





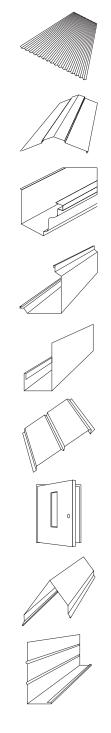


# **SL 16<sup>®</sup>**

Concealed Fastener System

### This booklet includes:

Trims and Accessories Design and Installation Information



# IMPORTANT NOTICE

READ THIS MANUAL COMPLETELY PRIOR TO BEGINNING THE INSTALLATION OF THE SL SERIES® ROOFING SYSTEM.

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

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

#### Ice Dam Disclaimer

ABC designs its standing seam roofs to meet the load requirements dictated by governing codes and project specifications, including applicable snow loads. However, ABC expressly disclaims responsibilty for weathertightness or roof point loading issues or other hazards resulting from ice dam situations. Any time ice and snow can melt on the main body of the roof and refreeze at the eave or in the shadow of an adjacent wall, an ice dam situation may develop. In addition to local climate, ice dam formation is affected by many other factors, including but not limited to, roof insulation R value, roof panel color, interior temperature of building, heater location in building, eave overhangs, parapet walls, shading of building roof areas from adjacent trees, parapets, buildings, etc. These factors are design and maintenance issues and are outside the control of ABC. ABC specifically disclaims any liability for damage due to ice dam formation, although the following issues should be taken into consideration concerning standing seam roofs installed in freezing climates:

- Always use field seamed panels. These machine-folded seams are more durable when subjected to occasional
- Eliminate "cold" eave overhangs and parapet walls from the building design. Roof overhangs outside the heated envelope of the building will tend to be colder than the roof areas over the heated envelope. Simple roof designs are preferred. Parapet walls at the eave allow ice and snow to collect due to shading effects and the lower roof temperatures caused thereby.
- Make sure the interior of the building is adequately insulated and the heating is properly distributed. Inadequate insulation in the roof and/or improper heat distribution causes heat flow though the main body of the roof. On days when the temperature is below freezing, this heat gain can cause ice and snow to melt and refreeze at the eave where the roof is colder.
- Lay out the building to prevent the eaves and other roof areas from being shaded during the winter. This may mean eliminating adjacent trees or reconsidering roof geometries.
- Consider using self-regulating heating cables at the eaves to mitigate the effects of ice dams.
- On building designs using attics, over-insulate the attic floor and provide adequate ventilation in the attic. This will reduce heat transfer through the roof resulting in more consistent roof temperatures between eave and field of roof.
- Increase the degree of diligence with respect to underlayment materials at roof areas prone to icing. This may include valleys, eaves, dormers and roof areas near dormers, parapets and the like where shading may occur.

For more information on this subject, please refer to the MCA's Metal Roof Design For Cold Climates manual.

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

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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. To ensure you have the latest information available, please inquire or visit our website at www.abcmetalroofing.com. Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs or panel profiles. Projects should be designed to conform to applicable building codes, regulations and accepted industry practices. If there is a conflict between this manual and project erection drawings, the erection drawings will take precedence.

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**LUBBOCK, TX** 800-481-3035

**MEMPHIS, TN** 800-877-8709

NICHOLASVILLE, KY 800-877-8709 **OMAHA, NE** 800-228-2260

15 18 21

OSKALOOSA, IA 800-345-0044 **PHOENIX, AZ** 800-481-3035

**ROME, NY** 800-544-2651

**SALT LAKE CITY, UT** 800-481-3035

# SL SERIES® DESIGN INFORMATION

#### **PLANNING**

Consult a qualified engineer or architect to be sure that your particular application of this product conforms to applicable building codes, regulations, environmental conditions and accepted industry practices. All suggested applications for SL Series® assume a qualified engineer or architect has been consulted prior to the application of the product. Please note that the details shown may not be appropriate for all environmental conditions and building applications. Prior to ordering panels, all dimensions should be confirmed by field measurements by the customer or installer.

#### **APPLICATIONS**

SL Series® is a non-structural, water shedding 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.

#### 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. 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. For information on this subject, please refer to MCA's oil canning technical bulletin.

#### **FASTENERS**

SL Series® panels are best secured to a solid wood substrate by using a 10 x 1" Type A pancake head fastener. Fastener spacing 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 S10-S11. Refer to page S16 for additional fastener information. Do not overdrive fasteners. This can cause panel distortion.

#### **Product Selection Chart**

Gauge	Galvalume Plus	Signature 200
26-Gauge	•	•
29-Gauge	•	•

• available in any quantity (see 26/29 gauge color chart for available colors)

# **APPLICATION, STORAGE AND HANDLING INFORMATION**

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.

#### STORAGE AND HANDLING

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**

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 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. For information on this subject, please refer to MCA's white paper on controlling condensation in steep slope metal roofing systems.

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

#### VENTILATION

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**

Check substructure for proper alignment and uniformity to avoid panel distortion. ABC recommends the use of 5/8" plywood for the substructure. Minimum 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. 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 proper fastener application, 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 Series® 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 panel application. 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 Series® panels cannot be endlapped.

#### **CLOSURES AND SEALANTS**

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, hip and eave.

For maximum protection, all caulking used should be urethane. Silicone caulks are not recommended for panels

#### **CUTTING METAL PANELS**

ABC recommends the use of power shears or nibblers that can follow the contour of the panel's profile. While not recommended, If a power saw is to be used, you must use a blade designed to cut the metal at a low temperature to prevent melting of the Galvalume® coating, such as the Slasher® from Dynamic Fastener. You should protect the panel during the cutting process to prevent

marring the panel surface. 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.

#### PANEL SELECTION

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

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

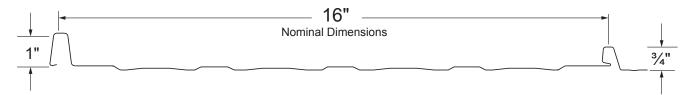
other corrosive atmospheres, as well as the accumulation of airborne debris and dirt will affect this aging process and the products' appearance.

If aesthetic appearance is one of your concerns, ABC recommends you select one of our many color coated panel selections. 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.

# 16" WIDE - SQUARE FOOT CHART

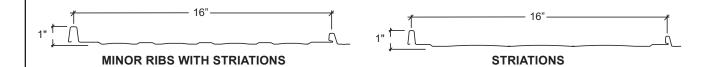
# **SL 16<sup>®</sup>**



#### 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	18.56	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	28.89	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	32.88	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	36.56
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	41.47	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 \$1.05 per sheet.
- 3. Panels are custom cut-to-the-inch.
- 4. Panels must be specified as: "Striated" or "Striated with Minor Ribs".

#### PACKAGING COST:

Standard Packaging: Strippable film on panel ribs, wood saddles and trusses as required \$6.00 per square - \$60.00 minimum charge.

#### **DELIVERY**:

#### NOTES:

- 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 (3:12).
- 5. Oil canning is not a cause for rejection.

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

FREIGHT CHARGES: \$6.00 per square - \$60.00 minimum charge.

- 1. Stop over charge (for unloading delay in excess of  $1\frac{1}{2}$  hrs. Charged in  $\frac{1}{2}$  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 ½% 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.

# **LOAD TABLES**

# SL 16<sup>®</sup> Series

29 GAUGE



### **Negative Design Loads**

Span	ASTM E-1592	Design Load
FT	PSF	PSF
1.00	62.40	31.20
1.50	54.60	27.30
2.00	46.80	23.40
2.50	44.20	22.10
3.00	41.60	20.80

#### NOTES:

- 1. The above loads were derived from uplift tests done in accordance with ASTM E-1592
- 2. All values are interpolated and/or extrapolated from tests performed at spans of 1'-0",
- 3. 2'-0" and 3'-0".
- Design Load contains a 2.00 factor of safety.
- 5. These values do not consider fastener pullout or pullover. Attachment must be designed separately.
- 6. The use of any accessories, including fasteners, other than those provided by the manufacturer may damage panels, void all warranties and will void all engineering data.
- 7. 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.

# **SL SERIES UL® TECHNICAL DATA**



- 1. Metal Panels (29 gauge or heavier)–16" wide, continuous over two or more spans.
- 2. Substructure (Plywood)-plywood decking to be a nominal %" thick.
- 3. Fasteners-No. 10 X 1" 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® 16" (29 msg). Secured by No. 10 X 1" 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".

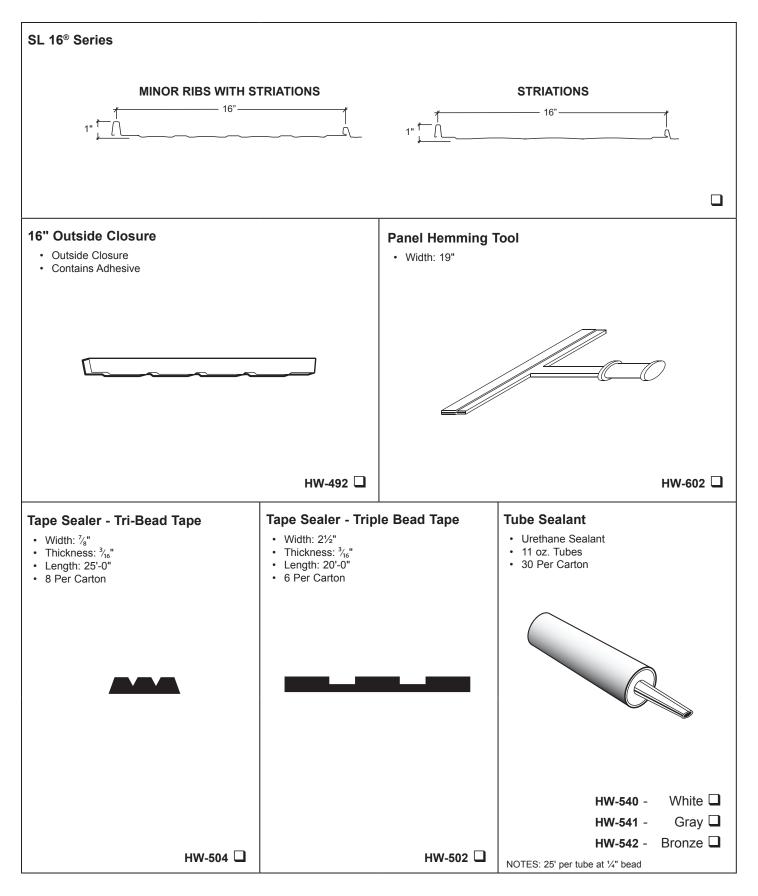
See UL FIRE RESISTANCE DIRECTORY for details of illustrations and fire resistance hourly ratings.

### **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.



### **SCREW FASTENERS**

#### **Wood Fastener** Pancake Head · Panel to Substructure at Fastener Flange · Panel to wood #2 Phillips Head size ¼" 250 Per Bag • 250 Per Bag 8A -10 x 1" 🔲 8 -10 x 1½" 8B -10 x 2" 10 x 2½" #13 - 10 x 1" 🗆 8C -Long Life Wood Fastener Lap-Tek Trim Fastener Panel to wood Head Size 5/16" • Head size 5/16" 250 Per Bag 250 Per Bag 10 x 1" $\square$ #9A -10 x 1½" 🔲 #9 -4A - 14 x 1/8" 🖵 NOTES: Other Sizes Available. Long Life Lap-Tek **Stainless Steel Wood Fastener** · Trim Fastener Bi-Metal Head Size 5/16" Fastener Head Size 5/16" 250 Per Bag · 250 Per Bag 216 -10 x 1" 🔲 **217** - 10 x 1½" 10 x 2" 218 -#4 - 14 x 1/8" 🗖 **219** - 10 x 2½" Long Life Type A Pop Rivet · Stainless Steel Trim · Panel to Plywood at Exposed Locations 250 Per Bag Head Size 5/16" 250 Per Bag 14 x 1" 🔲 #51 -#347 - 14 x 1½" 🔲

#14 - 1/8 x 3/16"

14 x 2" 🔲

#77 -

### **Profile Vent**



HW-116SL16 ☐

#### **Profile Vent Anchor Clip**

Two per panel



HW-2076 🖵

#### **One Piece Magnetic Socket**



HW-606 - 1/4" 🖵

HW-605 - 5/16" 🖵

### **Rubber Roof Jack**



PIPE SIZE	PART NUMBER	TEMP. RANGE	BASE DIM
1/4" - 2"	HW-1000	-65° - +212°	4½"
1/4" - 5"	HW-1001	-65° - +212°	8"
4" - 7"	HW-1002	-65° - +212°	11"
6" - 11"	HW-1003	-65° - +212°	14"
7" - 13"	HW-1004	-65° - +212°	17"

### Touch Up Paint - Brush Top Can

- 2 oz. can
- · Standard Colors
- · Recommended for minor scratch cover only



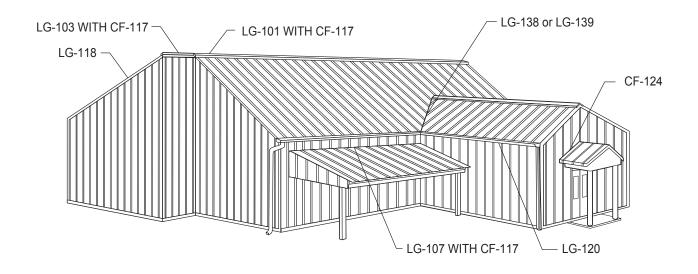
HW-304 ☐

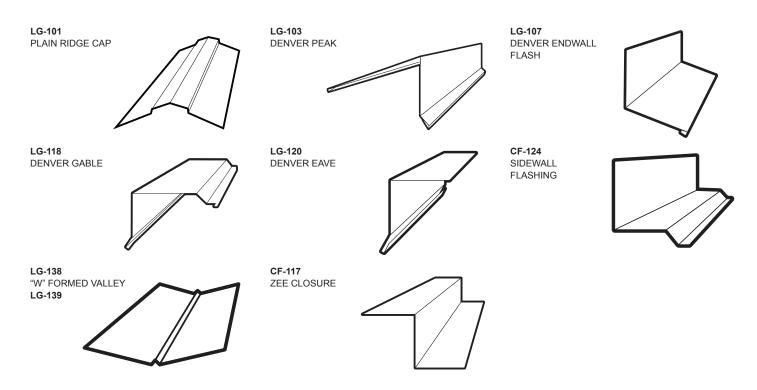
#### **Retrofit Rubber Roof Jack**



	PART		BASE
PIPE SIZE	NUMBER	TEMP. RANGE	DIM
1/2" - 4"	HW-1005	-65° - +212°	83/16"
4" - 91/4"	HW-1006	-65° - +212°	141/4"
91/4" - 161/4"	HW-1007	-65° - +212°	21½"
High Temperatu	re per special ord	der. Please inquire.	

# **EXPOSED FASTENER TRIM**

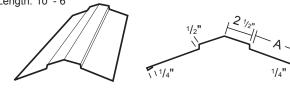




### **EXPOSED FASTENER TRIM**

### Plain Ridge Cap

• Length: 10' - 6"



<sup>4</sup>/<sub>12</sub> PITCH **LG-101** 

**LG-101** Dim A = 4" Girth =  $14\frac{1}{2}$ "  $\square$  **LG-101A** Dim A = 5" Girth =  $16\frac{1}{2}$ "  $\square$ 

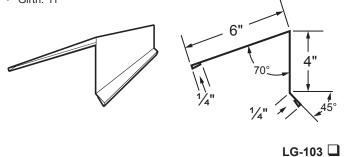
**LG-101B** Dim A = 6" Girth = 18½" □

**LG-101C** Dim A = 7" Girth =  $20\frac{1}{2}$ "

#### **Denver Peak Trim**

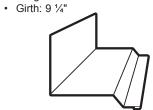
• Length: 10' - 6"

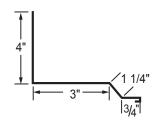
• Girth: 11"



### Sidewall Flashing

• Length: 10' - 6"

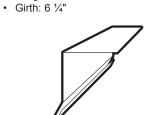


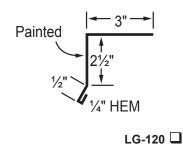


CF-124 🔲

#### **Denver Eave Trim**

• Length: 10' - 6"



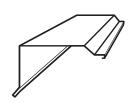


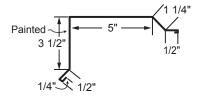
NOTE: Specify Angle

#### **Denver Gable**

• Length: 10' - 6"

• Girth: 11 1/4"



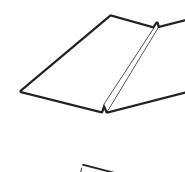


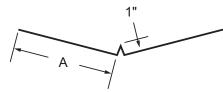
LG-118 🖵

4:12 Unless otherwise specified

# W Formed Valley

• Length: 10' - 6"





**LG-138** Dim A = 9" Girth =  $14\frac{1}{2}$ "

**LG-139** Dim A = 14" Girth =  $16\frac{1}{2}$ "

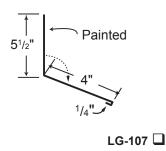
NOTE: Specify Angle

#### **Denver Endwall Flash**

• Length: 10' - 6"

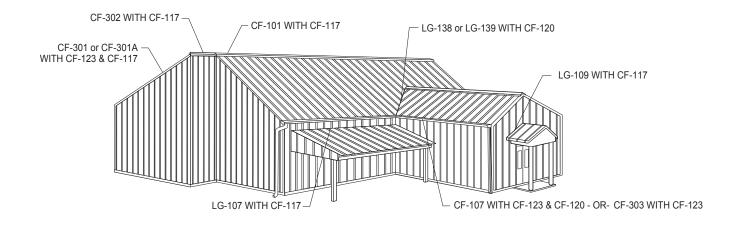


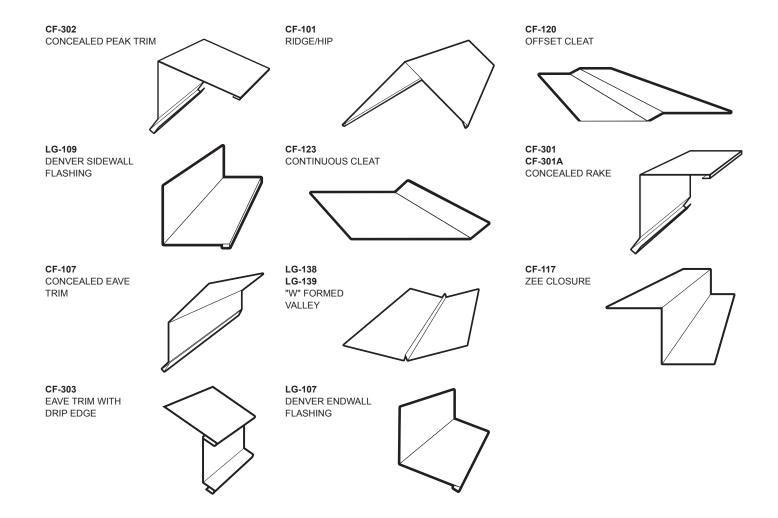




4:12 Unless otherwise specified

### **CONCEALED FASTENER TRIM**

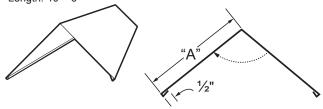




### **CONCEALED FASTENER TRIM**

#### Ridge/Hip

• Length: 10' - 6"



CF-101 Dim

Dim A = 6" Girth = 13" □

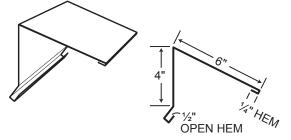
**CF-101A** Dim A = 7" Girth = 15" □ **CF-101B** Dim A = 8" Girth = 17" □

NOTE: Specify Angle/Specify HIP or RIDGE

### **Concealed Peak Trim**

· Length: 10' - 6"

• Girth: 11 %"

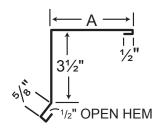


CF-302 🖵

#### **Concealed Rake**

• Length: 10' - 6"





CF-301

Dim A = 3"

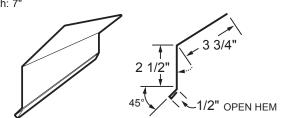
**CF-301A** Dim A = 6"

Girth = 81%" ☐ Girth = 111%" ☐

#### **Concealed Eave Trim**

• Length: 10' - 6"

• Girth: 7"



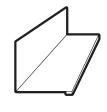
CF-107 🗖

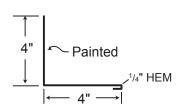
NOTE: Specify Angle

**Denver Sidewall Flashing** 

• Length: 10' - 6"

• Girth: 8 1/4"



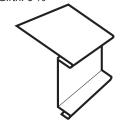


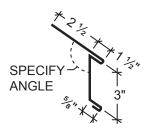
LG-109 🖵

#### **Eave Trim with Drip Edge**

• Length: 10' - 6"

• Girth: 9 %"

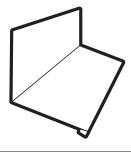


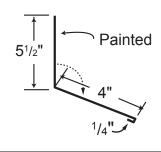


CF-303 🖵

#### **Denver Endwall Flash**

- Length: 10' 6"
- Girth: 9 3/4"





LG-107 🖵

4:12 Unless otherwise specified

### **CONCEALED FASTENER TRIM**

### "W" Formed Valley

• Length: 10' - 6"

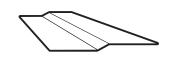


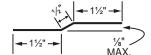
**LG-138** Dim A = 9" Girth = 20" □

**LG-139** Dim A = 14" Girth = 30" □

#### **Offset Cleat**

- Length: 10' 6"
- Girth: 3 ½"



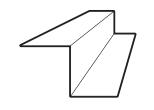


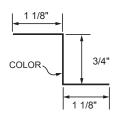
CF-120 □

NOTE: This item may be shipped out of any 29 gauge material.

#### "Z" Closure

- Length: 10' 6"
- Girth: 3"

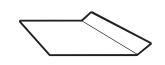


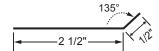


CF-117 🔲

#### **Continuous Cleat**

- Length: 10' 6"
- Girth: 3"





CF-123 🔲

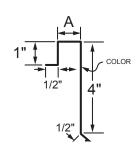
NOTE: This item may be shipped out of any 29 gauge material.

# **OTHER TRIM**

#### Rake Trim

• Length: 10' - 6"



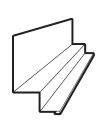


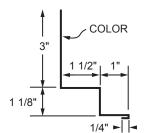
Dim A = 1" Girth = 7 1/4" CF-115

**CF-115A** Dim A = 2" Girth = 8 1/4"

#### **Universal Side Wall**

- Length: 10' 6"
- Girth: 6 1/8"

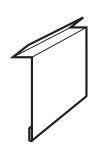


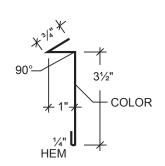


CF-118 🔲

### **Counter Flash**

- Length: 10' 6"Girth: 5 ½"

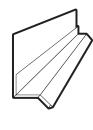


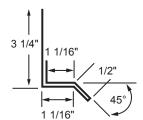


CF-304 🔲

#### **Drip Edge**

- Length: 10' 6"
- Girth: 7 %"

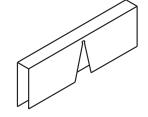




CF-121 🔲

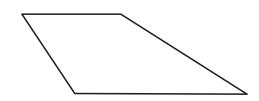
#### **Rib Cover**

• Length: 0' - 8"



CF-119 🔲

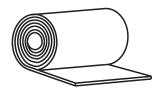
#### **Flat Sheet**



40 1/8" x 126" Galvanized and Color 44 1/2" x 126" Galvalume Plus® \*Skidding charge of \$42.00 will be added

#### **Roll Valley**

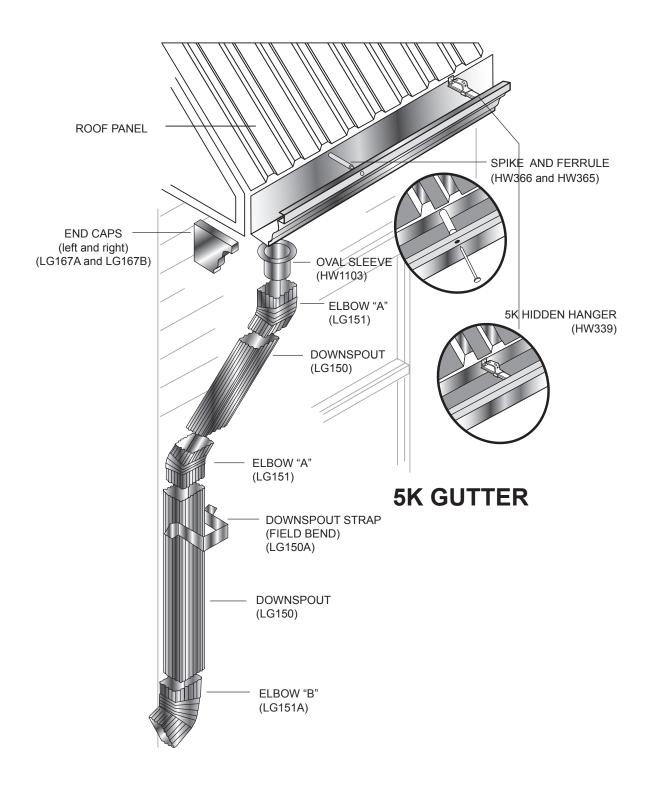
- Length: 50' 0"
- 29 Gauge
- width: 20 3/16"



Available in all colors

# SL 16<sup>®</sup> DETAILS

# **DOWNSPOUT CONNECTIONS**



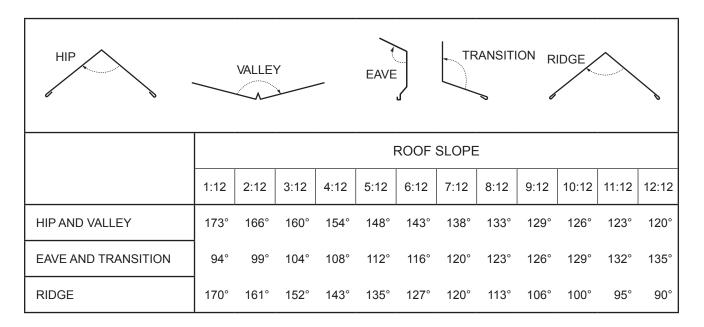
PAGE S20

# SL 16® ACCESSORIES

		PART					
ITEM	GENERAL	NUMBER	LENGTH	GIRTH	WEIGHT		
5K GUTTER		LG-161	16'-0"	12"	9.96#		
<del>*</del> 5" <del>*</del> .	LEFT	LG-167A	N/A	N/A	.1 #		
GUTTER ENDS	RIGHT	LG-167B	N/A	N/A	.1 #		
¥ 31/4" ¥	*Available in Sta	andard Colors					
INSIDE-OUTSIDE SQUARE CORNER	INSIDE	LG-168					
	OUTSIDE	LG-168A					
	WHITE ONLY - May be field painted to match other colors						
GUTTER APRON		LG-149	10'-6"	5"	2.70#		
2"							
5K 3" X 2" DOWNSPOUT		LG-150	10'	10 1/2"	5.60 #		
		20 100		10 112	0.00 #		
DOWNSPOUT STRAP		LG-150A	N/A	N/A	.02 #		
(FIELD BEND)							
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 #		

# **HOW TO ORDER SPECIAL TRIM**

### **DEGREES BASED ON ROOF PITCH**



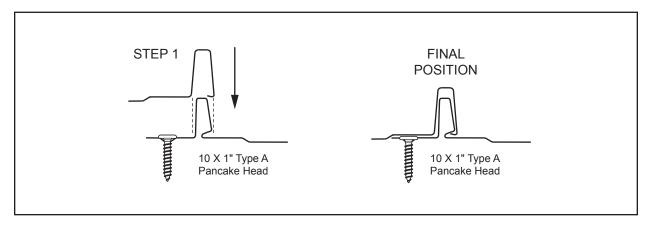
- 1. Always indicate the dimension of each segment.
- 2. Always indicate each angle in degrees
- 3. Indicate the number of hemmed edges
- 4. Always indicate the exposed or colored side of each trim piece.
- 5. Calculate girth, which is the total width of trim piece.

# SL 16<sup>®</sup> DETAILS

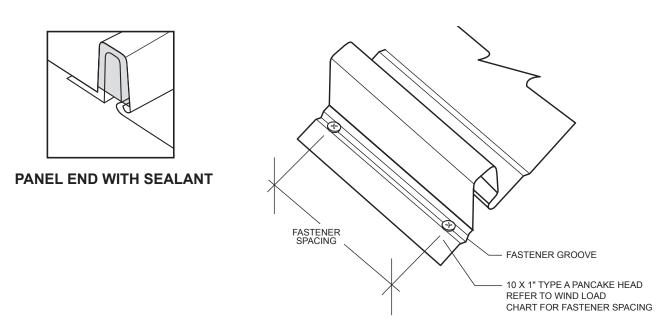
### PANEL ENGAGEMENT



#### PANEL PROFILE



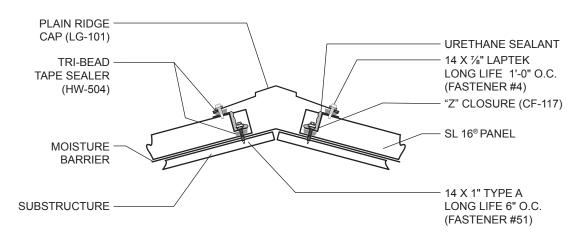
#### PANEL SIDELAP ENGAGEMENT



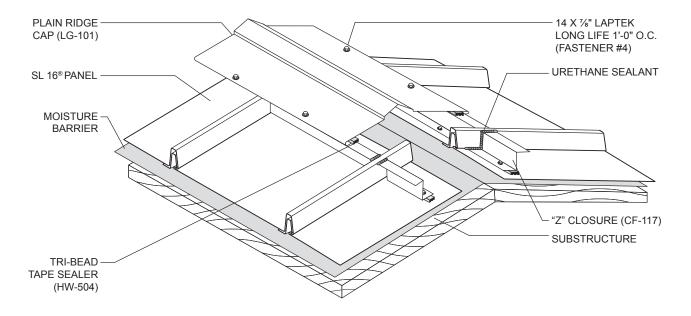
**FASTENER INSTALLATION** 

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

### **RIDGE**



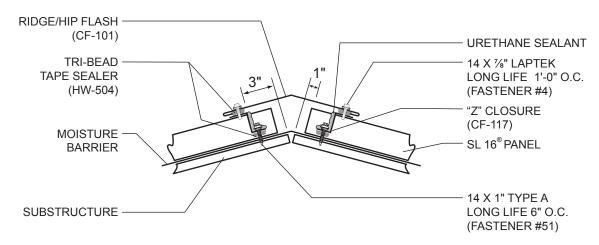
#### **CROSS SECTION OF PLAIN RIDGE CAP**



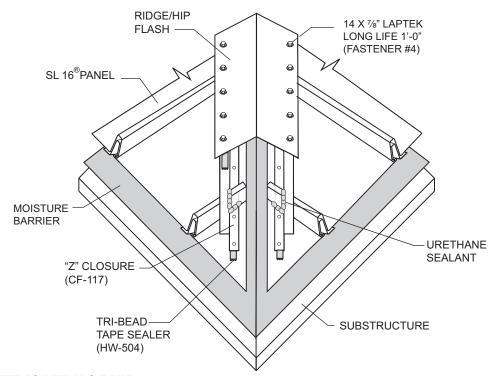
#### ISOMETRIC VIEW OF RIDGE

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

### **HIP**



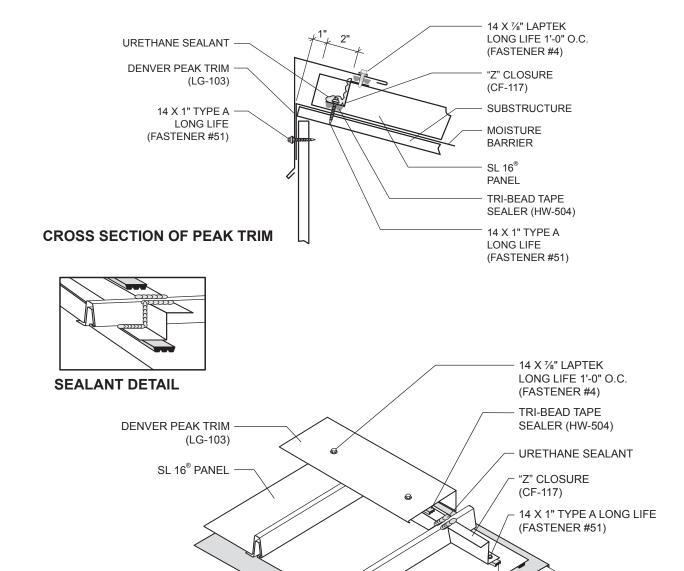
#### **CROSS SECTION OF HIP**



#### ISOMETRIC VIEW OF HIP

- 1. Bevel cut and install panels to follow angle of hip.
- 2. Field cut "Z" closures to fit panel bevel width.
- Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with 14 X 1" 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.
- 5. Attach Hip Flash to "Z" closures with 14 X %" Long Life Laptek at 1'-0" O.C.

### **PEAK TRIM**



#### NOTES:

1. Field cut "Z" closures to fit panel width.

MOISTURE BARRIER

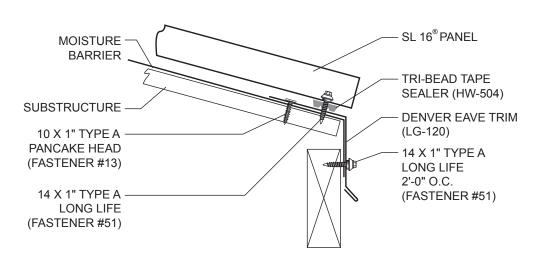
ISOMETRIC VIEW OF PEAK TRIM

- 2. Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with four 14 X 1" Type A fasteners per panel (three fasteners for 12" panel). Vertical leg of "Z" closure should be 3" from edge of peak.
- Seal ends of "Z" closures with urethane sealant.

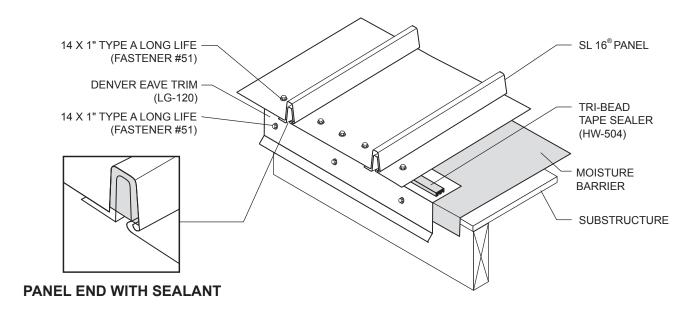
TRI-BEAD TAPE SEALER (HW-504)

SUBSTRUCTURE

### **EAVE**



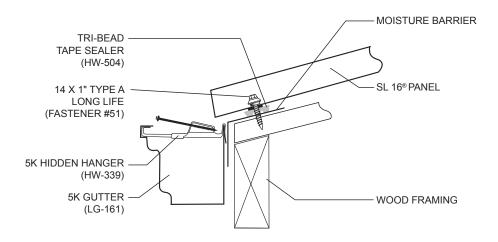
#### CROSS SECTION OF EAVE WITH EXPOSED FASTENERS



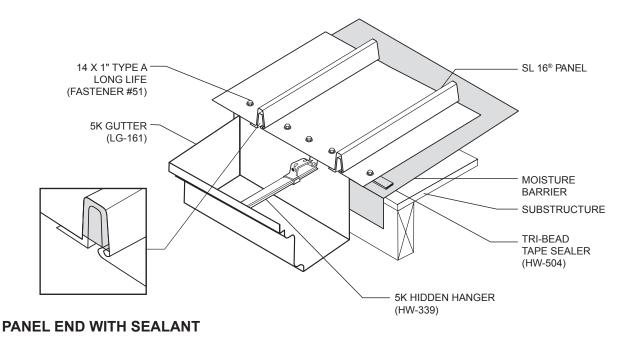
#### ISOMETRIC VIEW OF EAVE WITH EXPOSED FASTENERS

- 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 14 X 1" Type A Long Life fasteners
- 4. Fill ends of panels with urethane sealant.

### **GUTTER**



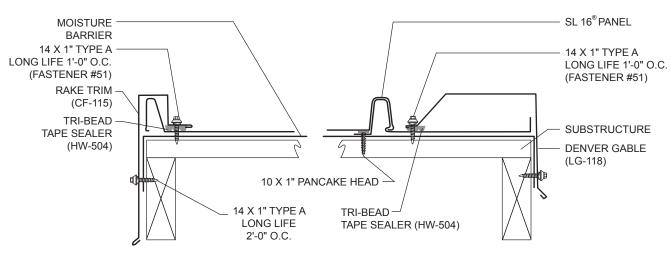
#### **CROSS SECTION OF EAVE WITH 5K GUTTER**



### ISOMETRIC VIEW OF EAVE WITH 5K GUTTER

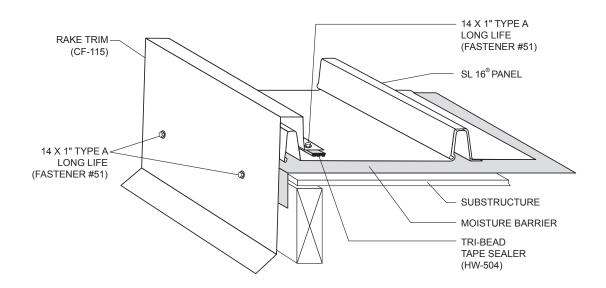
- 1. Use hidden hangers to attach 5K Gutter (LG161) to fascia board.
- 2. In areas of extreme ice or snow build-up, consider eliminating the gutter and using eave trim.

### **RAKE**



**BEGINNING ON MODULE** 

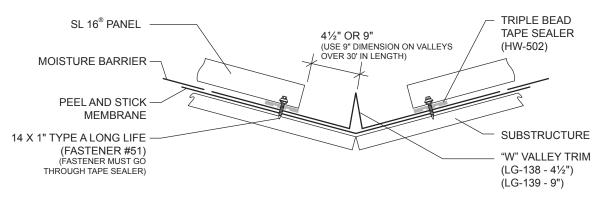
**FINISHING OFF MODULE** 



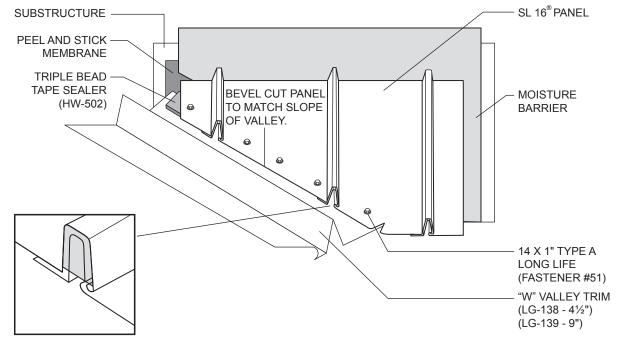
#### ISOMETRIC VIEW OF BEGINNING ON MODULE

- 1. Install rake trim to roof with 14 X 1" Type A Long Life Fastener at 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.

### **VALLEY**



#### **CROSS SECTION OF VALLEY WITH EXPOSED FASTENERS**

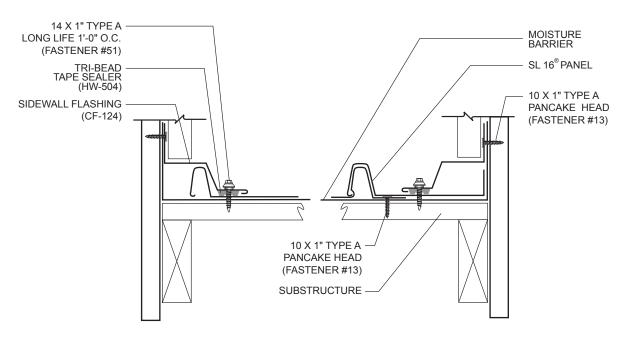


#### PANEL END WITH SEALANT

#### ISOMETRIC VIEW OF VALLEY WITH EXPOSED FASTENERS

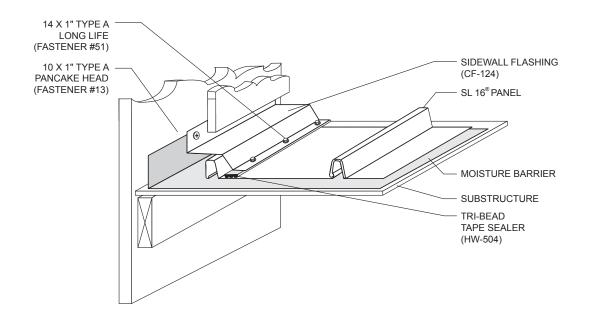
- 1. For valleys 30' or less in length, use standard "W" valley trim (LG-138). For valleys over 30' in length use I G-139.
- 2. Apply triple-bead tape sealer to the valley trim parallel to the slope of the valley. Lower edge of tape sealer should be even with edge of roof panel.
- 3. Bevel cut panels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

### SIDE WALL



#### **BEGINNING ON MODULE**

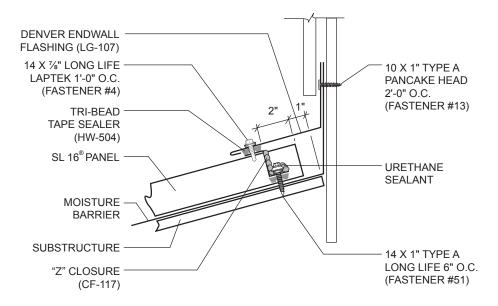
#### FINISHING OFF MODULE



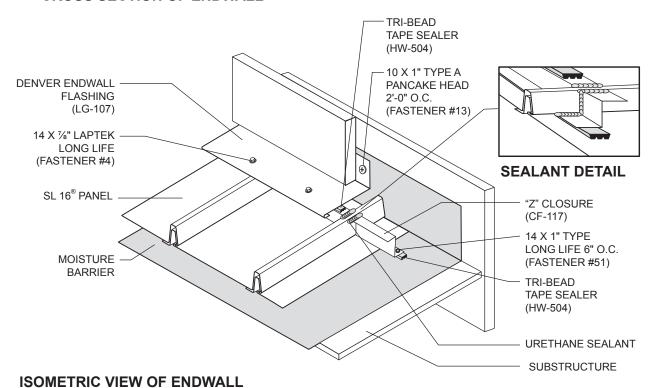
#### ISOMETRIC VIEW OF BEGINNING ON MODULE

- 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 Sidewall Flashing to roof panels with 14 X 1" Type A Long Life Fasteners at 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.

### **ENDWALL**

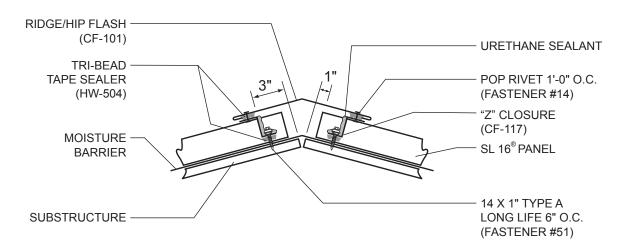


#### **CROSS SECTION OF ENDWALL**

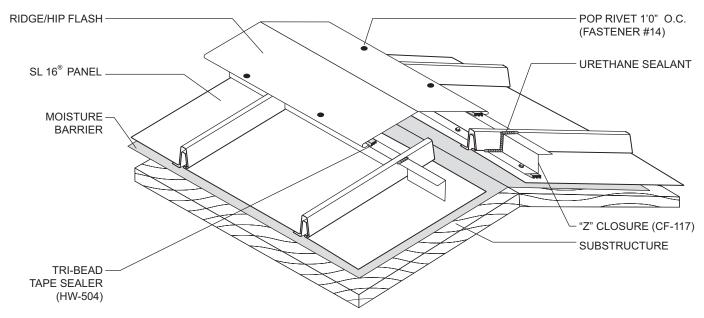


- 1. Field cut "Z" closures to fit panel width.
- Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with four 14 X 1" Type A
  fasteners per panel (three fasteners for 12" panel). Vertical leg of "Z" closure should be 3" from top of
  roof deck.
- 3. Seal ends of "Z" closures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

### **RIDGE**



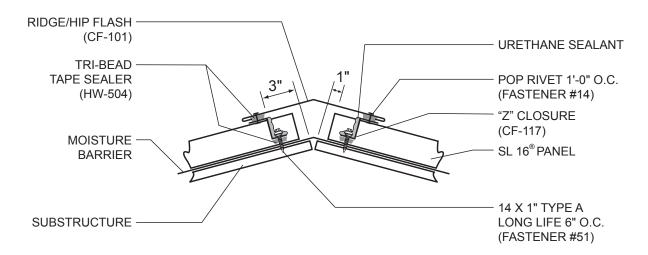
#### **CROSS SECTION OF RIDGE**



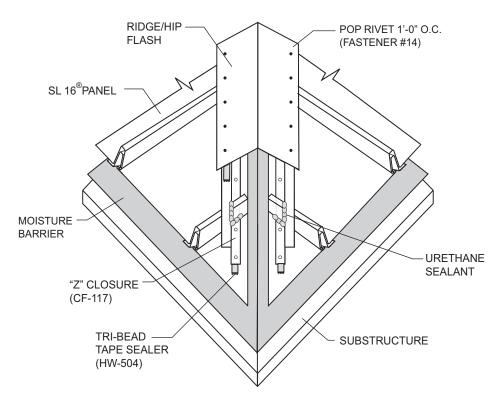
#### ISOMETRIC VIEW OF RIDGE

- 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 14 X 1" 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 rivets at 1'-0" O.C.

### HIP



#### **CROSS SECTION OF HIP**



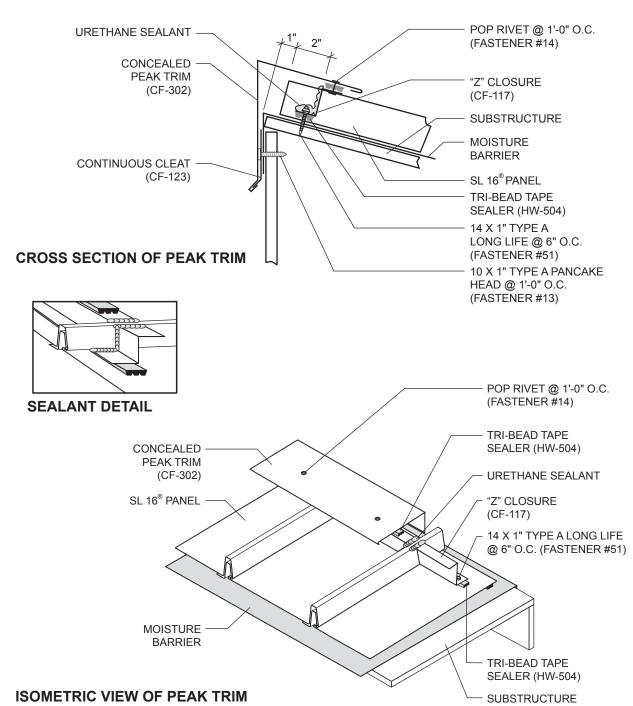
#### ISOMETRIC VIEW OF HIP

#### NOTES:

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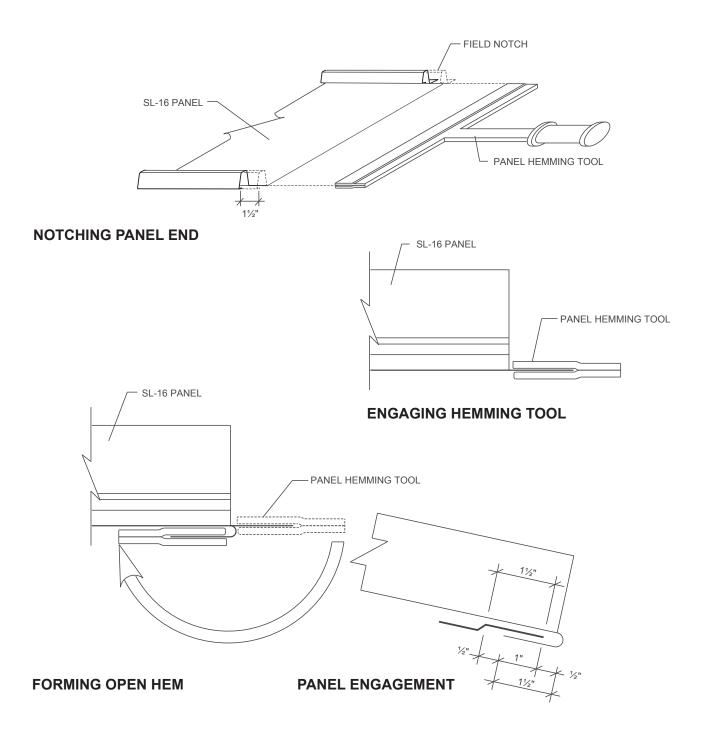
- 1. Bevel cut and install panels to follow angle of hip.
- 2. Field cut "Z" closures to fit panel bevel width.
- Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with 14 X 1" Type A fasteners 6" O.C. maximum. Vertical leg of "Z" closure should be 3" from center of hip.
- 4. Seal ends of "Z" closures with urethane sealant.
- 5. Attach Hip Flash to "Z" closures with pop rivets 1'-0" O.C.

### **PEAK TRIM**



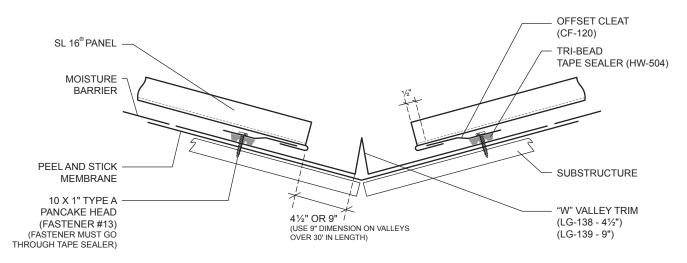
- 1. Field cut "Z" closures to fit panel width.
- Install tri-bead tape sealer to bottom leg of "Z" closures and attach to panels with four 14 X 1" Type A
  fasteners per panel (three fasteners for 12" panel). Vertical leg of "Z" closure should be 3" from edge
  of peak
- 3. Seal ends of "Z" closures with urethane sealant.
- 4. Install continuous cleat to wall with 10x1" pancake head screws at panel ribs.
- 5. Hook open item of concealed peak trim onto continuous cleat and attach top leg of trim to "Z" closures with pop rivets at 1'-0" O.C.

### FIELD HEMMING PANEL END

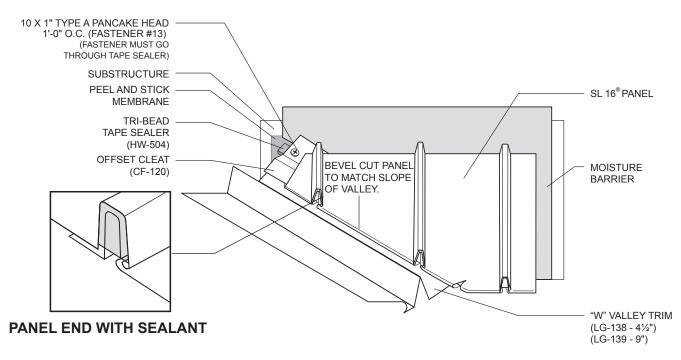


- 1. Field notch male and female legs of panel 1½".
- 2. Engage panel hemming tool onto protruding panel.
- 3. Bend panel down to form an open hem.
- 4. Hem may be tightened with a pair of vise grip "duck bills."
- 5. Panels with minor ribs cannot be hemmed.

### **VALLEY WITH OFFSET CLEAT**



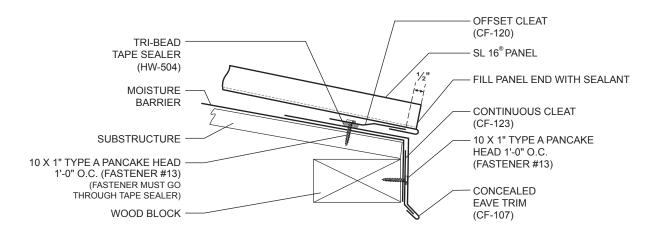
#### **CROSS SECTION OF VALLEY**



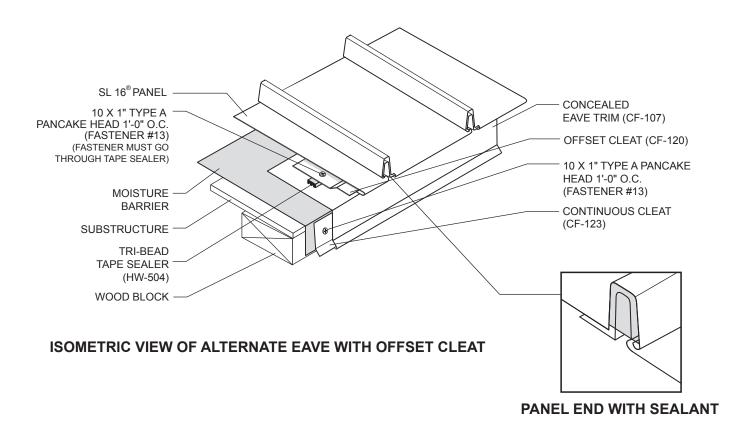
#### ISOMETRIC VIEW OF ALTERNATE VALLEY

- 1. Offset cleat is installed continuous along slope of valley over tri-bead tape sealer with 10 X 1" Type A Pancake Head Fastener at 1'-0" O.C. **Fasteners must go through tape sealer.**
- 2. Add 1½" to panel length for the panel hem. See page S34 for Hemming Detail.
- 3. Fill ends of panels with urethane sealant.

### **EAVE WITH OFFSET CLEAT**

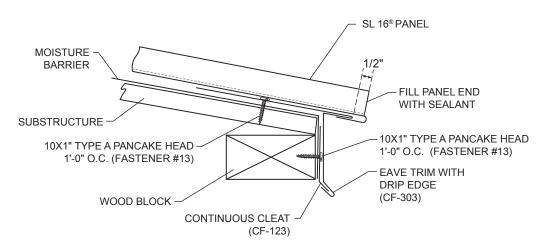


#### CROSS SECTION OF EAVE WITH OFFSET CLEAT

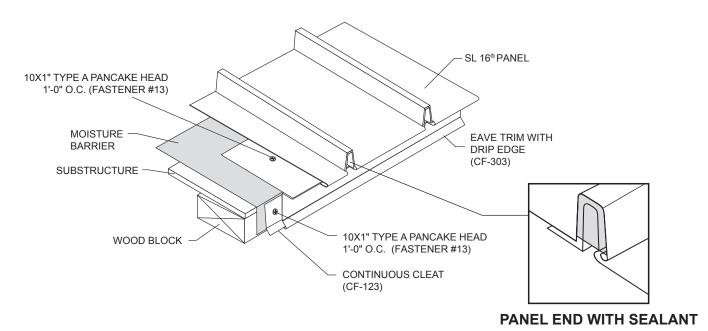


- Where load conditions permit, install first panel fastener 12" from eave for best appearance. Consult 1. a design professional or engineer to ensure compliance with local load and code requirements.
- Attach offset cleat to substructure with 10 X 1" Type A Pancake Head Fastener at 1'-0" O.C.
- Add 11/2" to panel length for the panel hem. See Page S34 for Hemming Detail.
- Fill ends of panels with urethane sealant.

### **EAVE TRIM WITH DRIP EDGE**



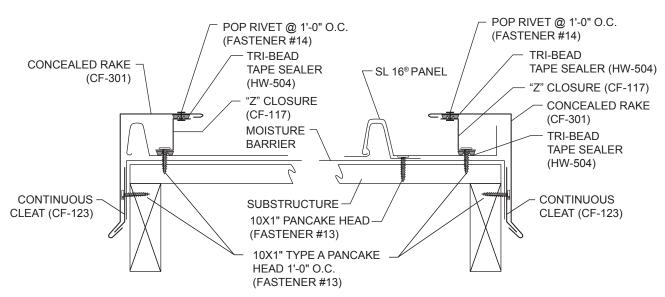
#### CROSS SECTION OF EAVE TRIM WITH DRIP EDGE



#### ISOMETRIC VIEW OF EAVE TRIM WITH DRIP EDGE

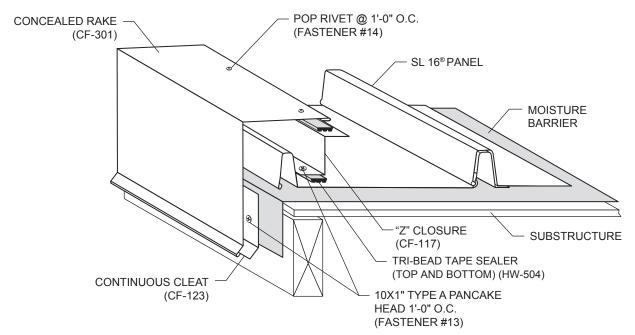
- 1. Where load conditions permit, install first panel fastener 12" from eave for best appearance. Consult a design professional or engineer to ensure compliance with local load and code requirements.
- 2. Attach offset cleat to substructure with 10 X 1" Type A Pancake Head Fastener at 1'-0" O.C.
- 3. Add 1½" to panel length for the panel hem. See Page S34 for Hemming Detail.
- 4. Fill ends of panels with urethane sealant.

### **RAKE**



#### **BEGINNING ON MODULE**

#### **FINISHING OFF MODULE**



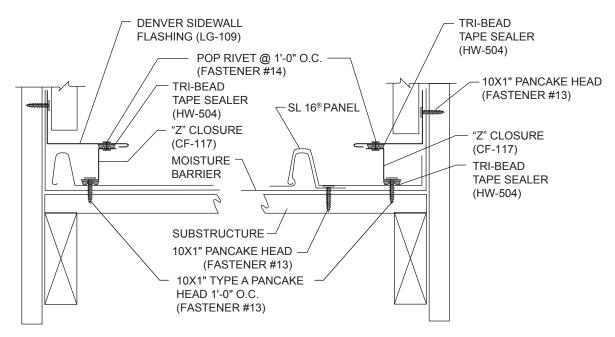
#### ISOMETRIC VIEW OF BEGINNING ON MODULE

#### NOTES:

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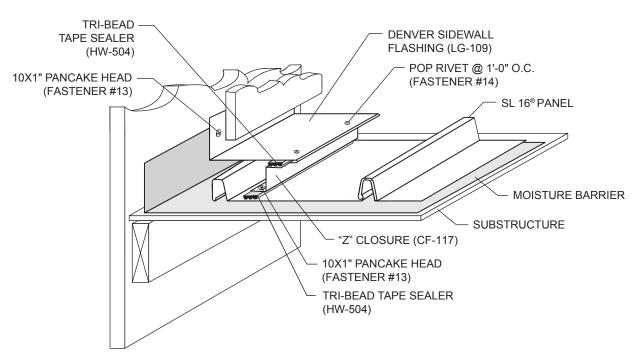
- Apply Tri-Bead Tape Sealer to bottom of Zee Closure and attach to substructure with 10x1" pancake head screws at 1'-0" on center.
- 2. Attach rake trim to Zee Closure with pop rivets at 1'-0" O.C.
- 3. When finishing off module, field bend a 1" leg up on panel before installing rake trim.

### SIDE WALL



#### **BEGINNING ON MODULE**

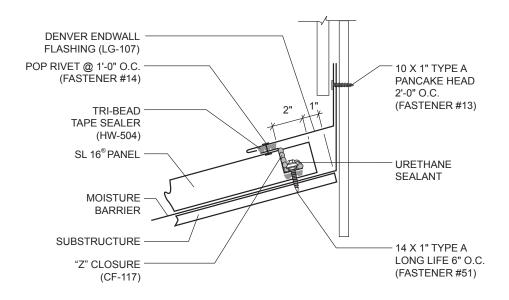
#### **FINISHING OFF MODULE**



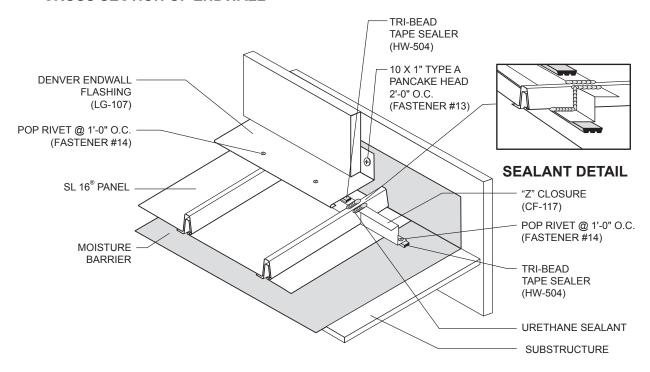
#### ISOMETRIC VIEW OF BEGINNING ON MODULE

- 1. Apply Tri-Bead Tape Sealer to bottom of Zee Closure and attach to substructure with 10x1" pancake head screws at 1'-0" on center.
- 2. Attach sidewall flashing to Zee Closure with pop rivets at 1'-0" O.C.
- 3. When finishing off module, field bend a 1" leg up on panel before installing sidewall flashing.

### **ENDWALL**



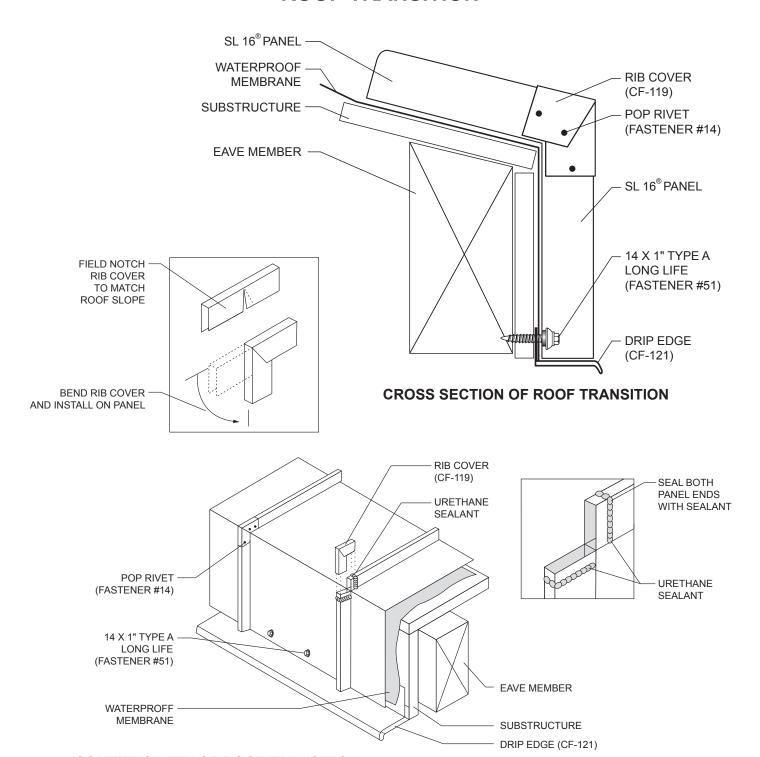
#### **CROSS SECTION OF ENDWALL**



#### ISOMETRIC VIEW OF ENDWALL

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

### **ROOF TRANSITION**

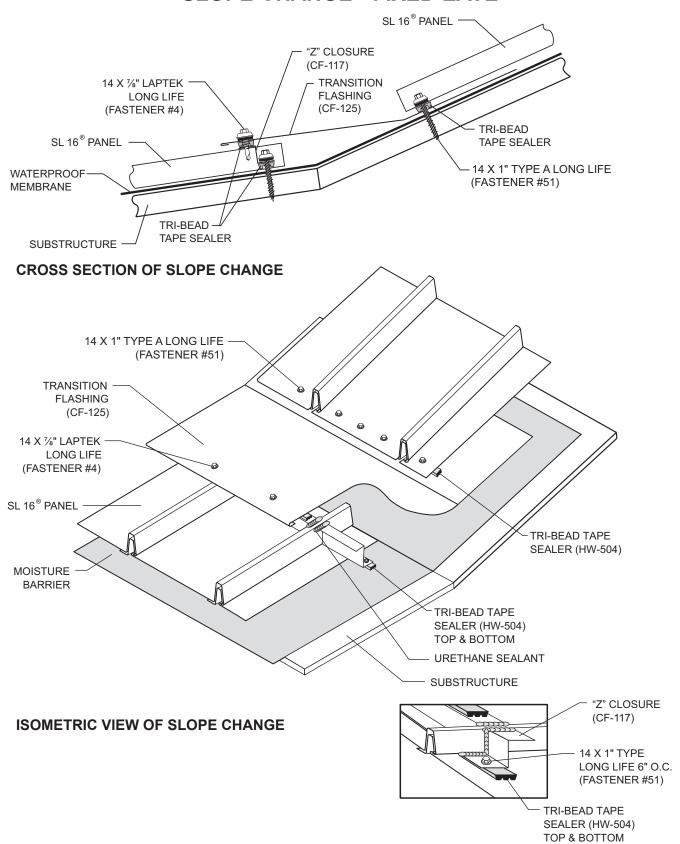


### ISOMETRIC VIEW OF ROOF TRANSITION

- 1. Lap Waterproof Membrane on outside of Drip Edge.
- 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.

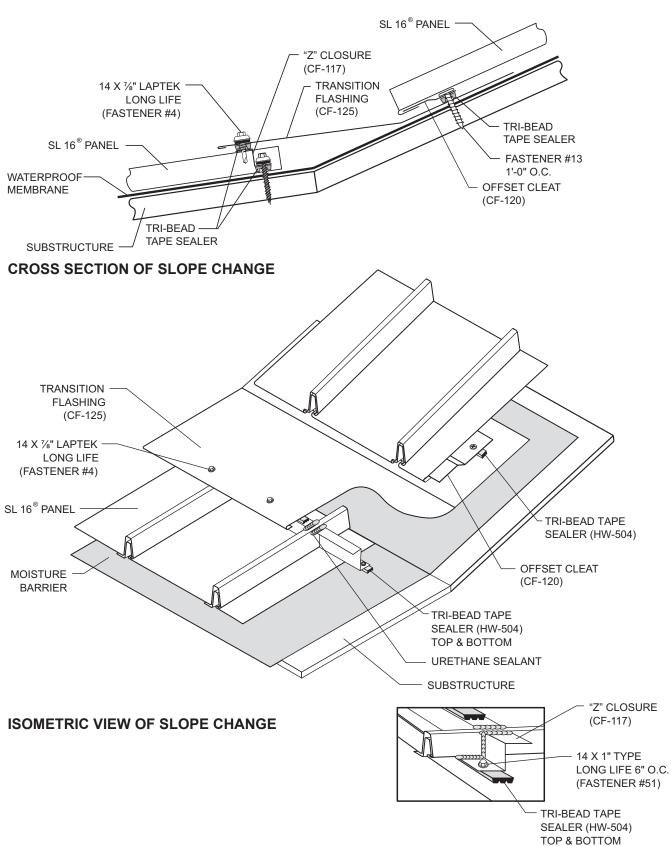
# SL 16® OTHER DETAILS

### **SLOPE CHANGE - FIXED EAVE**



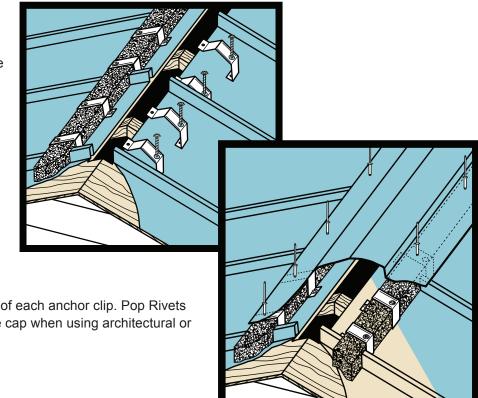
# **SL 16® OTHER DETAILS**

## **SLOPE CHANGE - FLOATING EAVE**



# **PROFILE VENT**

- Install your metal roofing panel according to manufacturer's instructions. Apply mastic above and below pre-drilled holes in the clip. Before installing ProleVent, insert #14A screw through the large down-slope access hole in top of the Ridge Cap Anchor Clip.
- 2. Lift the back end of clip. Slip ProfileVent under the clip. Push clip back down and insert another #14A screw in the up-slope hole.
- 3. Screw through rige cap and top of each anchor clip. Pop Rivets can be used to anchor the ridge cap when using architectural or standing seam panels.



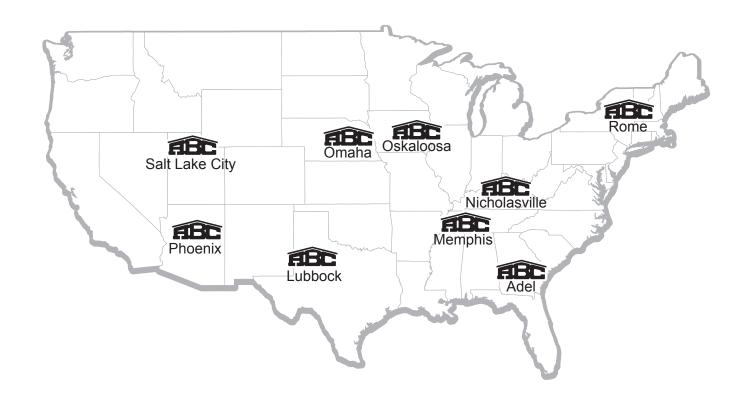
TECHNICAL DATA			
Passed	Net Free Area	1" nom. thickness	8.5 sq. in. per lin. ft. per slope
			(17 sq. in. per lin. fit. ridge)
Passed	Air Permeability	ASTM D737	>>760 cu. ft. per minute
Passed	Self-ignition Temp.	ASTM D1929	963°F
Passed	Cold Crack	Loren C115	Resistance to >-25°F
Passed	Snow Infiltration	CRL 5704	-0-
Passed	Tear Strength	ASTM D1294-86	Tear: Machine 25 p.p.i.
			Counter 25 p.p.i.
Passed	Tensile Strength	ASTM D2261-83	Tear: Machine 25 p.p.i.
			Counter 25 p.p.i.
Passed	Attic Dust Test	ASTM D1739-98	No Clogging, will not hold dust
Passed	Dust Exposure Test	ICBO AC132	
Passed	Loren	Compression	13%
		Recovery	100%
Passed	UV Stable	Chamber Test	No change to cover or materials
Passed	Abrasion Test	ASTM D1175	No damage to panel surface
Passed	100 MPH Wind Driven Rain Test		

NOTE 1: When ordering profile vent for panels that are striated use HW-116SL12 for SL-12® or HW-116SL16 for SL 16®

NOTE 2: Use appropriate length fasteners to affix Ridge Cap through Profile Vent into Deck. Use Tri-Bead Tape Sealer at Profile Vent/Deck interface. DO NOT USE POP RIVETS.

# **TERMS AND CONDITIONS OF SALE**

- 1. Parties All references to "ABC" or "Seller" refer to American Building Components, an unincorporated division of NCI Group, Inc. ABC and Buyer may sometimes collectively be referred to herein as the "parties."
- 2. Binding Effect The following terms and conditions (the "Terms and Conditions") shall apply to any and all sales between ABC and the Buyer and shall not be waived, modified or amended without the express written consent of the ABC's President or Executive Vice-President. Any and all laterns and/or conditions contained within any other purchase order, agreement or other document(s) issued by Buyer, whether conflicting with these Terms and Conditions hereof or not, shall be deemed null, void and of no force, effect or con-sequence. Any and all sales by ABC of any nature to Buyer shall be made under the provisions of this Agreement. Any document(s) 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 ABC'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 ABC 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 final approval and written acceptance by ABC.
- 3. Payments Payments due ABC under the terms of this sale and any other money due ABC by Buyer shall be paid to ABC at its Houston, Harris County, Texas office. Unless otherwise agreed in advance and in writing by ABC'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 ABC's Credit Department. If ABC grants Buyer credit terms, invoices paid ABC by Buyer within ten (10) days of date of invoice may, in ABC's sole discretion and judgment, 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 any discount. In the event ABC grants Buyer credit terms, said credit terms are subject to change at any time, for any reason, at the sole discretion of ABC 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. ABC's plants. ABC reserves the right to approve or disapprove the carrier on any and all C.O.D. shipments.
- 4. Lien/Release Buyer agrees that all payments with lien release language on the back of any check or other legal tender shall be sent only to ABC at its Houston, Harris County, Texas office. Buyer agrees that any payment(s) accepted through ABC's lock box with lien release language on the check does not bind ABC to the attempted release. ABC's agent(s) at the lock box who endorses and/or accepts checks for ABC is authorized only to accept unconditional payments, and no action by such agent(s) shall ever give rise to a claim of any alleged 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 ABC.
- 5. Interest/Costs of Collection Any and all payment(s) deferred after the due date as specified 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 proceeding(s), or if this Agreement is relevant to any other dispute(s) between the parties, in addition to any other amount(s) and dampe(s) recovered by ABC, Buyer agrees to pay ABC any and all attorneys' fees and costs incurred in any such hispute(s) and/or proceeding(s), together with interest, expenses, costs and any 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 initiation, copying and mailing expenses, lien fees, lost management time, inspection expenses and expert witnesses expenses in addition to taxable costs incurred in this incurred in litigation.
- 6. Security Interest Buyer has and does by these presents grant to ABC and ABC has and does hereby retain a security interest in all materials, parts and accessories (as well as all finished goods and/or the proceeds from the sale thereof) described in and being purchased by Buyer pursuant to this Agreement. In addition, Buyer has and does by these presents grant to ABC and ABC has and does hereby retain a security interest in all existing or subsequently arising accounts, accounts receivable and supporting obligations which may from time to time hereafter come into existence during the term of this security interest as a result of Buyer's sale of any of the said materials, parts, accessories or finished goods thereof to any third party. The security interest herein granted by Buyer and retained by ABC is to secure payment of the full purchase price and all other charges due and owing ABC by Buyer under the terms of this sale. This Agreement is governed by Section 2.101, et. seq. of the Susa 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.
- 7. 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, therefore, irrevocably consents to and authorizes the use of a commercial, consumer or any other credit report on or pertaining to the Buyer or undersigned individual(s) by ABC or its agents from time to time as may be needed in the credit evaluation process
- 8. Setoff?Recoupment In addition to any right of setoff or recoupment permitted by law, ABC shall have the right at any time to setoff or recoup any amount due and owing from Buyer to ABC or any of ABC's subsidiaries, divisions, or affiliates against any amount due and owing from ABC or any of its affiliates, divisions, or subsidiaries to Buyer.
- 9. Buyer Responsible for Accuracy of Order/Delivery Buyer hereby assumes sole and complete responsibility for the accuracy of any and all 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(s) at ABC's plant or shipment will be made by common carrier "Freight Collect" unless other arrangements are previously made and agreed to by the parties in writing.
- 10. Cancellation In the event of cancellation, Buyer agrees to pay ABC for any and all fees, expenses, costs and damages occasioned by the cancellation hereof
- Manufacturer's Warranties/Disclaimers Upon receipt of payment in full, ABC warrants is workmanship only against failure due to defective material or workmanship for a period of one (1) year from date of manufacture. In any event, however, Buyer's sole and exclusive remedy shall be limited to, in ABC's sole discretion and judgment, the replacement of defective part(s), F.O.B. ABC's plant or repair of defective part(s). Transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Buyer). Any such replacement or repair shall not include any materials not sold by ABC hereunder, and specifically excludes any obligation by ABC related to other property of the buyer or any property of third parties. UNDER NO CIRCUM-STANCES SHALL ABC BE RESPONSIBLE FOR OR LIABLE TO BUYER, OWNER(S) OR ANY OTHER THIRD PARTY, IN ANY RESPECT FOR, AND ABC HEREBY EXPRESSIX DISCLAIMS ANY AND ALL WARRANTIES OR REPRESENTATIONS PERTAINING TO, PRESENT OR FUTURE WATER LEAKS OR MOSTURE INTRUSION(S), DAMAGGE(S) TO THE BUILDING(S), OR ANY COMPONENTS TO RECOVERY DAMAGE CLAIMS RESULTING FROM THE ALLEGED EXISTENCE OR GROWTH OF MOLD, MILDEW AND/OR FUNGI, OR INTERUPTION IN THE USE OF THE BUILDING(S) OR PERSONAL INJURY OR PROPERTY DAMAGE CLAIMS RESULTING FROM THE ALLEGED EXISTENCE OR GROWTH OF MOLD, MILDEW AND/OR FUNGI, OR INTERUPTION IN THE USE OF THE BUILDING(S) OR PERSONAL INJURY OR PROPERTY DAMAGE CLAIMS RESULTING FROM THE ALLEGED EXISTENCE OR GROWTH OF MOLD, MILDEW AND/OR FUNGI, OR INTERUPTION IN THE USE OF THE BUILDING(S) OR PERSONAL INJURY OR PROPERTY DAMAGE CLAIMS RESULTING FROM THE ALLEGED EXISTENCE OR GROWTH OF MOLD, MILDEW AND/OR FUNGI, OR INTERUPTION IN THE USE OF THE BUILDING(S) OR PERSONAL INJURY OR PROPERTY DAMAGE CLAIMS ALL WARRANTIES OF THE BUILDING AND AND AND ACCOUNT OF THE EXTENT OF THE ADD AND AND ACCOUNT OF THE AUGUST OF THE EXTENT OF THE ADD AND ACCOUNT OF THE AUGUST OF THE EXTENT OF THE AUGUST OF THE EXTENT OF THE AUGUST OF THE AUGUST OF THE EXTENT OF THE AUGUST O
- 12. No Incidental, Special or Consequential Damages Notwithstanding any other agreement to the contrary, Buyer hereby agrees and stipulates that ABC shall not be liable for any incidental, special, compensatory, expectation, exemplary, punitive or consequential damages, which Buyer may suffer for any reason, including reasons attributable to ABC.
- 13. Acceptance of Change Orders Buyer may submit a written request for change orders to ABC adding, deleting or altering the quantity, description or specifications of material ordered. ABC, upon receipt of a written request for change order, shall price the requested change(s) and send to Buyer a price quotation thereof. ABC shall be under no obligation to accept or perform a request for change order unless Buyer unconditionally accepts in writing, without alteration or adjustment, the change order at the prices and terms quoted by ABC.
- 14. Effect of Sale/Buyer's Delays All products and materials sold hereunder to Buyer are final and cannot be returned to ABC for credit unless Buyer obtains prior written approval from ABC'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 sole and complete responsibility for any and all damages to the materials while in storage, including but not limited to damages caused by deterioration. A 25% restocking fee shall be charged on all returned materials if approved by ABC.
- 15. Force Majeure ABC 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 ABC be liable in any way to Buyer, building owner or any other party for water intrusion or the existence of moisture occurring prior to delivery of ABC's material or existing thereafter or any possible effects resulting therefrom (including fungi, mold or mildew), delays, failure in performance, or loss or damage due to force majeure conditions including, without limitation: fire; flood; epidemics; quarantiner, lightening; 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, fluel, products or transportation facilities; acts or omissions of supplicities; or any other causes beyond ABC's control, whether or not similar or relating to the foregoing. FURTHER, BUYER HEREBY AGREES AND STIPULATES THAT, IN THE EVENT ABC RECEIVES NOTIFICATION OF A PRICE INCREASE(S) FROM ANY OF ITS SUPPLIERS BETWEEN THE DATE OF THIS AGREEMENT AND THE DATE SCHEDULED FOR DELIVERY OF THE MATERIALS COVERED HEREBY, ABC RESERVES THE RIGHT, IN ITS SOLE DISCRETION AND JUDGMENT, TO INCREASE THE PURCHASE PRICE STATED HEREIN IN AN AMOUNT CORRESPONDING TO SAID PRICE INCREASE(S). Buyer agrees these limitations of ABC's liability are reasonable. Buyer further agrees est these limitations of ABC's liability are to be liberally construed in favor of ABC to eliminate any other liability of ABC other than repair or replacement of defective parts or products.
- 16. 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 shall be submitted exclusively 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 Houston, Harris County, Texas, (ii) Buyer irrevocably waives and prederal courts in Houston, 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 exclusive 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 the foregoing waivers are material inducements to the agreement of ABC to enter into a business relation-ship with Buyer, and that ABC has already relied on these waivers 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 WITHAT ANY SUCH RERESTING TO THE AGREEMENT AND FULL WAIVES ANY RIGHT TO TRIAL BY JURY TO THE EXTENT ANY SUCH RERESTING CONTENT RESPECT TO THIS AGREEMENT AND AGREES THAT THIS WAIVER OF RIGHT TO TRIAL BY JURY WOULD OTHERWISE ACCIOUS. EI
- 17. Indemnification BUYER ASSUMES ENTIRE RESPONSIBILITY AND LIABILITY FOR ANY AND ALL CLAIMS OR ACTIONS BASED ON OR ARISING OUT OF INJURIES, INCLUDING DEATH, TO PERSONS OR DAMAGE TO OR DESTRUCTION OF PROPERTY (WHETHER BELONGING TO BUYER, BUILDING OWNER AND/OR ANY THIRD PARTY), 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 BMPLOYEES, INCLUDING CLAIMS OR ACTIONS FOUNDED IN WHOLE OR IN PART UPON THE ALLEGED ACTS, OMISSIONS, NEGLIGENCE OR FAULT OF ABC, ABC'S REPRESENTATIVES, OR THE EMPLOYEES, AGENTS, INVITEES, OR LICENSEES THEREOF, BUYER FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARM-LESS ABC 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 ABC, ABC'S REPRESENTATIVE, AND THE EMPLOYEES, AGENTS, INVITEES AND LICENSEES THEREOF. THE PARTIES HEREBY WAIVE THEIR RESPECTIVE 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.
- 18. 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 accounts of this Agreement shall be construed and enforced as if in such jurisdiction accounts of this Agreement are intended by the parties as a final expression of their agreement containing all oral and written understandings, past and present, between the parties relative to the materials generally described in this Agreement.
- 19. Acceptance/Entire Agreement As a condition precedent to the effectiveness of an order, all orders are subject to approval and acceptance by ABC. This Agreement, along with any attached exhibits, constitutes the entire agreement of the parties herein.



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