVDF (Kynar 500)

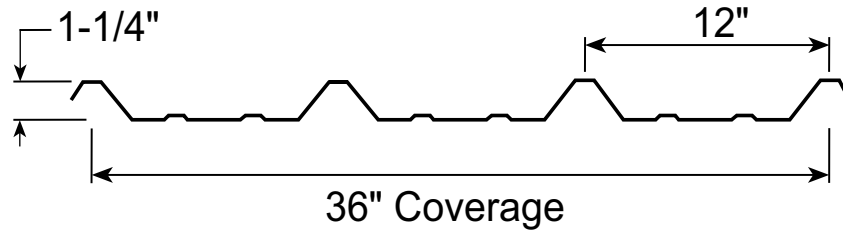
* Differential appearance of Acrylic Coated Galvalume roofing materials is not a cause for rejection.

** Meets both Kynar 500 and Hylar 5000 specifications.

PBR-PANEL

PANEL OVERVIEW

PBR-PANEL PROFILE



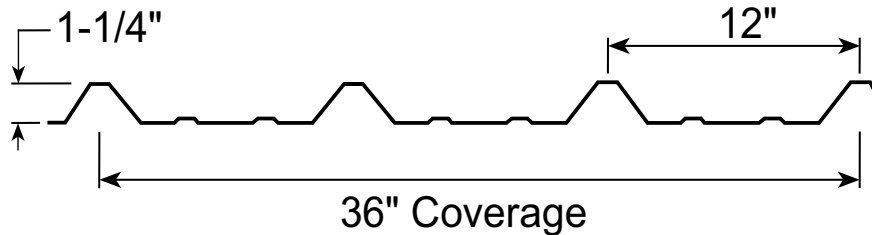
FINISH	GAUGE	COVERAGE	PRODUCT NO.	WT/SQ
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ACG	26	36"	2505241	83
MS Colorfast45®	26	36"	25052__	83
PVDF Standard♦	26	36"	26052__	83
ACG	24	36"	2505241	106
PVDF Standard♦	24	36"	26052__	106

♦ See Metal Sales color charts for color selection. __ Represents color code

*Additional lead time required.

R-PANEL PROFILE



FINISH	GAUGE	COVERAGE	PRODUCT NO.	WT/SQ
--------	-------	----------	-------------	-------

ACG	26	36"	2505241	83
MS Colorfast45®	26	36"	25052__	83
PVDF Standard♦	26	36"	26052__	83
ACG	24	36"	2505241	106
PVDF Standard♦	24	36"	26052__	106

♦ See Metal Sales color charts for color selection. __ Represents color code

*Additional lead time required.

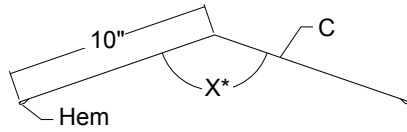
PANEL NOTES

1. For panel lengths over 45'-0", please inquire.
2. Panels may be installed over structural framing or solid substrate.
3. Minimum recommended roof slope: 1:12. Sidelap sealant and stitch screws required on less than 3:12 slope.
4. Finishes:
 - MS Colorfast45®
 - PVDF (Kynar 500)

PBR-PANEL

FLASHING PROFILES

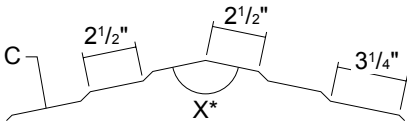
20" RIDGE/HIP COVER



* See chart on page GI-8

GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5500641	13.90 lbs	10'-2"
26	ACG	5500841	27.80 lbs	20'-3"
26	MS Colorfast45®	55006__	13.90 lbs	10'-2"
26	MS Colorfast45®	55008__	27.80 lbs	20'-3"
26	PVDF	56006__	13.90 lbs	10'-2"
26	PVDF	56008__	27.80 lbs	20'-3"
24	ACG	5700641	15.90 lbs	10'-2"
24	ACG	5700841	31.80 lbs	20'-3"
24	PVDF	58006__	15.90 lbs	10'-2"
24	PVDF	58008__	31.80 lbs	20'-3"

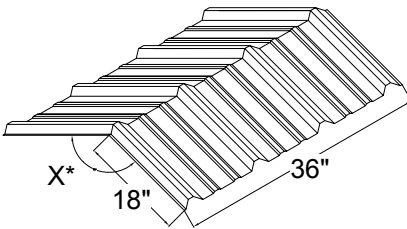
UNIVERSAL RIDGE COVER



* See chart on page XX

GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5501041	13.90 lbs	10'-2"
26	MS Colorfast45®	55010__	13.90 lbs	10'-2"
26	PVDF	56010__	13.90 lbs	10'-2"
24	ACG	5701041	15.90 lbs	10'-2"
24	PVDF	58010__	15.90 lbs	10'-2"

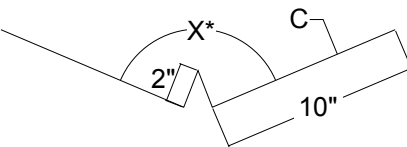
PBR-PANEL FORMED RIDGE



* See chart on page GI-8, Angle same as Ridge/Hip Cover.
 **4:12 Maximum slope on all Formed Ridge
 (Please inquire on minimum quantities required)

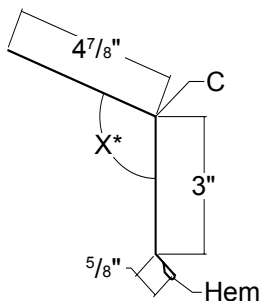
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5592141	9.00 lbs	18"
26	MS Colorfast45®	55921__	9.00 lbs	18"
26	PVDF	56921__	9.00 lbs	18"
24	ACG	5672141	10.10 lbs	18"
24	PVDF	56722__	10.10 lbs	18"

VALLEY



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5301841	13.90 lbs	10'-2"
26	ACG	5502041	27.80 lbs	20'-3"
26	MS Colorfast45®	53018__	13.90 lbs	10'-2"
26	MS Colorfast45®	55020__	27.80 lbs	20'-3"
26	PVDF	54018__	13.90 lbs	10'-2"
26	PVDF	56020__	27.80 lbs	20'-3"
24	ACG	5701841	16.85 lbs	10'-2"
24	ACG	5702041	33.70 lbs	20'-3"
24	PVDF	58018__	16.85 lbs	10'-2"
24	PVDF	58020__	33.70 lbs	20'-3"

EAVE

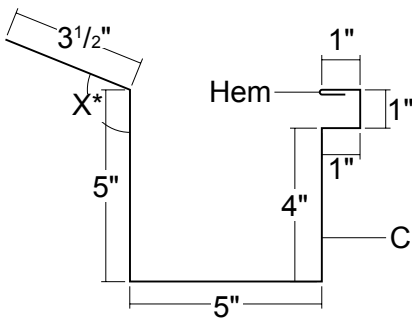


GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5506941	6.00 lbs	10'-2"
26	MS Colorfast45®	55069__	6.00 lbs	10'-2"
26	PVDF	56069__	6.00 lbs	10'-2"
24	ACG	5706941	7.00 lbs	10'-2"
24	PVDF	58069__	7.00 lbs	10'-2"

PBR-PANEL

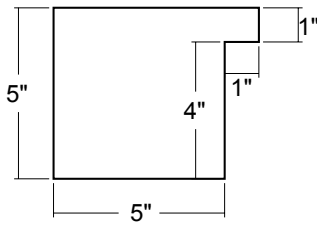
FLASHING PROFILES

BOX GUTTER



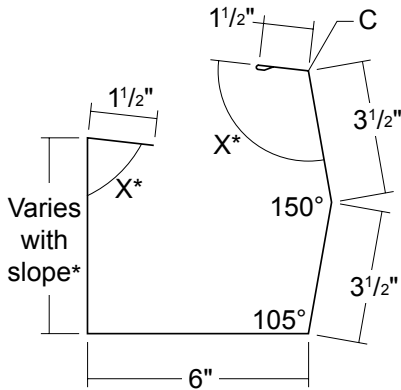
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5507741	14.00 lbs	10'-2"
26	ACG	5507941	28.00 lbs	20'-3"
26	MS Colorfast45®	55077__	14.00 lbs	10'-2"
26	MS Colorfast45®	55079__	28.00 lbs	20'-3"
26	PVDF	56077__	14.00 lbs	10'-2"
26	PVDF	56079__	28.00 lbs	20'-3"
24	ACG	5707741	16.95 lbs	10'-2"
24	ACG	5707941	33.90 lbs	20'-3"
24	PVDF	58077__	16.95 lbs	10'-2"
24	PVDF	58079__	33.90 lbs	20'-3"

BOX GUTTER END CAP



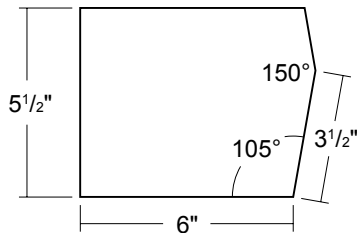
GAUGE	FINISH	PRODUCT NO.	WEIGHT	SIDE
26	ACG	5508141	.20 lbs	Left
26	ACG	5508241	.20 lbs	Right
26	MS Colorfast45®	55081__	.20 lbs	Left
26	MS Colorfast45®	55082__	.20 lbs	Right
26	PVDF	56081__	.20 lbs	Left
26	PVDF	56082__	.20 lbs	Right
24	ACG	5708141	.24 lbs	Left
24	ACG	5708241	.24 lbs	Right
24	PVDF	58081__	.24 lbs	Left
24	PVDF	58082__	.24 lbs	Right

SCULPTURED GUTTER



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5508441	14.00 lbs	10'-2"
26	ACG	5508641	28.00 lbs	20'-3"
26	MS Colorfast45®	55084__	14.00 lbs	10'-2"
26	MS Colorfast45®	55086__	28.00 lbs	20'-3"
26	PVDF	56084__	14.00 lbs	10'-2"
26	PVDF	56086__	28.00 lbs	20'-3"
24	ACG	5708441	16.95 lbs	10'-2"
24	ACG	5708641	33.90 lbs	20'-3"
24	PVDF	58084__	16.95 lbs	10'-2"
24	PVDF	58086__	33.90 lbs	20'-3"

SCULPTURED GUTTER END CAP

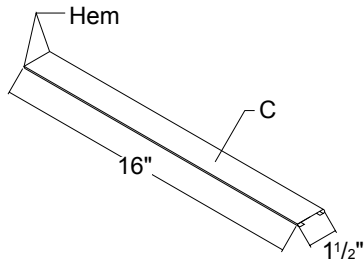


GAUGE	FINISH	PRODUCT NO.	WEIGHT	SIDE
26	ACG	5508841	.20 lbs	Left
26	ACG	5508941	.20 lbs	Right
26	MS Colorfast45®	55088__	.20 lbs	Left
26	MS Colorfast45®	55089__	.20 lbs	Right
26	PVDF	56088__	.20 lbs	Left
26	PVDF	56089__	.20 lbs	Right
24	ACG	5708841	.24 lbs	Left
24	ACG	5708941	.24 lbs	Right
24	PVDF	58088__	.24 lbs	Left
24	PVDF	58089__	.24 lbs	Right

PBR-PANEL

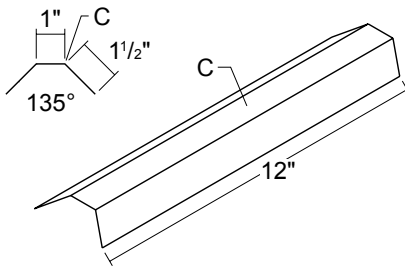
FLASHING PROFILES

BOX GUTTER/DOWNSPOUT STRAP



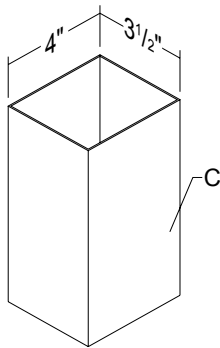
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5509241	.32 lbs	1'-4"
26	MS Colorfast45®	55092__	.32 lbs	1'-4"
26	PVDF	56092__	.32 lbs	1'-4"
24	ACG	5709241	.36 lbs	1'-4"
24	PVDF	58092__	.36 lbs	1'-4"

GUTTER HANGAR



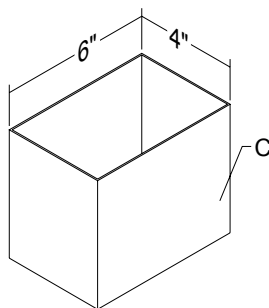
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5509141	.32 lbs	1'-0"
26	MS Colorfast45®	55091__	.32 lbs	1'-0"
26	PVDF	56091__	.32 lbs	1'-0"
24	ACG	5709141	.41 lbs	1'-0"
24	PVDF	58091__	.41 lbs	1'-0"

4" X 3-1/2" DOWNSPOUT



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5509441	13.90 lbs	10'-2"
26	ACG	5509741	27.80 lbs	20'-3"
26	MS Colorfast45®	55094__	13.90 lbs	10'-2"
26	MS Colorfast45®	55097__	27.80 lbs	20'-3"
26	PVDF	56094__	13.90 lbs	10'-2"
26	PVDF	56097__	27.80 lbs	20'-3"
24	ACG	5709441	16.85 lbs	10'-2"
24	ACG	5709741	33.70 lbs	20'-3"
24	PVDF	58094__	16.85 lbs	10'-2"
24	PVDF	58097__	33.70 lbs	20'-3"

6" X 4" DOWNSPOUT

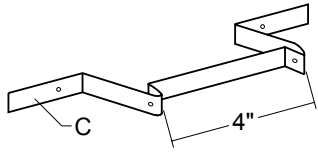


GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5509841	13.90 lbs	10'-2"
26	ACG	5510141	27.80 lbs	20'-3"
26	MS Colorfast45®	55098__	13.90 lbs	10'-2"
26	MS Colorfast45®	55101__	27.80 lbs	20'-3"
26	PVDF	56098__	13.90 lbs	10'-2"
26	PVDF	56101__	27.80 lbs	20'-3"
24	ACG	5709841	16.85 lbs	10'-2"
24	ACG	5710141	33.70 lbs	20'-3"
24	PVDF	58098__	16.85 lbs	10'-2"
24	PVDF	58101__	33.70 lbs	20'-3"

PBR-PANEL

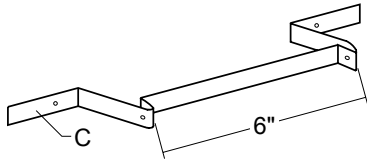
FLASHING PROFILES

4" DOWNSPOUT STRAP



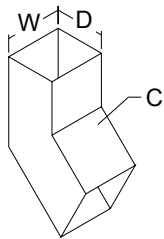
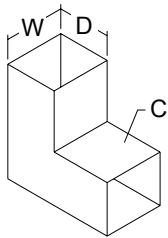
GAUGE	FINISH	PRODUCT NO.	WEIGHT
26	ACG	5511041	.32 lbs
26	MS Colorfast45®	55110__	.32 lbs
26	PVDF	56110__	.32 lbs
24	ACG	5711041	.36 lbs
24	PVDF	58110__	.36 lbs

6" DOWNSPOUT STRAP



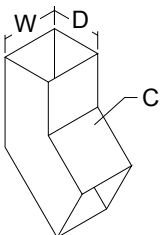
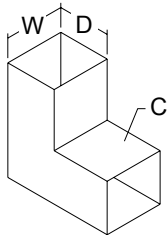
GAUGE	FINISH	PRODUCT NO.	WEIGHT
26	ACG	5511241	.32 lbs
26	MS Colorfast45®	55112__	.32 lbs
26	PVDF	56112__	.32 lbs
24	ACG	5711241	.36 lbs
24	PVDF	58112__	.36 lbs

4" X 3-1/2" ELBOW



GAUGE	FINISH	PRODUCT NO.	WEIGHT	TYPE
26	ACG	5510241	2.00 lbs	95 Degree
26	MS Colorfast45®	55102__	2.00 lbs	95 Degree
26	PVDF	56102__	2.00 lbs	95 Degree
24	ACG	5710241	2.30 lbs	95 Degree
24	PVDF	58102__	2.30 lbs	95 Degree
26	ACG	5510641	2.00 lbs	45 Degree
26	MS Colorfast45®	55106__	2.00 lbs	45 Degree
26	PVDF	56106__	2.00 lbs	45 Degree
24	ACG	5710641	2.30 lbs	45 Degree
24	PVDF	58106__	2.30 lbs	45 Degree

6" X 4" ELBOW



GAUGE	FINISH	PRODUCT NO.	WEIGHT	TYPE
26	ACG	5510441	2.00 lbs	95 Degree
26	MS Colorfast45®	55104__	2.00 lbs	95 Degree
26	PVDF	56104__	2.00 lbs	95 Degree
24	ACG	5710441	3.00 lbs	95 Degree
24	PVDF	58104__	3.00 lbs	95 Degree
26	ACG	5510841	2.00 lbs	45 Degree
26	MS Colorfast45®	55108__	2.00 lbs	45 Degree
26	PVDF	56108__	2.00 lbs	45 Degree
24	ACG	5710841	3.00 lbs	45 Degree
24	PVDF	58108__	3.00 lbs	45 Degree

PBR-PANEL

FLASHING PROFILES

PEAK	GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
	26	ACG	5502241	8.25 lbs	10'-2"
	26	ACG	5502441	16.50 lbs	20'-3"
	26	MS Colorfast45®	55022__	8.25 lbs	10'-2"
	26	MS Colorfast45®	55024__	16.50 lbs	20'-3"
	26	PVDF	56022__	8.25 lbs	10'-2"
	26	PVDF	56024__	16.50 lbs	20'-3"
	24	ACG	5702241	9.95 lbs	10'-2"
	24	ACG	5702441	19.90 lbs	20'-3"
	24	PVDF	58022__	9.95 lbs	10'-2"
	24	PVDF	58024__	19.90 lbs	20'-3"

SCULPTURED HIGH SIDE EAVE	GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
	26	ACG	5502241	8.25 lbs	10'-2"
	26	ACG	5502441	16.50 lbs	20'-3"
	26	MS Colorfast45®	55022__	8.25 lbs	10'-2"
	26	MS Colorfast45®	55024__	16.50 lbs	20'-3"
	26	PVDF	56022__	8.25 lbs	10'-2"
	26	PVDF	56024__	16.50 lbs	20'-3"
	24	ACG	5702241	9.95 lbs	10'-2"
	24	ACG	5702441	19.90 lbs	20'-3"
	24	PVDF	58022__	9.95 lbs	10'-2"
	24	PVDF	58024__	19.90 lbs	20'-3"

RAKE	GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
	26	ACG	5590441	8.10 lbs	10'-2"
	26	MS Colorfast45®	55904__	8.10 lbs	10'-2"
	26	PVDF	56904__	8.10 lbs	10'-2"
	24	ACG	5790441	10.80 lbs	10'-2"
	24	PVDF	59904__	10.80 lbs	10'-2"

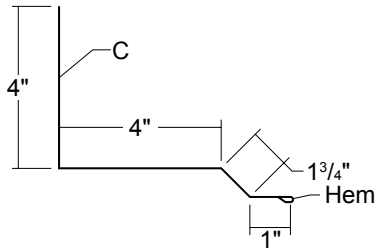
SCULPTURED RAKE	GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
	26	ACG	5591141	13.80 lbs	10'-2"
	26	ACG	5591241	27.60 lbs	20'-3"
	26	MS Colorfast45®	55911__	13.80 lbs	10'-2"
	26	MS Colorfast45®	55912__	27.60 lbs	20'-3"
	26	PVDF	56911__	13.80 lbs	10'-2"
	26	PVDF	56912__	27.60 lbs	20'-3"
	24	ACG	5791141	17.70 lbs	10'-2"
	24	ACG	5791241	35.40 lbs	20'-3"
	24	PVDF	58911__	17.70 lbs	10'-2"
	24	PVDF	58912__	35.40 lbs	20'-3"

SCULPTURED RAKE END	GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
	26	ACG	5504641	.15 lbs	
	26	MS Colorfast45®	55046__	.15 lbs	
	26	PVDF	56046__	.15 lbs	
	24	ACG	5704641	.18 lbs	
	24	PVDF	58046__	.18 lbs	

PBR-PANEL

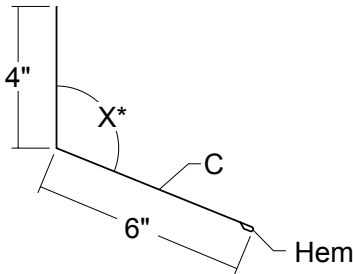
FLASHING PROFILES

RAKEWALL



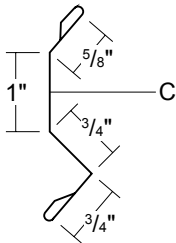
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5590241	7.20 lbs	10'-2"
26	ACG	5590341	14.40 lbs	20'-3"
26	MS Colorfast45®	55902__	7.20 lbs	10'-2"
26	MS Colorfast45®	55903__	14.40 lbs	20'-3"
26	PVDF	56902__	7.20 lbs	10'-2"
26	PVDF	56903__	14.40 lbs	20'-3"
24	ACG	5790241	9.60 lbs	10'-2"
24	ACG	5790341	19.20 lbs	20'-3"
24	PVDF	58902__	9.60 lbs	10'-2"
24	PVDF	58903__	19.20 lbs	20'-3"

PITCH BREAK



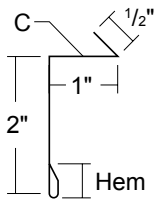
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5504841	6.90 lbs	10'-2"
26	MS Colorfast45®	55048__	6.90 lbs	10'-2"
26	PVDF	56048__	6.90 lbs	10'-2"
24	ACG	5704841	8.30 lbs	10'-2"
24	PVDF	59048__	8.30 lbs	10'-2"

COUNTER FLASHING



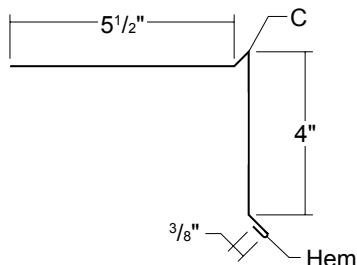
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5505241	2.75 lbs	10'-2"
26	MS Colorfast45®	55052__	2.75 lbs	10'-2"
26	PVDF	56052__	2.75 lbs	10'-2"
24	ACG	5705241	3.35 lbs	10'-2"
24	PVDF	59052__	3.35 lbs	10'-2"

REGLET FLASHING



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5505441	2.65 lbs	10'-2"
26	MS Colorfast45®	55054__	2.65 lbs	10'-2"
26	PVDF	56054__	2.65 lbs	10'-2"
24	ACG	5705441	3.20 lbs	10'-2"
24	PVDF	59054__	3.20 lbs	10'-2"

GRAVEL STOP

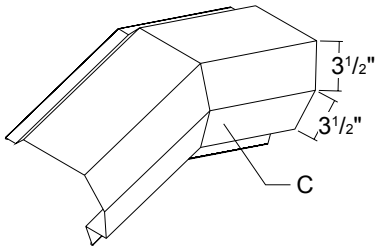


GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5503041	7.25 lbs	10'-2"
26	ACG	5503241	14.50 lbs	20'-3"
26	MS Colorfast45®	55030__	7.25 lbs	10'-2"
26	MS Colorfast45®	55032__	14.50 lbs	20'-3"
26	PVDF	56030__	7.25 lbs	10'-2"
26	PVDF	56032__	14.50 lbs	20'-3"
24	ACG	5703041	8.80 lbs	10'-2"
24	ACG	5703241	17.60 lbs	20'-3"
24	PVDF	58030__	8.80 lbs	10'-2"
24	PVDF	58032__	17.60 lbs	20'-3"

PBR-PANEL

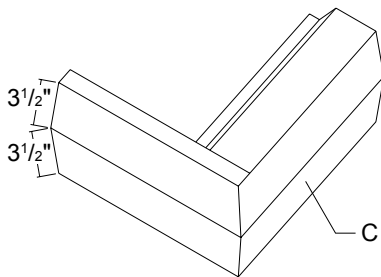
FLASHING PROFILES

SCULPTURED PEAK BOX



GAUGE	FINISH	PRODUCT NO.	WEIGHT
26	ACG	5596341	6.00 lbs
26	MS Colorfast45®	55963__	6.00 lbs
26	PVDF	56963__	6.00 lbs
24	ACG	5796341	7.00 lbs
24	PVDF	59963__	7.00 lbs

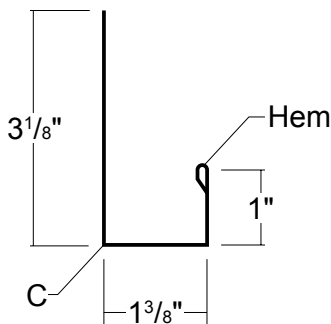
SCULPTURED CORNER BOX



Looking from Eave to Ridge
(Right Shown)

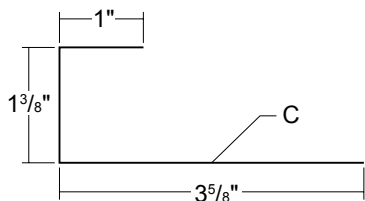
GAUGE	FINISH	PRODUCT NO.	WEIGHT	SIDE
26	ACG	5596441	7.00 lbs	Left
26	ACG	5596241	7.00 lbs	Right
26	MS Colorfast45®	55964__	7.00 lbs	Left
26	MS Colorfast45®	55962__	7.00 lbs	Right
26	PVDF	56964__	7.00 lbs	Left
26	PVDF	56962__	7.00 lbs	Right
24	ACG	5796441	8.00 lbs	Left
24	ACG	5796241	8.00 lbs	Right
24	PVDF	58964__	8.00 lbs	Left
24	PVDF	58962__	8.00 lbs	Right

R-PANEL JAMB



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5596641	3.00 lbs	7'-3"
26	ACG	5520841	4.20 lbs	10'-2"
26	ACG	5596741	5.80 lbs	14'-2"
26	MS Colorfast45®	55966__	3.00 lbs	7'-3"
26	MS Colorfast45®	55208__	4.20 lbs	10'-2"
26	MS Colorfast45®	55967__	5.80 lbs	14'-2"
26	PVDF	56966__	3.00 lbs	7'-3"
26	PVDF	56208__	4.20 lbs	10'-2"
26	PVDF	56967__	5.80 lbs	14'-2"
24	ACG	5796641	3.60 lbs	7'-3"
24	ACG	5720841	5.00 lbs	10'-2"
24	ACG	5796741	7.00 lbs	14'-2"
24	PVDF	58966__	3.60 lbs	7'-3"
24	PVDF	58208__	5.00 lbs	10'-2"
24	PVDF	58967__	7.00 lbs	14'-2"

C-CLOSURE

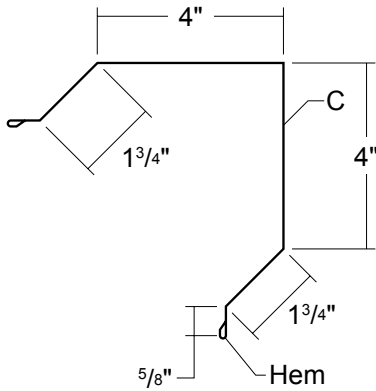


GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5520641	4.00 lbs	10'-2"
26	MS Colorfast45®	55206__	4.00 lbs	10'-2"
26	PVDF	56206__	4.00 lbs	10'-2"
24	ACG	5720641	5.00 lbs	10'-2"
24	PVDF	58206__	5.00 lbs	10'-2"

PBR-PANEL

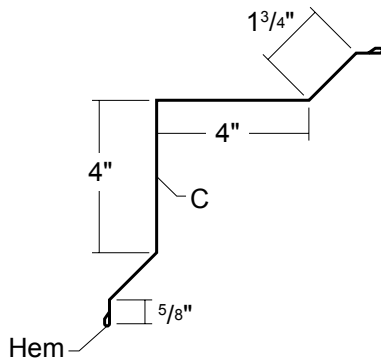
FLASHING PROFILES

PBR-PANEL OUTSIDE CORNER



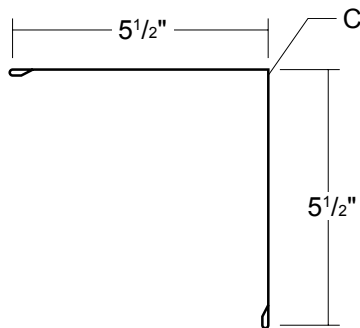
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5591441	9.30 lbs	10'-2"
26	ACG	5591541	13.05 lbs	14'-2"
26	ACG	5591641	18.60 lbs	20'-3"
26	MS Colorfast45®	55914__	9.30 lbs	10'-2"
26	MS Colorfast45®	55915__	13.05 lbs	14'-2"
26	MS Colorfast45®	55916__	18.60 lbs	20'-3"
26	PVDF	56914__	9.30 lbs	10'-2"
26	PVDF	56915__	13.05 lbs	14'-2"
26	PVDF	56916__	18.60 lbs	20'-3"
24	ACG	5791441	11.70 lbs	10'-2"
24	ACG	5791541	16.20 lbs	14'-2"
24	ACG	5791641	23.40 lbs	20'-3"
24	PVDF	58914__	11.70 lbs	10'-2"
24	PVDF	58915__	16.20 lbs	14'-2"
24	PVDF	58916__	23.40 lbs	20'-3"

PBR-PANEL INSIDE CORNER



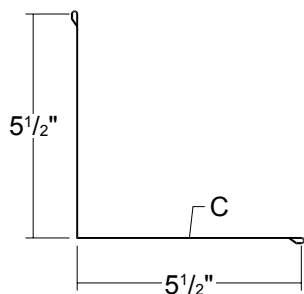
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5591741	9.30 lbs	10'-2"
26	ACG	5591841	13.05 lbs	14'-2"
26	ACG	5591941	18.60 lbs	20'-3"
26	MS Colorfast45®	55917__	9.30 lbs	10'-2"
26	MS Colorfast45®	55918__	13.05 lbs	14'-2"
26	MS Colorfast45®	55919__	18.60 lbs	20'-3"
26	PVDF	56917__	9.30 lbs	10'-2"
26	PVDF	56918__	13.05 lbs	14'-2"
26	PVDF	56919__	18.60 lbs	20'-3"
24	ACG	5791741	11.70 lbs	10'-2"
24	PVDF	58917__	11.70 lbs	10'-2"

OUTSIDE CORNER



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5513241	7.70 lbs	10'-2"
26	ACG	5513641	15.40 lbs	20'-3"
26	MS Colorfast45®	55132__	7.70 lbs	10'-2"
26	MS Colorfast45®	55136__	15.40 lbs	20'-3"
26	PVDF	56132__	7.70 lbs	10'-2"
26	PVDF	56136__	15.40 lbs	20'-3"
24	ACG	5713241	10.20 lbs	10'-2"
24	ACG	5713641	20.40 lbs	20'-3"
24	PVDF	58132__	10.20 lbs	10'-2"
24	PVDF	58136__	20.40 lbs	20'-3"

INSIDE CORNER

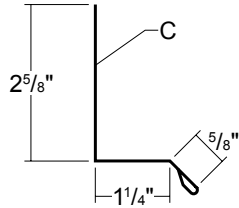


GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5512641	7.70 lbs	10'-2"
26	ACG	5513041	15.40 lbs	20'-3"
26	MS Colorfast45®	55126__	7.70 lbs	10'-2"
26	MS Colorfast45®	55130__	15.40 lbs	20'-3"
26	PVDF	56126__	7.70 lbs	10'-2"
26	PVDF	56130__	15.40 lbs	20'-3"
24	ACG	5712641	10.20 lbs	10'-2"
24	ACG	5713041	20.40 lbs	20'-3"
24	PVDF	58126__	10.20 lbs	10'-2"
24	PVDF	58130__	20.40 lbs	20'-3"

PBR-PANEL

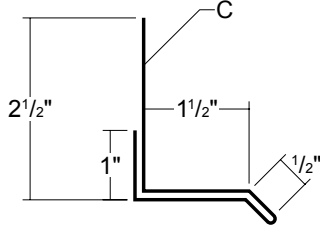
FLASHING PROFILES

1-1/4" BASE



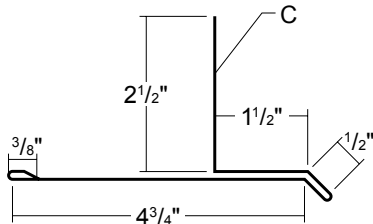
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5513841	3.25 lbs	10'-2"
26	MS Colorfast45®	55138__	3.25 lbs	10'-2"
26	PVDF	56138__	3.25 lbs	10'-2"
24	ACG	5713841	4.40 lbs	10'-2"
24	PVDF	58138__	4.40 lbs	10'-2"

1.5" SILL/HEAD



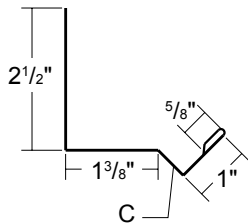
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5511441	5.20 lbs	10'-2"
26	MS Colorfast45®	55114__	5.20 lbs	10'-2"
26	PVDF	56114__	5.20 lbs	10'-2"
24	ACG	5711441	6.30 lbs	10'-2"
24	PVDF	58114__	6.30 lbs	10'-2"

1.5" SILL TO SOFFIT



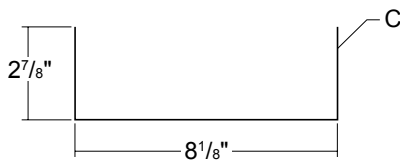
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5511841	7.20 lbs	10'-2"
26	MS Colorfast45®	55118__	7.20 lbs	10'-2"
26	PVDF	56118__	7.20 lbs	10'-2"
24	ACG	5711841	8.75 lbs	10'-2"
24	PVDF	58118__	8.75 lbs	10'-2"

HEAD CHANNEL



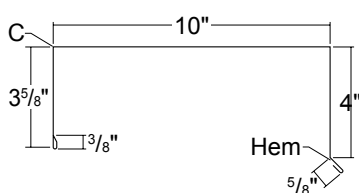
GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5596041	1.60 lbs	3'-6"
26	ACG	5512241	4.50 lbs	10'-2"
26	MS Colorfast45®	55960__	1.60 lbs	3'-6"
26	MS Colorfast45®	55122__	4.50 lbs	10'-2"
26	PVDF	56960__	1.60 lbs	3'-6"
26	PVDF	56122__	4.50 lbs	10'-2"
24	ACG	5712241	5.15 lbs	10'-2"
24	PVDF	58122__	5.15 lbs	10'-2"

HEAD/JAMB COVER



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5512441	9.25 lbs	10'-2"
26	ACG	5596141	12.25 lbs	14'-2"
26	MS Colorfast45®	55124__	9.25 lbs	10'-2"
26	MS Colorfast45®	55961__	12.25 lbs	14'-2"
26	PVDF	56124__	9.25 lbs	10'-2"
26	PVDF	56961__	12.25 lbs	14'-2"
24	ACG	5712441	11.00 lbs	10'-2"
24	PVDF	58124__	11.00 lbs	10'-2"



COPING



GAUGE	FINISH	PRODUCT NO.	WEIGHT	LENGTH
26	ACG	5502641	12.20 lbs	10'-2"
26	MS Colorfast45®	55026__	12.20 lbs	10'-2"
26	PVDF	56026__	12.20 lbs	10'-2"
24	ACG	5702641	15.35 lbs	10'-2"
24	ACG	5702841	30.70 lbs	14'-2"
24	PVDF	58026__	15.35 lbs	10'-2"
24	PVDF	58028__	30.70 lbs	14'-2"

PBR-PANEL

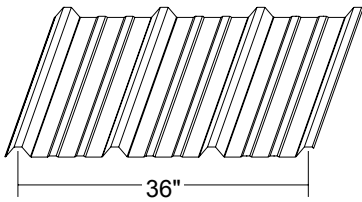
ACCESSORIES

PBR-PANEL CLOSURE		SIZE	TYPE	PRODUCT NO.	WT/100	
 <p>Outside Closure</p>  <p>Inside Closure</p>	1" x 3'-0"	Polyethylene Foam Glued	6460699	9.00 lbs		
	1" x 3'-0"	Polyethylene Foam Glued	6460800	7.00 lbs		
UNIVERSAL CLOSURE		SIZE	TYPE	PRODUCT NO.	WT/100	COLOR
	1" x 1 1/2" x 50'	Polyethylene Foam	6411100	4.00 lbs	Grey	
VERSA VENT		SIZE	TYPE	PRODUCT NO.	WT/10	CTN QTY
	1" x 1 1/2" x 10'	Vented Foam				10
PROFILE VENT		SIZE	TYPE	PRODUCT NO.	WEIGHT	CTN QTY
	3" x 50'	Vented Foam				2
SINGLE BEAD TAPE SEALANT		SIZE	TYPE	PRODUCT NO.	WT/CTN	CTN QTY
	7/8" x 3/16" x 25'	Butyl	6404099	40.00 lbs	48 Rolls	
TUBE SEALANT		SIZE	TYPE	PRODUCT NO.	WT/CTN	CTN QTY
	10.3 oz	Urethane White	6402830	30.00 lbs	30 Tubes	
	10.3 oz	Urethane Bronze	6402999	30.00 lbs	30 Tubes	
	10.3 oz	Urethane Grey	6402829	30.00 lbs	30 Tubes	

PBR-PANEL

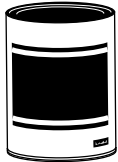
ACCESSORIES

LIGHT TRANSMITTING PANEL



SIZE	S.F. WEIGHT	PRODUCT NO.	WT/PC	COLOR
3'-0" X 12'-0"	8 oz	6190030	21.00 lbs	White

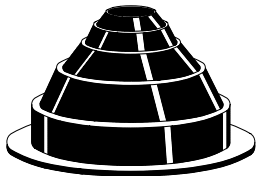
TOUCH-UP PAINT



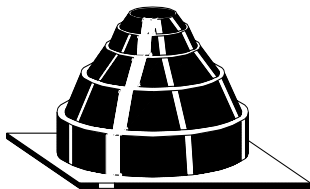
SIZE	TYPE	PRODUCT NO.	WEIGHT
Pint	MS Colorfast45®	66004__	1.60 lbs
Pint	PVDF	66010__	1.60 lbs
2 oz Bottle	PVDF	66005__	.15 lbs

RUBBER ROOF DECK FLASHING

Rubber Roof Jack Round Base



Retro Roof Jack Square Base



SIZE	TYPE	PRODUCT NO.	BASE DIA.	WEIGHT
#1 Flasher	Rubber	68501__*	1/4" - 2"	3.00 lbs
#2 Flasher	Rubber	68502__*	1 3/4" - 3 1/4"	3.00 lbs
#3 Flasher	Rubber	68503__*	1/4" - 5"	3.00 lbs
#4 Flasher	Rubber	68504__*	3" - 6 1/4"	3.00 lbs
#5 Flasher	Rubber	68505__*	4 1/4" - 7 1/2"	5.00 lbs
#6 Flasher	Rubber	68506__*	5" - 9"	9.00 lbs
#7 Flasher	Rubber	68507__*	6" - 11"	11.00 lbs
#8 Flasher	Rubber	68508__*	7" - 13"	13.00 lbs
#9 Flasher	Rubber	68509__*	10" - 19"	13.00 lbs

*Special order colors: 93=Brown; 94=Green; 95=Red; 96=Blue; 97=White; 98=Grey; 99=Black

#1 Flasher	HT Silicone	6850011	1/4" - 2"	3.00 lbs
#2 Flasher	HT Silicone	6850012	1 3/4" - 3 1/4"	3.00 lbs
#3 Flasher	HT Silicone	6850013	1/4" - 5"	3.00 lbs
#4 Flasher	HT Silicone	6850014	3" - 6 1/4"	3.00 lbs
#5 Flasher	HT Silicone	6850015	4 1/4" - 7 1/2"	5.00 lbs
#6 Flasher	HT Silicone	6850016	5" - 9"	9.00 lbs
#7 Flasher	HT Silicone	6850017	6" - 11"	11.00 lbs
#8 Flasher	HT Silicone	6850018	7" - 13"	13.00 lbs
#9 Flasher	HT Silicone	6850019	10" - 19"	13.00 lbs

#1 Masterflash	Retrofit HT	6850060	1/4" - 2"	4.00 lbs
#2 Masterflash	Retrofit HT	6850061	1 1/4" - 3"	4.00 lbs
#3 Masterflash	Retrofit HT	6850062	1/4" - 4"	4.00 lbs

GRAY ROUND RETRO ROOF JACK

#1 Masterflash	Retrofit E.P.D.M	6850073	1/4" - 2"	4.00 lbs
#2 Masterflash	Retrofit E.P.D.M	6850074	1 1/4" - 3"	4.00 lbs
#3 Masterflash	Retrofit E.P.D.M	6850075	1/4" - 4"	4.00 lbs

BLACK ROUND RETRO ROOF JACK

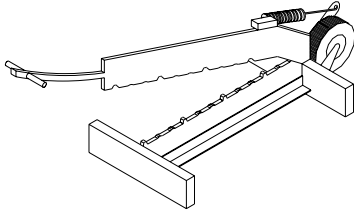
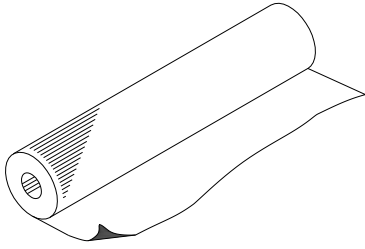
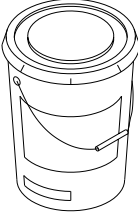
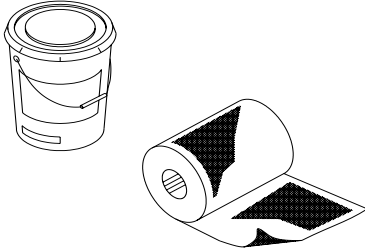
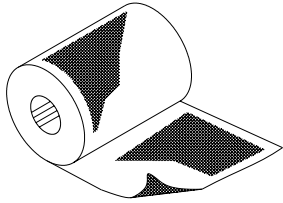
#1 Masterflash	Retrofit E.P.D.M	6850070	1/4" - 2"	4.00 lbs
#2 Masterflash	Retrofit E.P.D.M	6850071	1 1/4" - 3"	4.00 lbs
#3 Masterflash	Retrofit E.P.D.M	6850072	1/4" - 4"	4.00 lbs

BLACK SQUARE RETRO ROOF JACK

#1 Masterflash	Retrofit E.P.D.M	6850046	1/4" - 2"	4.00 lbs
#2 Masterflash	Retrofit E.P.D.M	6850047	1 1/4" - 3"	4.00 lbs
#3 Masterflash	Retrofit E.P.D.M	6850048	1/4" - 4"	4.00 lbs

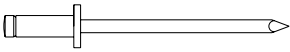
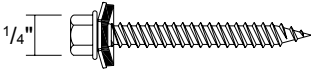
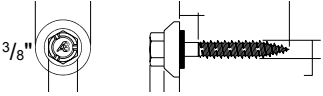
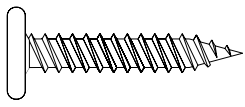
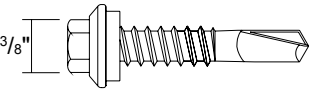
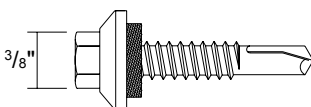
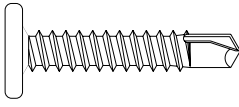
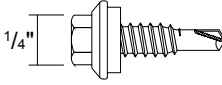
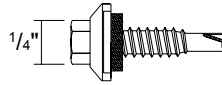
PBR-PANEL

ACCESSORIES

PBR-PANEL SHEAR	PROFILES	TYPE	PRODUCT NO.	WEIGHT	
	PBR-Panel and R-Panel	Straight	6536799	85.00 lbs	
ms-HT UNDERLAYMENT	SIZE	TYPE	PRODUCT NO.	WT/ROLL	COVERAGE
	36" x 75'-0"	Peel-n-Stick High Temp Underlayment	4121200	44.00 lbs	2 Squares/Roll
UNDERLAYMENT PRIMER	SIZE	TYPE	PRODUCT NO.	WT/ROLL	COVERAGE
	5 Gallon	Liquid	6600000	44.00 lbs	100-125 sf per gallon depending on substrate
ALSAN KIT	SIZE	CONTENTS	PRODUCT NO.	WT/ROLL	COVERAGE
	Kit	1 Gallon Alsan 1 Roll Poly Fleece Tools 1 Instructional Video	4130300	10.00 lbs	25 sf per gallon depending on weather temperature
POLY FLEECE ROLL	SIZE	TYPE	PRODUCT NO.	WT/ROLL	QTY
	4" x 50'	Poly Fleece	4130500	.30 lbs	1 Roll
	6" x 50'	Poly Fleece	4130400	.50 lbs	1 Roll

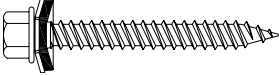

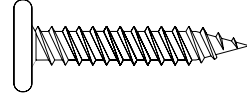
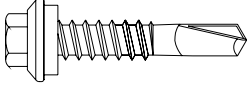
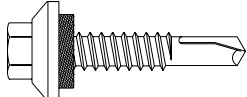
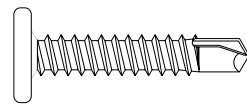
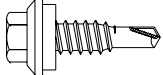
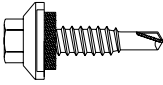
PBR-PANEL

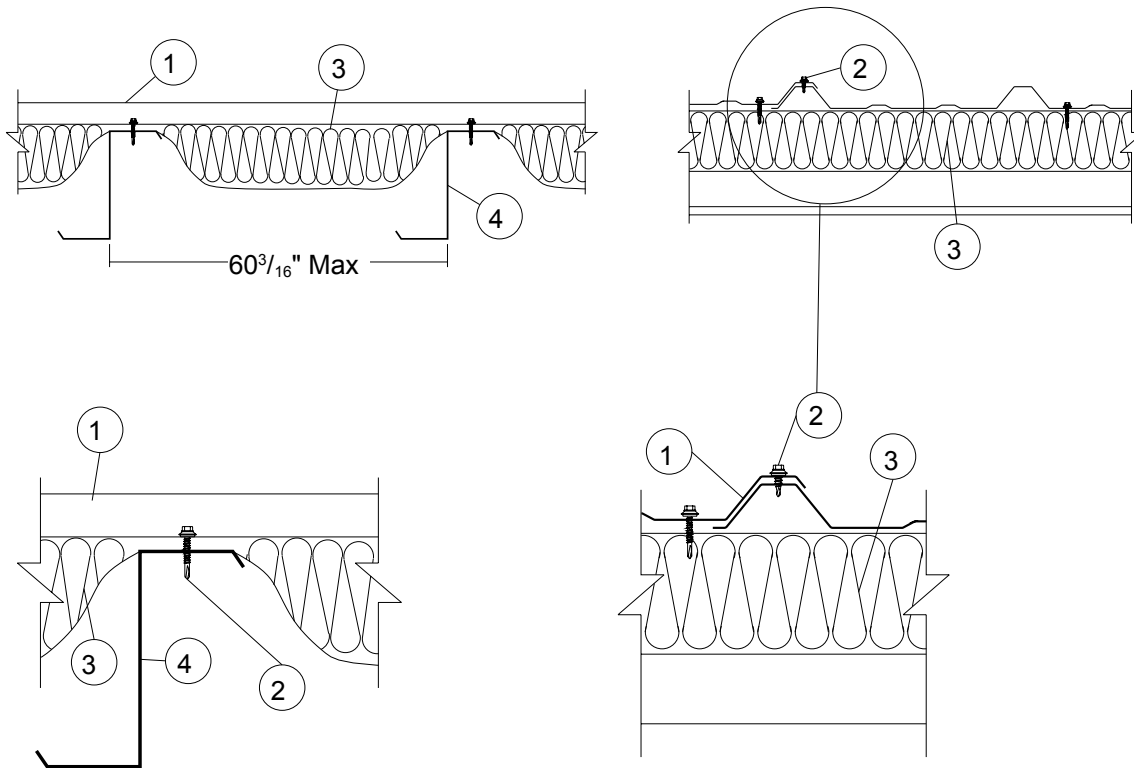
FASTENERS

POP RIVET		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
 <p>*Limited stocked colors</p>	1/8" x 3/16"	Aluminum	8240901	Unpainted	.75 lbs	
	1/8" x 3/16"	Aluminum	82409__	Painted*	.75 lbs	
WOODSCREW		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	#10-14 x 1"	A	82101__	Painted	4.30 lbs	
	#10-14 x 1 1/2"	A	82103__	Painted	5.50 lbs	
	#10-14 x 2"	A	82104__	Painted	6.70 lbs	
WOODSCREW XL		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	#10-14 x 1"	A	8212100	XL	6.50 lbs	
	#10-14 x 1 1/2"	A	8212300	XL	7.50 lbs	
XL Fasteners are recommended for use with bare galvalume panels and flashings.						
PANCAKE HEAD WOODSCREW		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	#10-12 x 1"	A	8243100	Plated	6.50 lbs	
SELF DRILLER (SD)		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	#12-14 x 1"	Driller	82201__	Painted	7.80 lbs	
	#12-14 x 1 1/2"	Driller	82203__	Painted	8.50 lbs	
	#12-14 x 2"	Driller	82204__	Painted	11.00 lbs	
SELF DRILLER XL		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	#12-14 x 1"	Driller	8235300	XL	12.00 lbs	
	#12-14 x 1 1/2"	Driller	8235400	XL	13.00 lbs	
	#12-14 x 2"	Driller	8235500	XL	14.00 lbs	
XL Fasteners are recommended for use with bare galvalume panels and flashings.						
PANCAKE HEAD SELF DRILLER		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	#10-16 x 1"	Driller	8242100	XL	6.50 lbs	
STITCH		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	1/4" -14 x 7/8"	Stitch	82348__	Painted	7.70 lbs	
STITCH XL		SIZE	TYPE	PRODUCT NO.	FINISH	WT/250
	1/4" -14 x 7/8"	Stitch	8236800	XL	10.50 lbs	
XL Fasteners are recommended for use with bare galvalume panels and flashings.						

PBR-PANEL

FASTENER PHYSICAL PROPERTIES

FASTENER	SIZE	HEAD DIA/TYPE	THREAD DIA. O.D.	THREAD DIA. I.D.	MIN TENSILE	MIN. TORSIONAL	NOM. SHEAR
WOODSCREW 	#10-14	1/4" HWH	.190-.200	.128-.133			
WOODSCREW XL 	#10-14	1/4" HWH	.190-.200	.128-.133			
PANCAKE HEAD WOODSCREW 							
SELF DRILLER 	#12-14	5/16" HWH	.209-.215	.157-.165	3446	128	2100
SELF DRILLER XL 	#12-14	5/16" HWH	.209-.215	.157-.165	3446	130	2100
PANCAKE HEAD SELF DRILLER 							
STITCH 	1/4 -14	5/16" HWH	.240-.246	.185-.192			
STITCH XL 	1/4 -14	5/16" HWH	.240-.246	.185-.192			



PBR-PANEL

Construction No. 161
 November 02, 2001
 Uplift - Class 90
 Fire Not Investigated

1. Metal Roof Deck PanNo. 26 MSG min gauge coated steel. Panels continuous over two or more spans. End laps to occur over purlins with panels overlapped a min of 4 in. with lap centered over purlin web. A line of tape sealant may be used at panel side and end laps.

Metal Sales Manufacturing Corporation "R-Panel" "PBR-Panel".

2. Panel Fasteners For panel to panel and panel to purlin connections to be No. 12-14 by 1 in. self-drilling, self-tapping, hex head, plated steel screws with a 5/8 in. OD formed steel washer and a neoprene sealing washer.

As alternate Fasteners - For panel to purlin connections, 1/4 - 14 HHAB self-tapping, plating steel screws, with a separate 5/8 in. OD dome shaped steel washer and a neoprene sealing washer may be used.

Or: No. 14-10HHA, self-tapping, plating steel screws, with a separate, 5/8 in. OD dome shaped steel washer and a neoprene sealing washer may be used.

Spacing, for panel - to - purlin connections to be 12 in. on center beginning 2 - 1/2 in. from center line on one side of each major rib. Spacing at end lap to be in a 5 - 7 - 5 - 7 in. pattern beginning 2 - 1/2 in. from the center line on both sides of each major rib.

Fastener for panel to purlin connection to be 1-1/4 in. long when insulation (Item 3) is greater than 4-1/2 in.

Spacing for panel - to - panel connections to be 20 in. on center with a fastener located in line with the purlin fasteners.

3. Insulation (Optional) - Any compressible blanket insulation 6 in. max thickness before compression.

4. Purlin No. 16 MSG min gauge steel (50,000 psi min yield).

5. Lateral Bracing (Not shown) - As required.

Refer to General Information, Roof Deck Construction, (Roofing Materials and Systems Directory) for items not evaluated.

* Bearing the UL Classification Mark.

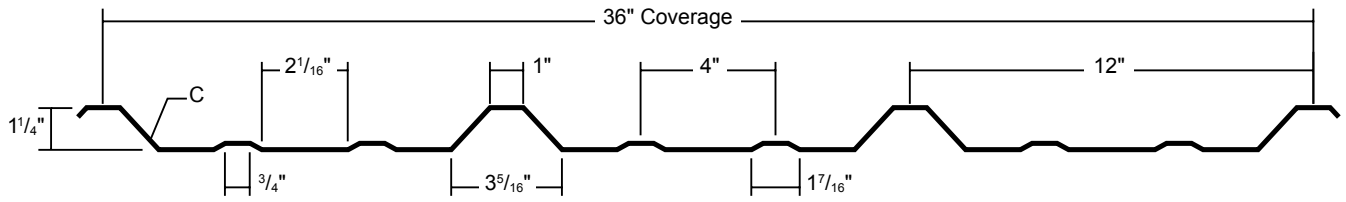


Underwriters Laboratories Inc. ®
 LISTED

PBR-PANEL

SECTION PROPERTIES

R-PANEL



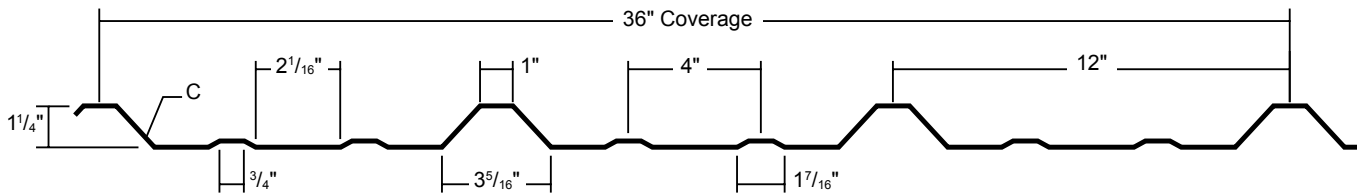
SECTION PROPERTIES

ALLOWABLE UNIFORM LOADS PSF (3 or More Equal Spans)

Ga.	Width (in.)	Yield KSI	Weight PSF	Top in Compression		Bottom in Compression		Inward Load							Outward Load						
				I _{xx} In ⁴ /ft	S _{xx} In ³ /ft	I _{xx} In ⁴ /ft	S _{xx} In ³ /ft	2'	3'	4'	5'	6'	7'	2'	3'	4'	5'	6'	7'		
26	36"	80	0.87	0.0350	0.0348	0.0293	0.0439	235	119	71	47	27	17	270	132	77	50	35	26		
24	36"	50	1.13	0.0543	0.0558	0.0427	0.0595	316	147	85	55	38	27	398	185	106	68	48	35		
22	36"	50	1.45	0.0767	0.0814	0.0600	0.0790	434	199	113	73	51	37	594	273	155	100	70	51		

- Theoretical Section Properties have been calculated per AISI 2007 "North American Specification for the Design of Cold-Formed Steel Structural Members". I_{xx} & S_{xx} are effective section properties for deflection and bending.
- Allowable load is calculated in accordance with AISI 2007 specification considering : bending, shear, combined bending and shear, deflection and ASTM E 1592 testing for 24 ga and 22 ga. Allowable load is base on 3 or more equal span condition. Allowable load does not consider panel weight, web crippling, fasteners / support conditions or testing for 26 gauge.
- Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
- Allowable loads do not include a 1/3 stress increase in uplift.

PBR-PANEL



SECTION PROPERTIES

ALLOWABLE UNIFORM LIVE LOADS PSF (3 or More Equal Spans)

Ga.	Width (in.)	Yield KSI	Weight PSF	Top in Compression		Bottom in Compression		Inward (Gravity / Deflection) Load							Outward Uplift (Stress) Load						
				I _{xx} In ⁴ /ft	S _{xx} In ³ /ft	I _{xx} In ⁴ /ft	S _{xx} In ³ /ft	2'	3'	4'	5'	6'	7'	2'	3'	4'	5'	6'	7'		
26	36"	80	0.84	0.0367	0.0367	0.0317	0.0458	261	129	76	49	35	23	223	107	62	40	28	21		
24	36"	50	1.09	0.0560	0.0579	0.0457	0.0613	330	153	88	57	39	29	314	145	83	53	37	27		
22	36"	50	1.43	0.0800	0.0860	0.0633	0.0816	453	207	118	76	53	39	474	218	124	80	55	40		

- Theoretical Section Properties have been calculated per AISI 2007 "North American Specification for the Design of Cold-Formed Steel Structural Members". I_{xx} & S_{xx} are effective section properties for deflection and bending.
- Allowable load is calculated in accordance with AISI 2007 specification considering : bending, shear, combined bending and shear, deflection and ASTM E 1592 testing for 24 ga and 22 ga. Allowable load is base on 3 or more equal span condition. Allowable load does not consider panel weight, web crippling, fasteners / support conditions or testing for 26 gauge.
- Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
- Allowable loads do not include a 1/3 stress increase in uplift.

RECEIVING MATERIAL

It is the responsibility of the installer to unload material from the delivery truck. The installer shall be responsible for providing suitable equipment for unloading of material from the truck.

After receiving material, check the condition of the material, and review the shipment against the shipping list to ensure all materials are accounted for. If damages or shortages are discovered, it should be noted on the Bill of Lading at the time of delivery. A claim should be made against the carrier as soon as possible. Metal Sales is not responsible for any damages or shortages unless they are documented in writing and presented to Metal Sales within 48 hours.

GENERAL HANDLING

Each bundle should be handled carefully to avoid being damaged. Care should be taken to prevent bending of the panel or abrasion to finish. Whenever possible, the bundle should remain crated until it is located in its place of storage. If bundles must be opened, we recommend you re-crate them before lifting. To avoid damage please lift the bundle at its center of gravity.

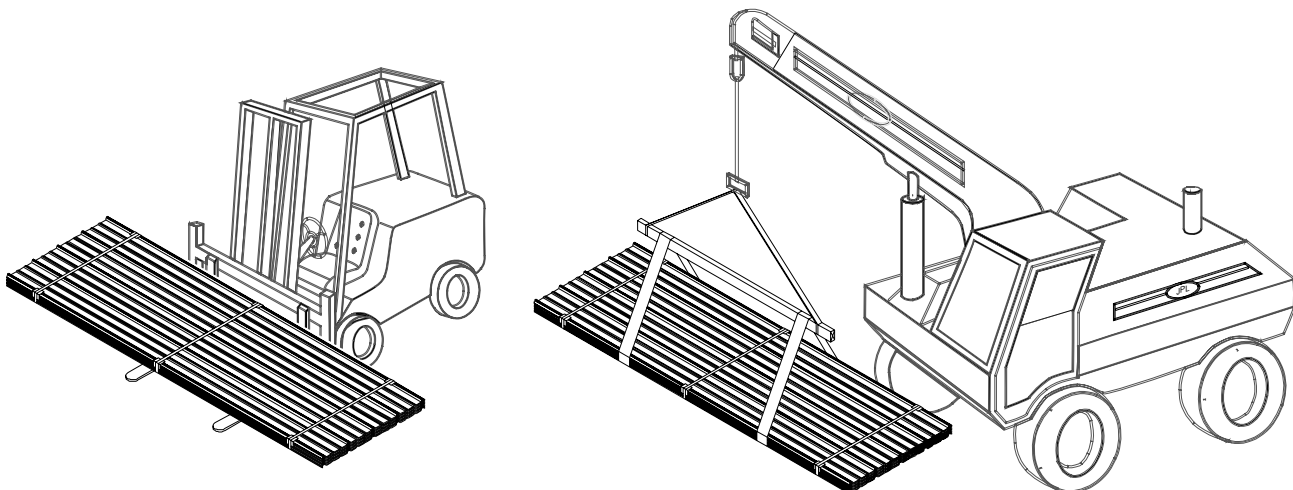
CAUTION

Improper loading and unloading of bundles and crates may result in bodily harm and/or material damage. Metal Sales is not responsible for bodily injuries and/or material damages resulting from improper loading and unloading.

MECHANICAL HANDLING

Forklift - A forklift may be used for panels up to 20'-0" long. Please make sure the forks are at their maximum separation. Do not transport open bundles. When transporting bundles across rough terrain, or over a longer distance, some means of supporting the panel load must be used.

Crane - A crane should be used when lifting panels with lengths greater than 20'-0". Please be sure to utilize a spreader bar to ensure the even distribution of the weight to the pick up points. As a rule when lifting panels, no more than $\frac{1}{3}$ of the length of the panel should be left unsupported. Never use wire rope because this will damage the panels.

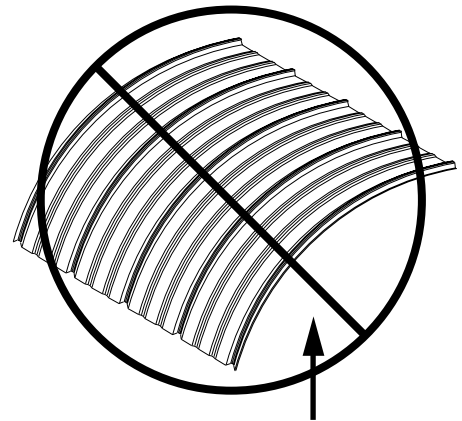
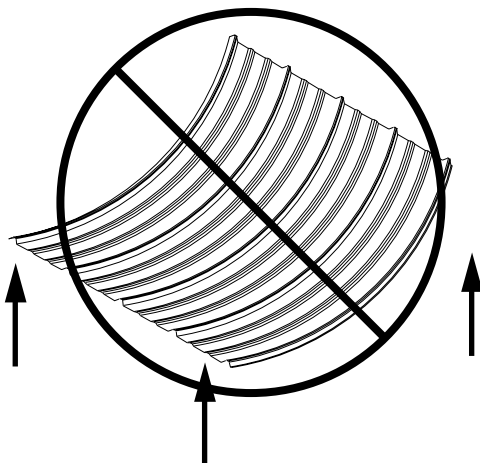
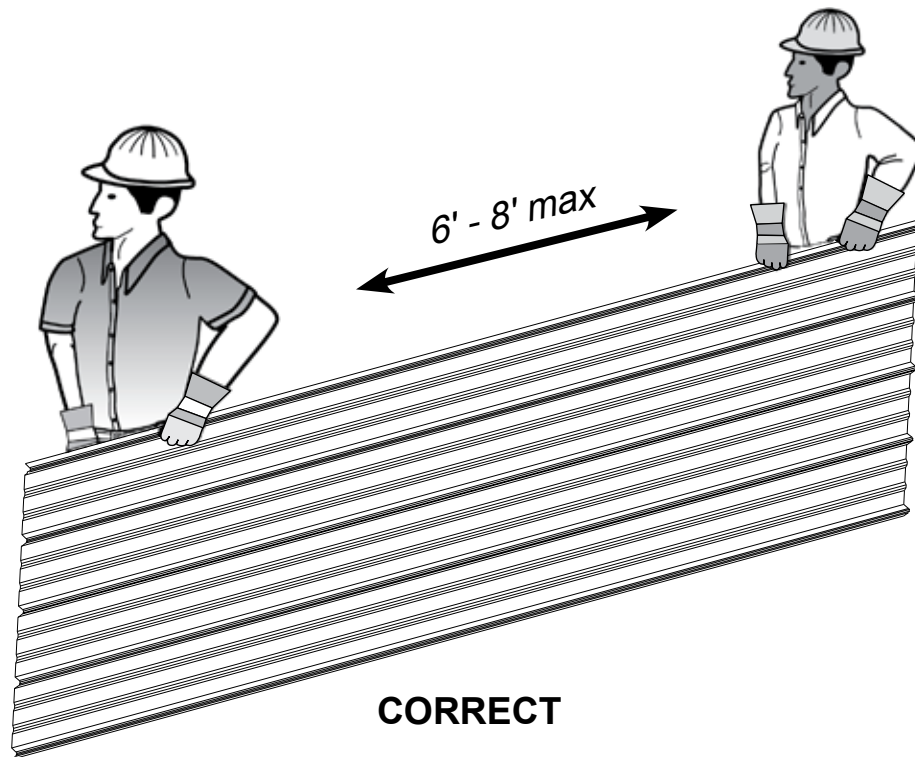


MANUAL HANDLING

When handling painted steel care should be taken to prevent scratching of material. Clean gloves should be worn at all times to prevent a reaction with salts found on bare skin. Installers should wear rubber sole shoes to keep from scuffing material while walking on the roof.

Handling of individual panels should be done carefully and properly to avoid bending or damaging. PBR-Panels should be carried by grasping the edge of the panel so that the PBR-Panel is vertical to the ground. The PBR-Panel should not be carried with the panel horizontal to the ground as this could cause the panel to buckle or bend in the center.

Normally individual panels can be handled by people placed every 6'-0" to 8'-0" along the length of the panel.

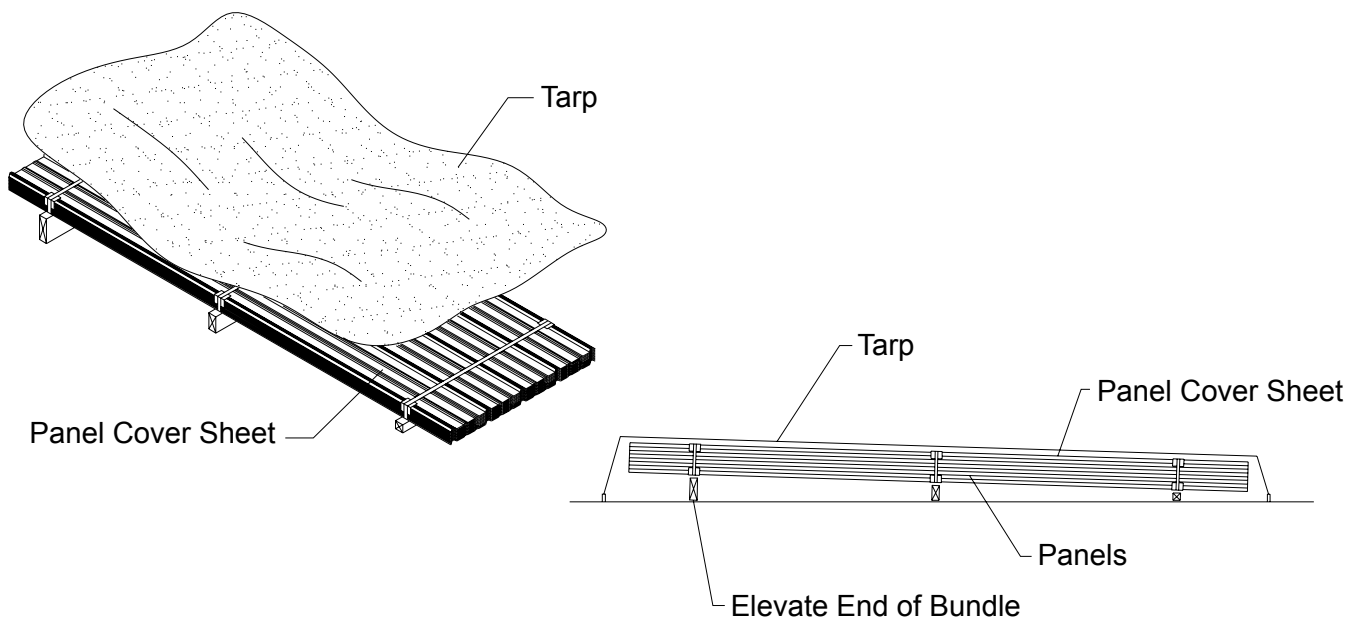


INCORRECT

GENERAL

Please inspect panels for moisture accumulation. If moisture has formed, the panels should be unbundled, wiped dry, and allowed to dry completely. Once dry, carefully re-stack the panels and loosely recover allowing for ample air circulation.

Bundled sheets should be stored high enough off of the ground to allow for air circulation and prevent contact with accumulating water. Elevate one end of the bundle to allow any moisture to run off the panels. Metal Sales recommends covering the bundle with a tarp. Do not use tight fitting plastic-type tarps as panel bundle covers. While they may provide protection from heavy downpours, they can also retard necessary ventilation and trap heat and moisture that may accelerate metal corrosion. If panels are to be stored in possible bad weather, we suggest they be stored inside. Extended storage of panels in a bundle is not recommended. **Under no circumstances should the panels be stored near or come in contact with salt water, corrosive chemicals, ash, or fumes generated or released inside the building or nearby plants, foundries, plating works, kilns, fertilizer, and wet or green lumber.**



FOOT TRAFFIC

Care of metal panels and flashings must be exercised throughout erection. Foot traffic can cause distortion of panel and damage to finish. Traffic over the installed system must be kept to an absolute minimum. Installers should wear rubber sole shoes to keep from scuffing material while walking on the roof.

When walking on the roof panels is unavoidable, walk only in the flats of the panel. Walking on the ribs can cause damage to the panels.

REQUIRED TOOLS

Standard required tools for field installation include:

- Screw Guns
- Magnetic Bits
- Metal Nibbler or Shear
- Tin Snips
- Tape Measure
- Hammer
- Chalk Line
- Power Drill
- Drill Bits
- Pop Rivet Gun
- Safety Goggles
- Gloves
- Ear Plugs
- Fall Protection

CONDITION OF SUBSTRUCTURE

Metal Sales' panels are designed to be installed over open framing and/or directly over a wood substrate (minimum 5/8") with 30# felt moisture barrier (or an Ice and Water Shield when required by Local Building Codes).

Always check with local building codes prior to all installations for any additional requirements that may be specific to your area.

Galvanized and Galvalume panels should not be in contact with, or subject to, water runoff from copper, lead, or uncoated steel materials.

Condensate water from air conditioning units typically contains dissolved copper. This condensate should be discharged through a plastic pipe extended beyond the edge of the roof.

The roof should be inspected for any trapped moisture or structural damage such as bowing or sagging rafters and warped or loose roof purlins or solid decking. These areas should be repaired prior to installing new metal panels.

Prior to installation, make sure there are no nails or fasteners protruding from the roof framing or wood substrate which could damage the panels and impede the installation process.

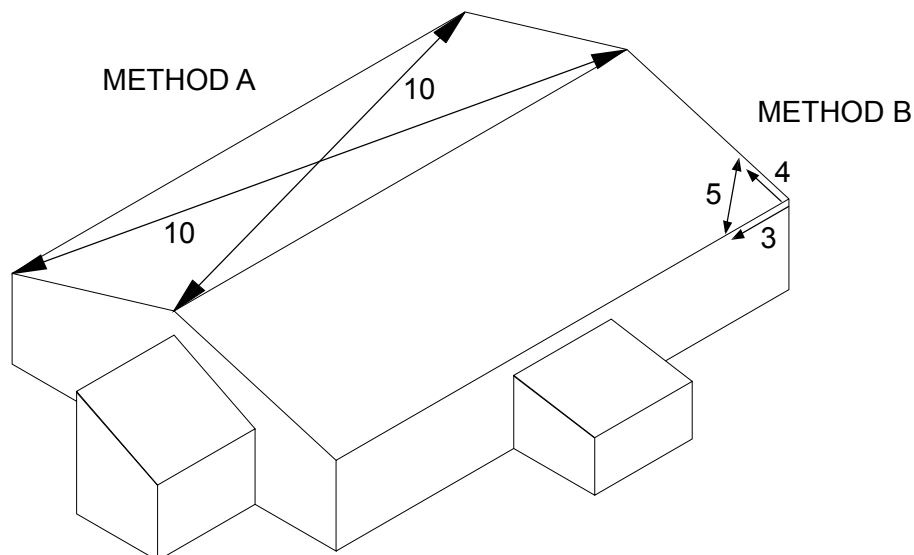
When installed, panel distortion may occur if not applied over properly aligned and uniform substructure.

Whether installing over new or existing roof, the installer should check the roof deck for squareness before installing panels. Several methods can be used to verify squareness of the structure for proper installation of the panels.

METHOD "A" - One method for checking the roof for squareness is to measure diagonally across one slope of the roof from similar points at the ridge and eave and obtain the same dimension.

METHOD "B" - The 3-4-5 triangle system may also be used. To use this system, measure a point from the corner along the edge of the roof at a module of three (3). Measure a point from the same corner along another edge at a module of four (4).

By measuring diagonally between the two points established, the dimension should be exactly a module of five (5) to have a square corner. Multiple uses of this system may be required to determine building squareness. If the endwall cannot be made square, the roof system cannot be installed as shown in these instructions.



FIELD CUTTING

Tin snips or a "nibbler" type electric tool are recommended for field cutting metal panels. Cutting the steel generates slivers or metal chips. These slivers and metal chips must be immediately removed from the panels because they will damage the finish and shorten the life of the product.

One method of preventing this problem is to flip the panels over when cutting. This allows the slivers and metal chips to be brushed from the back side and avoids damaging the paint on the top side of the panels.

When cutting metal panels and flashings, goggles must be worn for eye protection.

CAUTION

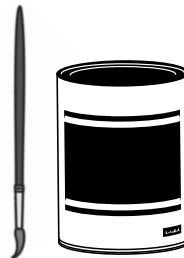
All product surfaces should be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface, voiding the warranty.

TOUCH-UP PAINT

All painted panels and flashings have a factory applied baked on finish. Handling and installing panels may result in some small scratches or nicks to the paint finish. Touch-up paint is available in matching colors from Metal Sales. It is recommended that a small brush be used to apply touch-up paint to those areas that are in need of repair. Touch-up paint does not have the superior chalk and fade resistance of the factory applied paint finish and will normally discolor at an accelerated rate. Aerosol paint should not be used because of the over-spray that may occur.



SPRAY PAINT



TOUCH-UP PAINT

VENTILATION

Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal buildings; these problems are common to all types of construction.

The underside of the metal roof on a typical metal building (no attic) should be protected from condensation by insulating with a faced insulation. This should reduce the potential of condensation forming on the underside of the panels.

On buildings that have an attic space or are being retrofitted with a metal roofing system, vents should be placed at both the eave and peak of the roof in order to prevent a buildup of moisture (humidity) in the attic space.

Though factory applied pre-painted finishes are very durable and will last many years, eventually it may be desirable to thoroughly clean or repaint them.

Dirt pickup may cause apparent discoloration of the paint when it has been exposed in some dirt-laden environments for long periods of time. In areas of strong sunlight, slight chalking may cause some change in appearance. A good cleaning will often restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will help maintain a good appearance.

In many cases, simply washing the building with plain water using a hose or pressure sprayer will be adequate. In areas where heavy dirt deposits dull the surface, a cloth or soft bristle brush and solution of water and detergent ($\frac{1}{3}$ cup of laundry detergent per gallon of water for example) may be used. This should be followed by an adequate rinse of water. Do not use wire brushes, abrasives, or cleaning tools which will damage the coating surface.

Mildew may occur in areas subject to high humidity but is not normally a problem due to the high inherent mildew resistance of the baked finish that is used. To remove mildew along with the dirt, the following solution is recommended.

- $\frac{1}{3}$ cup detergent (Tide® or equivalent)
- $\frac{2}{3}$ cup trisodium phosphate (Solex® or equivalent)
- 1 quart of 5% sodium hypochlorite solution (Clorox® or equivalent)
- 3 quarts of water

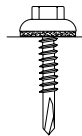
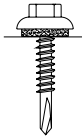
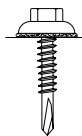
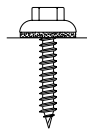
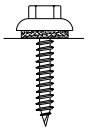
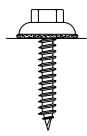
Strong solvents and abrasive type cleaners should be avoided. Most organic solvents are flammable and toxic and must be handled accordingly. When using a solvent, consult maintenance professionals and label instructions for proper handling and disposal of washings. If required, a mild solvent such as mineral spirits can be used to remove caulking compounds, oil, grease, tars, wax, and similar substances. Use a cloth dampened with mineral spirits and apply only to areas which are contaminated. Follow up the use of this mild solvent with detergent cleaning and rinsing.



FASTENER INSTALLATION TECHNIQUE

Recommended Tool Type - Use depth locating nose or adjustable clutch on screw gun to prevent over-drilling and strip out. **Do not use impact tools or runners.**

Seating the washer - Apply sufficient torque to seat the washer - do not overdrive the fastener.

	CORRECT Sealing material slightly visible at edge of metal washer. Assembly is watertight.	TOO LOOSE Sealing material is not visible; not enough compression to seal properly.	TOO TIGHT Metal washer deformed; sealing material pressed beyond washer edge.
SELF DRILLER			
WOODSCREW			

To prevent wobbling - Make sure fastener head is completely engaged in the socket. If the head does not go all the way in the socket - tap the magnet deeper into the socket to allow full head engagement. Metal chips will build up from drilling and should be removed from time to time.

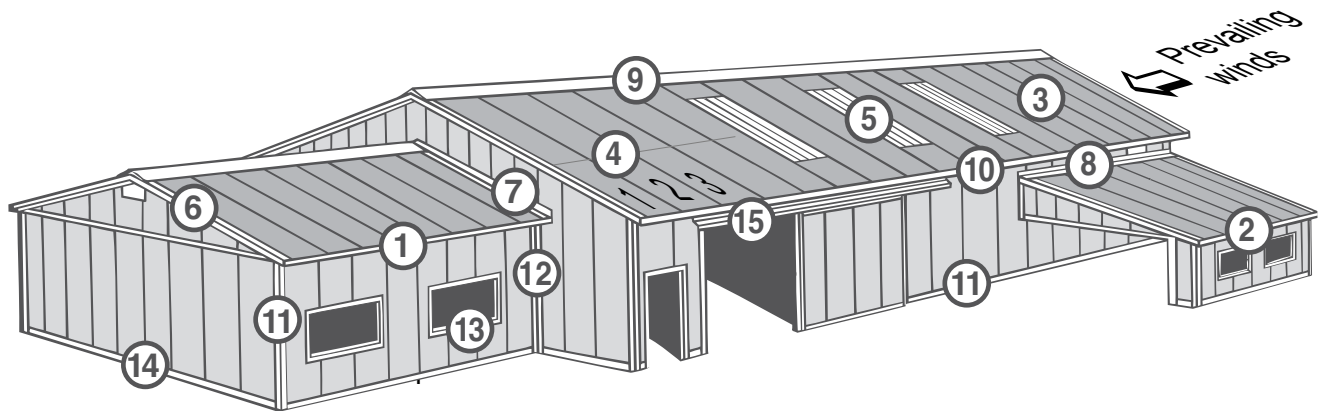
Protect drill point - Push only hard enough on the screw gun to engage clutch. This prevents excess friction and burn out of the drill point. Correct pressure will allow screw to drill and tap without binding.

Drilling through sheet and insulation - Ease up on pressure when drilling through insulation to avoid striking the purlin or girt with the point - apply more pressure after drill point contacts purlin or girt.

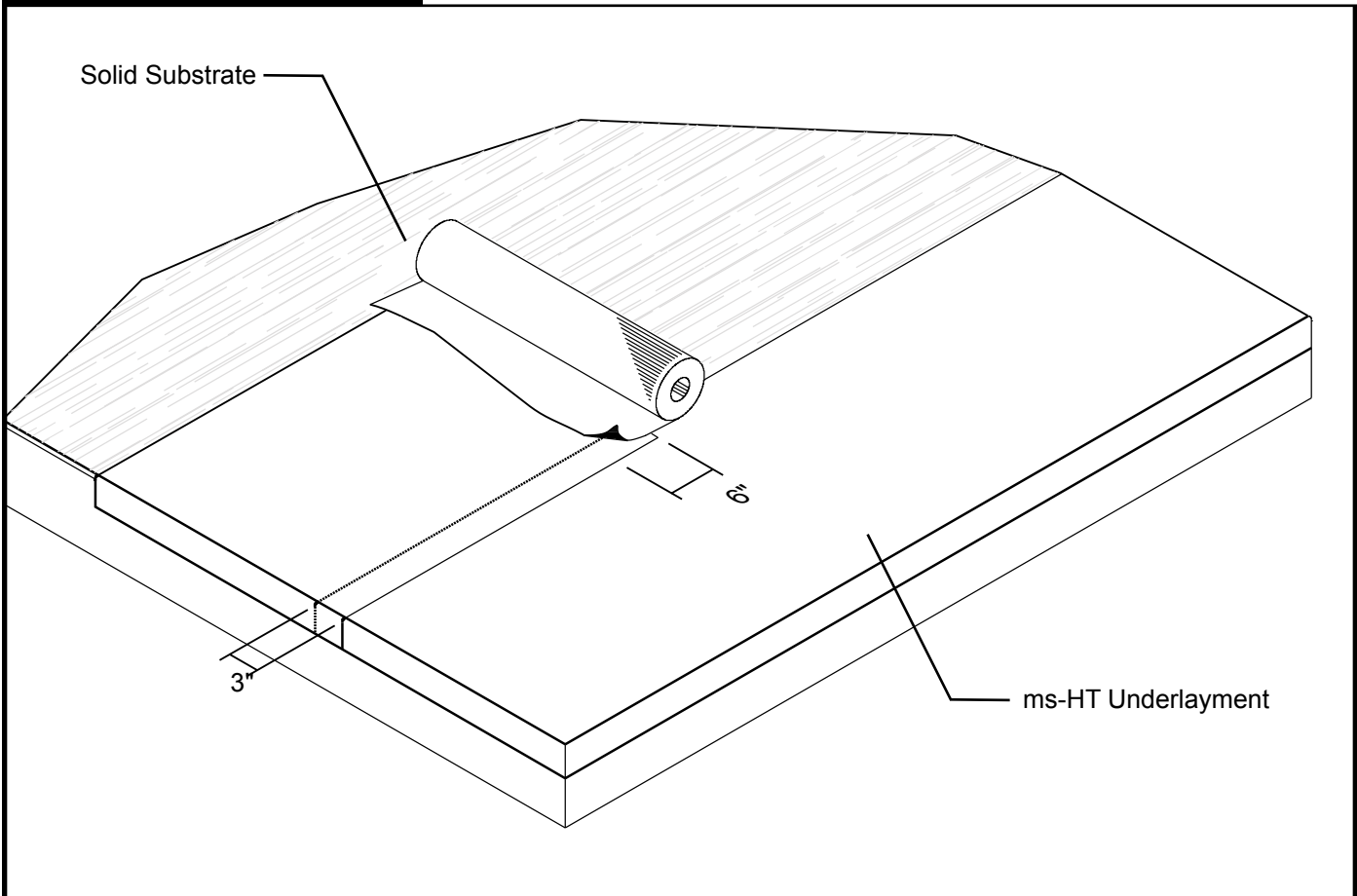
Drilling through purlin overlaps - Drilling through lapped purlins requires extra care. Excessive voids between purlins sometimes damages drill points and two self-drillers might be necessary to complete the operation. It is sometimes advantageous to predrill.

NOTES

- As shown below with the number designations, install panel against the prevailing wind. Installing Wall Panels first then Roof Panels
- To minimize corrosion, siding panels should not be installed all the way to the ground.
- Siding panels should lap over the foundations or splash boards at least three inches.
- Make sure panels are square and plumb, to assure straight and proper alignment of the entire row of panels.
- For areas with high wind considerations, closer fastener spacing may be required.
- It is necessary to attach a temporary guide to the foundation to use as an alignment guide when installing siding panels.



#	ROOF PANEL DETAILS	PAGE(S)	#	ROOF PANEL DETAILS	PAGE(S)
-	ms-HT Install	34	7	Rakewall	46
1	Eave Flashing	35	8	Endwall	47
-	Valley	36	9	Ridge	48
3	Roof Panel Install	37-38	10	Sculptured Gutter	49
4	Endlap	39	#	WALL PANEL DETAILS	PAGE(S)
5	Light Transmitting Panels	40	11	Outside Corner	50
-	Rubber Roof Jack	41	12	Inside Corner	51
-	Formed Ridge	42	13	Jamb	52
-	Ridge/Hip Flashing	43	14	Base	53
6	Sculptured Rake	44	17	Head Channel	54
6	Rake	45	-	Gravel Stop	55

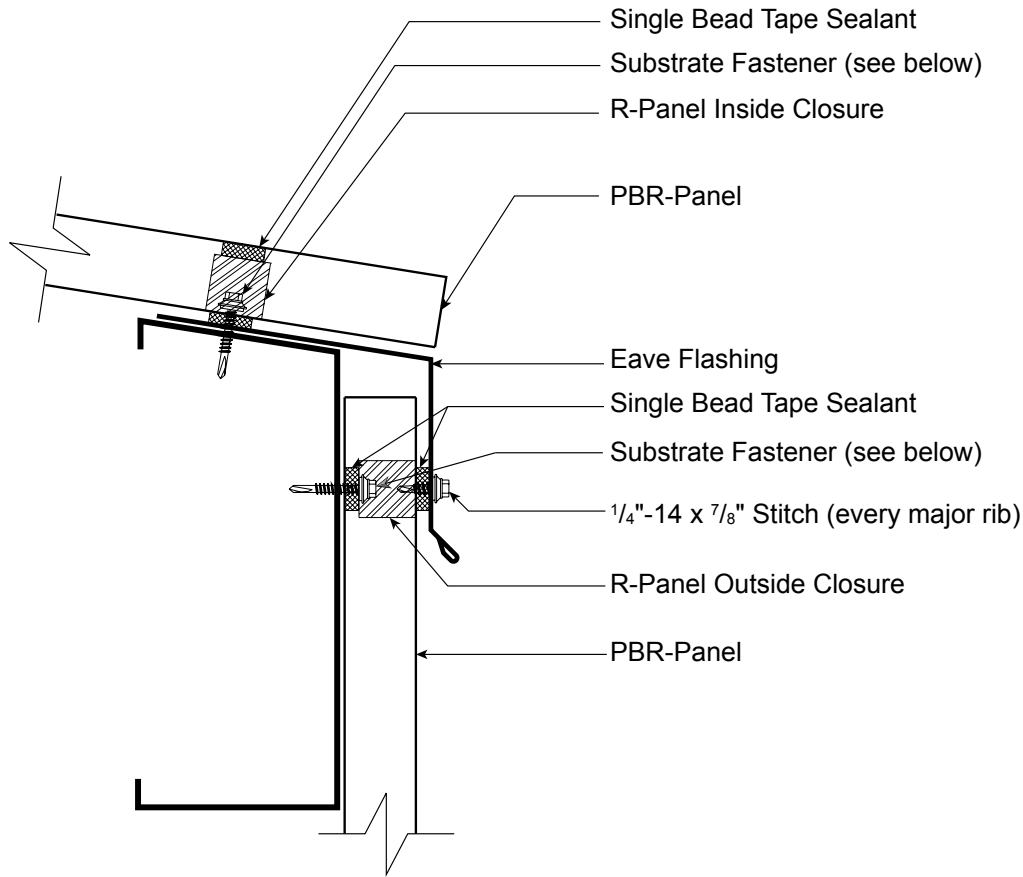
**GENERAL INFORMATION**

- ▶ Thickness: 40 mil
- ▶ Dimensions: 67' x 3'
- ▶ Gross Coverage: 200 ft²
- ▶ Net Coverage: 183 ft²
- ▶ Roll Weight: 43 lbs
- ▶ Installation Temperature: Above 50°

INSTALLATION STEPS

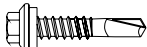
Note: ms-HT is a SBS modified bitumen self adhesive membrane intended to be used as a roofing underlayment. It has a slip resistant surface and will seal around penetrating fasteners.

1. Before installing the PBR-Panel roof it is recommended that a high-temperature underlayment (ms-HT) be installed on the solid substrate.
2. The ms-HT should extend over the edge of the roof surface a minimum of 2" on each side.
3. Start at the low side of the roof and roll out horizontally across the roof substructure.
4. If more than 1 roll is required as it is installed then the ms-HT must be endlapped a minimum of 6".
5. Once the bottom row is down and secure the next row is installed upslope of the first row. Lap the ms-HT a minimum of 3".



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



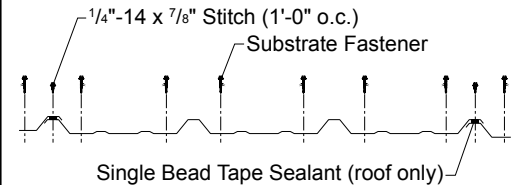
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

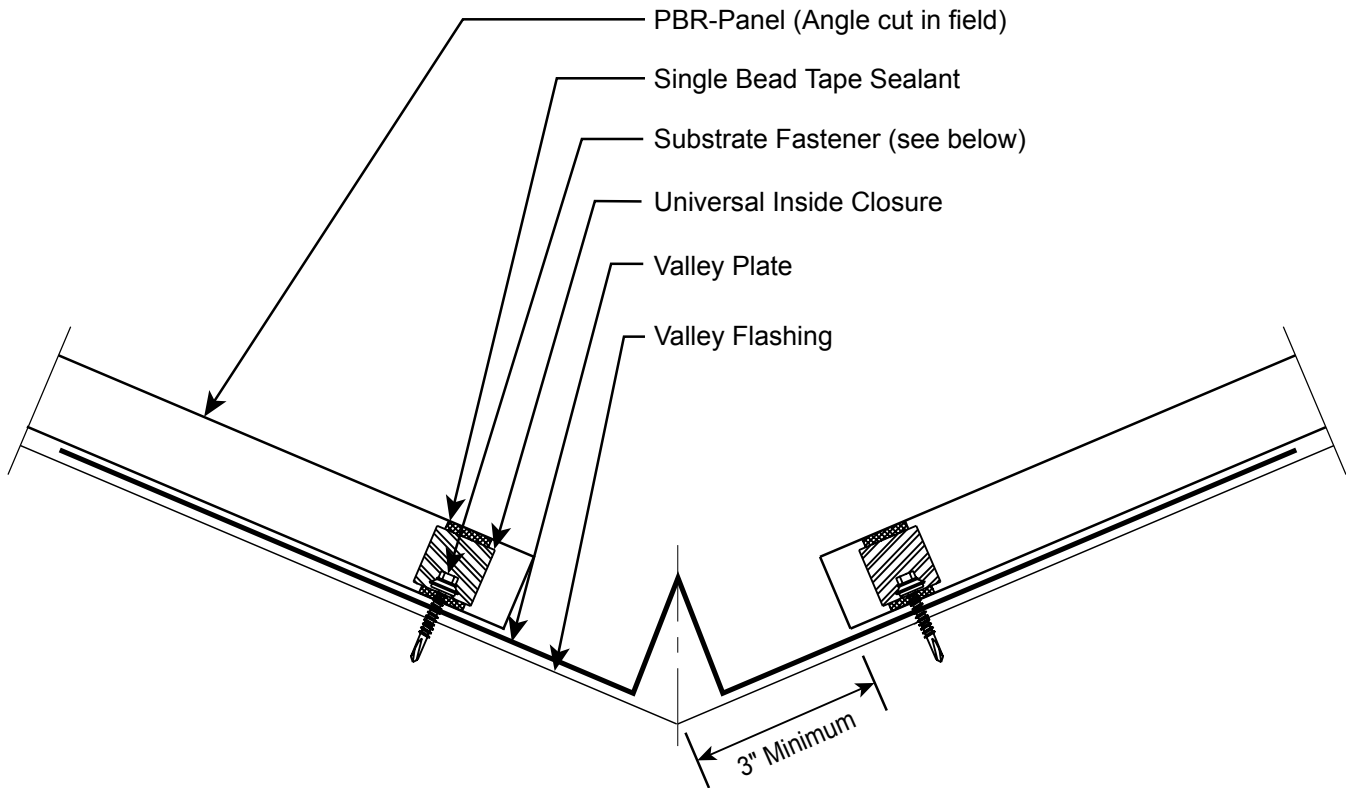
PBR-PANEL FASTENING PATTERN



INSTALLATION STEPS

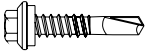
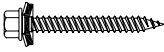

Note: If you are installing an Eave Flashing where there is wall panel, the wall panel must be installed first.

1. Place the Eave Flashing at the eave and mark where the bottom of the Eave Flashing hits the wall panel.
2. Apply a row of Single Bead Tape Sealant along the top of the wall panel so that it is above your mark and below the fasteners at the top of the wall panel.
3. Place an Outside Closure or a Universal Closure over the Single Bead Tape Sealant.
4. Apply a second row of Single Bead Tape Sealant to the outside face of the wall closures along the eave.
5. Install the eave flashing flush against the wall panels, making sure to hide the closure, and fasten to the wall panel with a Stitch Fastener through the sealant and closure, at every major rib.
6. Fasten the top of the Eave Flashing to the roof deck with the appropriate Pancake Head Fastener, four feet on center to hold the Eave Flashing in place until the roof panels can be installed.



SUBSTRATE FASTENER INFORMATION

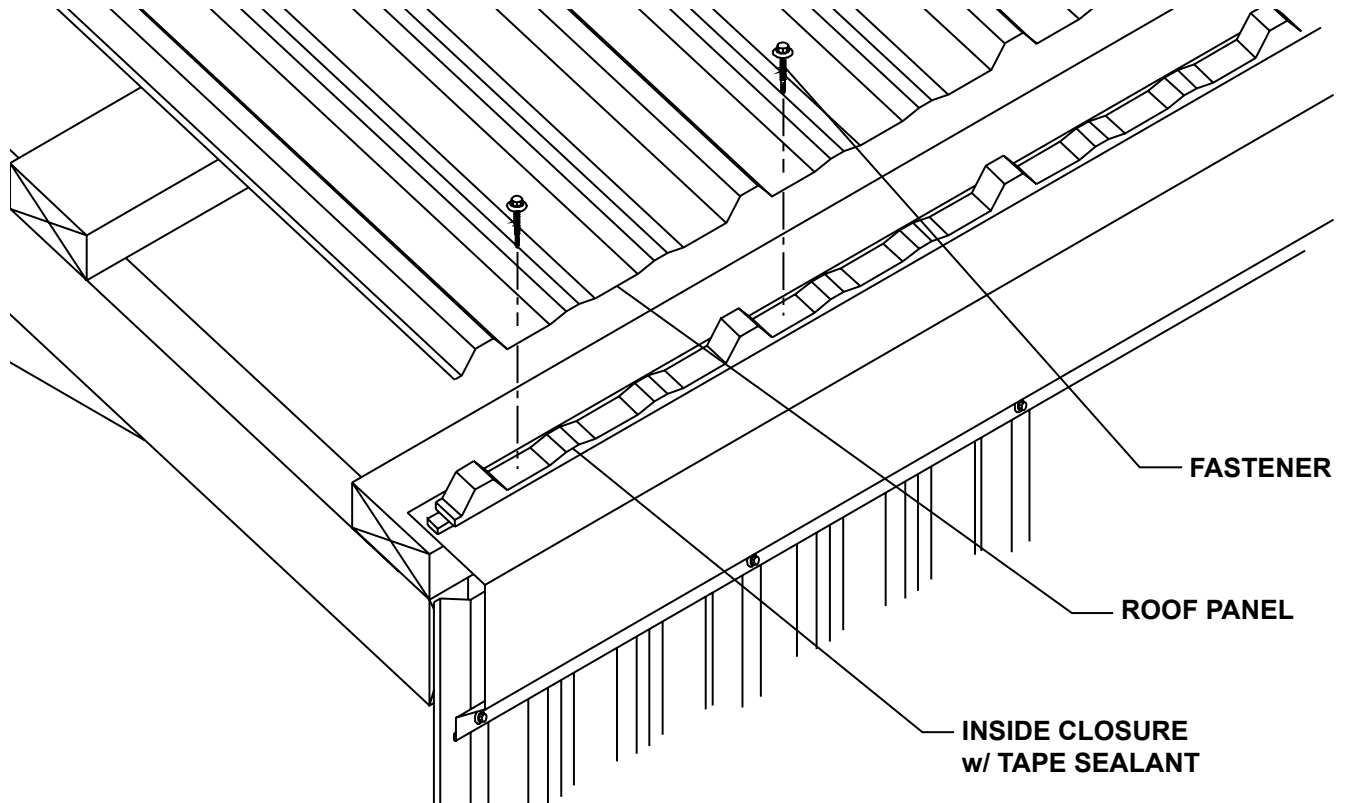
PBR-PANEL FASTENING PATTERN

Open Framing	Solid Wood Substrate	2X Wood Framing	PBR-PANEL FASTENING PATTERN
 <p>Self Driller #12-14 x 1" #12-14 x 1-1/2" #12-14 x 2"</p>	 <p>Woodscrew #10-14 x 1" #10-14 x 1-1/2" #10-14 x 2"</p>	 <p>Woodscrew #10-14 x 1" #10-14 x 1-1/2" #10-14 x 2"</p>	

INSTALLATION STEPS

Note: It is recommended that ms-HT be installed under the valley flashing for added moisture protection.

1. If two or more valley flashings are required, the valley must be installed working from eave to peak. If two or more Valley Flashings are required, then they must be lapped a minimum of 6" with two continuous beads of Tube Sealant between them.
2. Do not install fasteners through the valley lap.
3. Place the Valley Flashing upside down at the eave of the building and mark the cut line for the valley angle. Cut the Valley flashing with Turbo-Shears starting from each side, working towards the center "V". Mark the center "V" as shown to allow extra material to cap off the end of the valley flashing. Cut with Turbo-Shears and Tin Snips. Bend the cut tabs in to close the V.
4. Apply a three-eighths inch bead of Tube Sealant along the Eave Flashings and place the Valley Flashing down.
5. Fasten the Valley Flashing to the roof deck with pancake head woodscrews four feet on center, on each side



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



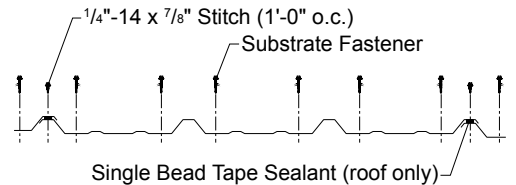
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



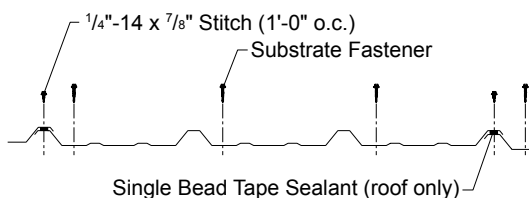
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

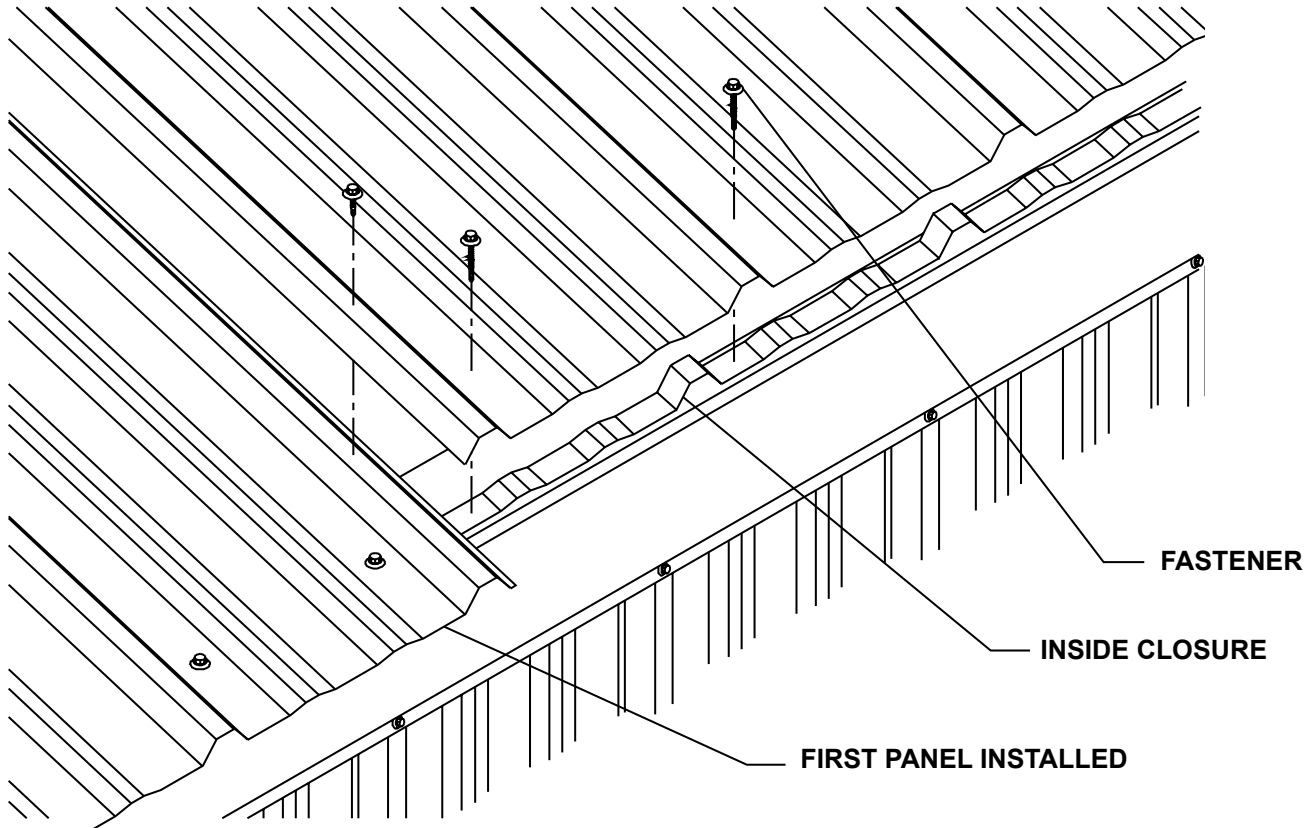
PBR-PANEL END FASTENING PATTERN



INSTALLATION STEPS

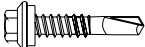


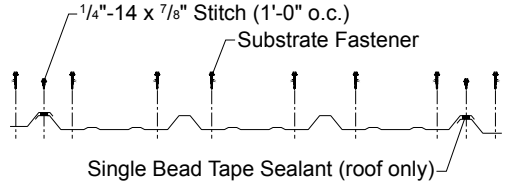
1. If your project has new or existing wall panels, you must consider adding additional overhang to your roof panels equal to the depth of the wall panels.
2. Turn the PBR Inside Closure over and attach Single Bead Tape Sealant to the underside. Place the PBR Inside Closure on top of the Eave Flashing. Install another row of Single Bead Tape Sealant to the top of the Inside Closure.
3. Make sure that the Inside Closure is square with the roof. Place the PBR-Panel over the Inside Closure.
4. The fastening pattern for roof panels at the panel ends, eave, gutter, ridge, or highside eave and at the endlap is as shown.
5. Fasteners at the ridge and highside eave are installed one inch from the end of the panels.
6. For certain building codes and state or county specifications, special fastener spacing may be required.
7. For the field of the panel the fastening pattern is as shown below.





SUBSTRATE FASTENER INFORMATION

PBR-PANEL FASTENING PATTERN

<p>Open Framing</p>  <p>Self Driller #12-14 x 1" #12-14 x 1-1/2" #12-14 x 2"</p>	<p>Solid Wood Substrate</p>  <p>Woodscrew #10-14 x 1" #10-14 x 1-1/2" #10-14 x 2"</p>	<p>2X Wood Framing</p>  <p>Woodscrew #10-14 x 1" #10-14 x 1-1/2" #10-14 x 2"</p>	 <p>1/4"-14 x 7/8" Stitch (1'-0" o.c.) Substrate Fastener Single Bead Tape Sealant (roof only)</p>
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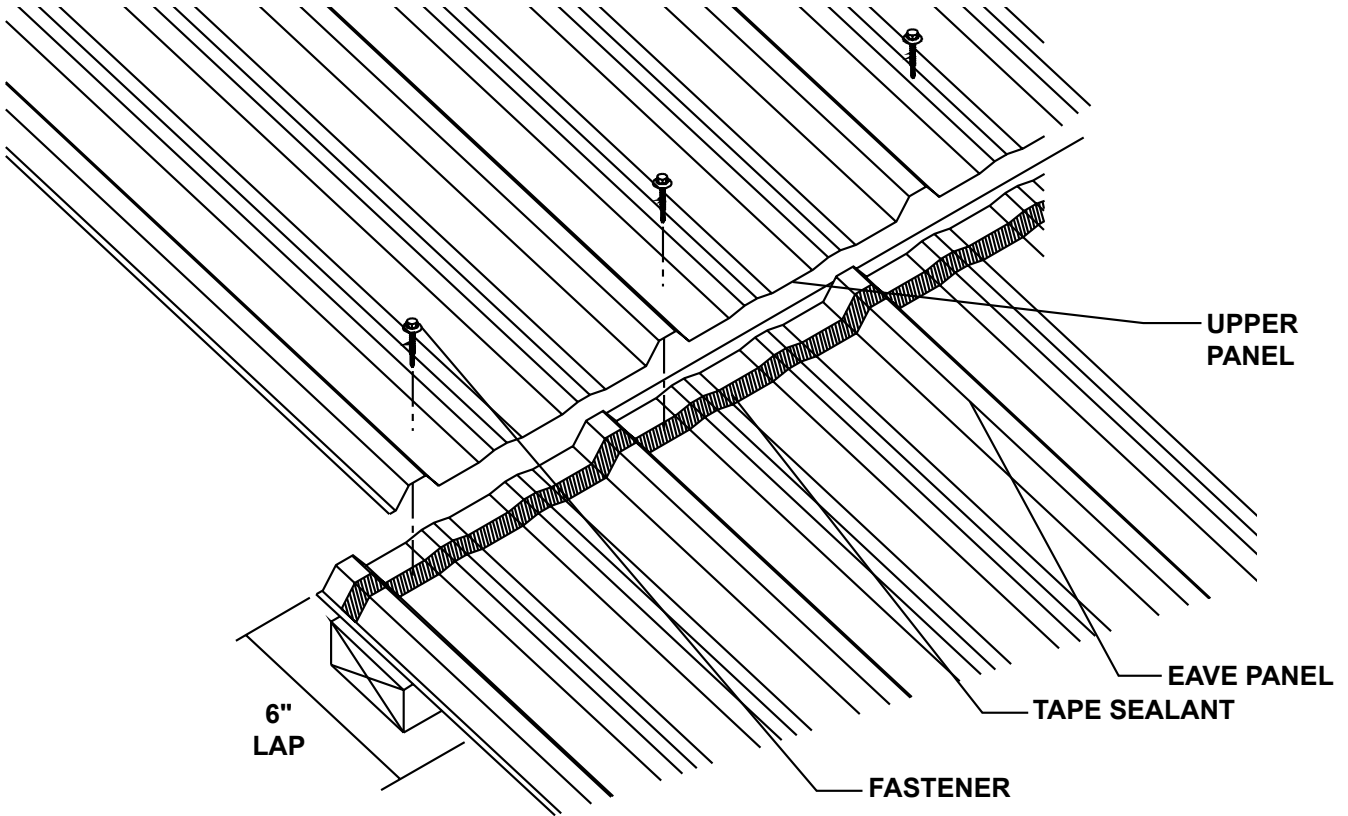
INSTALLATION STEPS

Note:

1. Before you install the next PBR-Panel, Single Bead Tape Sealant must be placed on the under lap rib of the previous panel.
2. Place the second panel on top of the previously installed panel covering the Single Bead Tape Sealant. Make sure that it is flush and square at the eave with the previous panel.
3. Install a Stitch Fastener on top of the lapping rib one foot on center through the sealant and the underlap rib.
4. Repeat this process for the remaining panels.
5. If you come to a valley condition, lay the panel down at the valley and mark the panel ribs to be cut. Snap a chalk line for the diagonal cut of the panel three inches from the center of the valley.
6. A Universal Closure is used instead of an Inside Closure at the valley condition.
7. Be sure to clean any debris or excess sealant before continuing the next section of the roof.

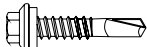
PBR-PANEL

ENDLAP INSTALLATION



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



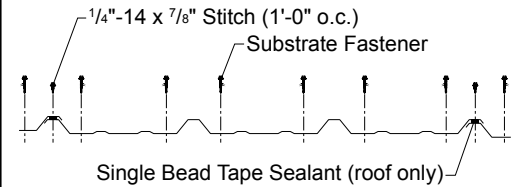
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

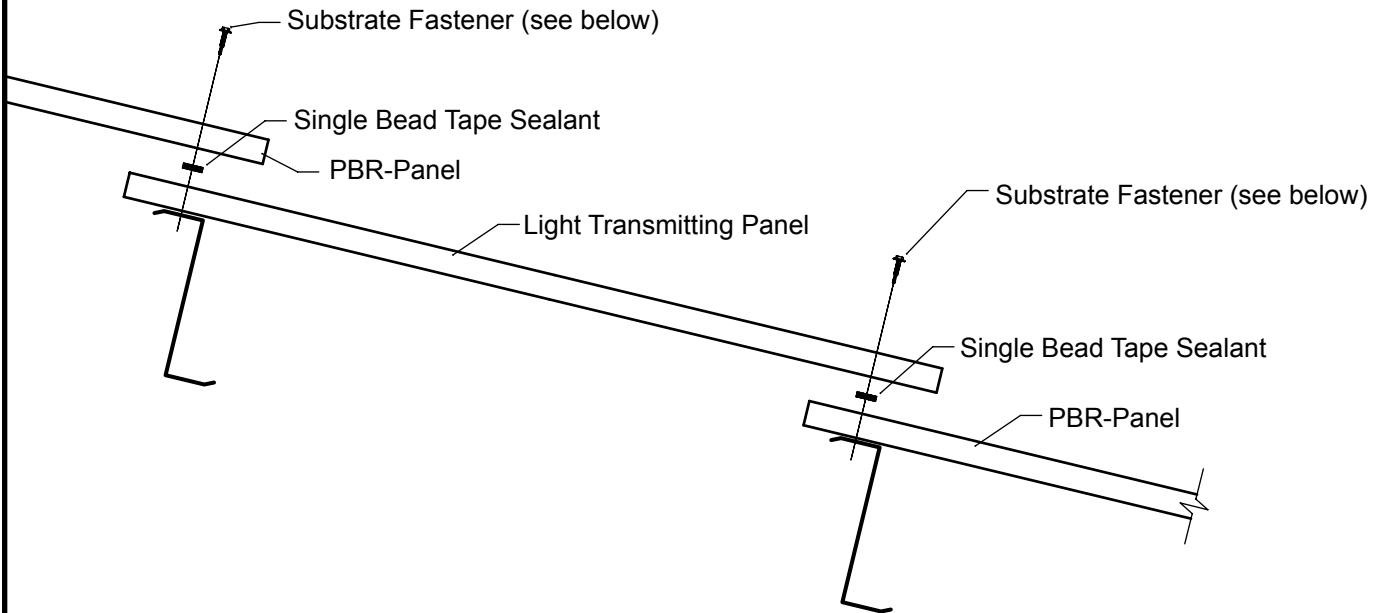
PBR-PANEL FASTENING PATTERN



INSTALLATION STEPS

Note:

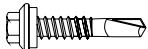
1. If more than one PBR Panel is required on a single panel run working eave to highside, then a panel endlap is required.
2. Start by installing all of the eave panels first. At the highside of the eave panels measure down three inches and apply a row of Single Bead Tape Sealant. Next apply another row of Single Bead Tape Sealant just above and below that first row.
3. Lap the highside panel over the eave panel a minimum of six inches.
4. Measure up the highside panel and install woodscrews with the correct fastening pattern so that the fastener goes through the middle row of the tape sealant and into the roof deck.



SUBSTRATE FASTENER INFORMATION

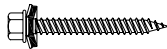
PBR-PANEL ENDLAP FASTENING PATTERN

Open Framing



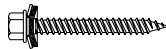
Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

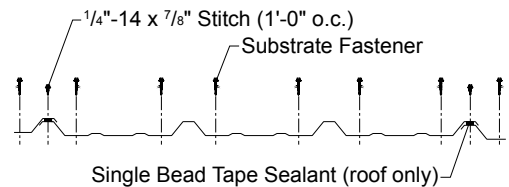


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

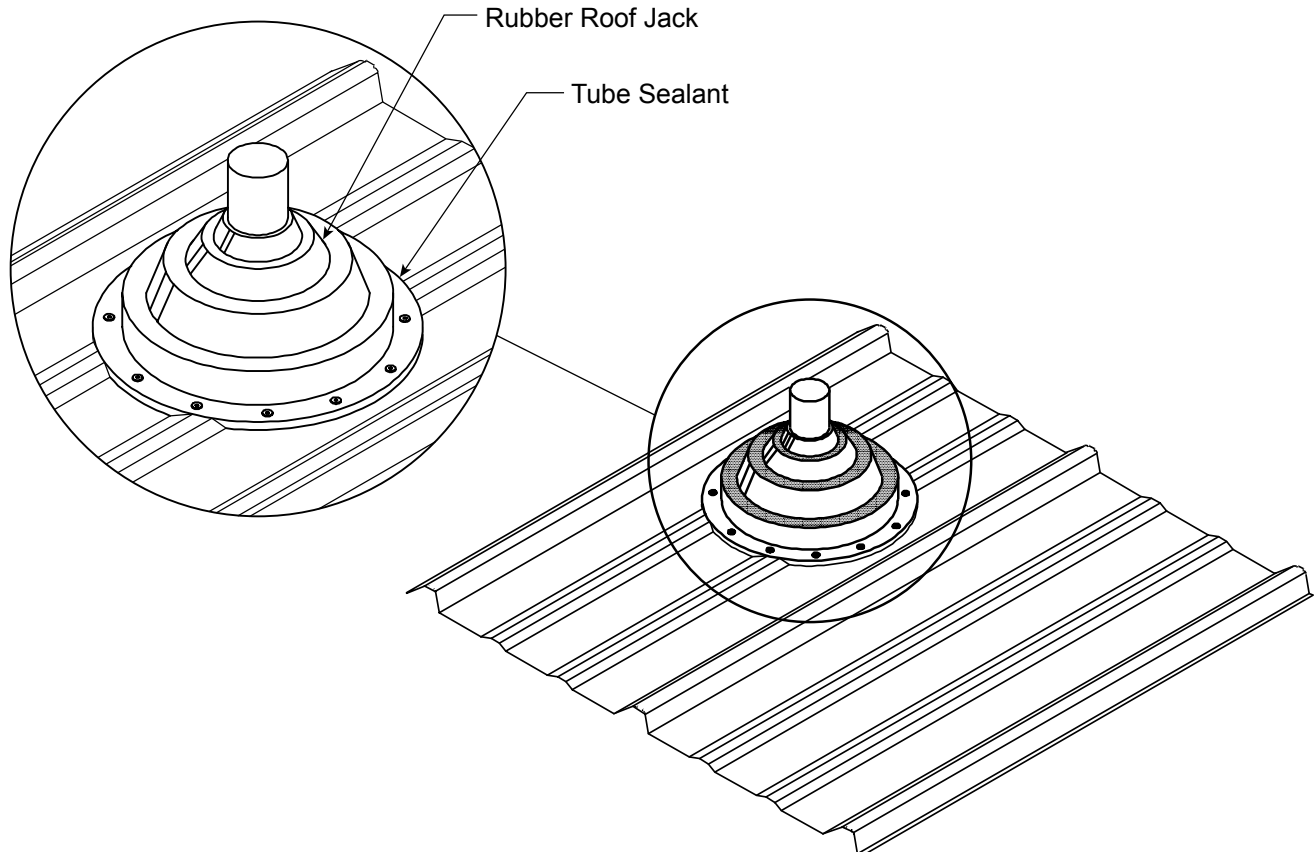


INSTALLATION STEPS

Note: Light Transmitting Panels require a minimum 6" lap at the low and high side of the panel.

1. Always install Light Transmitting Panels working from eave to ridge of the building for proper lapping.
2. After the Eave PBR-Panel is installed apply a row of Single bead Tape Sealant. Make sure that the Single Bead Tape Sealant is directly above your substrate member you are attaching to.
3. Place the low side of the Light Transmitting Panel over the Single Bead Tape Sealant.
4. Fasten the panels together with the substrate fastener, making sure the fastener goes through the middle of the Single Bead Tape Sealant and into the roof substrate member below.
5. Lap the highside panel over the Light Transmitting Panel a minimum of 6".
6. Measure up the highside panel and install woodscrews with the correct fastening pattern so that the fastener goes through the middle row of the Single Bead Tape Sealant and into the substrate member.

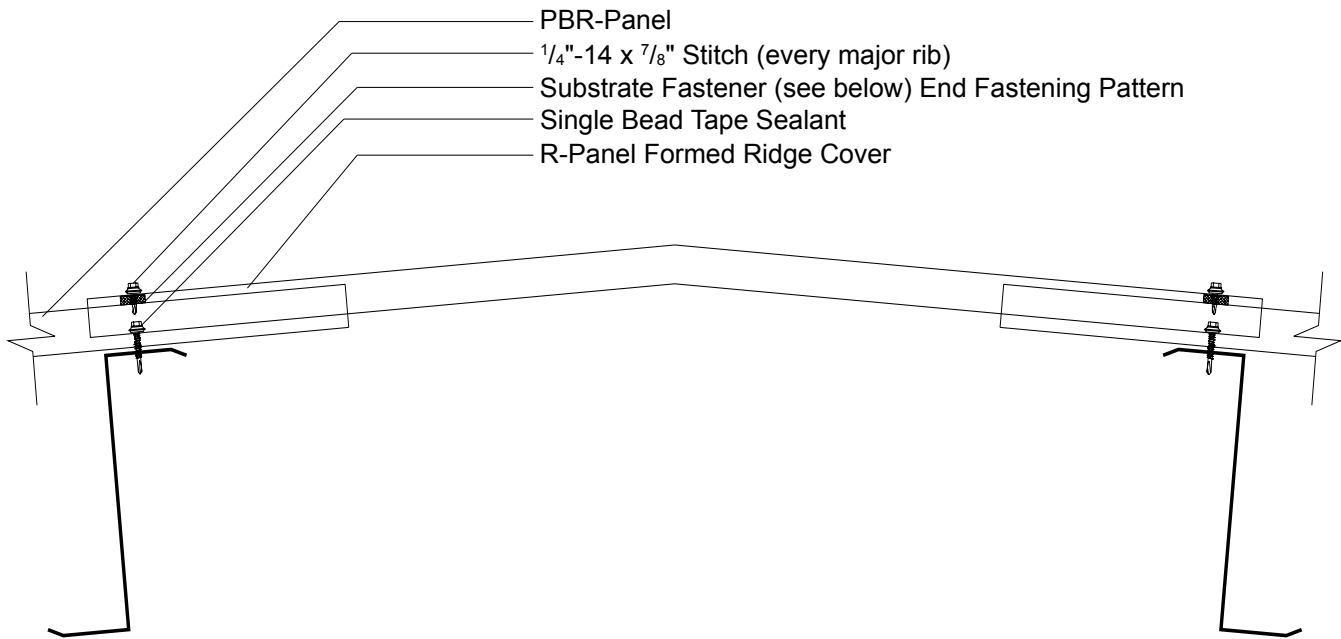
SAFETY NOTE: Never step, stand or walk on Light Transmitting Panels. They are not designed to carry point loading.



INSTALLATION STEPS

Note: Always abide by local plumbing codes when you're installing vent pipes

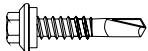
1. Areas around roof vents or rooftop units may show that corrosive fumes are emitted from a process within a building.
2. In the following example the procedures are for vent pipes six inches or less and not transmitting extremely hot or caustic materials.
3. The vent pipe must extend through the flat of the roof panel so that the Rubber Roof Jack does not block the flow of water. If the vent pipe extension cannot be raised directly into the minor ribs of the new roof panel, use elbows to offset the pipe.
4. Determine the size and length of the vent pipe to be raised.
5. Take the appropriate measurements for the pipe size and vent location, mark them on the PBR-Panel and cut the hole in the panel.
6. When cutting the hole in the panel for the penetration make the radius of the hole one half inch larger than the radius of the pipe. This will allow the panel to expand and contract around the penetration
7. Cut the top of the rubber roof jack so that it fits snug on the pipe. Slide the rubber roof jack onto the pipe all the way down until it is sitting on the roof panel.
8. If you are installing a square based rubber roof jack, make sure you turn it diamond shaped so the water runs around the side.
9. Lift the base of the rubber roof jack up so you can install tube sealant to the underside at the pipe.
10. Flip the rubber roof jack back down, flush with the panel
11. Bend up the base tabs of the rubber roof jack one side at a time and apply a bead of tube sealant. Repeat this with the other three sides of the rubber roof jack.
12. Attach the base of the rubber roof jack to the panel using stitch fasteners spaced 2" on center.
13. Apply tube sealant to the top of the rubber roof jack where it meets the pipe.



SUBSTRATE FASTENER INFORMATION

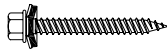
PBR-PANEL END FASTENING PATTERN

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

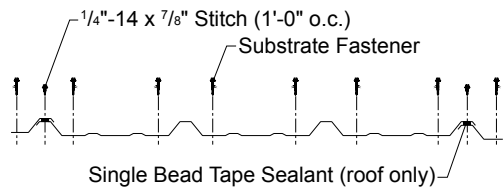


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



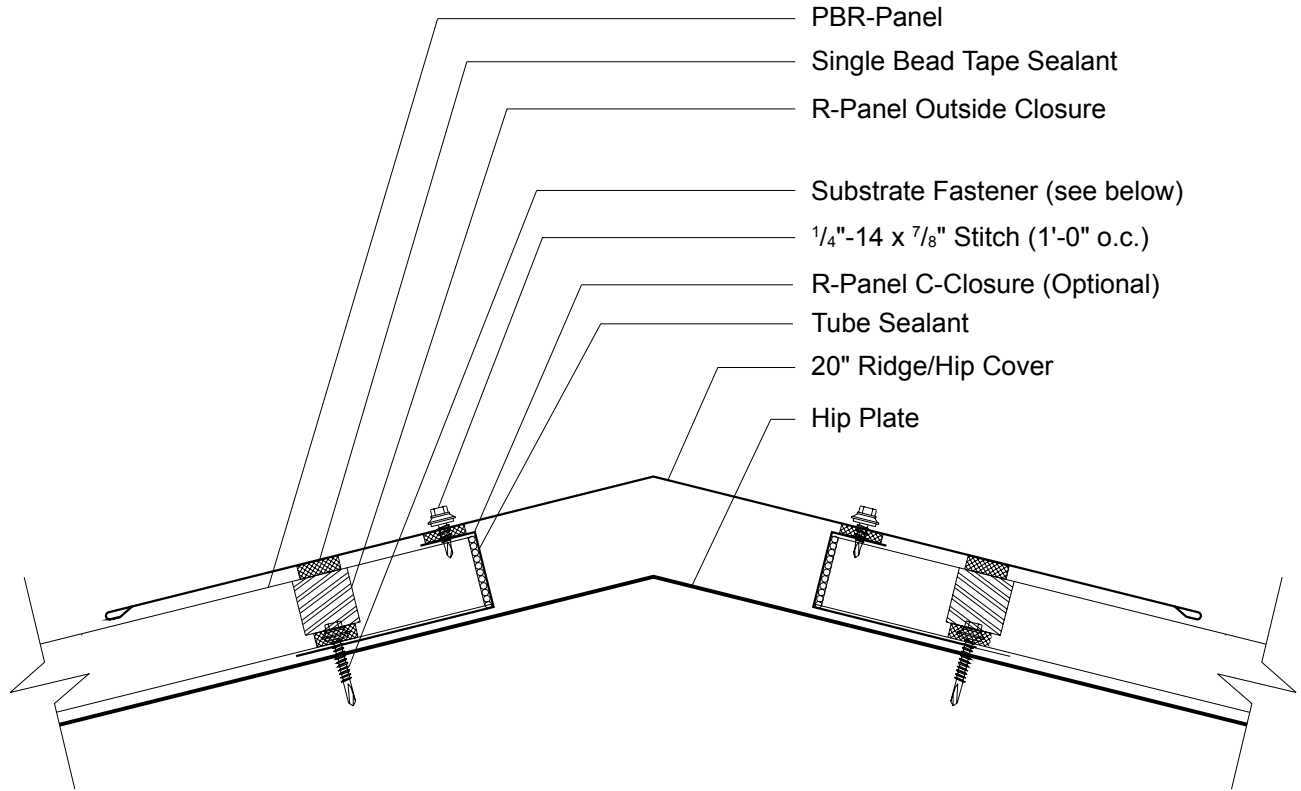
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"



INSTALLATION STEPS

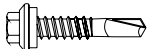
Note: It is critical that the panel ribs line up on both sides of the ridge before installing the Formed Ridge Flashing.

1. If you are using a Formed Ridge Flashing
2. If you using a Formed Ridge Condition then it should be installed before the Sculptured Rake.
3. Place the Formed Ridge Cover on top of the PBR roof panels at the ridge. Mark where the ridge flashing hits the PBR roof panels on both sides of the ridge.
4. Place a row of Single Bead Tape Sealant across the panel and over each panel rib on both sides of the ridge.
5. Fasten the Formed Ridge Flashing to the PBR roof panels with Woodscrew Fasteners, with the end fastening pattern.



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



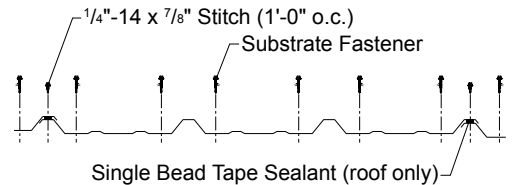
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

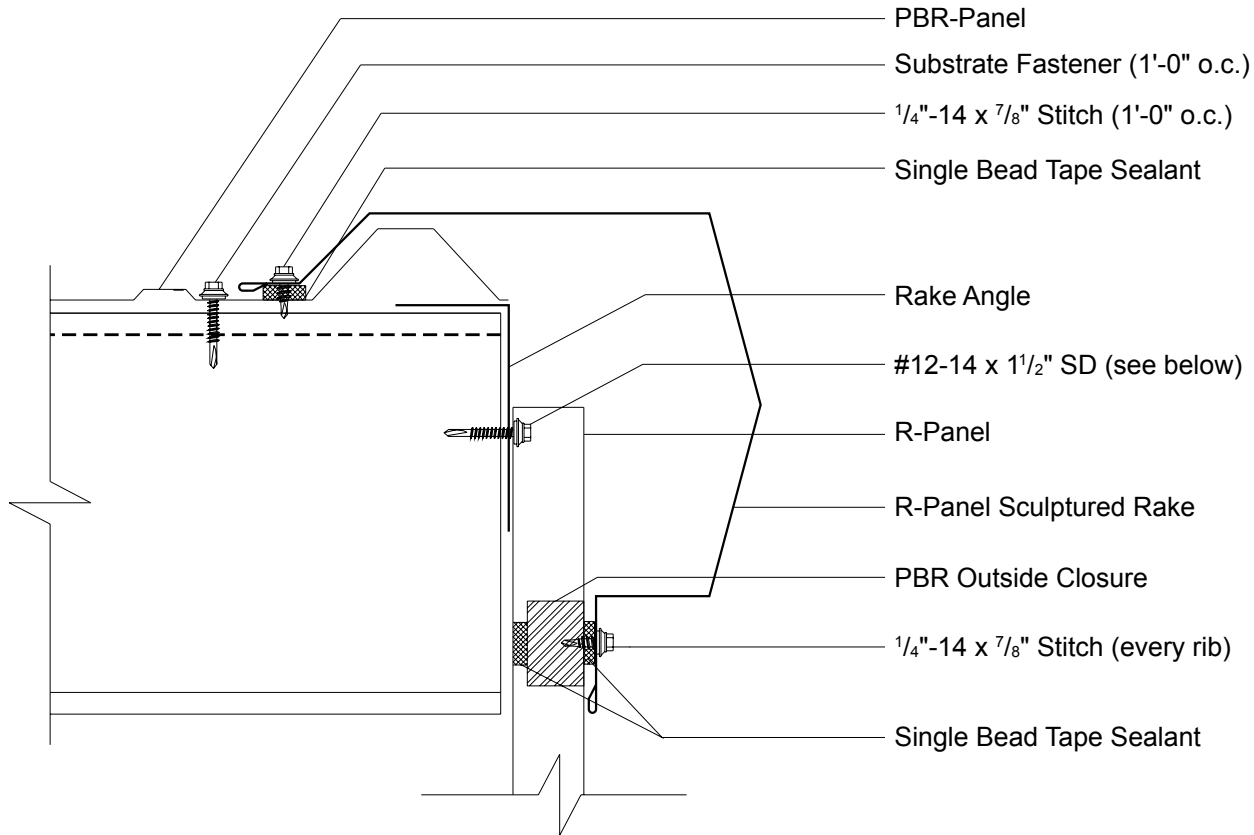
PBR-PANEL END FASTENING PATTERN



INSTALLATION STEPS

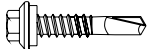
Note: C-Closure is optional on Hip installation.

1. Place the 20" Ridge/Hip Cover on top of the PBR roof panels. Mark where the edge of the Ridge/Hip Cover hits the PBR roof panels, upslope of your mark and downslope of the end fasteners, place a row of Single Bead Tape Sealant across the panel and over each panel rib.
2. Place PBR Outside Closures on top of the Single Bead Tape Sealant.
3. Apply a second row of Single Bead Tape Sealant to the top of the PBR Outside Closures.
4. Fasten the Ridge/Hip Cover to the PBR roof panels through the PBR Outside Closures with Stitch Fasteners, one at every major rib.
5. Now fasten the top of the Pitch Break Flashing to the wall or behind the wall panel.
6. If two or more flashings are required lap the flashing over the previously installed flashing by a minimum of two inches. Place a two beads of tube sealant between the flashings and secure with pop rivets two and a half inches on center.



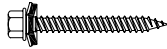
SUBSTRATE FASTENER INFORMATION

Open Framing



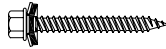
Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

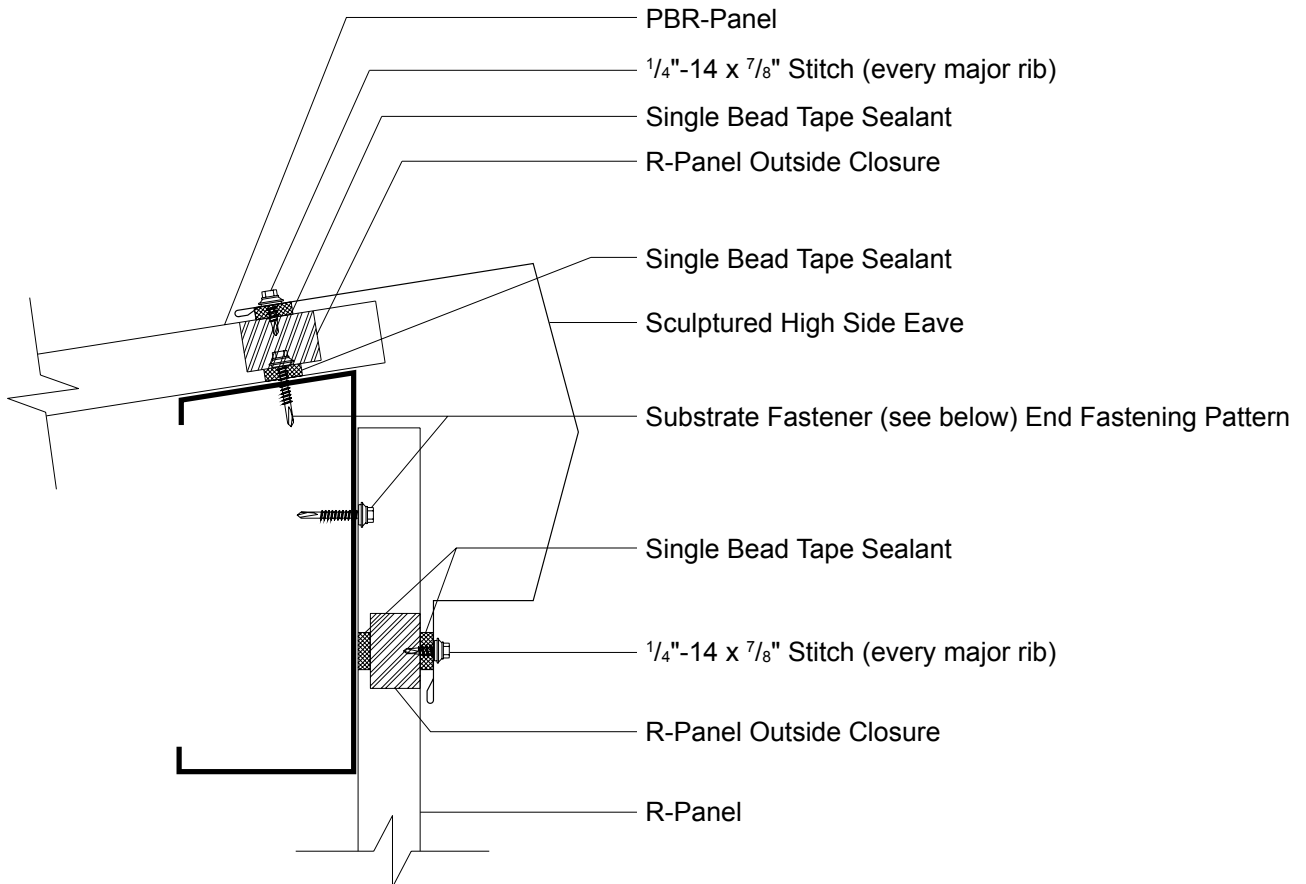
2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

INSTALLATION STEPS

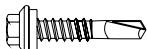
1. Before installing the Sculptured Rake Flashing the Rake Ends will need to be installed.
2. Place the Rake Ends into the end of the Sculptured Rake Flashing and fasten with Pop Rivets.
3. Place the Sculptured Rake Flashing on the rake of the building and lightly mark where the bottom of the flashing hits the wall panel along the slope. Also mark where the edge of the Sculptured Rake rests on the roof panel.
4. Place a row of Single Bead Tape Sealant along the slope of the rake at the top of the wall panel so that it is behind the Sculptured Rake Flashing.
5. Apply a Universal Closure over the Single Bead Tape Sealant. Press firmly into place.
6. For slopes up to three to twelve a PBR Outside Closure can be used for PBR wall panels.
7. The Universal closure will act as a barrier to keep insects and debris from entering the building.
8. Apply a second row of Single Bead Tape Sealant to the face of the Universal Closure. Also apply a row of Single Bead Tape Sealant to the roof panels inside of the marks made.
9. Install the Sculptured Rake Flashing flush against the wall panels, making sure to hide the Universal Closure. Fasten through the closure to the wall panel with a Stitch Fastener at every major rib.
10. Fasten the Sculptured Rake Flashing to the PBR roof panel with a Stitch fastener 1'-0" o.c..



SUBSTRATE FASTENER INFORMATION

PBR-PANEL END FASTENING PATTERN

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

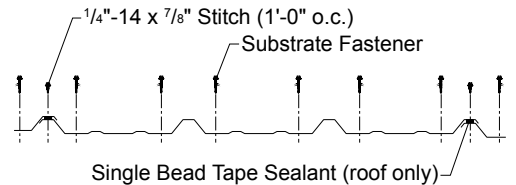


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing

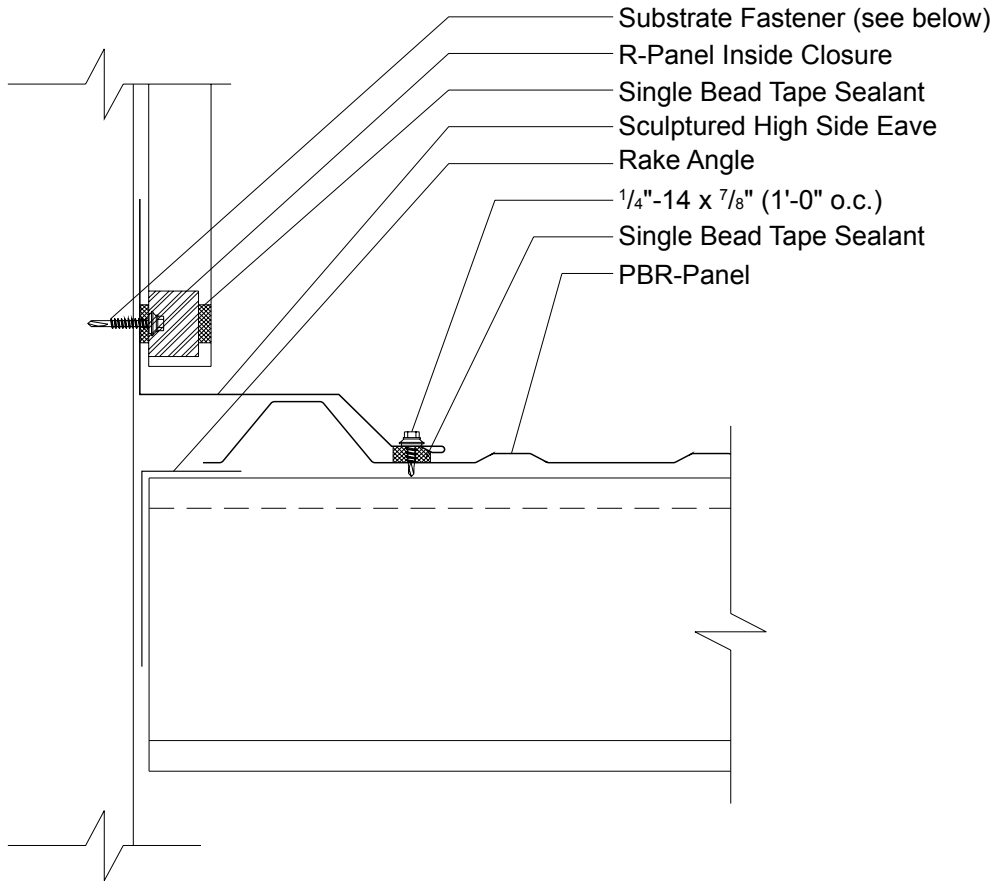


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"



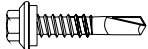
INSTALLATION STEPS

1. Place the Sculptured Highside Eave Flashing at the peak of the roof. Lightly mark where the bottom of the Sculptured Highside Eave Flashing meets the wall panel and the top edge hits the roof panel.
2. Place a row of Single Bead Tape Sealant across the roof panel and over each panel rib above the mark.
3. Place PBR Outside Closures along the length of the highside on the roof panels. Be sure the Outside Closures are located so that the Sculptured Highside Eave Flashing will cover them.
4. Apply a second row of Single Bead Tape Sealant to the top of the outside closures along the highside.
5. Now place a row of Single Bead Tape Sealant along the top of the wall panel so that it is above the wall mark.
6. Place the Outside Closures or a Universal Closure over the Single Bead Tape Sealant. The Outside Closure or Universal Closure will act as a barrier to keep insects and debris from entering the building.
7. Apply a second row of Single Bead Tape Sealant to the top of the Outside Closures along the at the wall.
8. Place Sculptured Highside Eave Flashing flush against the roof and wall panels.
9. Fasten the Sculptured Highside Eave Flashing to the PBR roof panel through the PBR Outside Closures with Stitch Fasteners, one at every major rib.
10. Now fasten the Sculptured Highside Eave Flashing to the wall with Stitch Fasteners at every major rib.



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

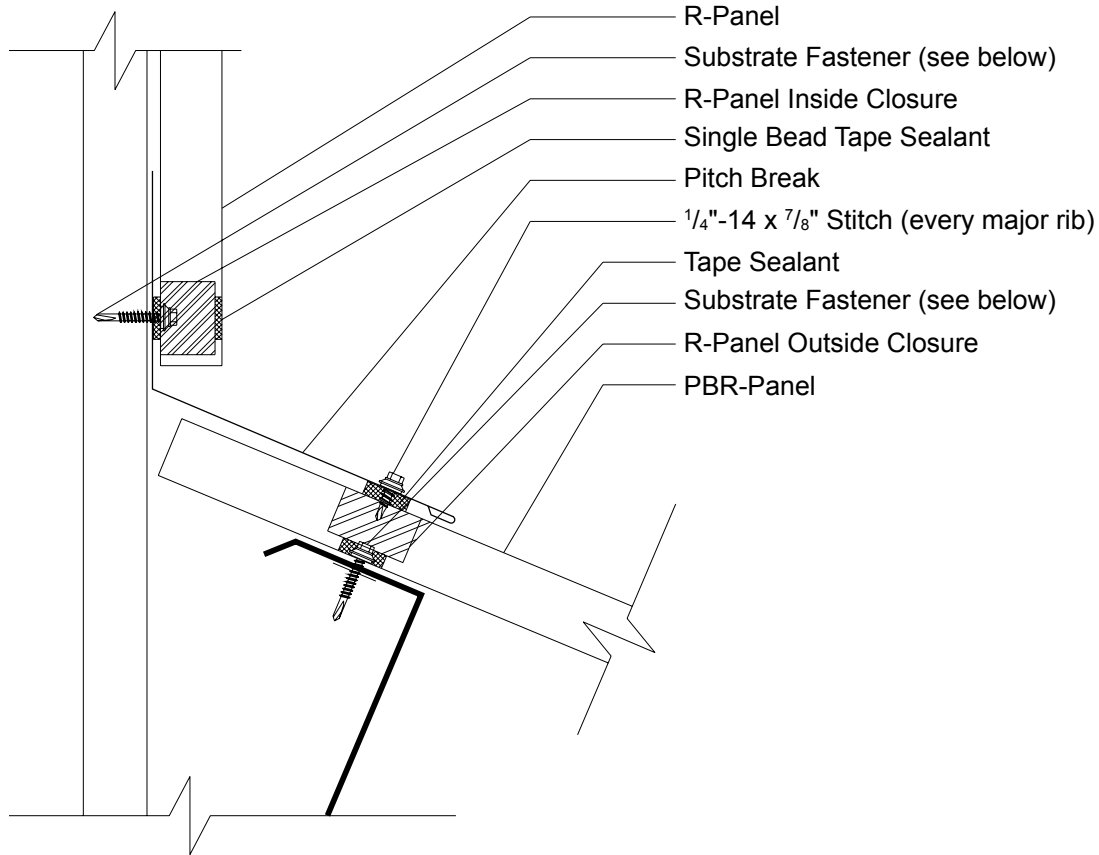
2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

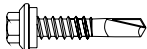
INSTALLATION STEPS

1. Place the Rakewall Flashing up against the wall and resting on the roof panel. Lightly mark the edge of the flashing on the roof panel.
2. Apply a row of Single Bead Tape Sealant on the major rib of the roof panel down the slope.
3. Lay the Rakewall Flashing down and fasten it to the PBR roof panel with a Stitch fastener one foot on center.
4. Now fasten the top of the Rakewall Flashing to the wall.
5. Install the counter flashing, reglet or wall panel and fasten to the parapet wall with the appropriate fastener one foot on center. If counter flashing or reglet is used, seal it to parapet wall with tube sealant.



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



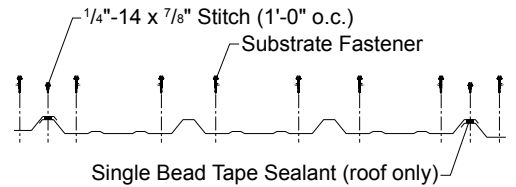
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



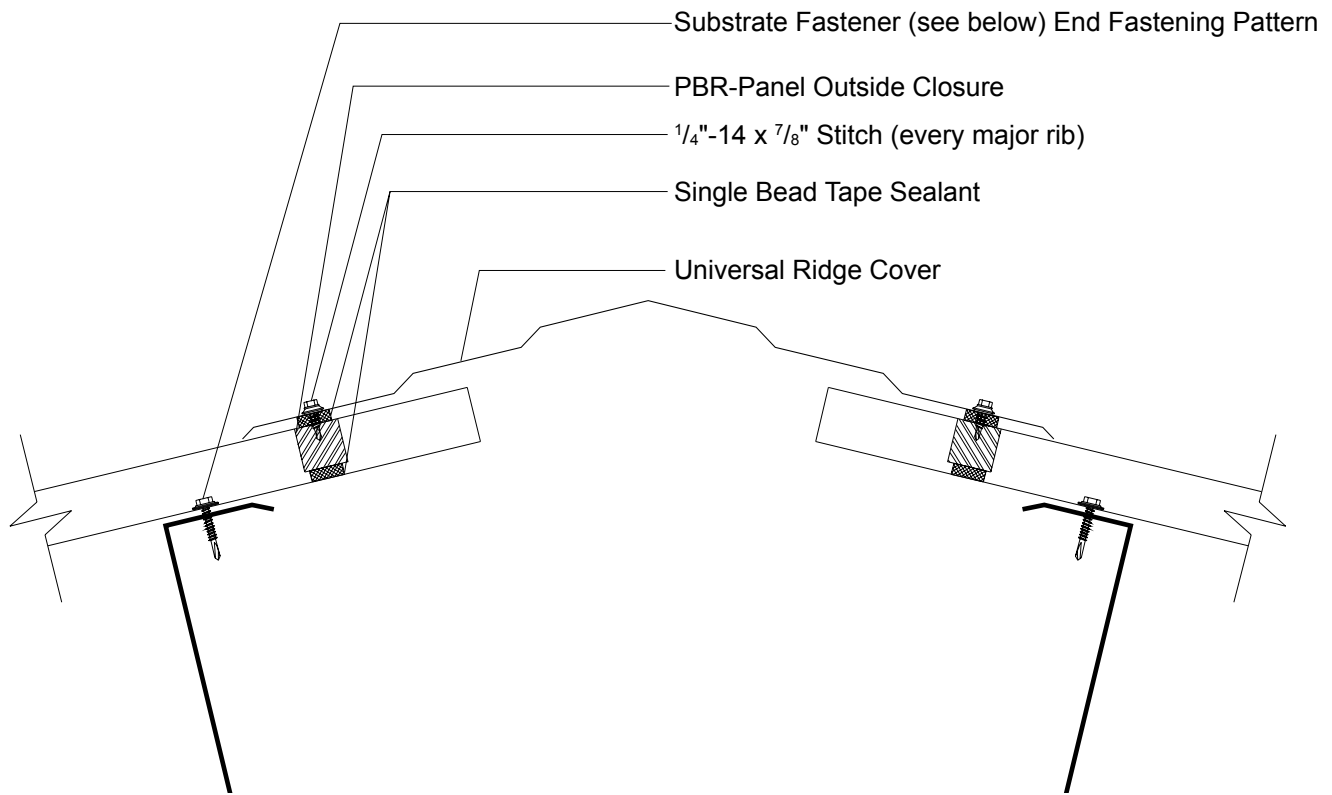
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

PBR-PANEL END FASTENING PATTERN



INSTALLATION STEPS

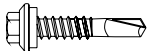
1. Place the Pitch Break Flashing on top of the PBR roof panels. Mark where the edge of the Pitch Break Flashing hits the PBR roof panels, upslope of your mark and downslope of the end fasteners, place a row of Single Bead Tape Sealant across the panel and over each panel rib.
2. Place PBR Outside Closures on top of the Single Bead Tape Sealant.
3. Apply a second row of Single Bead Tape Sealant to the top of the PBR Outside Closures.
4. Fasten the Pitch Break Flashing to the PBR roof panels through the PBR Outside Closures with Stitch Fasteners, one at every major rib.
5. Now fasten the top of the Pitch Break Flashing to the wall or behind the wall panel.
6. Install the counter flashing, reglet or wall panel and fasten to the parapet wall with the appropriate fastener one foot on center. If counter flashing or reglet is used, seal it to parapet wall with tube sealant.
7. If two or more flashings are required lap the flashing over the previously installed flashing by a minimum of two inches. Place a two beads of tube sealant between the flashings and secure with pop rivets two and a half inches on center.



SUBSTRATE FASTENER INFORMATION

PBR-PANEL END FASTENING PATTERN

Open Framing



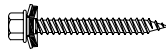
Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

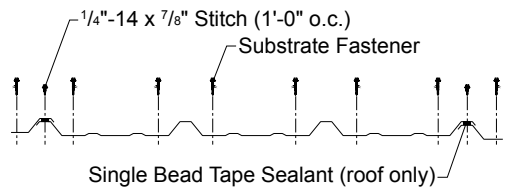


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing

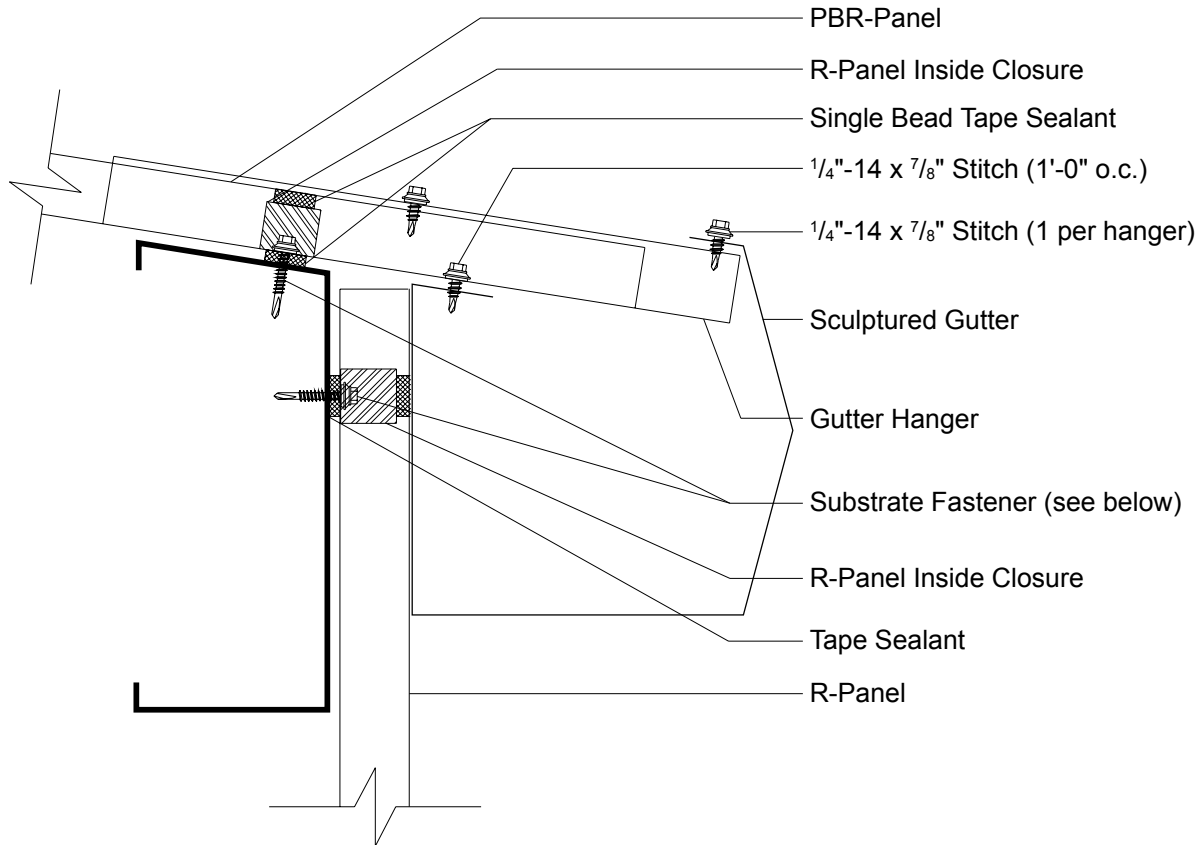


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"



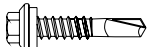
INSTALLATION STEPS

1. Place the Universal Ridge Cover on top of the PBR roof panels. Mark the edge location of both sides of the Universal Ridge Flashing. Place a row of Single Bead Tape Sealant two inches up from your mark, across the panel and over each panel rib on both sides of the ridge.
2. Place PBR Outside Closures on top of the outside closures along the length of the ridge.
3. Apply a second row of Single Bead Tape Sealant to the top of the PBR Outside Closures.
4. Place the Universal Ridge Flashing down on the ridge and fasten the Universal Ridge Flashing to the PBR-Panels through the PBR Outside Closures with Stitch Fasteners, one at every major rib.
5. If two or more flashings are required lap the flashing over the previously installed flashing by a minimum of two inches. Place a two beads of tube sealant between the flashings and secure with pop rivets two and a half inches on center.



SUBSTRATE FASTENER INFORMATION

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



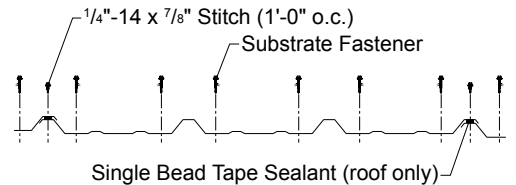
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



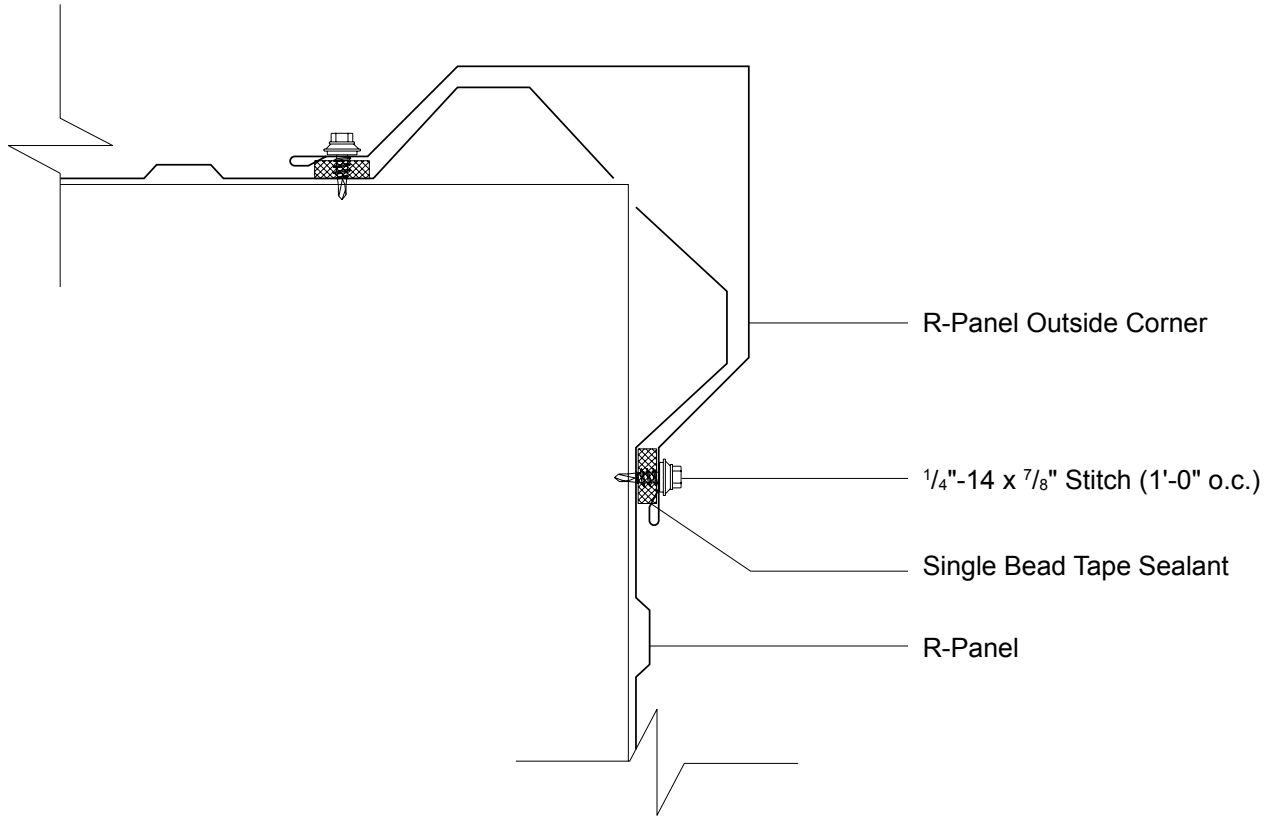
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

PBR-PANEL END FASTENING PATTERN



INSTALLATION STEPS

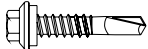
1. install the Gutter Hangers. They need to be spaced at no greater than three feet on center along the gutter line.
2. Hold the Sculptured Gutter in place flush against the Eave Flashing. Set the Gutter Hanger on top of the major rib of the PBR roof panel and slide the Gutter Hanger into the front of the gutter. Lightly mark on the panel the end of the gutter hanger. Measure and install the other Gutter Hangers down the length of the Gutter.
3. Apply Single Bead Tape Sealant to the top of the ribs. Place the Gutter Hangers as marked and fasten the Gutter Hanger to the major rib of the panel with two Stitch Fasteners.
4. Once all of the Gutter Hangers are in place install the Sculptured Gutter flashing back against the Eave Flashing.
5. Fasten the back of the Sculptured Gutter flashing to the end of the roof panel with Stitch Fasteners at a maximum of one foot on center.
6. Now fasten the front of the Sculptured Gutter to the Gutter Hangers with Stitch Fasteners. One fastener per Gutter Hanger.
7. Always remember the size and gauge of the Sculptured Gutter should be designed to applicable governing building codes.



SUBSTRATE FASTENER INFORMATION

OPTIONAL FLASHING

Open Framing



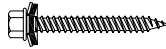
Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

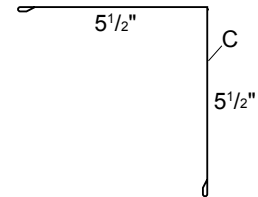


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



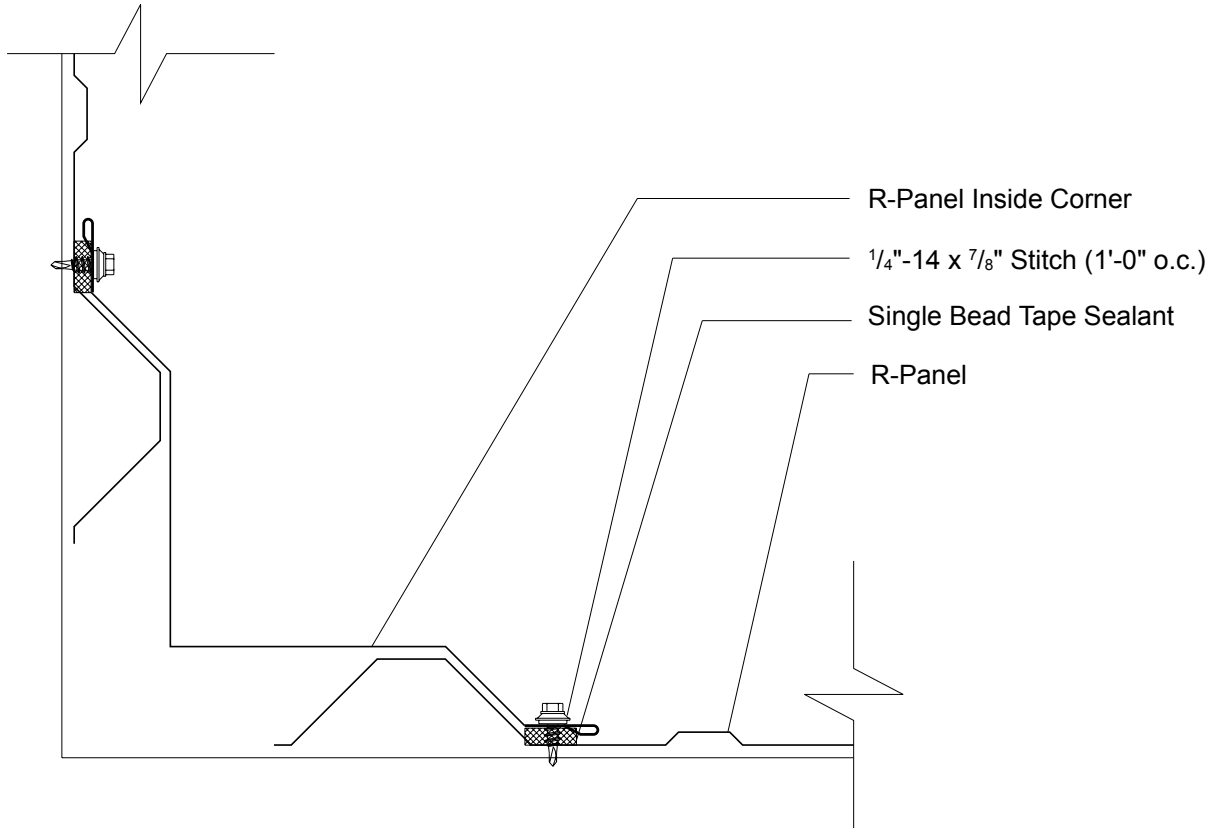
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"



INSTALLATION STEPS

Note: Outside Corner Flashings should be installed working from the ground up.

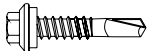
1. After the PBR wall panel is installed place the first Outside Corner Flashing at the base of the building.
2. Install a row of Single Bead Tape Sealant on each side of the Outside Corner Flashing.
3. Place the Outside Corner Flashing on the wall panels.
4. Fasten to the wall panels with 1/4"-14 x 7/8" Stitch Fasteners, 1'-0" on center.
5. If more than one Outside Corner Flashing is needed then a flashing lap is required.
6. Apply two rows of Tube Sealant to the top of the installed Outside Corner Flashing.
7. Lap the flashings a minimum of 3" and fasten with Pop Rivets 2" on center.



SUBSTRATE FASTENER INFORMATION

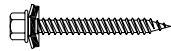
OPTIONAL FLASHING

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

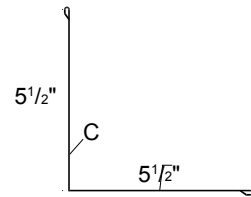


Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



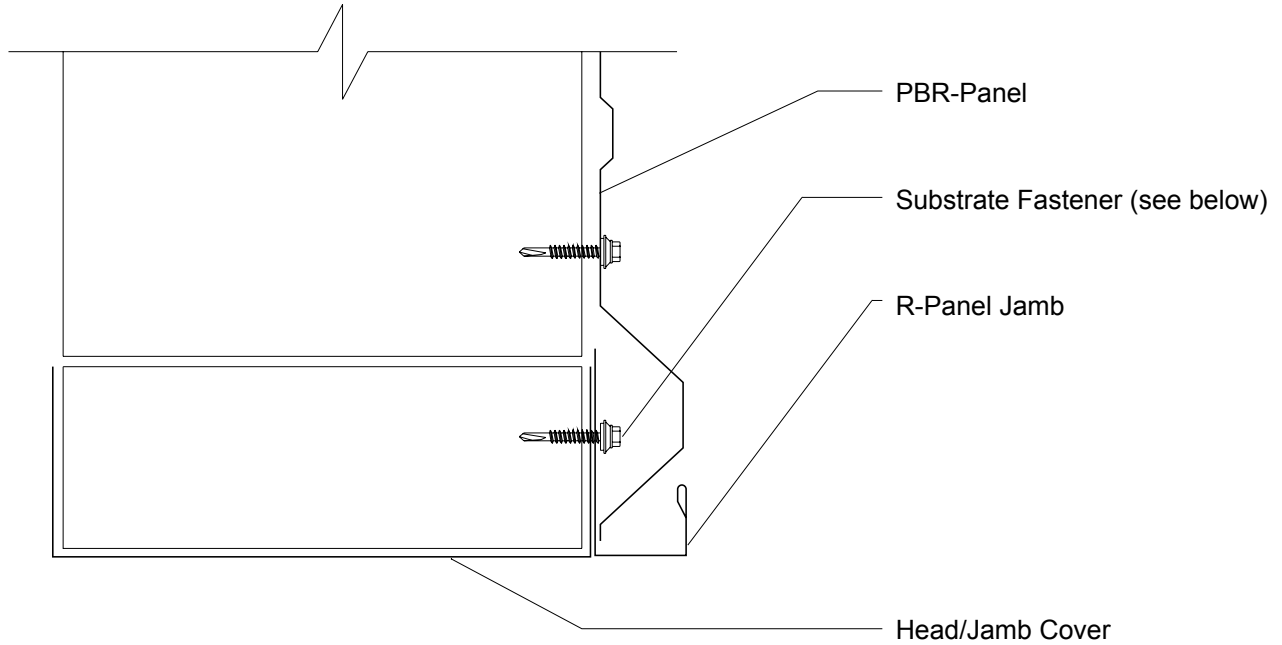
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"



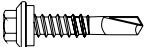


INSTALLATION STEPS

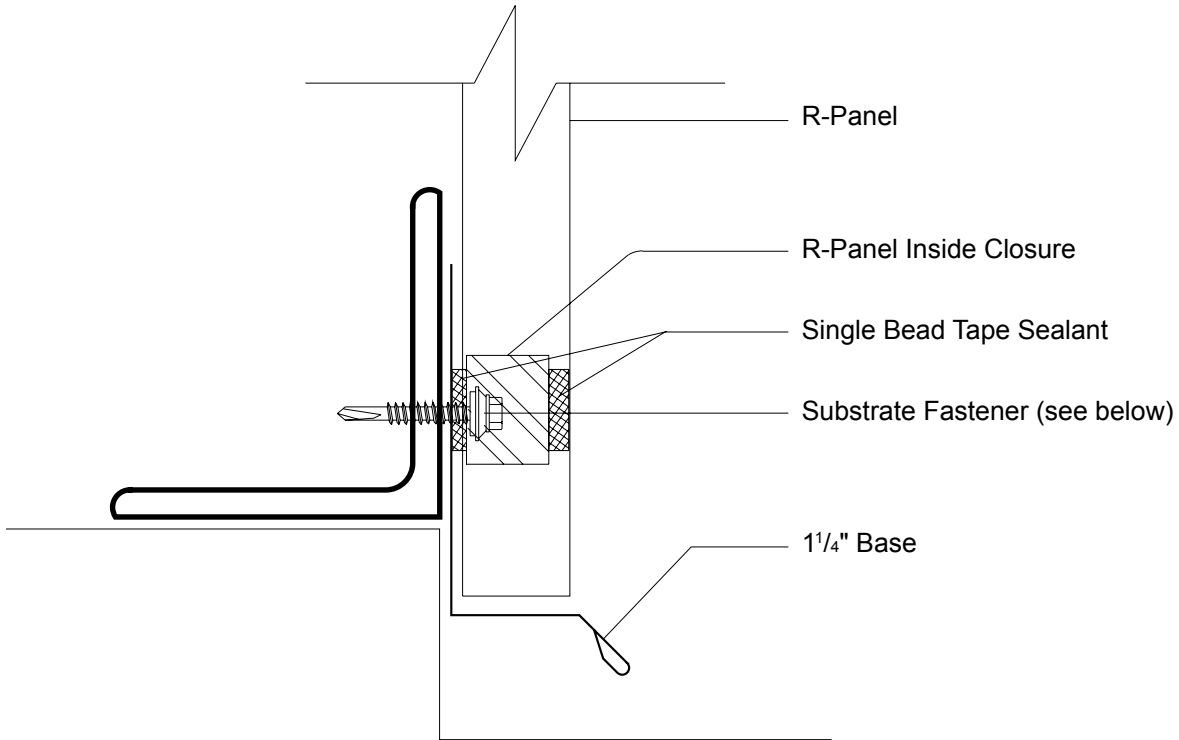
Note: Inside Corner Flashings should be installed working from the ground up.

1. After the PBR wall panel is installed place the first Inside Corner Flashing at the base of the building.
2. Install a row of Single Bead Tape Sealant on each side of the Inside Corner Flashing.
3. Place the Inside Corner Flashing on the wall panels.
4. Fasten to the wall panels with 1/4"-14 x 7/8" Stitch Fasteners, 1'-0" on center.
5. If more than one Inside Corner Flashing is needed then a flashing lap is required.
6. Apply two rows of Tube Sealant to the top of the installed Inside Corner Flashing.
7. Lap the flashings a minimum of 3" and fasten with Pop Rivets 2" on center.



SUBSTRATE FASTENER INFORMATION

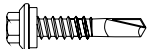
Open Framing	Solid Wood Substrate	2X Wood Framing	
 <p>Self Driller #12-14 x 1" #12-14 x 1-1/2" #12-14 x 2"</p>	 <p>Woodscrew #10-14 x 1" #10-14 x 1-1/2" #10-14 x 2"</p>	 <p>Woodscrew #10-14 x 1" #10-14 x 1-1/2" #10-14 x 2"</p>	



SUBSTRATE FASTENER INFORMATION

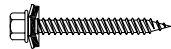
PBR-PANEL FASTENING PATTERN

Open Framing



Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

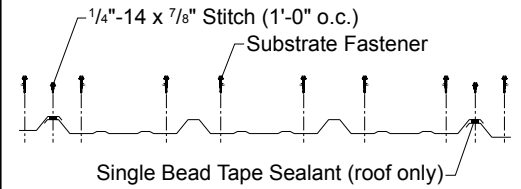


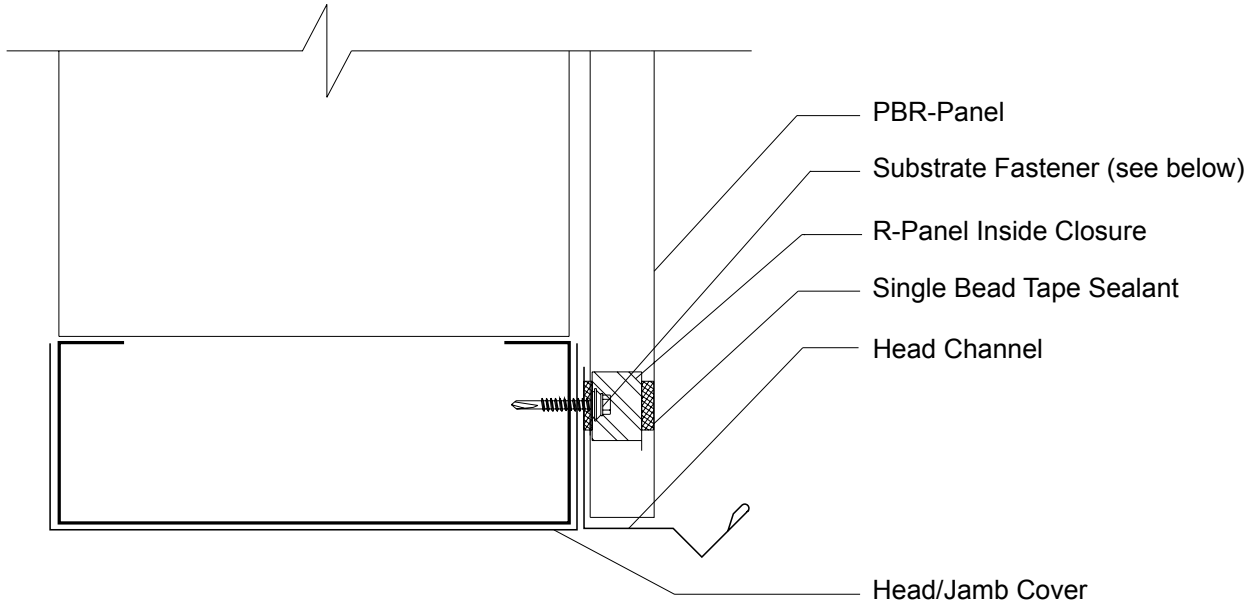
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

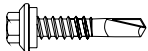




SUBSTRATE FASTENER INFORMATION

PBR-PANEL FASTENING PATTERN

Open Framing



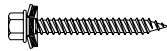
Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate

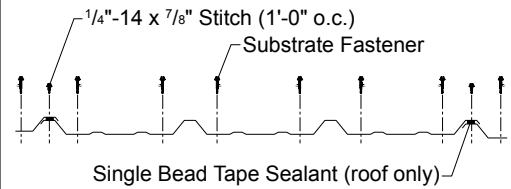


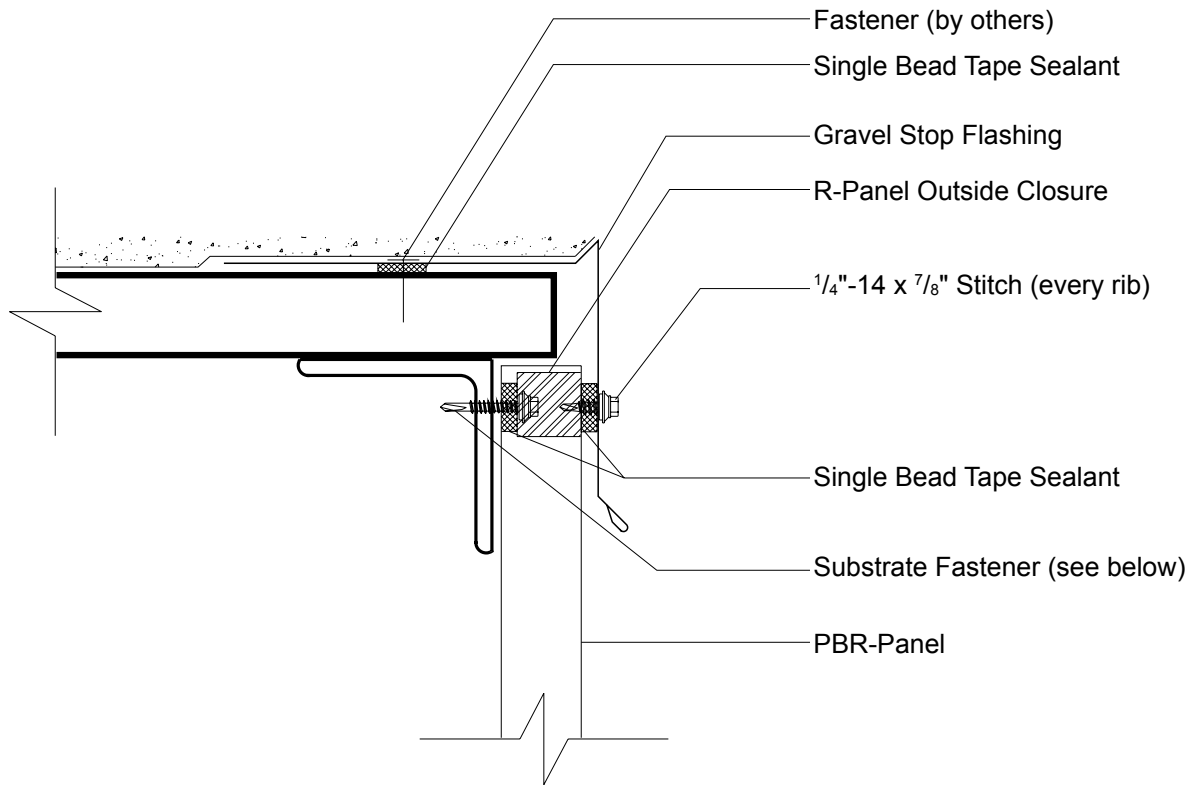
Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

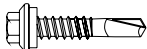




SUBSTRATE FASTENER INFORMATION

PBR-PANEL FASTENING PATTERN

Open Framing



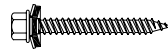
Self Driller
 #12-14 x 1"
 #12-14 x 1-1/2"
 #12-14 x 2"

Solid Wood Substrate



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

2X Wood Framing



Woodscrew
 #10-14 x 1"
 #10-14 x 1-1/2"
 #10-14 x 2"

