

# TEXAS DEPARTMENT OF INSURANCE

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## PRODUCT EVALUATION RC-125

Effective June 1, 2005

*The following product has been evaluated for compliance with the wind loads specified in **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation 3 years after the effective date.*

*This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.*

*This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.*

**“U” Panel (24 gauge and 26 gauge)** manufactured by

**Central Texas Metal Rollforming, Inc.**  
**830 Sagebrush Drive**  
**Austin, Texas 78758**  
**(512) 452-1515**

is acceptable in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with the manufacturer’s installation instructions and this product evaluation.

## PRODUCT DESCRIPTION

Central Texas Metal Rollforming “U” roof panels are manufactured from 26 gauge coated steel conforming to ASTM A792, Grade E, with a minimum yield strength of 80,000 psi. and 24 gauge coated steel conforming to ASTM A792, Grade 40, with a minimum yield strength of 40,000 psi. The panels have an AZ 55 hot-dip aluminum zinc alloy coating conforming to ASTM A792.

## LIMITATIONS

**Design Wind Pressure:** For installation of 26 gauge panels to nominal 15/32 inch plywood panel decks, design wind pressure limitations are specified in Table 1. For installation of 24 gauge panels to nominal 15/32 inch plywood panel decks, design wind pressure limitations are specified in Table 2. For installation of 26 gauge panels to nominal 19/32 inch plywood panel decks, design wind pressure limitations are specified in Table 3. For installation of 24 gauge panels to nominal 19/32 inch plywood panel decks, design wind pressure limitations are specified in Table 4.

**Roof Deck Attachment:** The roof deck shall be secured to the roof framing to resist the required design pressures.

**Installation Over an Existing Roof Covering:** Installation over an existing roof covering is limited to a maximum of one existing layer of composition shingles, wood shingles or shakes, built-up roofing, or roll roofing. The thickness of the plywood deck shall comply with the requirements of this evaluation report. Note: Inspection of the existing roof deck must be made before installing the roof panels. The condition of the existing roof deck must be acceptable to receive the roof panels before the roof panel installation can proceed.

**Roof Slope:** The "U" panels shall not be installed on roofs with a roof slope less than  $\frac{1}{2}$ :12.

### INSTALLATION INSTRUCTIONS

**General Installation Requirements:**

The installation of the panels shall be limited to extending two inches beyond the plane of the fascia board.

#### Panel Installation Requirements

**Panels:** Panels shall be attached in accordance with Tables 1-4. Refer to Figures 1-11 following the tables for illustrations of the attachment details.

**Table 1**

Attachment of 26 gauge "U" Roof Panel to nominal  $\frac{15}{32}$  inch plywood panel deck:

Wind Pressure (psf)	Attachment of Roof Panel to 15/32" thick plywood deck
-34	Screw Pattern @ 5'-0" o.c.
-39	Screw Pattern @ 4'-6" o.c.
-46	Screw Pattern @ 4'-0" o.c.
-53	Screw Pattern @ 3'-6" o.c.
-62	Screw Pattern @ 3'-0" o.c.
-74	Screw Pattern @ 2'-6" o.c.
-90	Screw Pattern @ 2'-0" o.c.
-122	Screw Pattern @ 1'-6" o.c.
-133	Screw Pattern @ 1'-0" o.c.

**Table 2**

Attachment of 24 gauge "U" Roof Panel to nominal  $\frac{15}{32}$  inch plywood roof decking:

Wind Pressure (psf)	Attachment of Roof Panel to 15/32" thick plywood deck
-34	Screw Pattern @ 5'-0" o.c.
-39	Screw Pattern @ 4'-6" o.c.
-46	Screw Pattern @ 4'-0" o.c.
-53	Screw Pattern @ 3'-6" o.c.
-62	Screw Pattern @ 3'-0" o.c.
-74	Screw Pattern @ 2'-6" o.c.
-90	Screw Pattern @ 2'-0" o.c.
-122	Screw Pattern @ 1'-6" o.c.
-133	Screw Pattern @ 1'-0" o.c.

**Table 3**

Attachment of 26 gauge "U" Roof Panel to nominal  $\frac{19}{32}$  inch plywood roof decking:

Wind Pressure (psf)	Attachment of Roof Panel to 19/32" thick plywood deck
-34	Screw Pattern @ 5'-0" o.c.
-42	Screw Pattern @ 4'-6" o.c.
-54	Screw Pattern @ 4'-0" o.c.
-70	Screw Pattern @ 3'-6" o.c.
-90	Screw Pattern @ 3'-0" o.c.
-105	Screw Pattern @ 2'-6" o.c.
-133	Screw Pattern @ 2'-0" o.c.

**Table 4**

Attachment of 24 gauge "U" Roof Panel to nominal  $\frac{19}{32}$  inch plywood roof decking:

Wind Pressure (psf)	Attachment of Roof Panel to 19/32" thick plywood deck
-38	Screw Pattern @ 5'-0" o.c.
-45	Screw Pattern @ 4'-6" o.c.
-57	Screw Pattern @ 4'-0" o.c.
-70	Screw Pattern @ 3'-6" o.c.
-90	Screw Pattern @ 3'-0" o.c.
-105	Screw Pattern @ 2'-6" o.c.
-133	Screw Pattern @ 2'-0" o.c.

**Underlayment:** Minimum one layer of No. 30 (Type II) asphalt felt shall be used. The underlayment used shall comply with ASTM D 226, ASTM D 4869, or ASTM D 1970. The felt shall be installed with 6-inch side laps and 3-inch head laps. The underlayment shall be applied with corrosion resistant fasteners in accordance with manufacturer's installation instructions. Fasteners shall be applied along the overlaps not farther apart than 36 inches on center. Note: An optional radiant barrier may be installed beneath the panels in conjunction with the underlayment.

**Anchorage:**

**Tables 1-2:** The U panels shall be fastened to the plywood deck with minimum #10-16 x 1 inch HWH with an EPDM Sealing Washer Woodbinder screws, manufactured by Sealtite Building Fasteners. If the panels are laid directly over an existing roof covering, then #10-16 x 1 1/2 inch HWH with an EPDM Sealing Washer Woodbinder screws, manufactured by Sealtite Building Fasteners are required. The fasteners shall be long enough to penetrate completely through the wood structural panels with a minimum exposure of 1/4 inch below the underside of the wood structural panels.

**Tables 3-4:** The U panels shall be fastened to the plywood deck with minimum #10-16 x 1 1/2 inch HWH with an EPDM Sealing Washer Woodbinder screws, manufactured by Sealtite Building Fasteners. If the panels are laid directly over an existing roof covering, then the same fasteners may

be used. The fasteners shall be long enough to penetrate completely through the wood structural panels with a minimum exposure of  $\frac{1}{4}$  inch below the underside of the wood structural panels.

**Ridge Cap and Rake Trim:** The ridge cap and the rake trim shall be attached to the panels with #10-16 HWH Longlife self-tapping screws at 12-inches o.c. as indicated in the attachment detail figures. Elastic butyl tape (tape sealer) and ( $\frac{1}{4}$  ") #14 x 7/8 inch HWH self drilling screws with an EPDM integral washer, manufactured by Sealrite Fasteners, are required along the trim end laps spaced according to the fastener details.

**Eave Trim and Valley Trim:** The Eave trim and the valley trim shall be anchored to the substrate with the panels using a #10-16 HWH Longlife self-tapping screws as indicated in the attachment detail figures. Elastic butyl tape (tape sealer) and neoprene inside closures are required along the panel ends as shown on the eave and valley details.

**Alternative Fasteners:** Substitution of equivalent fasteners shall meet the following requirements:

#10-16 HWH Woodbinder screws with an integral cupped hex washer head assembled with an EPDM sealing washer, manufactured by Sealrite Building Fasteners.

- Ultimate withdrawal (pullout)  $\geq$  592 lbs. in  $\frac{19}{32}$  inch plywood
- Ultimate withdrawal (pullout)  $\geq$  400 lbs. in  $\frac{15}{32}$  inch plywood

$\frac{1}{4}$ "-14 x  $\frac{7}{8}$ " HWH with Oxysel II™ long life coating.

- Ultimate withdrawal (pullout) in minimum 26 Ga steel  $\geq$  256 lbs.
- Ultimate pullover through minimum 26 Ga. steel  $\geq$  782 lbs. (15 mm diameter bonded washer).
- Ultimate withdrawal (pullout) in minimum 24 Ga steel  $\geq$  325 lbs.
- Ultimate pullover through minimum 24 Ga. steel  $\geq$  1024 lbs. (15 mm diameter bonded washer).

**Note:** The manufacturer's installation instructions shall be on the job site during the installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.

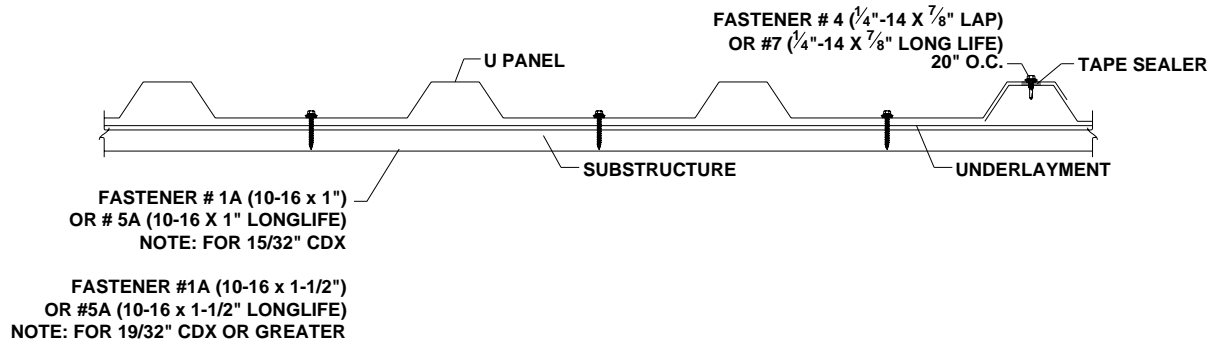


Figure 1: Fastener Pattern

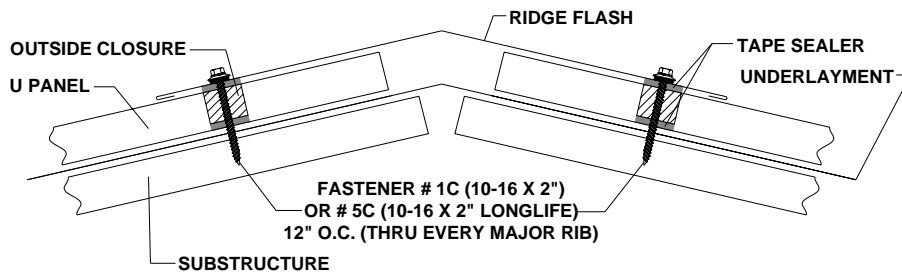


Figure 2: Typical Ridge Detail

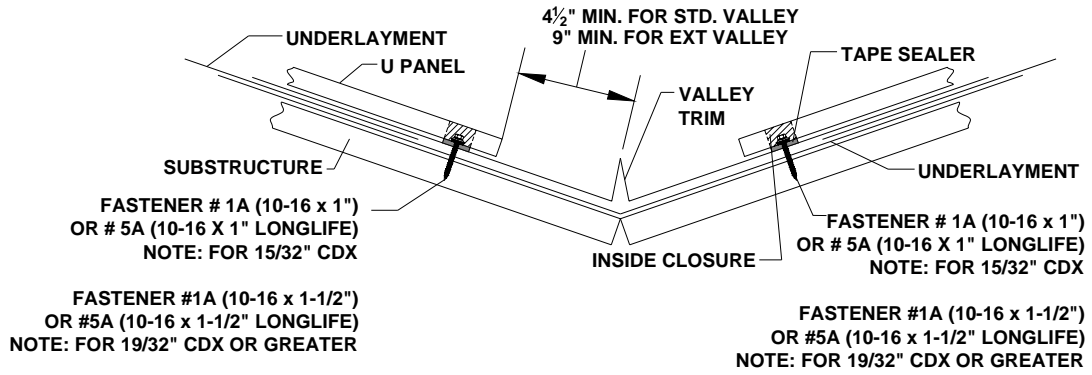


Figure 3: Typical Valley Detail

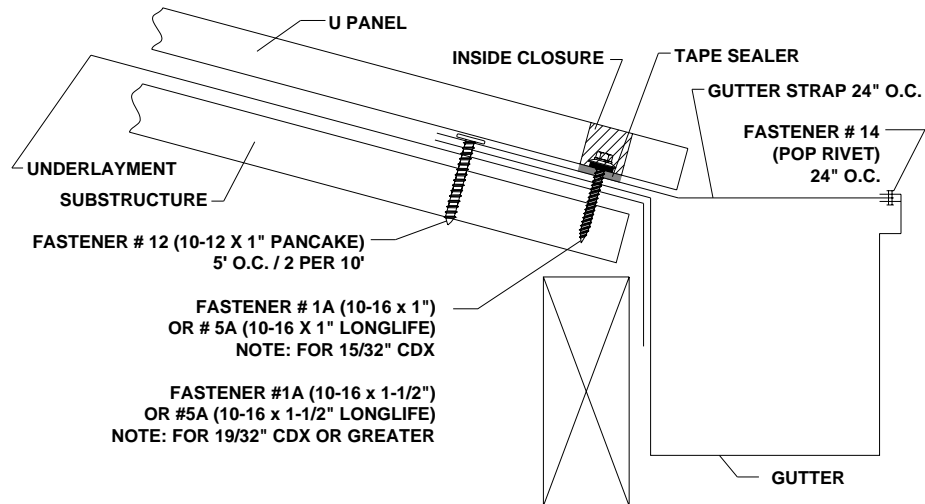


Figure 4: Typical Gutter Detail

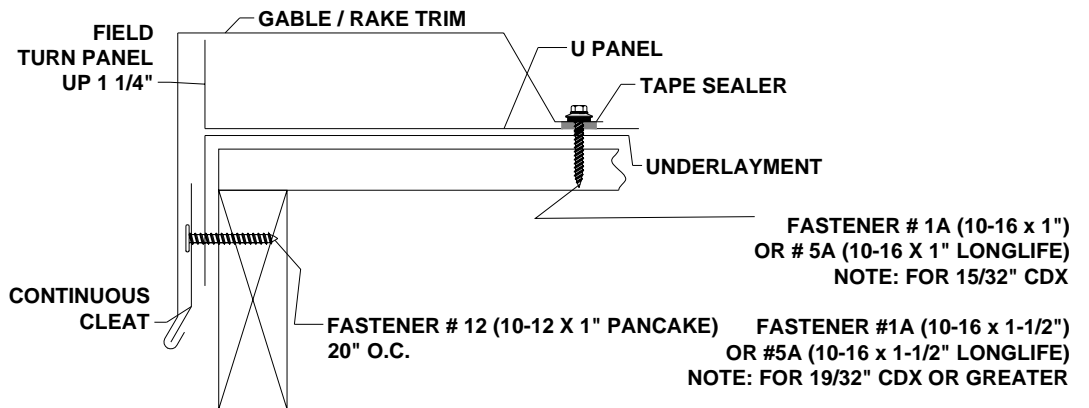
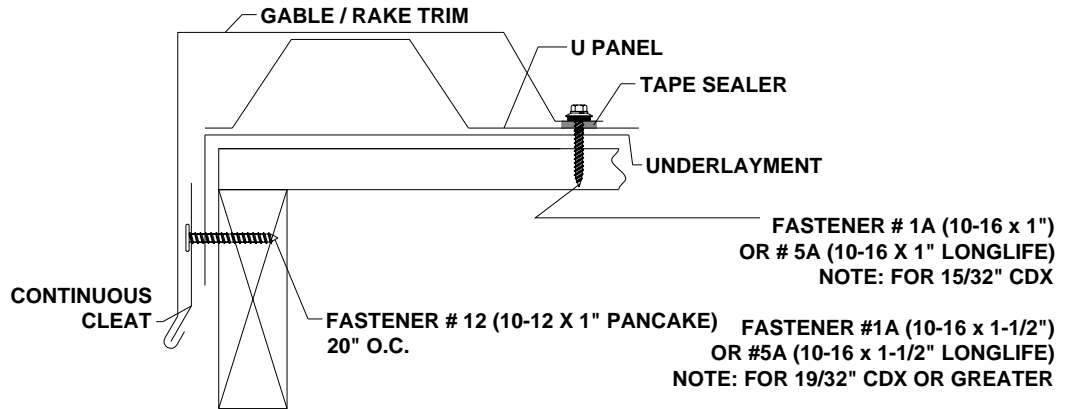


Figure 5: Typical Gable/Rake Details

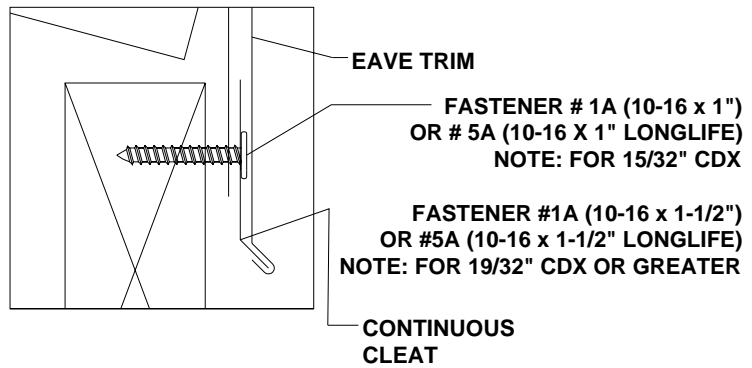
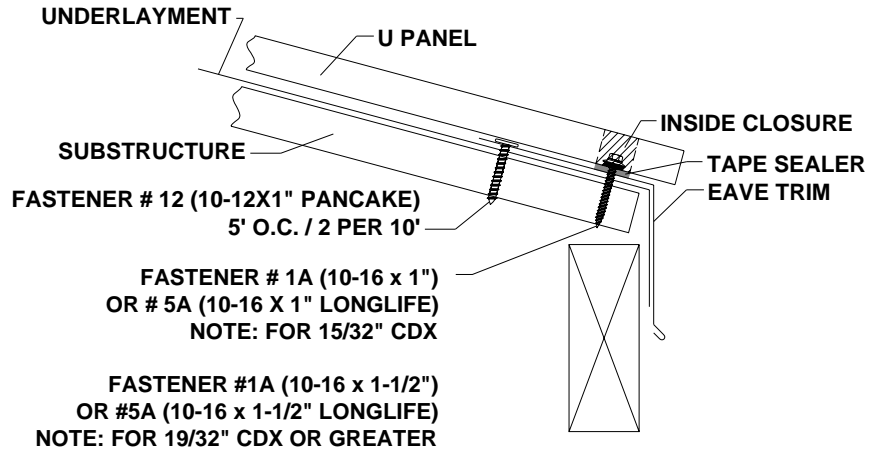


Figure 6: Typical Eave Details



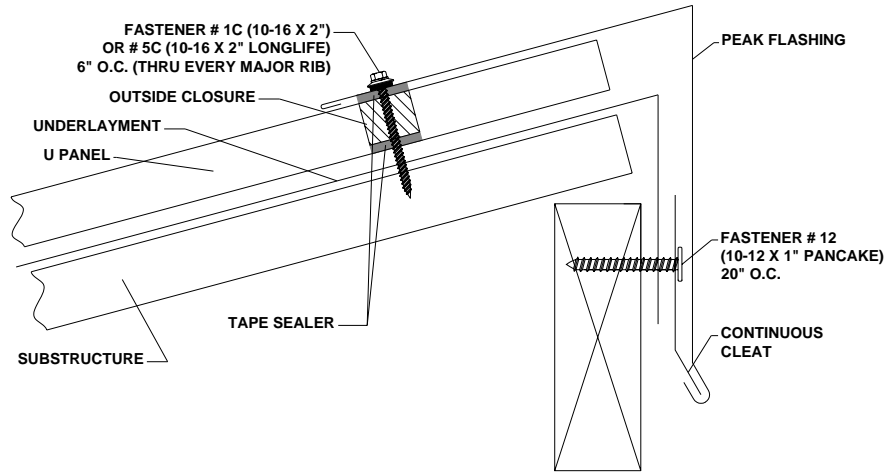


Figure 7: Typical Peak Flashing Detail

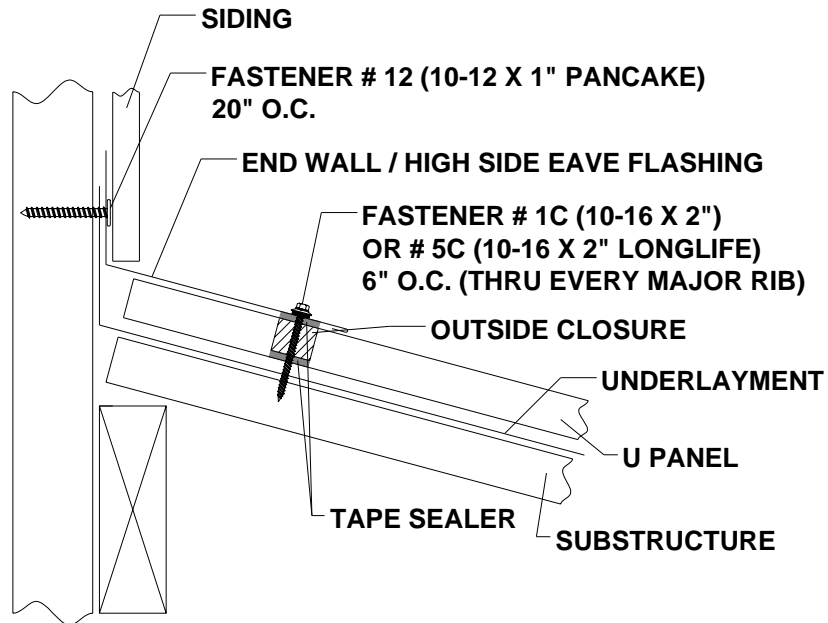


Figure 8: Typical Endwall Parapet Highside Eave Flashing Detail

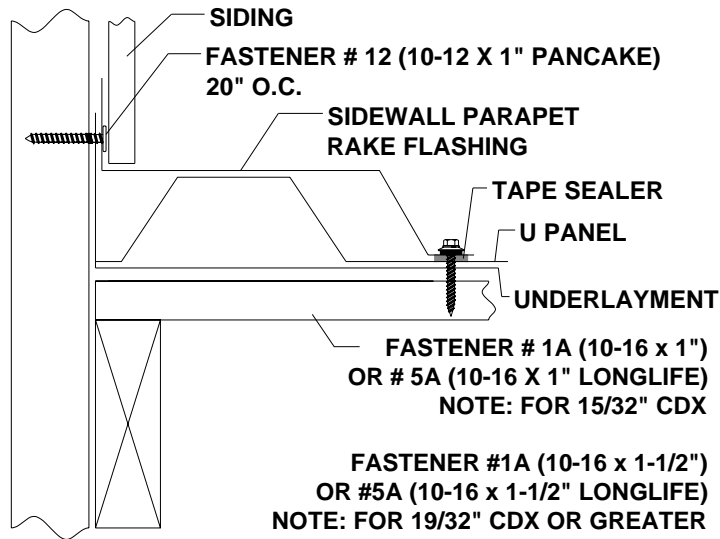


Figure 9: Typical Sidewall Parapet Rake Flashing Detail

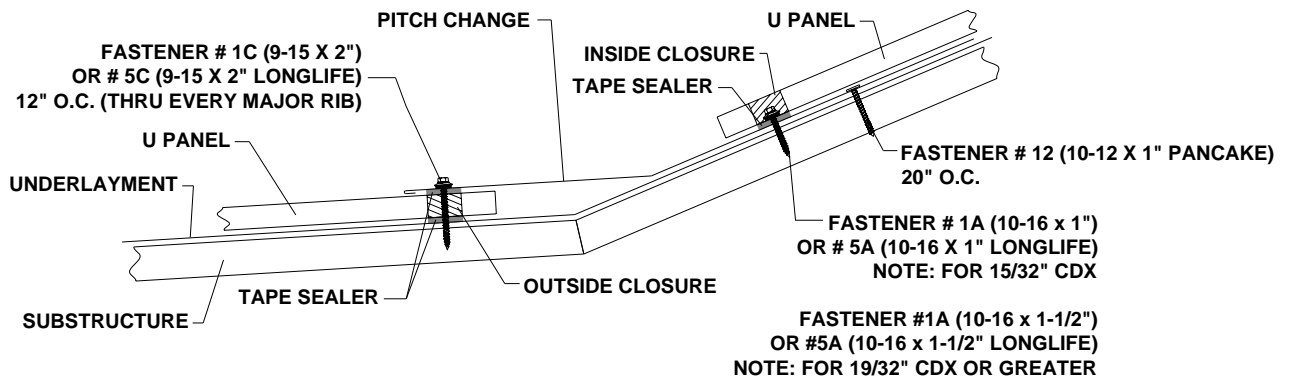


Figure 10: Typical Sidewall Parapet Rake Flashing Detail

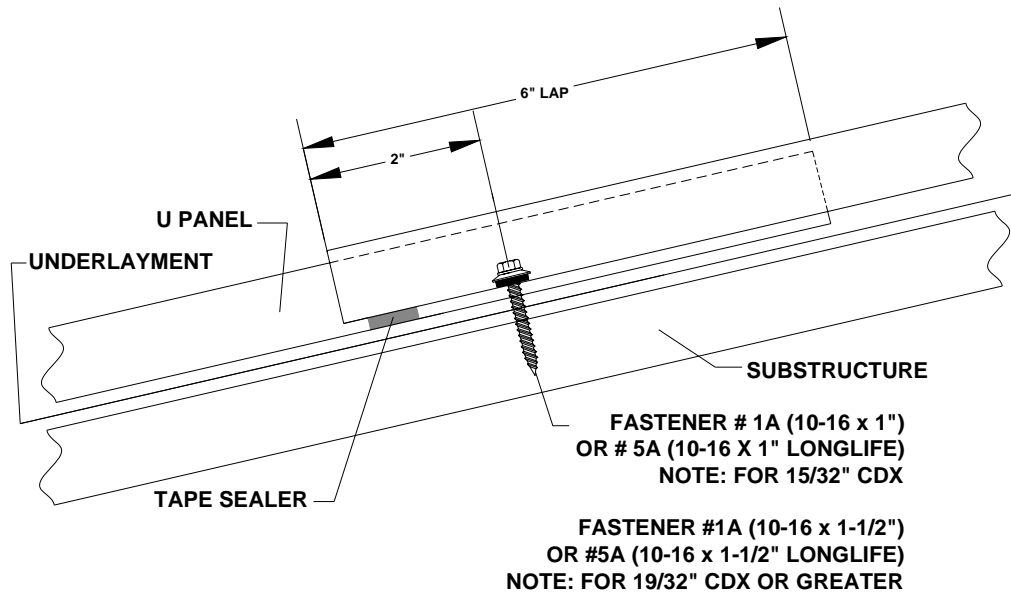


Figure 11: Typical Endlap Detail