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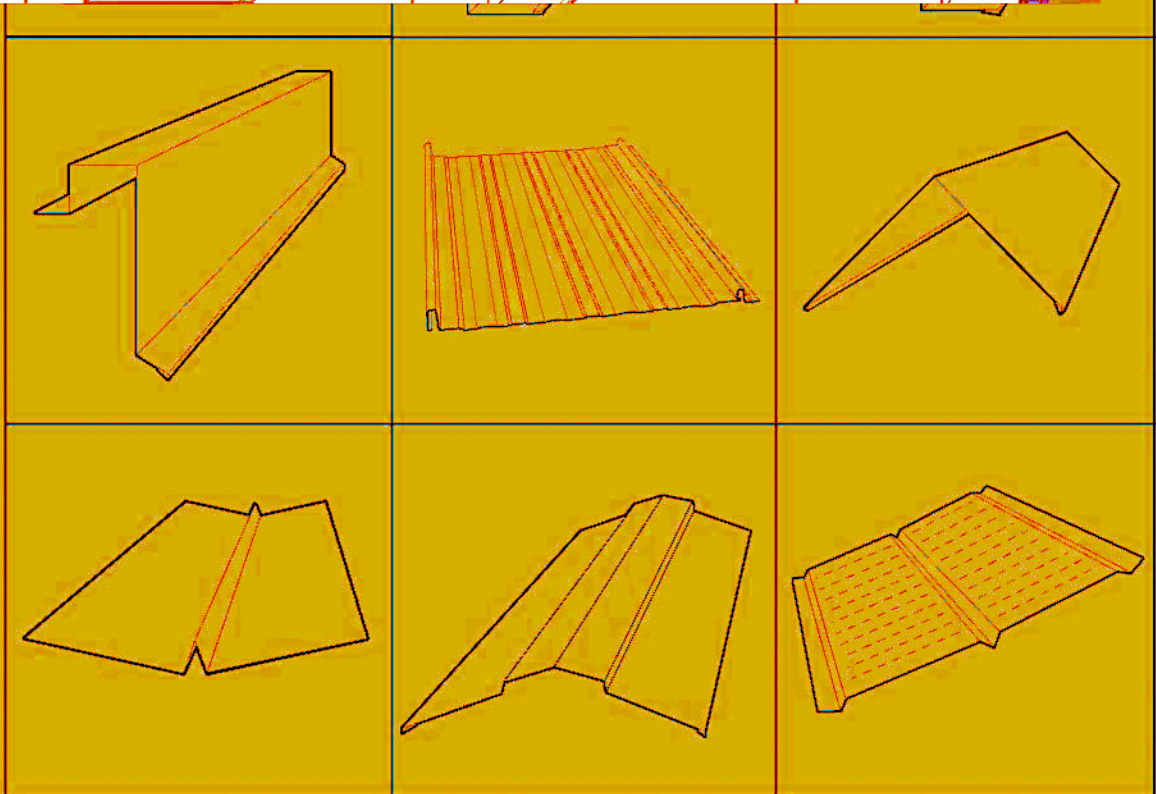
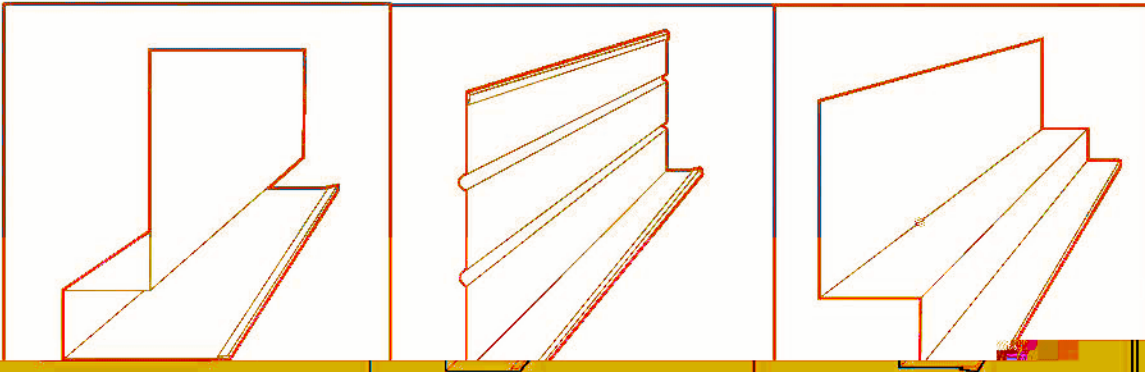
MICHIANA BUILDING SUPPLIES

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269 683 2723

# SL-16<sup>®</sup> Panel - Concealed Fastener System

Effective April 10, 2006



**This booklet includes:**

- **Trims and Accessories**
- **Design and Installation Information**

 AMERICAN

®

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Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, ABC reserves the right to discontinue products at any time or change specifications and/or designs without incurring obligation. Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs, or panel profiles. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices. Insulation is not shown in these details for clarity. **If there is a conflict between this manual and the erection drawings, the erection drawings will take precedence.**

# APPLICATION, STORAGE AND HANDLING INFORMATION

## SAFETY PRECAUTIONS

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Improper unloading and handling of bundles and crates may cause bodily injury or material damage. Use extreme care in the operation of power lifting devices such as cranes and forklifts and follow the safety instructions provided by their manufacturer. Crates, boxes and bundles may be bulky, heavy, or both. The improper or unaided lifting of them may cause bodily injury. The manufacturer is not responsible for bodily injuries or material damage due to improper handling during unloading, storage, or job site placement.

Protective heavy duty gloves should be worn when handling metal panels and trim products. Safety goggles or face shield should be worn while cutting or drilling metal products with power tools. Follow the safety instructions provided by the manufacturer of the power tools.

Use extreme care when walking, sitting, standing, or kneeling on a metal roof to avoid a fall. Galvalume® and galvanized panels have a light coating of oil to protect the panels from moisture prior to erection. They can be extremely slippery, as are painted panels, when they are wet. If necessary, remove the oil coating with a non-abrasive detergent and water mixture followed by a clear water rinse. Insure the panels are dry prior to installation.

When nails are used to fasten the panels, goggles should be worn to prevent possible eye injuries. Off center strikes by the hammer may cause nails to ricochet or metal fragments to become dislodged, striking the user or those nearby. Insure adequate safety measures and warnings are in place and followed.

## STORAGE AND HANDLING

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To preserve and protect the attractive appearance of American Building Components' roofing and siding from damage caused by moisture, corrosive chemicals or improper handling, it is necessary that you take a few simple precautions. When material is received bundled, panels should be inspected for moisture. If there is moisture, the panels should be separated and dried. If shipping damage is found, the carrier should be advised and a notation made on the bill of lading.

On job sites, reasonable care should be taken when handling painted surfaces during installation in order to protect the finish. Although the paint coating is tough and provides impact resistance, dragging panels across the surface of one another will almost certainly mar the finish.

Prolonged storage of sheets in bundles is not recommended. If conditions do not permit immediate erection, extra care must be taken to protect the material from damage caused by moisture.

Store bundled sheets **ONLY IN A DRY PLACE**. Sheets should be unbundled, stood on end against an interior wall to allow for air circulation. If unable to store sheets in an upright position, strapping bands should be broken and sheets should be blocked off the floor with one end slightly elevated. Stacked sheets should then be completely protected from the elements while maintaining good airflow to prevent condensation. A properly draped canvas tarpaulin, that allows air flow, is an example of a good protective cover. Do not use plastic as it causes sweating or condensation to occur.

## BUILDING DESIGN AND CONSTRUCTION

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It is important to protect metal panels from potentially corrosive situations and materials. This will insure the good performance and long life of the metal. If installing metal panels over green lumber, damp lumber, or treated lumber (CCA or ACQ), a barrier must be installed to separate the wood from the metal. A barrier may be formed with plastic, builders felt, or other suitable material. Avoid contact with, or water runoff from, dissimilar metals such as copper, lead or graphite. Dissimilar metals under the roof panels may be separated with asphalt, builders felt, caulking compounds or gasket material.

Metal panels must further be protected from contact with strong chemicals such as fertilizers, lime acids, animal waste

and soil. All of these have the potential to initiate corrosion in metal panels. Metal panels should not be in permanent contact with soil.

Temperature variations, (dew point) between the outside air and the interior building air mass can cause condensation to occur on the inside of the building on the panel's surfaces. Proper venting and air flow consideration and the use of a vapor barrier such as vinyl backed insulation can eliminate this problem. If left unattended, condensation can cause the premature degradation of the metal and void any applicable warranties.

**The substructure, on which the panels are to be installed, must be "on plane" (1/4" tolerance) from eave to edge. Maximum recommended panel length is 36'; minimum panel length is 3'.**

## VENTILATION

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Sufficient air movement should be provided by means of a ridge or rotary vent, power operated fans, or other openings to minimize condensation. Contact the equipment

manufacturer for specific information or a qualified mechanical engineer.

# APPLICATION, STORAGE AND HANDLING INFORMATION

## ROOFING INSTALLATION

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Check substructure for proper alignment and uniformity to avoid panel distortion. ABC recommends the use of 5/8" plywood for the substructure. 5/8" plywood substructure is MANDATORY for UL 90 Uplift Rating.

THE MINIMUM roof slope recommended is 3 inches of rise per foot. This ensures that sufficient slope is present for adequate drainage. A quality sealant tape should also be applied at all sidelaps and endlaps to provide maximum weather protection. The panels must be installed over a completely water-proofed substructure. This is typically accomplished by the application of: one layer of 30# felt\*, or a product such as StormGuard®HT, available from GAF Materials Corporation.

It is important to remember that in the installation of roof sheets, the sidelaps should face away from the direction of the prevailing wind. The first sheet should be installed

square with the eave and at the down-wind end of the roof, farthest from the direction of the wind.

For the proper application of nails and screws, refer to our published guide.

Remember to sweep the roof clean of any metal filings created from fastener placement or cutting of panels to prevent rust marks on the surface of the painted panels.

Installing SL-16® panels over an uneven substrate will cause distortion of the panel. It is the responsibility of the installer to insure a suitable substrate prior to the application of SL-16®. Distortion in the panel caused by an uneven substrate, ripples or laps in the vapor barrier, debris, etc., are not defects in the material, and are not the responsibility of ABC SL-16® panels cannot be endlapped.

## CLOSURE AND SEALANTS

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To thoroughly protect the contents of any structure from moisture, regardless of building size or roof slope, closure strips should be used at the roof ridge and eave. Closure strips are available to match all of our panel profiles. For

maximum protection, all caulking used should be urethane. **Silicone caulks are not recommended for painted panels and trims.**

## CUTTING METAL PANELS

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ABC recommends the use of power shears or nibblers that can follow the contour of the panel's profile. While not recommended, if you use a power saw, it is imperative that the panel be turned reverse side up in order that the hot filings do not contact the painted surface of the panel. These metal particles could become imbedded and cause rust marks on the surface of the panel. Panels should be

thoroughly brushed after cutting to remove any particles of metal and caution should be taken that filings from cutting don't settle on other panels. Follow the safety instructions provided by the manufacturer when using any tools. **Silicone caulks are not recommended for painted panels and trims.**

## PANEL SELECTION

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ABC's bare Galvalume® (Galvalume Plus®), and color coated products are produced from material that meets or exceeds the specifications outlined in ASTM-653 and ASTM-792.

other corrosive atmospheres, as well as the accumulation of airborne debris and dirt will affect this aging process and the products' appearance.

If you chose a bare Galvalume® (Galvalume Plus®), for your application you should be aware that this product is recommended for applications where aesthetic appearance is not your prime concern. Unpainted products may not weather uniformly and while they may be shiny and bright when new, they will fade or "patina" with age. Acid rain and

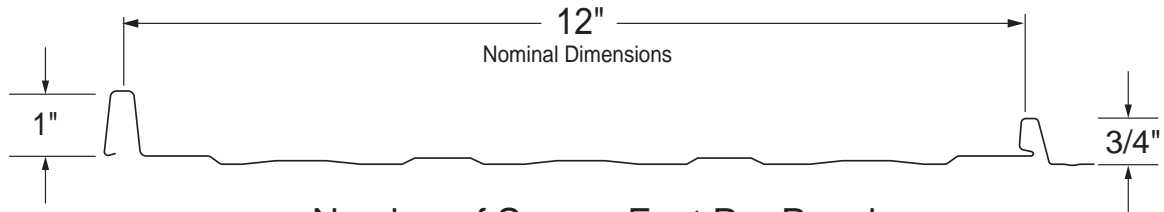
If aesthetic appearance is one of your concerns, ABC recommends you select one of our many color coated panel selections that have a thirty year limited warranty. Copies of ABC's color coated panel warranty are available at your point of purchase, or from the ABC office located nearest to you.

Failure to comply with these precautions relieves the manufacturer of responsibility for any resultant damage to, or deterioration of the product and voids any applicable warranties. Contact your local ABC facility for copies of our Limited Color Coated and Galvalume® warranties. Except as outlined in our published limited warranties, ABC makes no warranty, express or implied, limited or otherwise, as to the merchantability or fitness for any particular purpose, with respect to the product sold.

\*30# minimum. StormGuard®HT is a registered trademark of GAF Materials Corporation.

# 12" WIDE - SQUARE FOOT CHART

## SL-12<sup>®</sup>

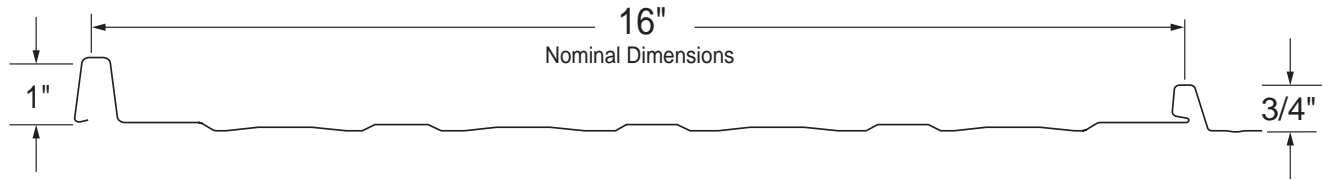


Number of Square Feet Per Panel

	0"	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"
1 FT.	1.00	1.08	1.17	1.25	1.34	1.42	1.50	1.58	1.67	1.75	1.83	1.92
2 FT.	2.00	2.08	2.17	2.25	2.34	2.42	2.50	2.58	2.67	2.75	2.83	2.92
3 FT.	3.00	3.08	3.17	3.25	3.34	3.42	3.50	3.58	3.67	3.75	3.83	3.92
4 FT.	4.00	4.08	4.17	4.25	4.34	4.42	4.50	4.58	4.67	4.75	4.83	4.92
5 FT.	5.00	5.08	5.17	5.25	5.34	5.42	5.50	5.58	5.67	5.75	5.83	5.92
6 FT.	6.00	6.08	6.17	6.25	6.34	6.42	6.50	6.58	6.67	6.75	6.83	6.92
7 FT.	7.00	7.08	7.17	7.25	7.34	7.42	7.50	7.58	7.67	7.75	7.83	7.92
8 FT.	8.00	8.08	8.17	8.25	8.34	8.42	8.50	8.58	8.67	8.75	8.83	8.92
9 FT.	9.00	9.08	9.17	9.25	9.34	9.42	9.50	9.58	9.67	9.75	9.83	9.92
10 FT.	10.00	10.08	10.17	10.25	10.34	10.42	10.50	10.58	10.67	10.75	10.83	10.92
11 FT.	11.00	11.08	11.17	11.25	11.34	11.42	11.50	11.58	11.67	11.75	11.83	11.92
12 FT.	12.00	12.08	12.17	12.25	12.34	12.42	12.50	12.58	12.67	12.75	12.83	12.92
13 FT.	13.00	13.08	13.17	13.25	13.34	13.42	13.50	13.58	13.67	13.75	13.83	13.92
14 FT.	14.00	14.08	14.17	14.25	14.34	14.42	14.50	14.58	14.67	14.75	14.83	14.92
15 FT.	15.00	15.08	15.17	15.25	15.34	15.42	15.50	15.58	15.67	15.75	15.83	15.92
16 FT.	16.00	16.08	16.17	16.25	16.34	16.42	16.50	16.58	16.67	16.75	16.83	16.92
17 FT.	17.00	17.08	17.17	17.25	17.34	17.42	17.50	17.58	17.67	17.75	17.83	17.92
18 FT.	18.00	18.08	18.17	18.25	18.34	18.42	18.50	18.58	18.67	18.75	18.83	18.92
19 FT.	19.00	19.08	19.17	19.25	19.34	19.42	19.50	19.58	19.67	19.75	19.83	19.92
20 FT.	20.00	20.08	20.17	20.25	20.34	20.42	20.50	20.58	20.67	20.75	20.83	20.92
21 FT.	21.00	21.08	21.17	21.25	21.34	21.42	21.50	21.58	21.67	21.75	21.83	21.92
22 FT.	22.00	22.08	22.17	22.25	22.34	22.42	22.50	22.58	22.67	22.75	22.83	22.92
23 FT.	23.00	23.08	23.17	23.25	23.34	23.42	23.50	23.58	23.67	23.75	23.83	23.92
24 FT.	24.00	24.08	24.17	24.25	24.34	24.42	24.50	24.58	24.67	24.75	24.83	24.92
25 FT.	25.00	25.08	25.17	25.25	25.34	25.42	25.50	25.58	25.67	25.75	25.83	25.92
26 FT.	26.00	26.08	26.17	26.25	26.34	26.42	26.50	26.58	26.67	26.75	26.83	26.92
27 FT.	27.00	27.08	27.17	27.25	27.34	27.42	27.50	27.58	27.67	27.75	27.83	27.92
28 FT.	28.00	28.08	28.17	28.25	28.34	28.42	28.50	28.58	28.67	28.75	28.83	28.92
29 FT.	29.00	29.08	29.17	29.25	29.34	29.42	29.50	29.58	29.67	29.75	29.83	29.92
30 FT.	30.00	30.08	30.17	30.25	30.34	30.42	30.50	30.58	30.67	30.75	30.83	30.92
31 FT.	31.00	31.08	31.17	31.25	31.34	31.42	31.50	31.58	31.67	31.75	31.83	31.92
32 FT.	32.00	32.08	32.17	32.25	32.34	32.42	32.50	32.58	32.67	32.75	32.83	32.92
33 FT.	33.00	33.08	33.17	33.25	33.34	33.42	33.50	33.58	33.67	33.75	33.83	33.92
34 FT.	34.00	34.08	34.17	34.25	34.34	34.42	34.50	34.58	34.67	34.75	34.83	34.92
35 FT.	35.00	35.08	35.17	35.25	35.34	35.42	35.50	35.58	35.67	35.75	35.83	35.92
36 FT.	36.00	36.08	36.17	36.25	36.34	36.42	36.50	36.58	36.67	36.75	36.83	36.92
37 FT.	37.00	37.08	37.17	37.25	37.34	37.42	37.50	37.58	37.67	37.75	37.83	37.92
38 FT.	38.00	38.08	38.17	38.25	38.34	38.42	38.50	38.58	38.67	38.75	38.83	38.92
39 FT.	39.00	39.08	39.17	39.25	39.34	39.42	39.50	39.58	39.67	39.75	39.83	39.92
40 FT.	40.00	40.08	40.17	40.25	40.34	40.42	40.50	40.58	40.67	40.75	40.83	40.92

# 16" WIDE - SQUARE FOOT CHART

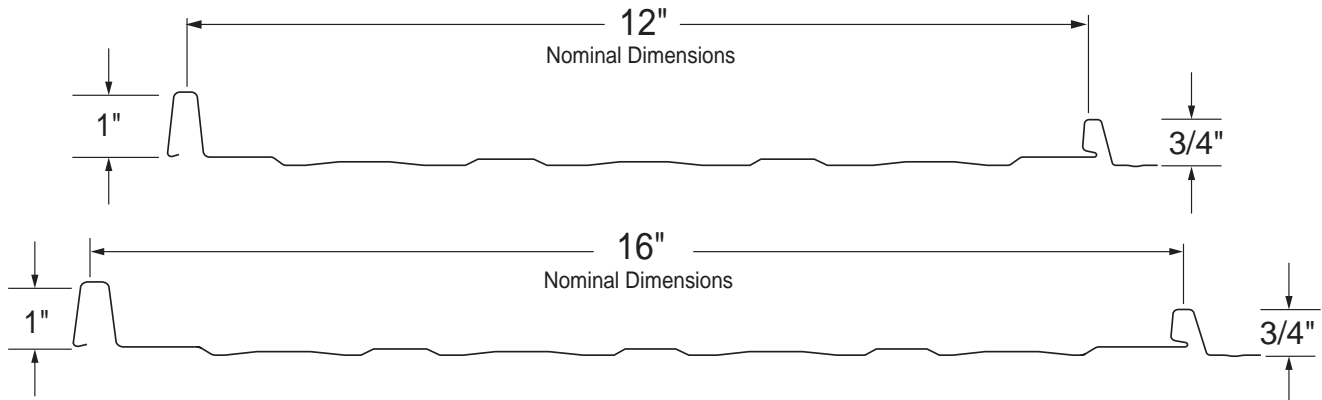
## SL-16<sup>®</sup>



### Number of Square Feet Per Panel

	0"	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"
1 FT.	1.33	1.44	1.56	1.67	1.78	1.89	2.00	2.11	2.22	2.33	2.44	2.56
2 FT.	2.67	2.78	2.89	3.00	3.11	3.22	3.33	3.44	3.56	3.67	3.78	3.89
3 FT.	4.00	4.11	4.22	4.33	4.44	4.58	4.67	4.78	4.89	5.00	5.11	5.22
4 FT.	5.33	5.44	5.56	5.67	5.78	5.89	6.00	6.11	6.22	6.33	6.44	6.56
5 FT.	6.67	6.78	6.89	7.00	7.11	7.22	7.33	7.44	7.56	7.67	7.78	7.89
6 FT.	8.00	8.11	8.22	8.33	8.44	8.56	8.67	8.78	8.89	9.00	9.11	9.22
7 FT.	9.33	9.44	9.56	9.67	9.78	9.89	10.00	10.11	10.22	10.33	10.44	10.56
8 FT.	10.67	10.78	10.89	11.00	11.11	11.22	11.33	11.44	11.56	11.67	11.78	11.89
9 FT.	12.00	12.11	12.22	12.33	12.44	12.56	12.67	12.78	12.89	13.00	13.11	13.22
10 FT.	13.33	13.44	13.56	13.67	13.78	13.89	14.00	14.11	14.22	14.33	14.44	14.56
11 FT.	14.67	14.78	14.89	15.00	15.11	15.22	15.33	15.44	15.56	15.67	15.78	15.89
12 FT.	16.00	16.11	16.22	16.33	16.44	16.56	16.67	16.78	16.89	17.00	17.11	17.22
13 FT.	17.33	17.44	17.56	17.67	17.78	17.89	18.00	18.11	18.22	18.33	18.44	18.56
14 FT.	18.67	18.78	18.89	19.00	19.11	19.22	19.33	19.44	19.56	19.67	19.78	19.89
15 FT.	20.00	20.11	20.22	20.33	20.44	20.56	20.67	20.78	20.89	21.00	21.11	21.22
16 FT.	21.33	21.44	21.56	21.67	21.78	21.89	22.00	22.11	22.22	22.33	22.44	22.56
17 FT.	22.67	22.78	22.89	23.00	23.11	23.22	23.33	23.44	23.56	23.67	23.78	23.89
18 FT.	24.00	24.11	24.22	24.33	24.44	24.56	24.67	24.78	24.89	25.00	25.11	25.22
19 FT.	25.33	25.44	25.56	25.67	25.78	25.89	26.00	26.11	26.22	26.33	26.44	26.56
20 FT.	26.67	26.78	26.89	27.00	27.11	27.22	27.33	27.44	27.56	27.67	27.78	27.89
21 FT.	28.00	28.11	28.22	28.33	28.44	28.56	28.67	28.78	28.89	29.00	29.11	29.22
22 FT.	29.33	29.44	29.56	29.67	29.78	29.89	30.00	30.11	30.22	30.33	30.44	30.56
23 FT.	30.67	30.78	30.89	31.00	31.11	31.22	31.33	31.44	31.56	31.67	31.78	31.89
24 FT.	32.00	32.11	32.22	32.33	32.44	32.56	32.67	32.78	32.89	33.00	33.11	33.22
25 FT.	33.33	33.44	33.56	33.67	33.78	33.89	34.00	34.11	34.22	34.33	34.44	34.56
26 FT.	34.67	34.78	34.89	35.00	35.11	35.22	35.33	35.44	35.56	35.67	35.78	35.89
27 FT.	36.00	36.11	36.22	36.33	36.44	36.56	36.67	36.78	36.89	37.00	37.11	37.22
28 FT.	37.33	37.44	37.56	37.67	37.78	37.89	38.00	38.11	38.22	38.33	38.44	38.56
29 FT.	38.67	38.78	38.89	39.00	39.11	39.22	39.33	39.44	39.56	39.67	39.78	39.89
30 FT.	40.00	40.11	40.22	40.33	40.44	40.56	40.67	40.78	40.89	41.00	41.11	41.22
31 FT.	41.33	41.44	41.55	41.67	41.78	41.89	42.00	42.11	42.22	42.33	42.44	42.56
32 FT.	42.67	42.78	42.89	43.00	43.11	43.22	43.33	43.44	43.56	43.67	43.78	43.89
33 FT.	44.00	44.11	44.22	44.33	44.44	44.56	44.67	44.78	44.89	45.00	45.11	45.22
34 FT.	45.33	45.44	45.56	45.67	45.78	45.89	46.00	46.11	46.22	46.33	46.44	46.56
35 FT.	46.67	46.78	46.89	47.00	47.11	47.22	47.33	47.44	47.56	47.67	47.78	47.89
36 FT.	48.00	48.11	48.22	48.33	48.44	48.56	48.67	48.78	48.89	49.00	49.11	49.22
37 FT.	49.33	49.44	49.56	49.67	49.78	49.89	50.00	50.11	50.22	50.33	50.44	50.56
38 FT.	50.67	50.78	50.89	51.00	51.11	51.22	51.33	51.44	51.56	51.67	51.78	51.89
39 FT.	52.00	52.11	52.22	52.33	52.44	52.56	52.67	52.78	52.89	53.00	53.11	53.22
40 FT.	53.33	53.44	53.56	53.67	53.78	53.89	54.00	54.11	54.22	54.33	54.44	54.56

# FREIGHT and PACKAGING COSTS



## PANEL PRICING

1. All pricing is based on net coverage.
2. For panel lengths under 4' - 0" add \$.75 per sheet.
3. Panels are custom cut-to-the-inch.
4. This panel is available with ribs or striations only.

## PACKAGING COST:

Packaging ..... \$ .07/L.F. - \$60.00 minimum charge.

## DELIVERY:

1. 29 gauge premium colors ..... Approximately 15 working days.
2. Other gauges, colors, and metals ..... Please inquire.

## NOTES:

1. For panels - lengths longer than 36' - 0" ..... Please inquire.
2. Minimum panel length of 3'.
3. Recommended roofing applications are over a solid substrate (5/8" plywood with a suitable moisture/vapor barrier).
4. Minimum roof pitch for a roofing application is 3" of rise per foot.
5. Oil canning is not a cause for rejection.

FREIGHT: All prices are F.O.B. shipping point.

FREIGHT CHARGES: .07¢ per Linear Foot - \$60.00 minimum charge.

1. Stop over charge (for unloading delay in excess of 1 1/2 hrs. Charged in 1/2 hr. increments)...\$90.00 per hour.
2. Job Site Delivery: \$75.00 Minimum.
3. Refer to price sheets for freight notes.

ABC is pleased to provide job site delivery to our customers. Customers requesting this service must have mechanized means to off-load the material (i.e. - crane, forklift, gin pole). The job site location must be accessible to a vehicle 65' long and weighing up to 80,000 pounds. ABC reserves the right to refuse delivery at job sites where unsafe or impassable terrain or road conditions are present.

## TERMS:

Invoices paid ABC by buyer within 10 days of date of shipment are allowed 1/2% of 1% discount, net due 30 days from date of shipment. Prices subject to change without notice. Possession of this price sheet does not constitute a proposal to sell. Prices in effect at time of shipment will apply.

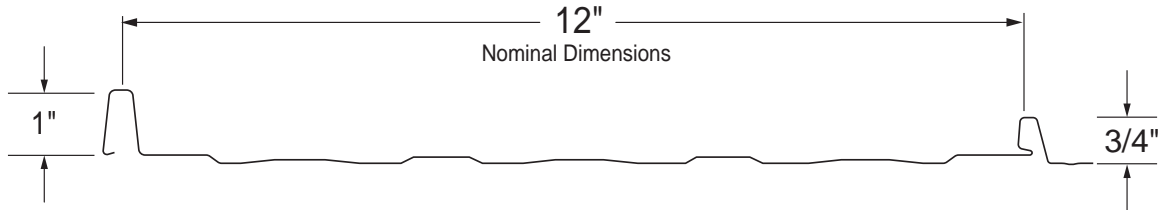


## TECHNICAL DATA

# SL-12<sup>®</sup>

## 29 GAUGE

(This panel is available with striations or ribs w/striations only.)



### Negative Design Loads

Span	ASTM E-1592	Design Load
FT	PSF	PSF
1.00	62.40	50.42
1.50	60.45	48.85
2.00	57.20	46.22
2.50	52.65	42.54
3.00	46.80	37.82

#### NOTES:

- 1) The above loads were derived from uplift test done in accordance with ASTM E-1592.
- 2) All values are interpolated and /or extrapolated from tests performed at spans of 1' - 0", 2' - 0" and 3' - 0".
- 3) Test results are highlighted.
- 4) Design Load contains a 1.65 factor of safety and 33% increase due to wind per AISI '96.
- 5) This material is subject to change without notice. Please contact ABC for most current data.

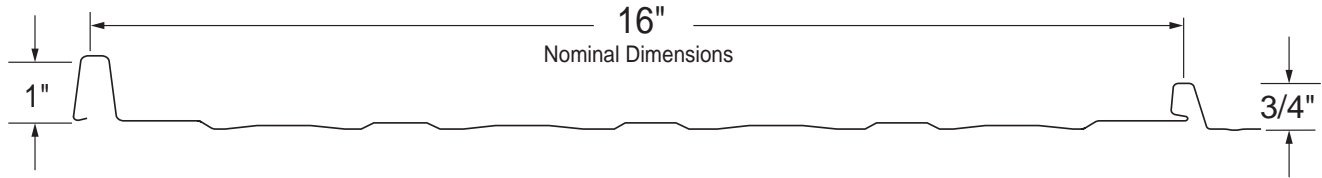
Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. ABC reserves the right to discontinue products at any time or change specifications and/or designs without notice and without incurring obligation. Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs, or panel profiles. Projects should be engineered to conform to applicable building codes, regulations and accepted industry practices.

# TECHNICAL DATA

# SL-16<sup>®</sup>

## 29 GAUGE

(This panel is available with striations or ribs w/striations only.)



### Negative Design Loads

Span	ASTM	Design
	E-1592	Load
FT	PSF	PSF
1.00	62.40	50.42
1.50	54.00	43.64
2.00	46.80	37.82
2.50	43.50	35.15
3.00	41.60	33.62

#### NOTES:

- 1) The above loads were derived from uplift test done in accordance with ASTM E-1592.
- 2) All values are interpolated and/or extrapolated from tests performed at spans of 1' - 0", 2' - 0" and 3' - 0".
- 3) Test results are highlighted.
- 4) Design Load contains a 1.65 factor of safety and 33% increase due to wind per AISI '96.
- 5) This material is subject to change without notice. Please contact ABC for most current data.

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## UL 90 Requirements

### Construction #529 SL-16® over Plywood

1. Metal Panels (29 gauge or heavier)—12" or 16" wide, continuous over two or more spans.
2. Substructure (Plywood)—plywood decking to be a nominal 5/8" thick.
3. Fasteners—No. 10X1" long No. 2 Phillips pancake head wood screw spaced 1' - 0" O.C.
4. Joists—joists spaced 2' O.C. may be one of the following:
  - A. Nom. 2" x 6" wood joists No. 2 or better.
  - B. Nom. 2" x 4" wood when used on a top cord of a wood truss, No. 2 or better.
  - C. Light gauge structural steel framing with the member against the plywood to be a minimum No. 22 msg coated steel.

## FIRE RESISTANCE RATING

External Fire Exposure: Class A

Mechanically attached metal roof panels — type SL Series® 12" or 16" (29 msg).  
Secured by No. 10X1" No. 2 Phillips pancake head wood screw.

For use in:

"Design Nos. P224, P225, P227, P230, P233, P237, P265, P268, P508, P510, P512, P701, P711, P715, P717, P720, P722, P724, P726, P731, P734, P736, P801, P803, P814, P815, P819, P821 and P823".

**See UL FIRE RESISTANCE DIRECTORY for details of illustrations and fire resistance hourly ratings.**

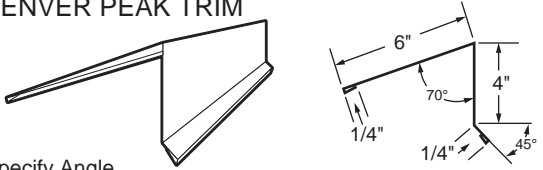
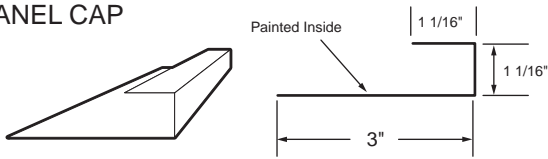
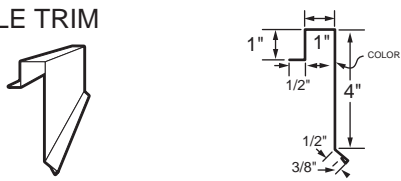
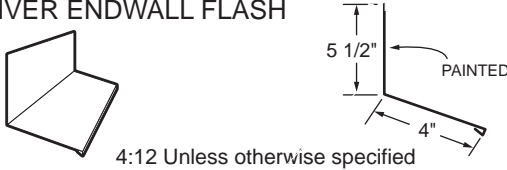
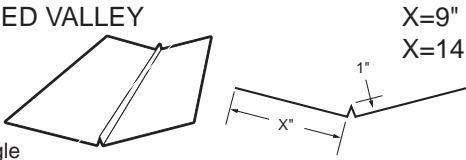
## IMPACT RESISTANCE

UL Classification as to Impact Resistance: Class 4

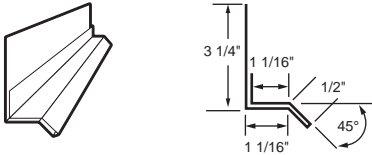
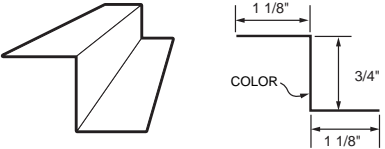
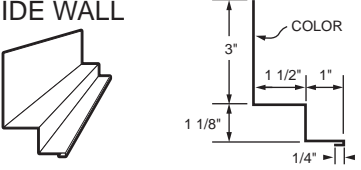
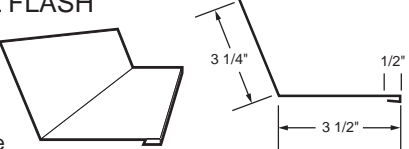
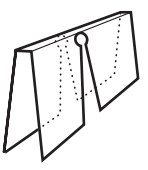
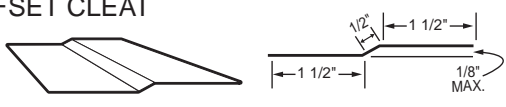
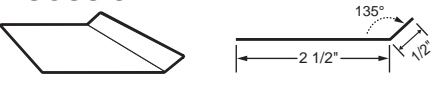
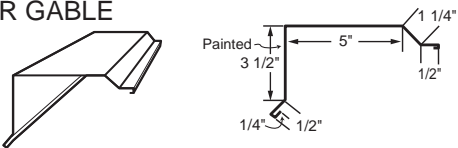
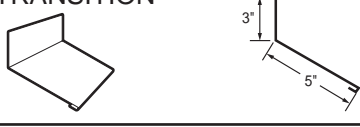

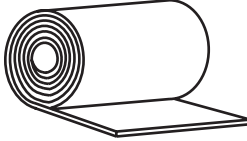
### CAUTION

**For UL 90 Rated Roofs, the above requirements must be followed. See UL Roofing Materials and Systems Directory for additional requirements.  
If you have any questions, call ABC before proceeding.**








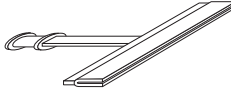
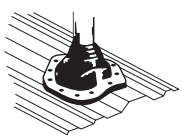
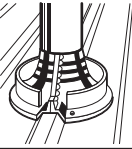
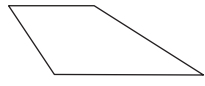
# SL-16<sup>®</sup> TRIM

ITEM	DESCRIPTION				
	PART NO.	LENGTH	GIRTH	WEIGHT	
DENVER PEAK TRIM  Specify Angle	LG-103	10' - 6"	11"	5.80 #	
PANEL CAP  Painted Inside	CF-122	10' - 6"	5 1/8"	2.64 #	
EAVE TRIM  Specify Angle	CF-107	10' - 6"	7"	3.73 #	
RAKE GABLE TRIM  COLOR	CF-115	10' - 6"	7 1/4"	3.73 #	
DENVER ENDWALL FLASH  4:12 Unless otherwise specified	LG-107	10' - 6"	9 3/4"	3.73 #	
W FORMED VALLEY  Specify Angle X=9" X=14"	LG-138 LG-139	10' - 6" 10' - 6"	20" 30"	10.30 # 15.45 #	

# SL-16<sup>®</sup> TRIM

ITEM	DESCRIPTION				NOTES
	PART NO.	LENGTH	GIRTH	WEIGHT	
<b>DRIP EDGE</b> 	CF-121	10' - 6"	7 3/8"	3.83 #	
<b>"Z" METAL</b> 	CF-117	10' - 6"	3"	1.95 #	
<b>UNIVERSAL SIDE WALL</b> 	CF-118	10' - 6"	6 7/8"	3.70 #	
<b>ENDWALL FLASH</b>  <p>Specify Angle</p>	CF-105	10' - 6"	7 1/4"	3.73 #	
<b>RIB COVER</b> 	CF-119	0' - 8"	N/A	.25 #	
<b>OFFSET CLEAT</b> 	CF-120	10' - 6"	3 1/2"	1.54 #	This item may be shipped out of any 29 gauge material.
<b>CONTINUOUS CLEAT</b> 	CF-123	10' - 6"	3"	1.32 #	This item may be shipped out of any 29 gauge material.
<b>DENVER GABLE</b> 	LG-118	10' - 6"	11 1/4"	6.03 #	
<b>HIGHSIDE TRANSITION</b>  <p>Specify Angle</p>	CF-125	10' - 6"	8 1/2"	4.22 #	
<b>RAKE TRANSITION</b> 	CF-124	10' - 6"	9 1/4"	4.62 #	
<b>ROLL VALLEY</b> <b>29 GAUGE</b> 29 Gauge Steel Available in All Colors 		50'-0"	20 3/16"	65 #	


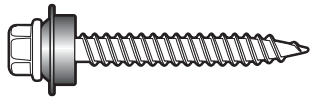
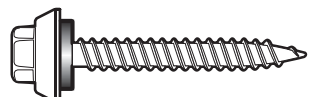
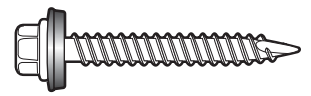
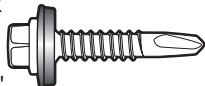
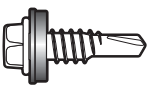



# SL-16<sup>®</sup> ACCESSORIES

ITEM	DESCRIPTION					NOTES
<b>TAPE SEALER</b>  <b>FLAT</b>  <b>DOUBLE BEAD TAPE</b>  <b>TRIPLE BEAD TAPE</b>  <b>TRI-BEAD TAPE</b>	PART NO.	GENERAL	CARTON SIZE	LENGTH	ROLL WEIGHT	
	HW-505	3/8" X 3/32"	48	45'-0"	1.70 #	
	HW-507	1/2" X 3/32"	20	50'-0"	1.70 #	
	HW-508	1" X 1/8"	12	40'-0"	3.50 #	
	PART NO.	GENERAL	CARTON SIZE	LENGTH	CARTON WEIGHT	
	HW-500	7/8" X 3/16"	8	25'-0"	15.16 #	
HW-502	2 1/2" X 3/16"	6	20'-0"	21.00 #		
HW-504	7/8" X 3/16"	8	25'-0"	17.74 #		
ITEM	DESCRIPTION					
PART NO.	GENERAL		LENGTH	WEIGHT		
UNIVERSAL CLOSURE 	HW-490	1 1/2" X 3/4"	3'-0"	.15 #		
12" OUTSIDE CLOSURE 	HW-491	Adhesive Backed	12"	.30 #		
16" OUTSIDE CLOSURE 	HW-492	Adhesive Backed	16"	.30 #		
PANEL HEMMING TOOL 	HW-602	19" Width	13 1/2"	4.25 #		
RUBBER ROOF JACK 	PART NO.	TEMP. RANGE	PIPE SIZE	BASE DIM.	WEIGHT	
	HW-1000*	-65° – +212°	1/4" – 2"	4 1/2"	.17 #	
	HW-1001*	-65° – +212°	1/4" – 4"	8"	.50 #	
	HW-1002*	-65° – +212°	4" – 7"	11"	.95 #	
	HW-1003*	-65° – +212°	6" – 11"	14"	1.55 #	
	HW-1004*	-65° – +212°	7" – 13"	17"	2.56 #	
	*High temperature not available.					
RETROFIT RUBBER ROOF JACK 	PART NO.	TEMP. RANGE	PIPE SIZE	BASE DIM.	WEIGHT	
	HW-1005**	-65° – +212°	1/2" – 4"	8 3/16"	.74 #	
	HW-1006**	-65° – +212°	4" – 9 1/4"	14 1/4"	2.20 #	
	HW-1007**	-65° – +212°	9 1/4" – 16 1/4"	21 1/2"	11.00 #	
	**High temperature not available.					
FLAT SHEET 	GENERAL		GAUGE	COLOR	WEIGHT	
	40 7/8" X 126"		29 GA.	GALVANIZED & COLOR	22.89#	
	44 1/2" X 126"		29 GA.	GALVALUME PLUS	24.03#	
Skidding charge of \$42.00 will be added						

## SL-16<sup>®</sup> ACCESSORIES

ITEM	DESCRIPTION		NOTES
	PART NO.	GENERAL	
TOUCH UP PAINT - Spray Cans (6oz by Volume) <small>* Std. Colors (Recommended for field painting of accessories only.)</small>	HW-306	Spray Can 4.25 oz. Net Weight  NOTE: Spray cans cannot be shipped via Air.	
TOUCH-UP PAINT - Brush Top Can <small>* Std. Colors (Recommended for minor scratch cover only.)</small>	HW-304	2 oz. Can	
1/4" ONE PIECE MAGNETIC SOCKET	HW-606		
ACRYLIC EDGE COAT	HW-325	Pint Color: Clear Recommended for cut edges.	
JOINT SEALER	HW-552	5 oz. Tube (Color: Aluminum) .30 # ea.	
SILICONE* CAULK <small>*Silicone caulk not recommended for panel applications.</small>	HW-546	Color: Clear	
URETHANE CAULK	HW-540 HW-542 HW-544	Color: White Color: Bronze Color: Almond	

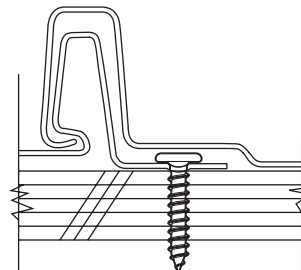
# SCREW FASTENERS

ITEM	Packaged 250 per bag			NOTES
	PART NO.	NO. & LENGTH	# PER BAG PIECES	
<b>SOFFIT AND FASCIA NAIL</b>  (Plated Only)	HW-379	1 3/4"	220 PER #	
<b>SILVER SENTRI® WOODGRIP LONG LIFE COATED FASTENER</b>  Head Size 1/4" (Panel To Solid Wood)	8A 8 8B 8C	10 X 1" 10 X 1 1/2" 10 X 2" 10 X 2 1/2"	2.18 # 2.70 # 3.28 # 3.85 #	
<b>ZAC® LONG LIFE WOODGRIP FASTENER</b>  Head Size 5/16" (Panel To Solid Wood)	9A 9	10 X 1" 10 X 1 1/2"	3.55 # 4.58 #	
<b>STAINLESS STEEL WOODGRIP</b>  Head Size 5/16"	216 217 218 219	10 X 1" 10 X 1 1/2" 10 X 2" 10 X 2 1/2"	2.33 # 2.83 # 3.33 # 3.58 #	
<b>SELF-DRILLER</b>  Head Size 5/16"	17A	12 X 1 1/4"	3.88 #	
<b>SELF-DRILLER LAP-TEK</b> Paint setup charges apply  Head Size 5/16"	4A	14 X 7/8"	4.00 #	
<b>SELF TAPPING</b> Special Order UPS Charges apply  Head Size 3/8" (Panel To Plywood)	18 18C	14 X 1" 14 X 2"	4.13 # 6.58 #	
<b>POP RIVET</b>  (Stainless Steel)	14	1/8" X 3/16"	.73 #	
<b>PANCAKE HEAD #2 Phillips - Wood Grip</b>  PANCAKE HEAD S.D. # 2 Phillips - (12 gauge max.)	13  12	10 x 1" Panel to Plywood  10 x 1" Steel	3.56 # 250 Per Bag  3.50 # 250 Per Bag	

**NOTE:** Other lengths and sizes available, PLEASE INQUIRE. **Not all fasteners in stock, UPS and \$25.00 paint charges will apply.**

**FASTENER USE:**


SL Series® panels are best secured to a solid wood substrate by using a #10 x 1" - #2 Phillips Pancake Head fastener. For metal substrate applications, contact your ABC representative. Fastener placement is dependent upon design considerations. Consult a qualified engineer or architect for the specific requirements needed to meet local design codes, weather conditions or other related factors. Refer to "Negative Design Load" Tables on pages S9-S10 of this manual.

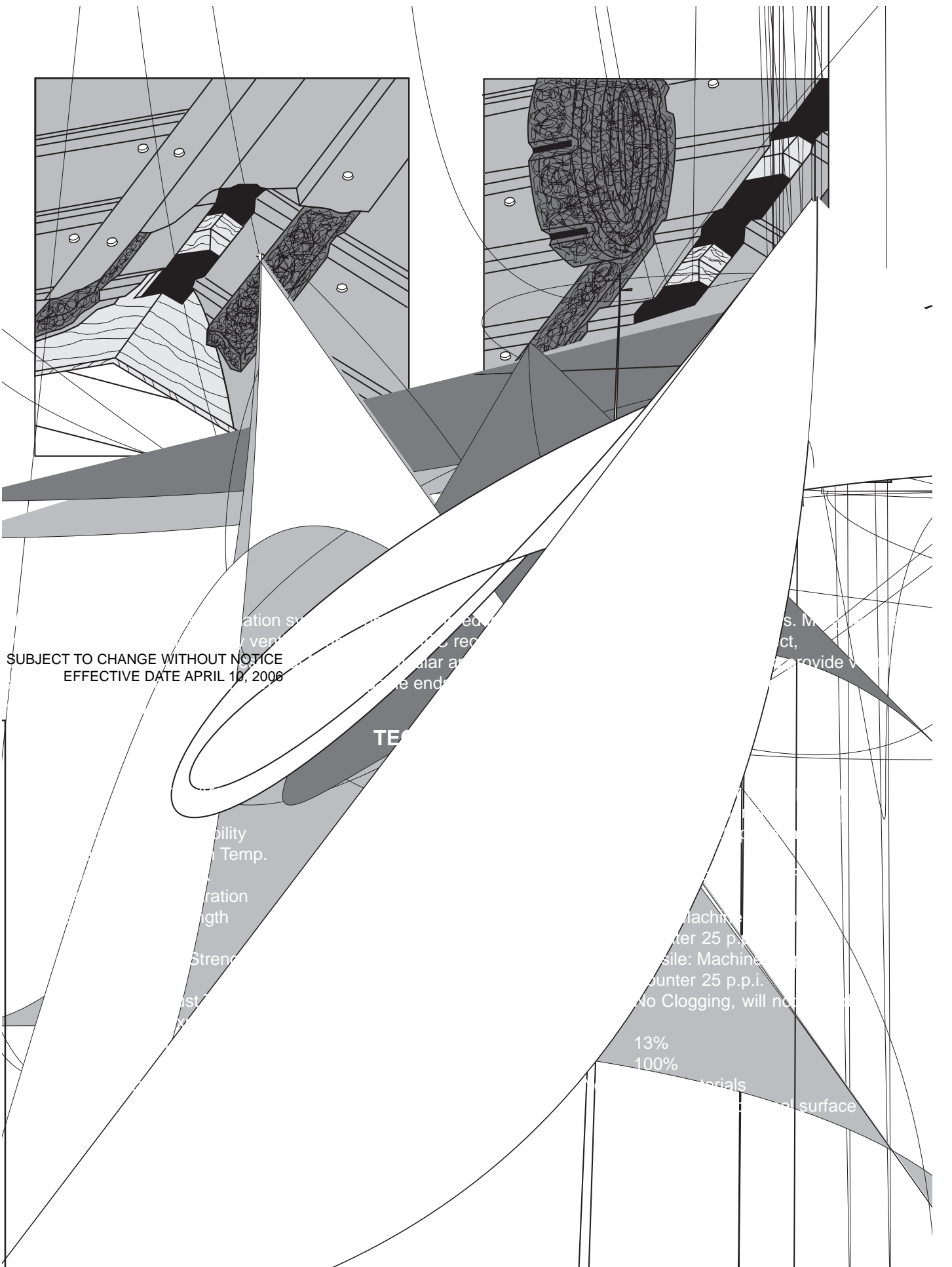


**IMPORTANT:** Do not overdrive fasteners. This will cause a visual distortion of the panels. Use the depth sensing nose piece provided with most modern screw guns.



## VENT MATERIAL

ITEM	PART NO.	PROFILE	LENGTH	NOTES	
PROFILE VENT	HW-116SL12	SL-12®	100' Roll (Pkgd. in Two 50' Rolls)		
	HW-116SL16	SL-16®			
	PART NO.	GIRTH	LENGTH		
RIDGE CAP	CF-101	X=6"	10' - 6"		
	CF-101A	X=7"	10' - 6"		
	CF-101B	X=8"	10' - 6"		
	PART NO.	LENGTH	GENERAL		
WOODGRIP	8C	2 1/2"	12 ea. Required Per 10' Length		
#14 X 2" TYPE A	18C	2"			
ITEM	PART NO.	GENERAL	CARTON SIZE	WEIGHT EACH	NOTES
PROFILE VENT Anchor Clip  	HW-2076	1 1/4" Profile Vent Anchor Clip (Royal Lock/SL Only)	25	.05 #	
Sold in 25 pc. boxes only					
ITEM	PART NO.	GENERAL	CARTON SIZE	LENGTH	
VERSA VENT	HW-111	1" Thickness	10	10'-0"	
	HW-112	1 1/4" Thickness	10	10'-0"	



SUBJECT TO CHANGE WITHOUT NOTICE  
EFFECTIVE DATE APRIL 10, 2008

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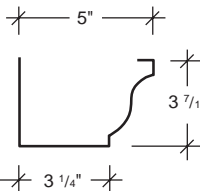
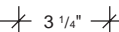

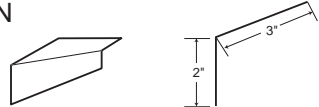
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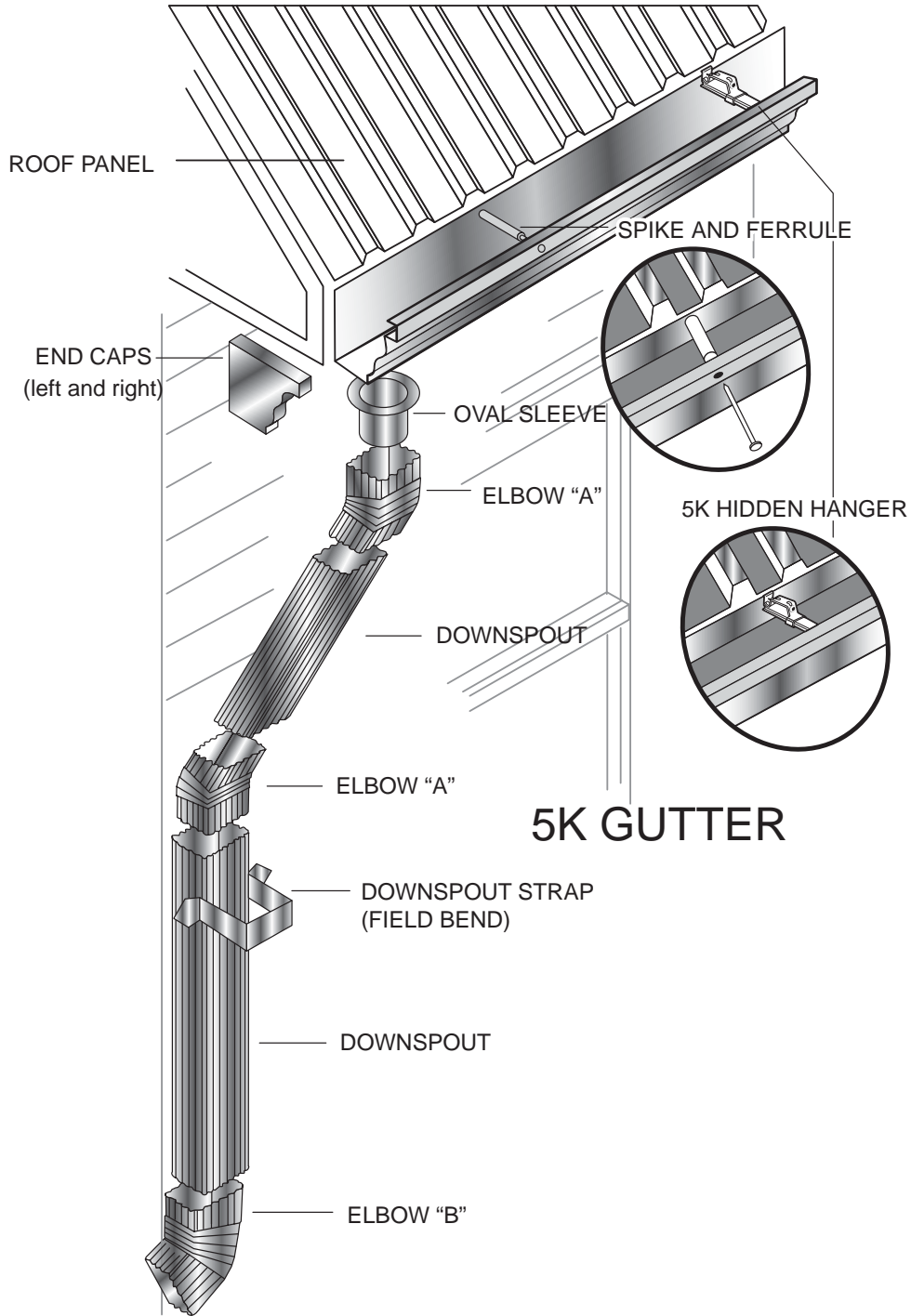
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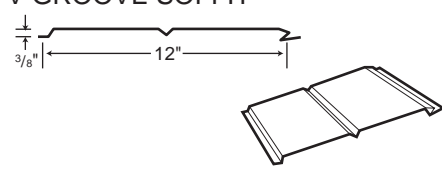
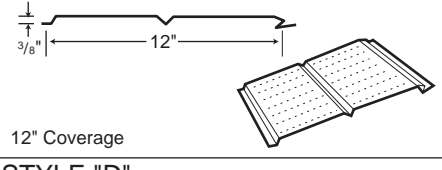

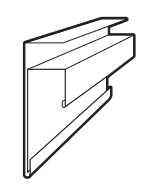
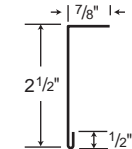
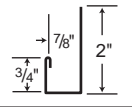
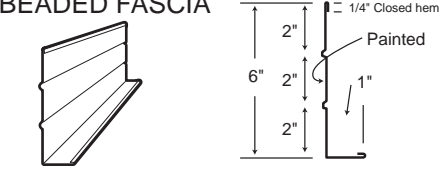
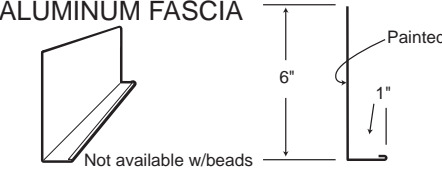
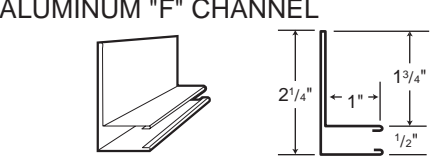
# 5K GUTTER

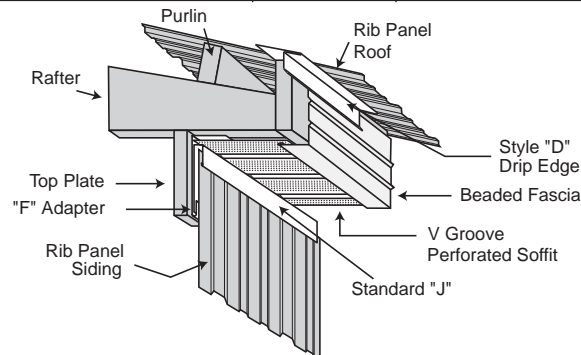
ITEM	DESCRIPTION				NOTES
	PART NO.	LENGTH	GIRTH	WEIGHT	
5K GUTTER - Available in Standard Colors (Application Detail on Page S20)	LG-161	16' - 0"	12"	9.96 #	
 3 7/16" GUTTER ENDS - Left Right	LG-167A	N/A	N/A	.1 #	
 3 1/4"	LG-167B	N/A	N/A	.1 #	
Not recommended for heavy snow areas.					
INSIDE-OUTSIDE SQUARE CORNER	LG-168 "Inside" LG-168A "Outside"	N/A N/A	N/A N/A	.70 # .70 #	
	White Only- May be field painted to match other colors				
GUTTER APRON	LG-149	10' - 6"	5"	2.7 #	
					
5K 3" x 2" DOWNSPOUT	LG-150	10'	10 1/2"	5.6 #	
DOWNSPOUT STRAP (Field Bend)	LG-150A	N/A	N/A	.02 #	
5K 3" x 2" ELBOW (TYPE A)	LG-151	N/A	N/A	.5 #	
5K 3" x 2" ELBOW (TYPE B)	LG-151A	N/A	N/A	.5 #	
3" OVAL OUTLET TUBES	HW-1103	N/A	N/A	.05 #	
5K HIDDEN HANGER	HW-339	5"	N/A	.02 #	
5" FERRULES	HW-365	N/A	N/A	.02 #	
8" SPIKES	HW-366	N/A	N/A	.02 #	

# DOWNSPOUT CONNECTIONS



# V GROOVE SOFFIT PANEL AND TRIM

ITEM	DESCRIPTION					NOTES
<b>V GROOVE SOFFIT</b>  12" Coverage	PART NO.	GENERAL	LENGTH	GIRTH	WEIGHT	
	LG-140	29 Gauge Steel (Available in All Colors)	12' - 6"	13 3/4"	8.75 #	
	LG-141	Aluminum (White or Bronze Only)	12' - 6"	13 3/4"	4.30 #	
<b>V GROOVE PERFORATED SOFFIT</b>  12" Coverage	LG-142	29 Gauge Steel (Available in All Colors)	12' - 6"	13 3/4"	8.75 #	
	LG-143	Aluminum (White or Bronze Only)	12' - 6"	13 3/4"	4.30 #	
	<b>(PERFORATION VOIDS WARRANTIES)</b>					
<b>STYLE "D"</b> 	LG-144	29 Gauge Steel (Available in All Colors)	10' - 6"	5 1/8"	3.00 #	
<b>F&amp;J ASSEMBLY</b> 	<b>F ADAPTOR</b> (for F & J) 	LG-147F	Non-Exposed Assorted Material	10' - 6"	3 7/8"	2.32 #
	<b>STANDARD J</b> 	LG-123	Use from Your Own Stock or Order Separately	10' - 6"	3 7/8"	2.32 #
<b>BEADED FASCIA</b> 	LG-145	29 Gauge Steel (Available in All Colors)	10' - 6"	7 1/2"	4.02 #	
<b>ALUMINUM FASCIA</b>  <p style="font-size: small;">Not available w/beads</p>	LG-146	Aluminum (White or Bronze Only)	10' - 6"	7 1/4"	1.85 #	
<b>ALUMINUM "F" CHANNEL</b> 	LG-148	Aluminum (White or Bronze Only)	10' - 6"	6 1/2"	1.65 #	



# SL SERIES® DESIGN INFORMATION

## **INSTALLATION**

Do not overdrive fasteners. This can cause panel distortion.

## **PLANNING**

Consult a qualified engineer or architect to be sure that your particular applications of this product conform to applicable building codes, regulations, environmental conditions and accepted industry practices. All suggested applications for SL Series® take for granted a qualified engineer or architect has been consulted prior to the application of the product. Prior to ordering panels, all dimensions should be confirmed by field measurements by the customer or installer.

## **APPLICATIONS**

SL Series® is a non-structural concealed fastener panel system that can be applied on a variety of projects. They include roofing, siding mansard, or fascia systems. SL Series' contemporary design, with economical interlocking ribs and fastening flanges make it ideally suitable for new construction or retro-fit markets on both light commercial and residential projects. For panels longer than 36' please inquire. Panels may not be endlapped.

## **ROOF SUBSTRATE**

For roofing applications, apply SL Series® over a properly aligned, smooth continuous structural substrate such as 5/8" or thicker plywood surface with a suitable moisture barrier.

## **PITCH**

Recommended minimum is 3" of rise per linear foot of roof measured from eave to peak (3 on 12). Lesser pitch may be possible depending on local weather conditions and design considerations. Consult a qualified engineer or architect.

## **WATER/VAPOR CONTROL (MOISTURE BARRIER UNDERLAYMENT)**

When warm moist air contacts a cold surface such as the underside of a metal roof panel, the water vapor contained in it condenses. The continuous presence of moisture is detrimental to many things, including metal. The use of suitable moisture/vapor barrier and insulations protect the metal and your investment. The minimum acceptable barrier would be 30# builders felt. Other breathable barriers such as "Shingle Mate®" or "StormGuard®HT" from GAF Materials Corporation provide exceptional long term protections when applied as directed by the manufacturer. Whatever barrier you decide to use must be applied in a smooth continuous manner, free from holes or rips. Fasteners used to attach the barrier must be covered to protect the underside of the panels. Fasteners must be flush with the surface of the barrier or they will cause unwanted distortion of the panel surface. It is further recommended that peak and eave or gable vents be installed to provide adequate air flow in trapped air spaces such as attics (refer to pages S17-S18). Consult a qualified design professional for venting requirements.

## **OIL CANNING**

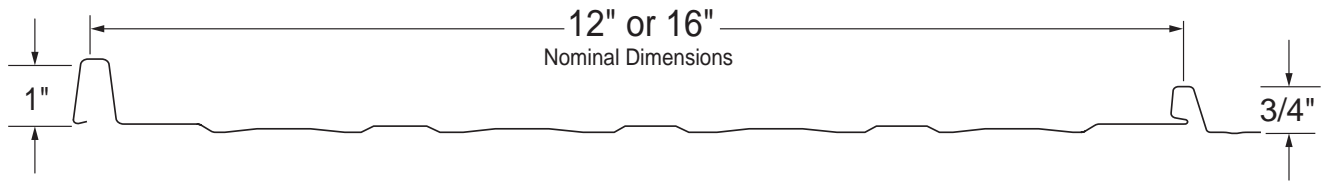
Flat surface areas in metal panels are subject to visible stress. This "oil canning" (wave) is evident to some degree in all flat metal surfaces. Every effort is taken to minimize this condition during the forming process. Oil canning does not affect the structural integrity of the panel and is not a cause for rejection.

## **FASTENERS**

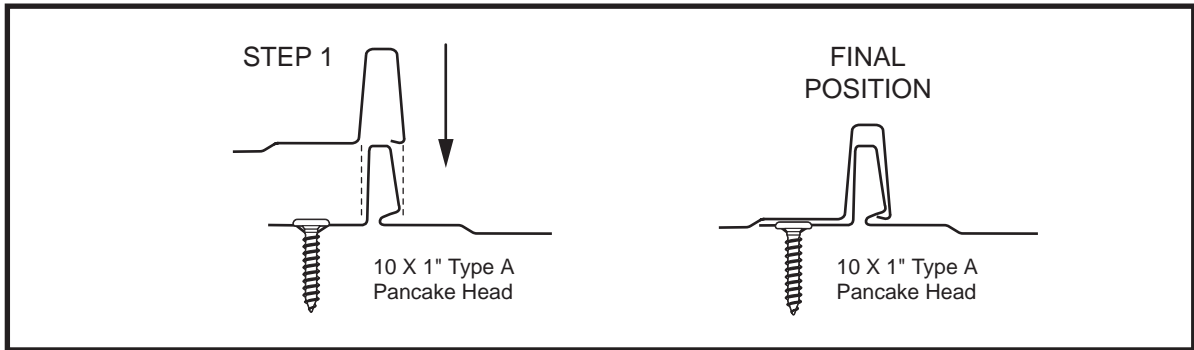
SL Series® panels are best secured to a solid wood substrate by using a 10 x 1" Type A pancake head fastener. Fastener placement is dependent upon design considerations. A qualified engineer must be consulted to insure that all design codes and other pertinent criteria are met. Refer to load tables on pages S9-S10. Refer to page S16 for additional fastener information.

Shingle Mate® and StormGuard®HT are registered trademarks of GAF Materials Corporation

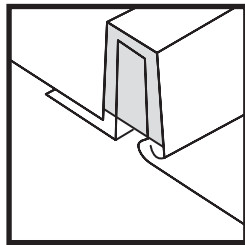
**TYPICAL DETAILS  
PANEL**



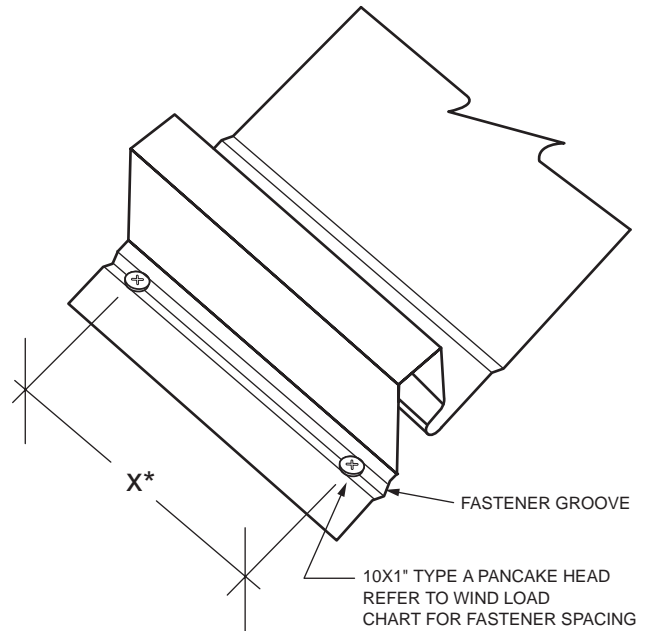
**PANEL PROFILE**



**PANEL SIDELAP ENGAGEMENT**



**END VIEW  
WITH  
SEALANT**

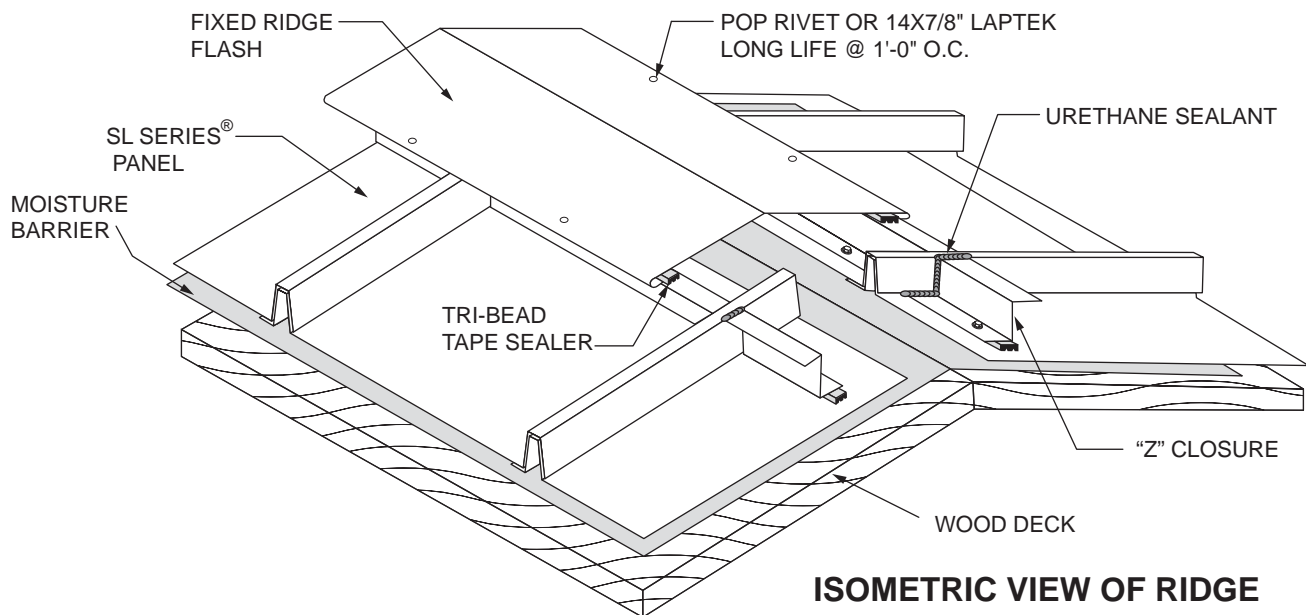
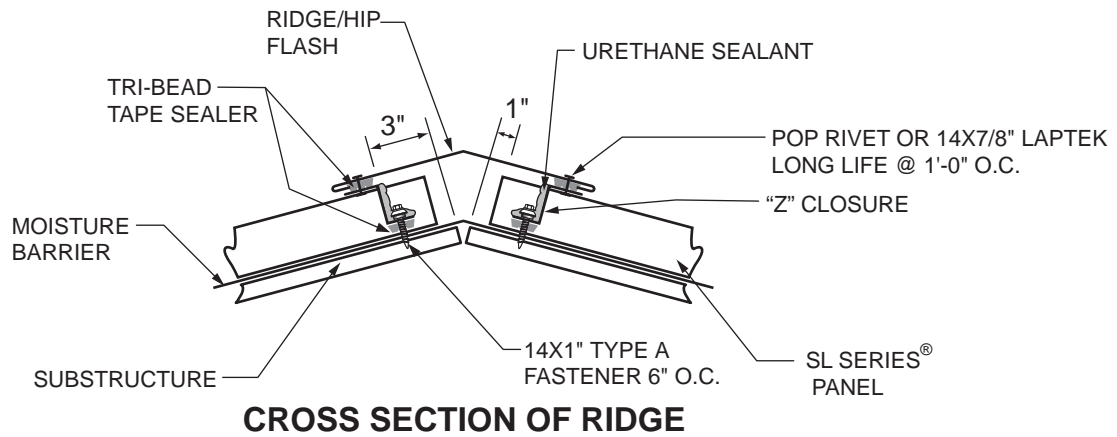


**FASTENER INSTALLATION**

**NOTES:**

1. Panels are produced with a fastener groove to facilitate fastener placement. \*Refer to pages S9-S10 for fastener spacing requirements.
2. Total sidelap engagement without spreading the panel rib is essential. Always check panel module at each end before installing fasteners.
3. Fill ends with urethane sealant.

## TYPICAL DETAILS RIDGE/HIP



### Ridge

#### NOTES:

1. Field cut "Z" closures to fit panel width.
2. Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with four 14X1" Type A fasteners per panel (three fasteners for 12" panel). Vertical leg of "Z" closure should be 3" from center of ridge.
3. Seal ends of "Z" closures with urethane sealant.
4. Attach ridge flash to "Z" closures with pop rivet or 14X7/8" Laptek 1'-0" O.C.

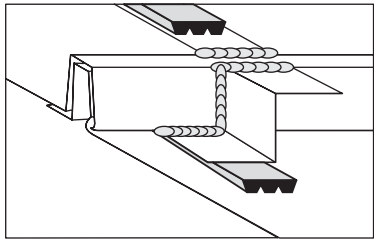
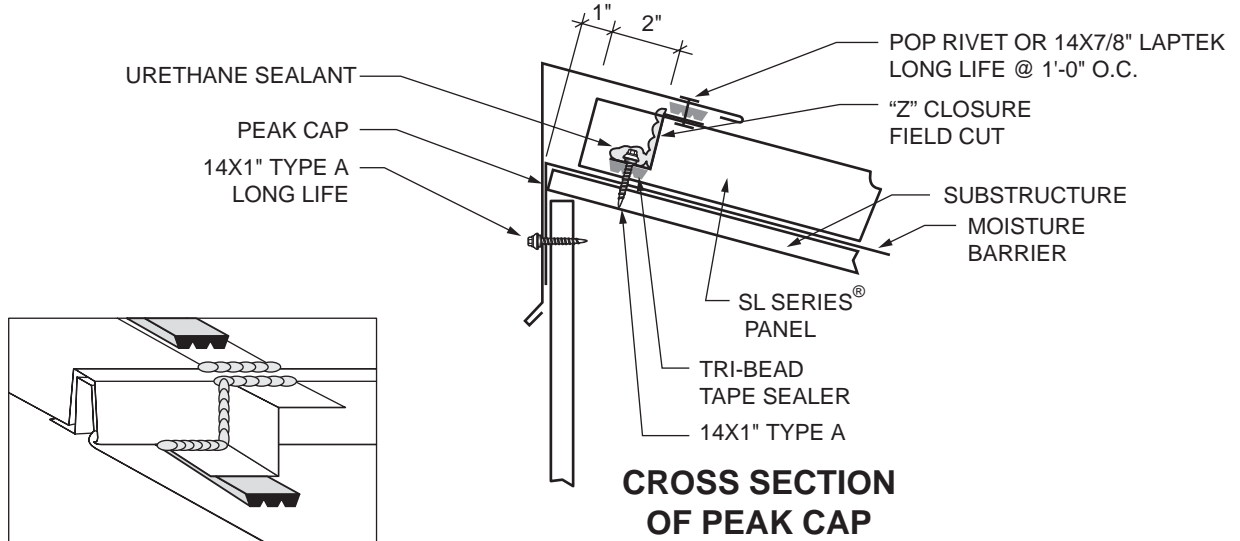
### Hip

#### NOTES:

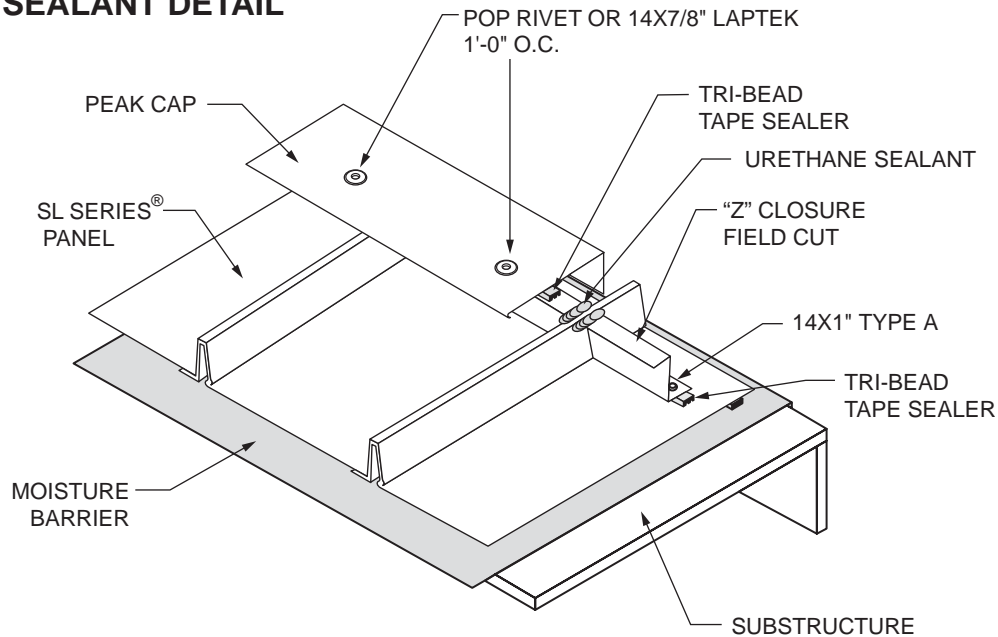
1. Bevel cut and install panels to follow bevel of hip.
2. Field cut "Z" closures to fit panel bevel width.
3. Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with 14X1" Type A fasteners 6" O.C. maximum. Vertical leg of "Z" closure should be 3" from center of hip.
4. Seal ends of "Z" closures with urethane sealant.



## TYPICAL DETAILS PEAK CAP



**SEALANT DETAIL**

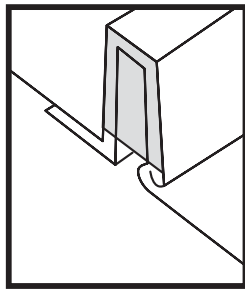
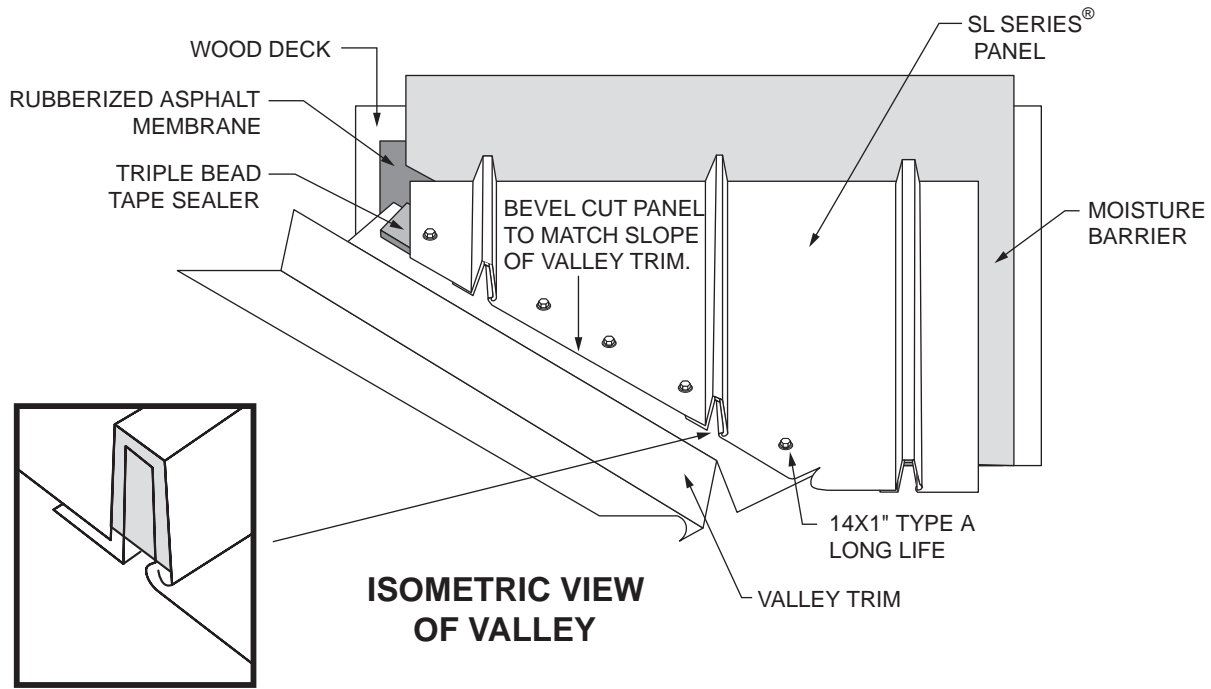
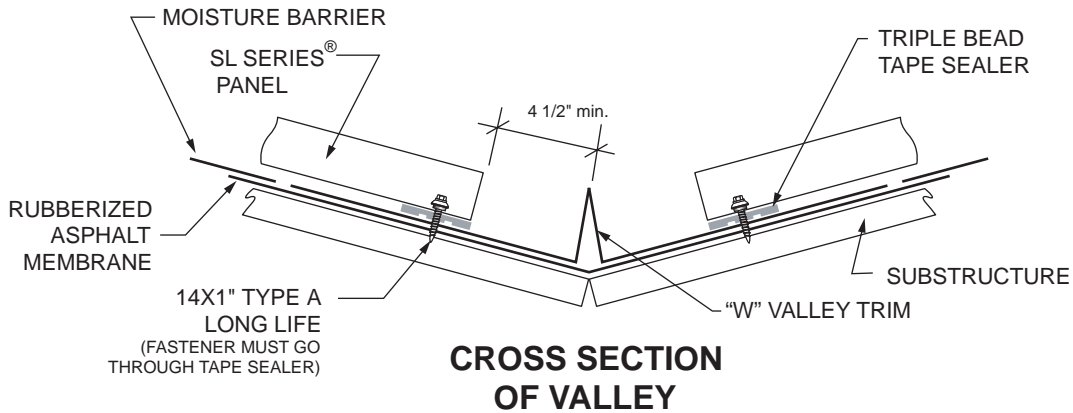


**ISOMETRIC VIEW OF PEAK CAP**

**NOTES:**

1. Field cut "Z" closures to fit panel width.
2. Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with four 14X1" Type A fasteners per panel (three fasteners for 12" panel). Vertical leg of "Z" closure should be 3" from edge of peak.
3. Seal ends of "Z" closures with urethane sealant.
4. Attach peak cap to "Z" closures with pop rivets or 14X7/8" Laptek Long Life @ 1'-0" O.C.

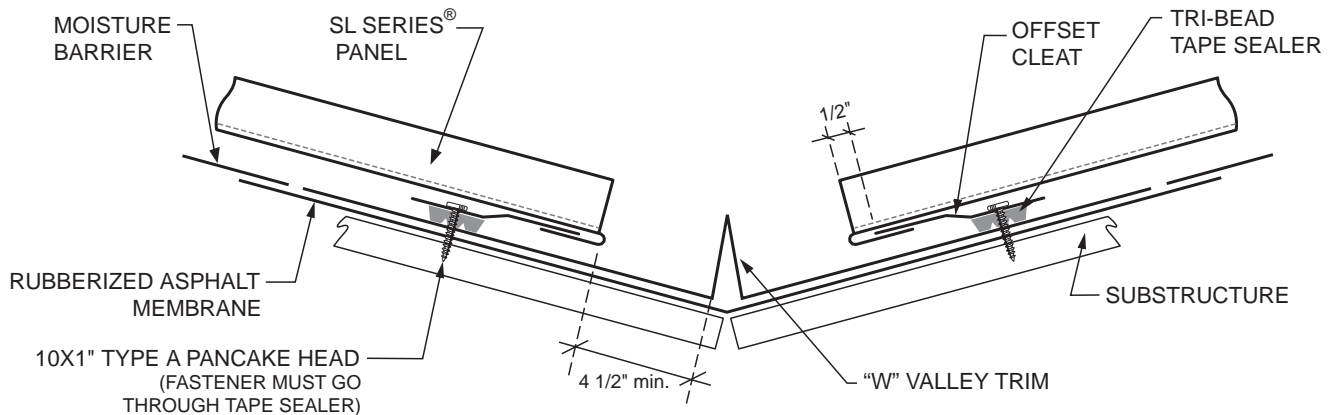
## TYPICAL DETAILS VALLEY



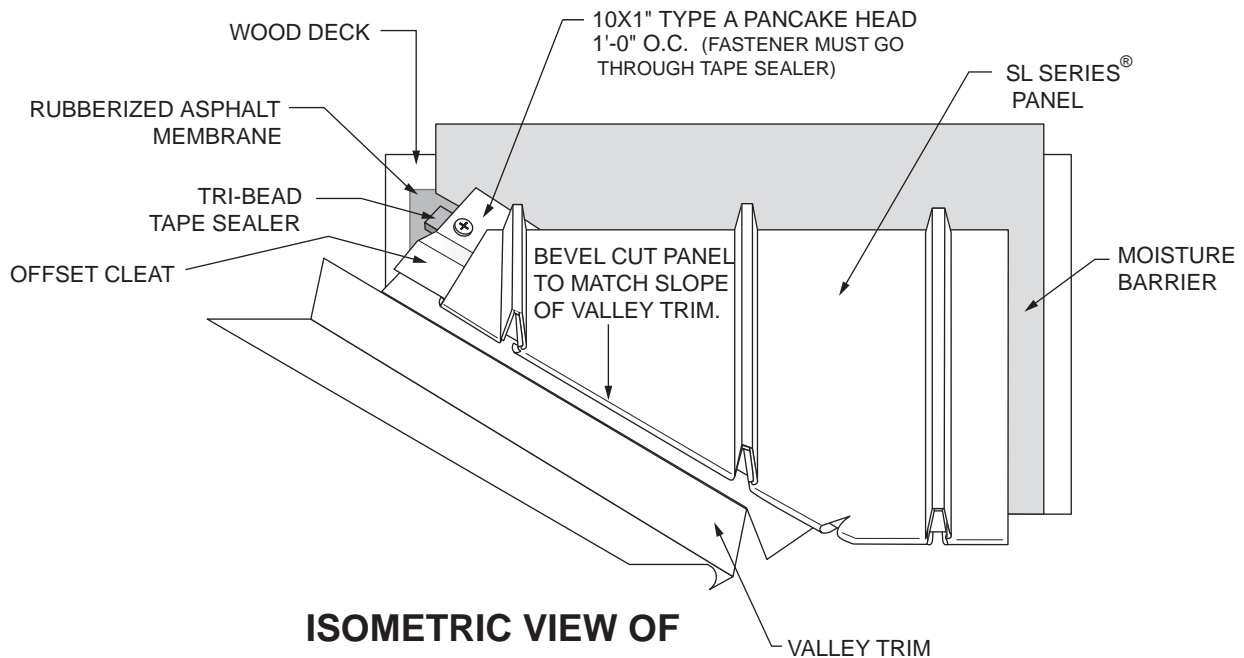
### NOTES:

1. For valleys 30' or less in length, use standard "W" valley trim (LG-138 or LG-139). Valleys over 30' in length please inquire.
2. Apply triple bead tape sealer to the valley trim parallel to the slope of the valley. Lower edge of tape sealer should be even with edge of roof panel.
3. Bevel cut panels to fit slope of valley.
4. Fasten panels to valley with 14X1" Type A Long Life fasteners 4" O.C. maximum. Fasteners must go through tape sealer.
5. Fill ends of panels with urethane sealant.

## ALTERNATE DETAIL VALLEY WITH OFFSET CLEAT



### CROSS SECTION OF VALLEY

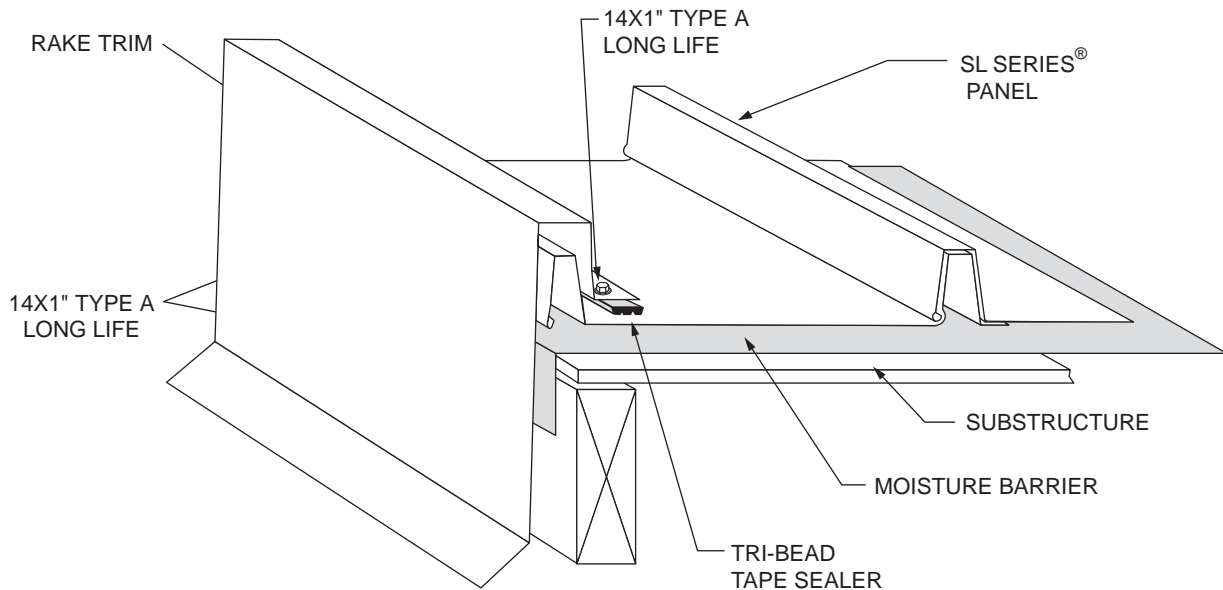
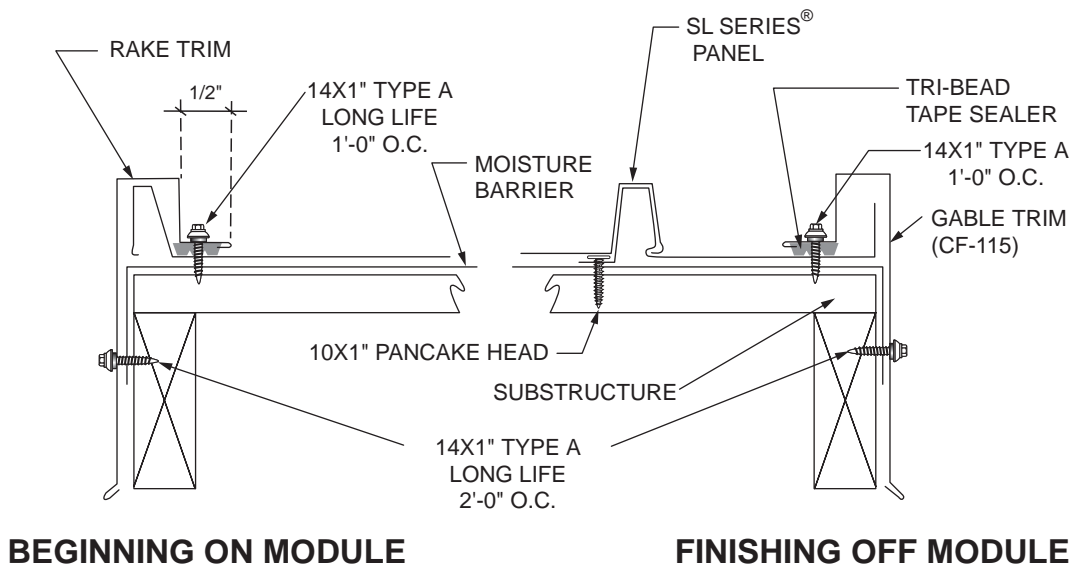


### ISOMETRIC VIEW OF ALTERNATE VALLEY

#### NOTES:

1. Offset cleat is installed continuous along slope of valley over tri-bead tape sealer with 10X1" Type A Pancake Head Fastener at 1' - 0" O.C.  
**Fasteners must go through tape sealer.**
2. Add 1 1/2" to panel length for the panel hem.
3. See "Panel End Sealant Detail" on page S23 to seal panel ends at valley.

**TYPICAL DETAILS  
RAKE**

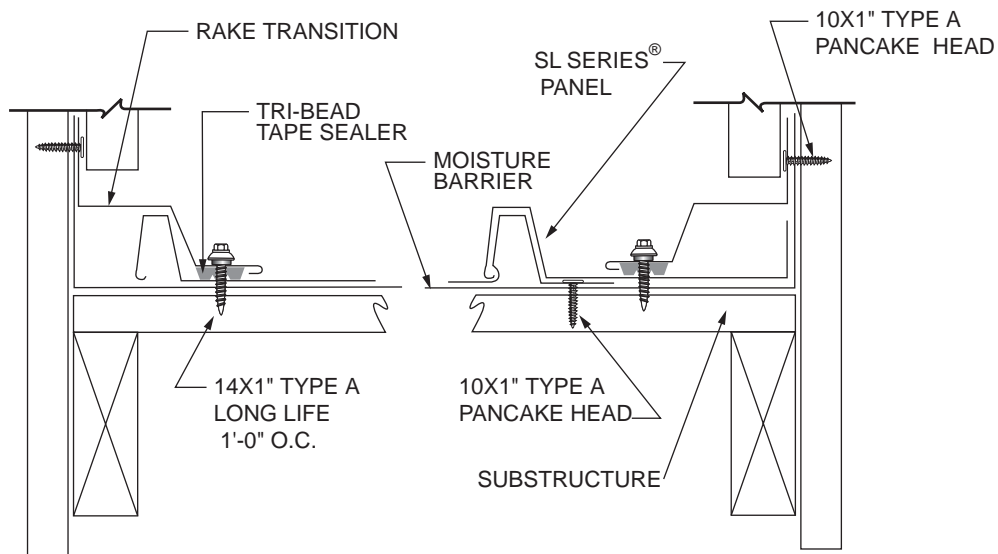


**ISOMETRIC VIEW OF  
BEGINNING ON MODULE**

**NOTES:**

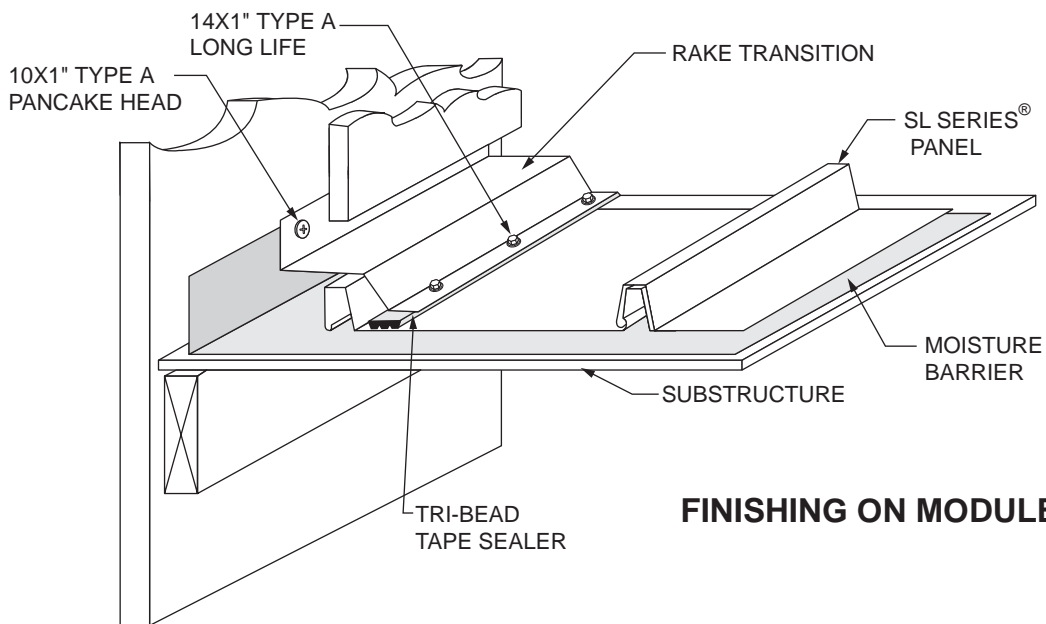
1. Install rake trim to roof with 14X1" Type A 1' - 0" O.C. Fasteners must go through tri-bead tape sealer.
2. When finishing off module, field bend a 1" leg up on panel before installing rake trim.

**TYPICAL DETAILS  
RAKE TRANSITION**



**BEGINNING ON MODULE**

**FINISHING OFF MODULE**

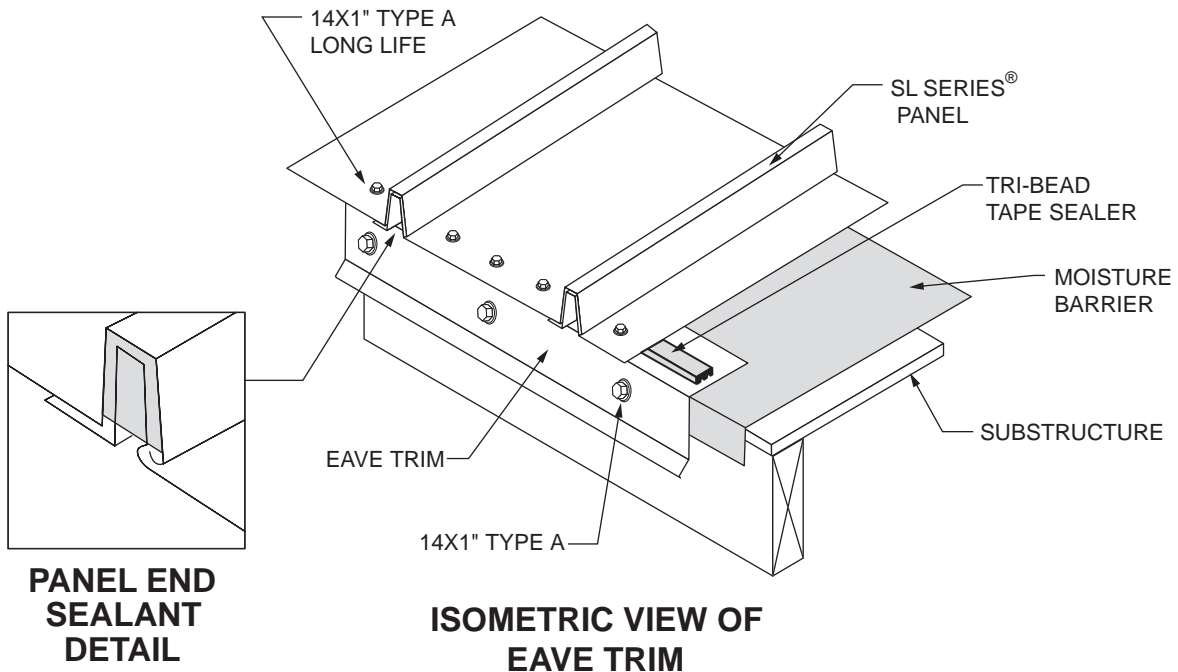
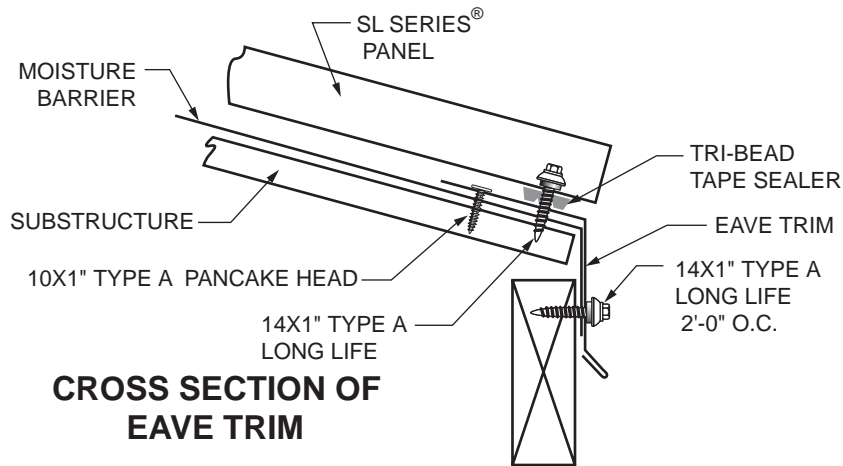


**FINISHING ON MODULE**

**NOTES:**

1. If roof finishes on module, proceed to Step 2. If roof finishes off module, field bend a 1" leg up on panel before proceeding to Step 2.
2. Install rake transition to roof panels with 14X1" Type A Long Life @ 1' - 0" O.C. Fasteners must go through tri-bead tape sealer. Top leg of flash may be fastened to substrate as needed to hold in place before siding is installed.

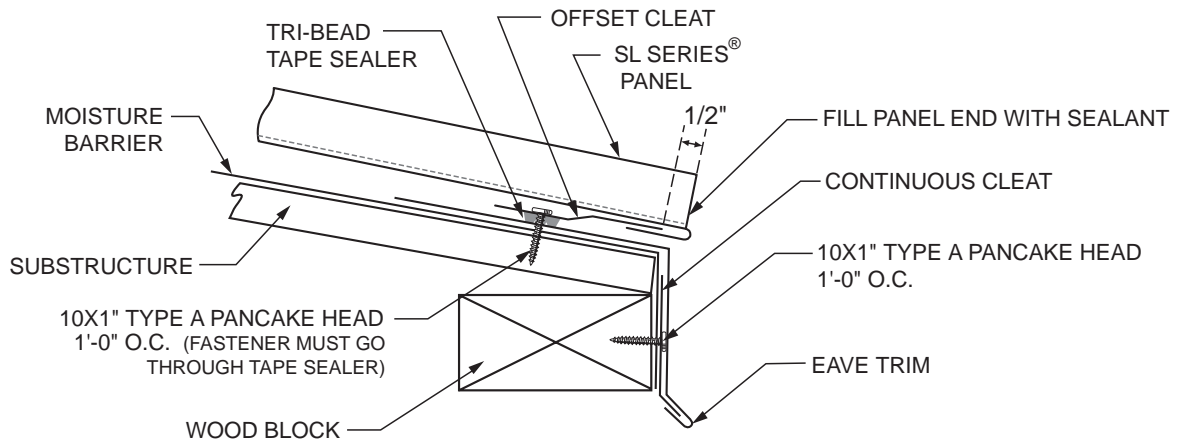
## TYPICAL DETAILS EAVE TRIM



### NOTES:

1. Attach eave trim to roof deck with two pancake head fasteners per 10' section.
2. Install tri-bead tape sealer along top leg of eave trim.
3. Attach panel at eave with four 14X1" Type A Long Life fasteners (three fasteners for 12" panel).
4. Fill ends of panels with urethane sealant.

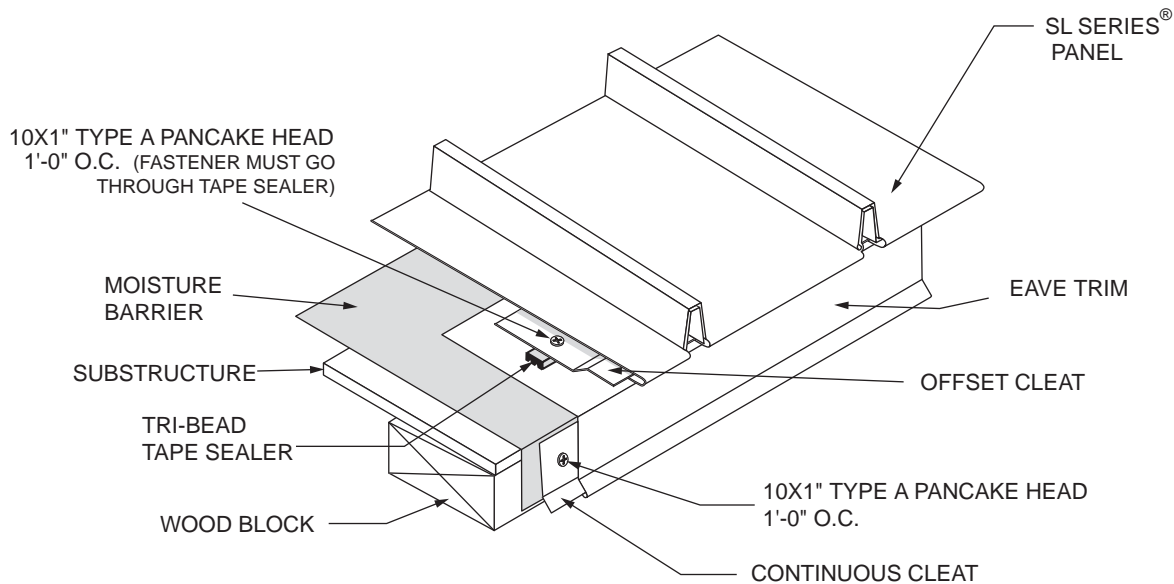
**ALTERNATE DETAIL  
EAVE  
WITH OFFSET CLEAT,  
CONTINUOUS CLEAT**



**CROSS SECTION OF EAVE TRIM**

**NOTE:**

1. Where load conditions permit, install first panel fastener 18" from eave for best appearance. Consult a design professional or engineer to ensure compliance with local load and code requirements.

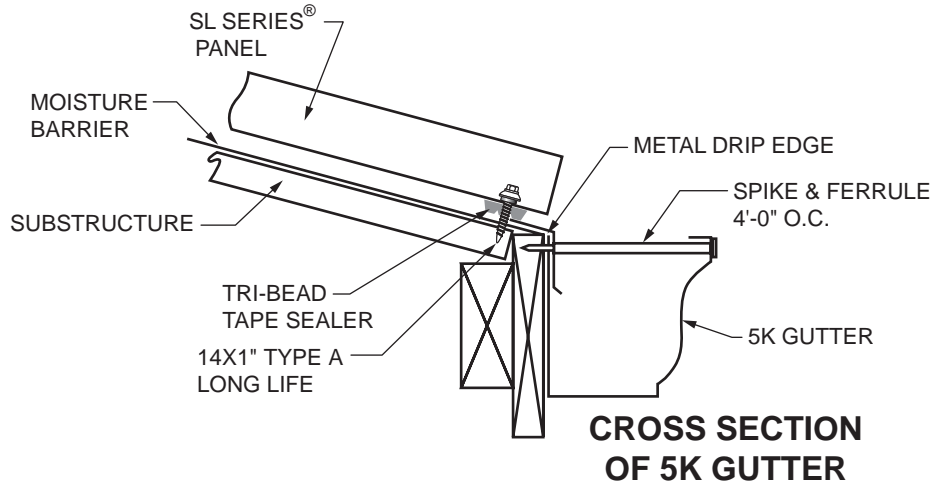


**ISOMETRIC VIEW OF ALTERNATE EAVE**

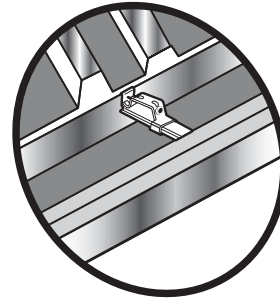
**NOTES:**

1. Attach offset cleat to substructure with 10X1" Type A Pancake Head Fastener at 1' - 0" O.C.
2. Add 1 1/2" to panel length for the panel hem.
3. See "Panel End Sealant Detail" on page S23 to seal panel ends.

## TYPICAL DETAILS GUTTER



5K  
HIDDEN HANGER



### 5K Gutter

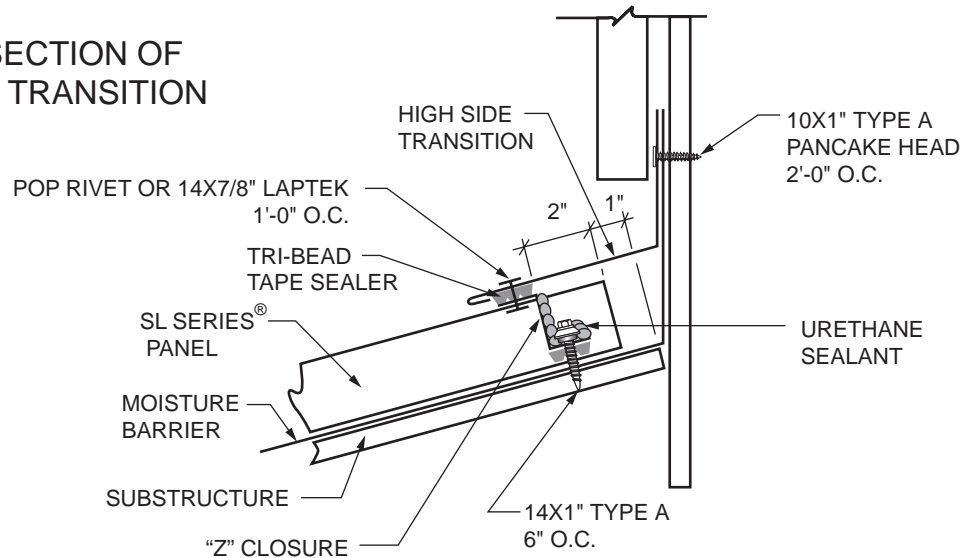
#### NOTES:

1. Install metal drip edge along eave of roof before installing roof panels.
2. Drill 5/16" hole in front face of gutter 4' - 0" O.C. to receive gutter spikes.
3. Slide back leg of gutter behind metal drip edge and drive spike and ferrule assembly through metal drip edge, back leg of gutter and into fascia board.
4. Fill ends of panels with urethane sealant.
5. In areas of extreme ice or snow build-up, consider eliminating the gutter and using eave trim instead.

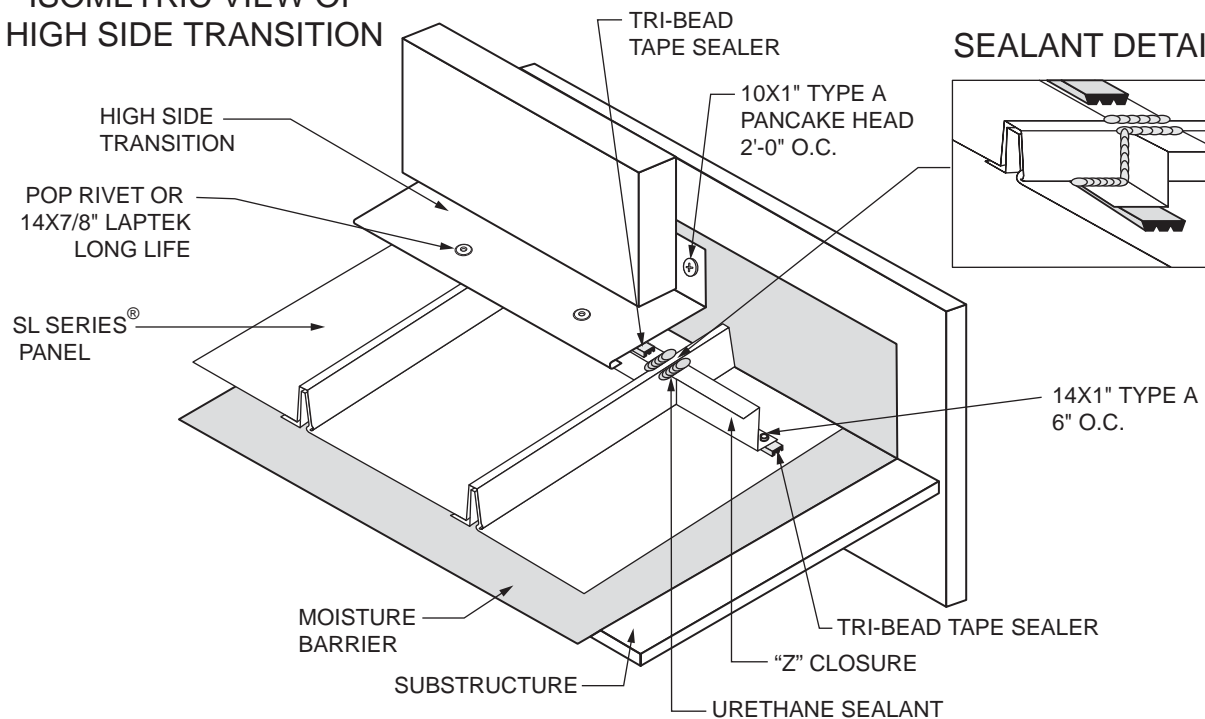


## TYPICAL DETAILS HIGH SIDE TRANSITION

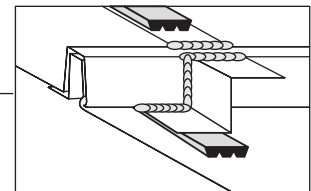
### CROSS SECTION OF HIGH SIDE TRANSITION



### ISOMETRIC VIEW OF HIGH SIDE TRANSITION



### SEALANT DETAIL

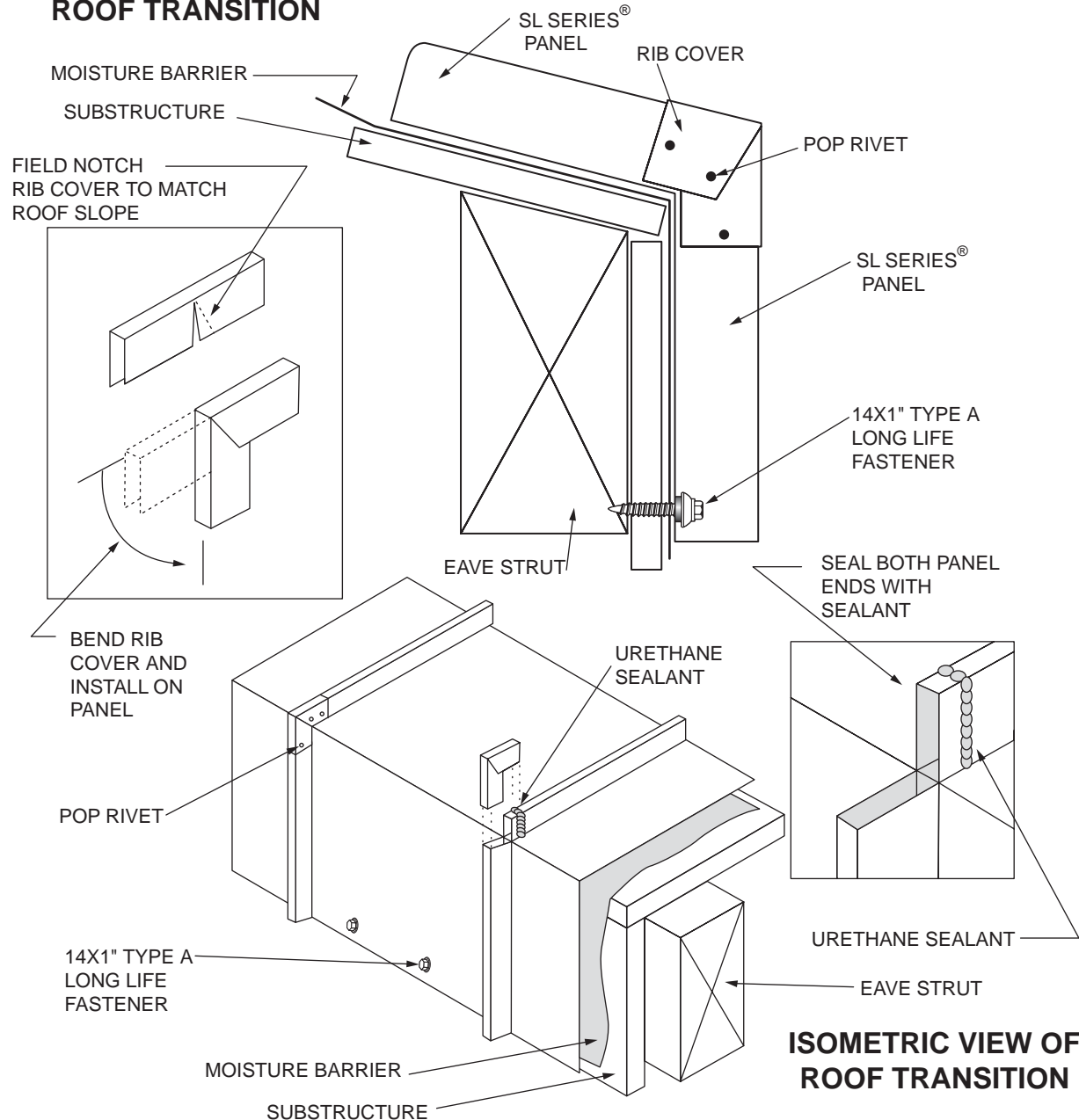


### NOTES:

1. Field cut "Z" closures to fit panel width.
2. Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with four 14X1" Type A Long Life fasteners per panel (three fasteners for 12" panel). Vertical leg of "Z" closure should be 3" from top of roof deck.
3. Seal ends of "Z" closures with urethane sealant.
4. Attach high side transition flash to "Z" closures with pop rivets or 14X7/8" Laptek 1' - 0" O.C. Top leg of flash may be fastened to substructure as needed to hold in place before siding is installed.

## TYPICAL DETAILS ROOF TRANSITION

### CROSS SECTION VIEW OF ROOF TRANSITION



### NOTES:

1. Do not use this detail with the fixed ridge or hip details.
2. Field cut legs of panels and bend to required angle.
3. Fill both exposed ends of panels with urethane sealant.
4. Field notch rib cover to allow it to bend to the proper angle.
5. Field apply a bead of sealant over rib before applying rib cover.
6. **Do not use this detail inside the building envelope.**

# TERMS AND CONDITIONS OF SALE

- Parties** - All references to ABC or Seller refer to Metal Building Components L.P. (hereinafter "Seller" or "ABC"). Seller and Buyer may sometimes collectively be referred to herein as the "parties."
- Binding Effect** - The following terms and conditions (the "Terms and Conditions") shall apply to any and all sales between Seller and the Buyer and shall not be waived, modified or amended without the express written consent of the Seller's President or Executive Vice-President. Terms contained within any other purchase order or agreement issued by Buyer conflicting with these Terms and Conditions shall be of no force and effect. All sales by Seller of any nature to Buyer shall be made under the provisions of this Agreement. Any documents that Buyer may use for its convenience including, but not limited to, purchase orders or sales acknowledgement forms shall be deemed to be for the administrative convenience of Buyer only, and this Agreement as well as the terms and conditions as stated in Seller's invoices and bills of lading shall supersede and take precedence over any of Buyer's terms and conditions which may be contained on any such forms. Further, should Seller act upon this Agreement without first obtaining Buyer's signature on a Purchase Order, Buyer hereby irrevocably agrees to be bound by this Agreement to the exclusion of any contrary terms and conditions proposed by Buyer. All orders are subject to approval and acceptance by Seller.
- Payment** - Payments due Seller under the terms of this sale and any other money due Seller by Buyer shall be paid to Seller at its Houston, Harris County, Texas office. Unless otherwise agreed in advance and in writing by Seller's Credit Department, payment for the materials and/or services under this Agreement shall be COD. Any and all different credit terms must be pre-approved in writing by Seller's Credit Department. If Seller grants Buyer credit terms, invoices paid Seller by Buyer within ten (10) days of date of invoice may be allowed ½% discount, net due thirty (30) days from date of invoice. C.O.D. shipments paid at the time of shipment are not allowed discount. In the event Seller grants Buyer credit terms, said credit terms are subject to change at any time, for any reason, at the sole discretion of Seller without prior written notice to Buyer. Unless specifically enumerated herein, the price does not include any taxes (including excise, privilege, occupation, use, sales, etc.; Federal, State or local) or costs of shipment. All materials sold hereunder are sold F.O.B. Seller's plants. Seller reserves the right to approve the carrier on all C.O.D. shipments.
- Lien/Release** - Buyer agrees that all payments with lien release language on the back of any check shall be sent only to Seller at its Houston, Harris County, Texas office. Buyer agrees that any payment accepted through Seller's lock box with lien release language on the check does not bind Seller to the attempted release. Seller's agent at the lock box who endorses and/or accepts checks for Seller is authorized only to accept unconditional payments, and no action by this agent shall ever give rise to a claim of any authority, apparent or otherwise, beyond that described in this paragraph. Acceptance of any conditional check, including any lien release language or otherwise at the lock box shall only be a partial release for those funds received, and never otherwise. This paragraph cannot be waived or modified except in writing in advance by the President of Seller.
- Interest/Costs of Collection** - Any payments deferred after the due date as specified herein shall bear interest at the greater of the rate of ten percent (10%) per annum or a rate equal to the maximum non-usurious rate under applicable law. If an invoice becomes past due, is placed in the hands of an attorney for collection, if collected by any legal proceedings, or if this Agreement is relevant to any other dispute between the parties, in addition to any other amounts and damages recovered by Seller, Buyer agrees to pay Seller any and all attorney's fees and costs incurred in the collection of sums owed by Buyer to Seller on account of principal, interest or other charges, which attorneys' fees shall not be less than thirty percent (30%) of the total amount payable. "Costs incurred in the collection of sums" as used herein is not to be limited to costs incurred in litigation, but includes, without limitation, copying and mailing expenses, lien fees, lost management time, inspection expenses and expert witnesses expenses in addition to taxable costs incurred in litigation.
- Security Interest** - Buyer has and does by these presents grant to Seller and Seller has and does hereby retain a security interest in all parts and accessories described in and being purchased by Buyer pursuant to this Agreement. The security interest herein granted by Buyer and retained by Seller is to secure payment of the full purchase price and all other charges due and owing Seller by Buyer under the terms of this sale. This Agreement is governed by Section 2.101, et. seq. of the Texas Business & Commerce Code, and the security interest hereunder constitutes a "purchase money security interest" pursuant to the Uniform Commercial Code. This instrument is a contract, security agreement and financing statement between the Parties hereto.
- Authorization for Credit History** - The Buyer or undersigned individual who is either the credit applicant or a principal/agent of the Buyer, recognizes that a credit history report may be a factor in the evaluation of the credit history of the Buyer. Buyer, therefore, consents to and authorizes the use of a commercial, consumer or any other credit report on the Buyer or undersigned individual by Seller from time to time as may be needed in the credit evaluation process.
- Buyer Responsible for Accuracy of Order/Delivery** - Buyer hereby assumes responsibility for the accuracy of verbal orders unless written confirmation is received prior to fabrication. Confirming orders should be marked "Confirming Order-Do Not Duplicate." Buyer may arrange for pickup of order at ABC's plant or shipment will be made by common carrier - "Freight Collect" - unless other arrangements are previously made.
- Cancellation** - Either party may cancel this Agreement by giving written notice to the other party not less than seven (7) days prior to the cancellation date; provided, however, that the Terms and Conditions provided herein shall apply and remain in full force and effect with respect to any and all transactions entered into by and between Seller and Buyer. In the event of such cancellation, Buyer agrees to pay Seller for any and all costs and damages occasioned by the cancellation hereof including, but not limited to, Seller's expenses of order processing, engineering, detailing, purchase of material, fabrication and sales commissions and applicable incidental, consequential and lost profits damages; provided, however, in no event will the amount payable by Buyer pursuant to this sentence be less than \$2,500.
- Manufacturer's Warranties/Disclaimer** - Seller warrants its workmanship only against failure due to defective material or workmanship for a period of one (1) year from date of manufacture; however, Buyer's sole and exclusive remedy shall be limited to, in Seller's sole discretion, the replacement of defective parts, F.O.B. Seller's plant (transportation, redesign, dismantling, disposal of material and installation are not included), or repair of defective parts. As a condition precedent to the effectiveness of the any warranty, all amounts owing to Seller under this or any other agreement with Seller or Seller's affiliates must be fully paid. Seller's liability shall be strictly limited to the written express warranties specified herein, and Buyer agrees and stipulates that Seller shall not be liable for any direct, incidental, consequential, liquidated or exemplary damages, which Buyer may suffer for any reason, including reasons attributable to Seller. Seller does not warrant products that are not manufactured by Seller except to the extent of the warranty ABC may actually pass through or assign from the manufacturer. **EXCEPT AS STATED ABOVE, SELLER HEREBY EXPRESSLY DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR APARTICULAR PURPOSE, AND THE PARTIES HERETO HEREBY STIPULATE THAT ALL SUCH WARRANTIES ARE HEREBY DISCLAIMED.** Claims for shortages or defective materials must be made to Seller in writing within five (5) days after delivery of shipment (which the Parties agree is a reasonable time), or claim shall be conclusively waived.
- No Incidental, Special or Consequential Damages** - Notwithstanding any other agreement to the contrary, Buyer hereby agrees and stipulates that Seller shall not be liable for any incidental, special, compensatory, expectation, exemplary or consequential damages, which Buyer may suffer for any reason, including reasons attributable to Seller.
- Weather-tightness Warranty** - In the event that Buyer purchases a Weather-tightness Warranty, all Seller procedures must be strictly followed for issuance and effectiveness of the warranty, and Buyer must have paid in full all invoices for materials and the warranty before the Weather-tightness Warranty will be issued. As a condition precedent to the issuance of a Weather-tightness Warranty by Seller, Buyer must not have any outstanding payables owed to Seller or any of Seller's subsidiaries or affiliates.
- Drawings** - If Seller prepares shop drawings, the shop drawings will be in accordance with the Seller's Lump Sum Buyers Agreement which was prepared from the plans and specifications supplied by Buyer to Seller. The shop drawings shall be submitted to Buyer for approval. All materials sold will be in substantial compliance to approved shop drawings only. The approval stamp on the shop drawings shall be signed by the Buyer or his Representative and made a part hereof, and shall be an indication of the accuracy of the shop drawings.
- Acceptance of Change Orders** - Buyer may submit a written request for change orders to Seller adding, deleting or altering the Quantity, Description or Specifications of material ordered. Seller, upon receipt of a written request for change order, shall price the requested changes and send to Buyer a price quotation thereof. Seller shall be under no obligation to accept or perform a request for change order unless Buyer accepts in writing, without alteration or adjustment, the change order at the prices and terms quoted by Seller.
- Insurance** - Buyer will, at its sole expense, maintain insurance during the performance of the services covered by this agreement and thereafter, including General Liability Insurance with a per occurrence limit of not less than \$1,000,000 covering Seller with respect to any involvement in the performance and/or services covered by this agreement. This insurance will include products liability and completed operations liability coverages, which will extend for three (3) years after the completion of the services. Buyer agrees to name Seller as an additional named insured with respect to the coverages required to be maintained by this agreement and to provide Seller with a conformed Additional Named Insured Endorsement setting forth the coverages required by this agreement. Buyer agrees that its insurance coverages as required by this agreement shall be primary to and not concurrent with any insurance coverages maintained by Seller and that any such coverages maintained by Seller shall in no way be implicated unless and until all available coverages required by this agreement shall have been fully exhausted.
- Effect of Sale** - All materials sold hereunder to Buyer are final and cannot be returned to Seller for credit unless Buyer obtains prior written approval from Seller's authorized representative. If, at Buyer's request, the delivery of materials is delayed, then ABC shall invoice Buyer for the price of materials, which invoice shall be due in accordance with the terms of payment provided herein. Buyer shall reimburse ABC for the cost of storing materials if shipment is delayed by Buyer, and will assume any damages to the materials caused by deterioration. In the unlikely event Seller agrees to accept return of some of the materials, a 25% restocking fee shall be charged on all returned materials.
- Force Majeure** - Seller shall not be liable to Buyer for liquidated damages, back charges or loss of use to Buyer arising out of any delay or any other reason in carrying out this Agreement. **Under no circumstances shall Seller be liable in any way to Buyer, building owner or any other party for delays, failure in performance, or loss or damage due to force majeure conditions including, without limitation: fire; flood; epidemics; quarantine; lightning; strike; embargo; explosion; power surge or failure; acts of God; war; labor or employment disputes; civil disturbances; acts of civil or military authority; inability to secure materials, fuel, products or transportation facilities; acts or omissions of suppliers; or any other causes beyond ABC's reasonable control, whether or not similar to the foregoing.** **FURTHER, BUYER HEREBY AGREES AND STIPULATES THAT, IN THE EVENT SELLER RECEIVES NOTIFICATION OF A SCHEDULED PRICE INCREASE FROM ANY OF ITS SUPPLIERS BETWEEN THE DATE OF THIS AGREEMENT AND THE DATE SCHEDULED FOR DELIVERY OF THE MATERIALS COVERED HEREBY, SELLER RESERVES THE RIGHT, IN ITS SOLE DISCRETION, TO INCREASE THE PURCHASE PRICE STATED HEREIN IN AN AMOUNT CORRESPONDING TO SAID PRICE INCREASE.** Buyer agrees this limitation of Seller's liability is reasonable. Buyer further agrees that this limitation of Seller's liability is part of the consideration for this Agreement and is reflected in the amounts charged by Seller hereunder. Buyer intends that this limitation on Seller's liability be liberally construed in favor of Seller to eliminate any other liability of Seller other than repair or replacement of defective products.
- Jurisdiction/Venue/Waiver of Trial by Jury** - Buyer hereby acknowledges, stipulates and agrees that (i) any and all claims, actions, proceedings or causes of action relating to the validity, performance, interpretation, and/or enforcement hereof must be submitted to a court of competent jurisdiction in Houston, Harris County, Texas, (ii) to the maximum extent practicable, this Agreement will be deemed to call for performance in Harris County, Texas, (iii) Buyer irrevocably submits itself to the jurisdiction of the state and federal courts in Harris County, Texas, (iv) service of process may be made upon it in any legal proceeding in connection with this Agreement or any other agreement as provided by Texas law, (v) Buyer irrevocably waives, to the fullest extent permitted by law, any objection that it may now or hereafter have to the laying of venue of any litigation arising out of or in connection with this Agreement or any other agreement or transaction brought in any such court, (vi) Buyer irrevocably waives any claims that litigation brought in any such court has been brought in an inconvenient forum, and (vii) it irrevocably consents to the service of process out of any of the aforementioned courts by the mailing of copies thereof by Certified Mail, Return Receipt Requested, postage prepaid, at its address set forth herein. The scope of each of the foregoing waivers is intended to be all encompassing. Buyer acknowledges that this waiver is a material inducement to the agreement of Seller to enter into a business relationship, and that Seller has already relied on this waiver in entering into this Agreement. **EACH PARTY HEREBY AGREES NOT TO ELECT A TRIAL BY JURY OF ANY ISSUE TRIABLE OF RIGHT BY JURY, AND FULLY WAIVES ANY RIGHT TO TRIAL BY JURY TO THE EXTENT THAT ANY SUCH RIGHT NOW OR HEREAFTER EXISTS WITH RESPECT TO THIS AGREEMENT AND/OR THE AGREEMENTS, INSTRUMENTS AND DOCUMENTS CONTEMPLATED HEREBY OR ANY CLAIM, COUNTERCLAIM OR OTHER ACTION ARISING IN CONNECTION HEREWITH. EACH PARTY ACKNOWLEDGES AND AGREES THAT THIS WAIVER OF RIGHT TO TRIAL BY JURY IS GIVEN KNOWINGLY AND VOLUNTARILY BY SUCH PARTY AND IS INTENDED TO ENCOMPASS EACH INSTANCE AND EACH ISSUE AS TO WHICH THE RIGHT TO TRIAL BY JURY WOULD OTHERWISE ACCRUE. EITHER PARTY IS HEREBY AUTHORIZED TO FILE A COPY OF THIS SECTION IN ANY PROCEEDING AS CONCLUSIVE EVIDENCE OF THIS WAIVER.**
- Indemnification** - BUYER ASSUMES ENTIRE RESPONSIBILITY AND LIABILITY FOR ANY CLAIMS OR ACTIONS BASED ON OR ARISING OUT OF INJURIES, INCLUDING DEATH, TO PERSONS OR DAMAGES TO OR DESTRUCTION OF PROPERTY, SUSTAINED OR ALLEGED TO HAVE BEEN SUSTAINED IN CONNECTION WITH OR TO HAVE ARISEN OUT OF OR INCIDENTAL TO THE PERFORMANCE OF THIS CONTRACT BY BUYER, ITS AGENTS AND EMPLOYEES, AND ITS SUBCONTRACTORS, THEIR AGENTS AND EMPLOYEES, INCLUDING CLAIMS OR ACTIONS FOUNDED IN WHOLE OR IN PART UPON THE ALLEGED ACTS, OMISSIONS OR NEGLIGENCE OF SELLER, SELLER'S REPRESENTATIVES, OR THE EMPLOYEES, AGENTS, INVITEES, OR LICENSEES THEREOF. BUYER FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS SELLER AND ITS REPRESENTATIVES, AND THE EMPLOYEES, AGENTS, INVITEES AND LICENSEES THEREOF IN RESPECT OF ANY SUCH MATTERS AND AGREES TO DEFEND ANY CLAIM OR SUIT OR ACTION BROUGHT AGAINST SELLER, SELLER'S REPRESENTATIVE, AND THE EMPLOYEES, AGENTS, INVITEES AND LICENSEES THEREOF. **THE PARTIES HEREBY WAIVE THEIR RESPECTIVE RIGHTS UNDER THE DECEPTIVE TRADE PRACTICES-CONSUMER PROTECTION ACT, SECTIONS 17.41 THROUGH 17.63 INCLUSIVE, OF THE TEXAS BUSINESS AND COMMERCE CODE, A LAW THAT GIVES CONSUMERS SPECIAL RIGHTS AND PROTECTIONS. AFTER CONSULTATION WITH LEGAL COUNSEL, EACH VOLUNTARILY CONSENTS TO THIS WAIVER.**
- Severability** - Each of the provisions of this Agreement is a separate and distinct agreement and independent of the others. If any provision of this Agreement is found to be invalid or unenforceable in any jurisdiction, such provision shall be fully severable in such jurisdiction, and this Agreement shall be construed and enforced as if in such jurisdiction such provision had never comprised a part hereof. In such event, the remaining provisions of this Agreement shall remain in full force and effect. The terms of this Agreement are intended by the parties as a final expression of their agreement containing all oral and written understandings between the parties relative to the materials generally described in this Agreement.
- Acceptance/Entire Agreement** - As a condition precedent to the effectiveness of an order, all orders are subject to approval and acceptance by Seller. This Agreement, along with any attached exhibits, constitutes the entire agreement of the parties herein.

AGREED AND ACCEPTED:

Signature

Date

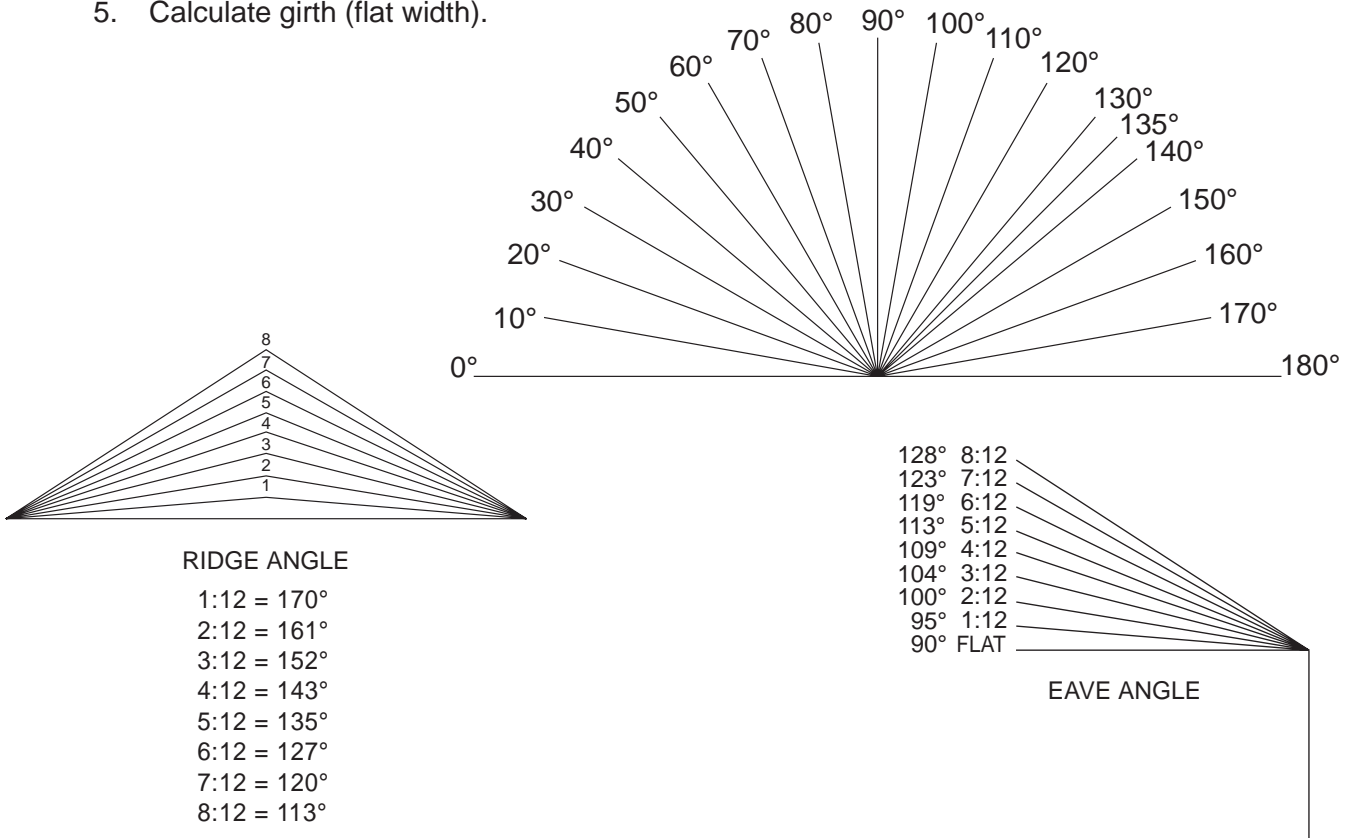
ABC RESERVES THE RIGHT TO CHANGE THESE TERMS AND CONDITIONS WITHOUT NOTICE.

EFFECTIVE DATE APRIL 10, 2006


## HOW TO ORDER SPECIAL FLASHING

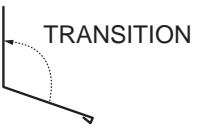
### NOTE:


1. Always dimension each segment
2. Always put in degrees of each angle.
3. Always use degrees on inside angle from line to line (never use angle to a non-existing line).
4. Always show where color goes on each piece.
5. Calculate girth (flat width).




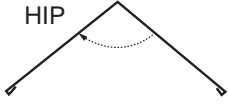
### ANGLE CHART FOR HIP, VALLEY, RIDGE, GUTTER and PITCH BREAK TRIM

 RIDGE

 TRANSITION

 VALLEY

 GUTTER

 HIP

	ROOF SLOPE											
	1:12	2:12	3:12	4:12	5:12	6:12	7:12	8:12	9:12	10:12	11:12	12:12
HIP AND VALLEY	173°	166°	160°	154°	148°	143°	138°	133°	129°	126°	123°	120°
RIDGE	170°	161°	152°	143°	135°	127°	120°	113°	106°	100°	95°	90°
GUTTER AND PITCH BREAK	94°	99°	104°	108°	112°	116°	120°	123°	126°	129°	132°	135°

## **Recommended Installation Equipment**

**Dry Line or Chalk Line**

**Tape Measure**

**Square**

**Screw Gun (Should be able to achieve  
2500 rpms with a pressure sensitive head)**

**Sockets**

**Drill**

**Pop Rivet Tool**

**Metal Shear (Hand Tool) or Nibbler**

**Duck-Bill Pliers**

**Snips**

**Caulking Gun**

**Hemming Tool**

Only qualified individuals, using proper equipment and tools, using safe construction practices, and following proper erection procedures should attempt installation of ABC products. All applicable OSHA regulations must be strictly observed. Follow all applicable local building permit and building code requirements.

**NOTES**

A large rectangular area filled with a grid of dashed lines, intended for handwritten notes. The grid consists of 20 columns and 30 rows of small squares.

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