R-Panel Install Guide
IMPORTANT NOTICE

This manual contains suggestions and guidelines on how to install panels and trim details. The contents of this manual include the guidelines that were in effect at the time this publication was originally printed. In an effort to keep pace with the ever-changing code environment, we retain the right to change specifications and/or designs at any time without incurring any obligations. To insure you have the latest information available, please inquire or visit our web site. Application and design details are for illustrative purposes only and may not be appropriate for all environmental conditions and/or building designs. Projects should be engineered and installed to conform to applicable building codes, regulations, and accepted industry practices.
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Introduction

The R-Panel system is an industry leader in strength and durability. This heavy-duty roof and wall panel features classic looks and is used primarily on commercial, industrial, and steel building applications. R-Panel was designed with taller ribs to increase strength and allow installation on lower slopes down to 1:12.

R-Panel is available in a range of paint colors and in both 26 and 24 gauge steel. It is also available in unpainted Galvalume®. Our paint system carries a 40 year warranty and Galvalume® a 25 year warranty.

The R-Panel system is available in 36” coverage. The panel has four major support ribs at 1.25” high that add rigidity and strength to the panel.

Below is a list of all of the R-Panel system approvals and certifications.

- Miami-Dade County, Florida Approved - See Approvals for Requirements
- Florida Building Code Approved - See Approvals for Requirements
- Texas Windstorm Certified
- UL 790 Fire Resistance Class A
- UL 2218 Impact Resistance Class 4
- UL 580 Uplift Resistance Class 90

<table>
<thead>
<tr>
<th>ALLOWABLE UNIFORM LOADS PER SQUARE FOOT - R and PBR Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Span (ft)</strong></td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>2.5</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

NOTES:
- All load data is based on three or more spans (TS). For more information regarding spans or section properties, please contact your rep.
- Allowable load based on stress is the smallest load due to bending, shear and combined bending and shear.
- Allowable load based on deflection limit cannot exceed allowable load based on stress.
- These loads are for panel strength. Frames, purlins, fasteners and all supports must be designed to resist all loads imposed on the panel.
- Allowable uplift loads based on stress have not been increased by 33.33% for wind uplift.
- Allowable loads for deflection are based on deflection limitation of span/180.
- For roof panels, self weight of the panel has to be deducted from the allowable inward load to arrive at the actual ‘live load’ carrying capacity of the panel.

It is the users responsibility to verify all applicable code requirements for the area, check all measurements, and determine suitability of product for job. Implied warranties of merchantability and fitness for particular purpose are disclaimed.
Panel Installation Guide

Storage

If metal is not to be installed immediately, store inside in a well ventilated, dry location. Condensation or other moisture can form between the sheets during storage causing water stains or white rust which detracts from the appearance of the product and may affect the product’s useful life. Trapped moisture between sheets of painted metal can cause white rust to form underneath the paint. This can cause the paint to flake off the panel immediately or several years later. To prevent white rust and staining, break the shipping bands on the material. Store the material on end or on an incline of at least 8” with a supporting board underneath to prevent sagging. Fan the sheets slightly at the bottom to allow for air circulation. Keep the sheets off of the ground with an insulator such as wood. Any outdoor storage is at the customer’s own risk. If outdoor storage cannot be avoided, protect the metal using a canvas cover or waterproof paper. Never cover the metal with plastic as this will cause condensation to form.

General Installation Information

Insure that the structure is square and true before beginning panel installation. If the structure is not square, the panels will not properly seal at the side laps. Green or damp lumber is not recommended. Moisture released from the damp lumber may damage the metal panels. Remove any loose metal shavings left on roof surface immediately to prevent corrosion. Keep roof free of debris that could trap moisture on the metal, causing corrosion. The minimum pitch for roofing applications is 1:12.

Safety Precautions

Always wear heavy gloves when working with steel panels to avoid cuts from sharp edges. When power cutting or drilling steel panels, always wear safety glasses to prevent eye injury from flying metal fragments. If you must walk on a metal roof, take great care. Metal panels can become slippery, so always wear shoes with non-slip soles. Avoid working on metal roofs during wet conditions when the panels can become extremely slippery. Walking or standing on a metal roof which does not have a plywood or other deck beneath it is not recommended. However, if you must do so, always walk on the purlins, never between.

Fastening

If you wish to pre-drill fastener holes, use a cover sheet to prevent hot metal shavings from sticking to panels. It is recommended that you cut panels upside down using a nibbler. For best results, use #14 x 7/8” Lap Screws at panel overlaps. For installation into a steel frame, use #12 x 1” (minimum) Self-Drilling Screws. For installation into a wood frame, use #10 x 1” (minimum) Wood Screws. Position fasteners as shown in Figure 1.

Figure 1

![Fastening Patterns](image_url)
Roofing Installation Options

Option 1
- Install Metal Directly to Wood/Metal Frame
  - Use Maximum 2’ Purlin Spacing
  - Install Metal
  - *DO NOT USE THIS OPTION FOR HEATED SPACES

Option 2
- Install Metal on Solid Deck
  - Lay Plywood Deck
  - Apply Synthetic Underlayment or other Moisture Barrier Protection
  - Install Metal

Option 3
- Install Metal Over Existing Shingles
  - Apply Synthetic Underlayment or other Moisture Barrier Protection
  - Install Metal

Allow an overhang a minimum of 1” at the eave to provide for a drip edge. Use inside closure at eave to prevent water infiltration, insect or bird infestation at openings. To protect against uplifting winds and to provide a finished appearance, apply rake trim or other standard gable trim. Slopes of less than 1:12 aren’t recommended. For slopes less than 3:12, apply butyl tape as shown in Figure #4 along the top of all lap ribs. For best results, apply a 7/8” lap screw into the crown of the rib to secure the side lap.

End lap panels 6”
Install panels in the sequence shown in Figure #5.

Figure #4 - Rib Overlap

- R. PANEL OVERLAP
- PBR PANEL OVERLAP

Figure #5
Using two tape measures, locate point C by hooking one tape to a nail at point A and the second tape to a nail at point B. Extend the tapes until they cross and meet at 4’ on the first tape and 5’ on the second tape and place a temporary nail where 4’ and 5’ meet. 

...the 4’ and 5’ measurements are the 4 and 5 sides of the 3...4...5...triangle.

Establish a line from point A to point B by temporarily marking each point with a nail. The line must be parallel to the eave and in this example 3’ long (this is the 3 side of the 3...4...5...Triangle).

Note:
For larger 3...4...5...Triangles multiple each side of the triangle by the desired increase in size. For example, if the roof panels are 25’ from eave to ridge, multiply each side by a factor of 6 for an 18’...24’...30’...Triangle. Obviously, the closer the triangle vertical leg length is to matching the panel length, the greater the squaring accuracy.

Hook a chalk line to point A and pull it in line with point C and mark a chalk line on the roof deck. This will be the square reference line for the panel installation.
4. Mark chalk lines parallel with the square reference line out ahead of panel installation so that panel square can be checked as the panels are installed. Suggested line spacing is one foot beyond 3 panels wide or about 10 feet.

5. Check for square by measuring the distance from the installed panel edge to the chalk line at both the eave and ridge. If the measurements match, then the installed panels are square, if not, adjustments must be made to bring the panels back into square.
## Accessories

- **Butyl Tape**
  - 3/8" (3/8" x 3/32" x 45")
  - 7/8" (7/8" x 3/16" x 40 or 25 depending on plant)

- **Double Bead Butyl Tape**
  - 1.5" x 1/2" x 40 or 25 depending on plant

- **Profile Vent Ridge Vent**
  - 1.25" x 3" x 25"

- **Flex-O-Vent Ridge Vent Material**
  - 1.5" x 3" x 10'

- **Pipe Boot**
  - Various sizes, heat treated & retrofit also available

- **Tube Sealant**
  - (Various sizes, heat treated & retrofit also available)

- **Outside Closure Strip**

- **Inside Closure Strip**

- **XL Emseal Expanding Hip/Valley Closure**
  - 1.5" x 1" x 13.2"

- **Synthetic Roof Underlayment**

- **LP2 Vented Ridge Closure**
  - 1.25" x 3" x 25"

- **1" - 1.25" - 2" - 2.5" Hex Head Wood Screw**
  - Metal-to-Wood

- **1" - 1.25" - 1.5" Hex Head Self Driller**
  - Metal-to-Metal

- **1" - 1.5" - 2" Pancake Head Wood Screw**

- **1" - 1.5" - 2" Pancake Head Self Driller**

- **Pop Rivet (Stainless)**
  - 1/8" x 3/16"

- **#7/8" Hex Head Lap Stitch Screw**
  - Metal-to-Metal
## Typical Trim Profiles (size/design vary by plant)

<table>
<thead>
<tr>
<th>Ridge</th>
<th>Rake</th>
<th>Eave</th>
<th>Valley</th>
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<tbody>
<tr>
<td><img src="image1" alt="Ridge Diagram" /></td>
<td><img src="image2" alt="Rake Diagram" /></td>
<td><img src="image3" alt="Eave Diagram" /></td>
<td><img src="image4" alt="Valley Diagram" /></td>
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<table>
<thead>
<tr>
<th>Endwall</th>
<th>Sidewall</th>
<th>Pitch Break</th>
<th>Gambrel</th>
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<tbody>
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<td><img src="image5" alt="Endwall Diagram" /></td>
<td><img src="image6" alt="Sidewall Diagram" /></td>
<td><img src="image7" alt="Pitch Break Diagram" /></td>
<td><img src="image8" alt="Gambrel Diagram" /></td>
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<table>
<thead>
<tr>
<th>High Side Peak</th>
<th>Fascia / Angle</th>
<th>Outside Corner</th>
<th>Inside Corner</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image9" alt="High Side Peak Diagram" /></td>
<td><img src="image10" alt="Fascia / Angle Diagram" /></td>
<td><img src="image11" alt="Outside Corner Diagram" /></td>
<td><img src="image12" alt="Inside Corner Diagram" /></td>
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<table>
<thead>
<tr>
<th>J-Channel</th>
<th>Rat Guard</th>
<th>Drip Cap</th>
<th>Flat Sheet</th>
</tr>
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<tbody>
<tr>
<td><img src="image13" alt="J-Channel Diagram" /></td>
<td><img src="image14" alt="Rat Guard Diagram" /></td>
<td><img src="image15" alt="Drip Cap Diagram" /></td>
<td><img src="image16" alt="Flat Sheet Diagram" /></td>
</tr>
</tbody>
</table>
Install the roof substrate according to local building code requirements.

Install moisture barrier according to the manufacture’s recommended procedure and in compliance with local building code requirements.

Install the Fascia trim and butt ends.

Fasten trim with Pancake Screws 2’ apart along the length of the trim.

Fasten trim with Wood Screws spaced 2’ apart along the length of the trim.

Numbers indicate suggested trim assembly sequence.
Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.

Fasten trim with Pancake Screws spaced 12” apart along the length of the trim.

Install continuous along Eave at 1” up from face.

Install the Mini Eave and lap ends.

Install the roof substrate according to local building code requirements.

Install the panel and overhang the panel a minimum of 1” beyond the Mini Eave edge. See panel squaring method in this manual.

Apply optional Tube Sealant to the top side of the Inside Closure.

Place the Inside Closure over the top of the optional Butyl Tape.

Fasten wood screw at the Inside Closure on each side of major ribs.
Install moisture barrier according to the manufacturer's recommended procedure and in compliance with local building code requirements.

Fasten trim with Pancake Screws spaced 12" apart along the length of the trim.

Install continuous along eave at 1" up from face.

Install the Eave Trim and lap ends.

Install the roof substrate according to local building code requirements.

Install the panel and overhang the panel a minimum of 1" beyond the Eave Trim edge. See panel squaring method in this manual.

Apply optional Tube Sealant to the top side of the Inside Closure.

Place the Inside Closure over the top of the optional Butyl Tape.

Fasten wood screw at the Inside Closure on each side of major ribs.
Butyl Tape
Apply Butyl Tape along the length of the panel.

Panel
Install the panel and overhang the panel a minimum of 1” beyond the Eave Trim edge. See panel squaring method in this manual.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Moisture Barrier
Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.

Rake Trim
Install the Rake trim and overlap the ends 4”. See lapping diagram in this manual.

Trim Wood Screw
Fasten trim with Wood Screws spaced 12” apart along the length of the trim.

Trim Wood Screw
Fasten trim with Wood Screws spaced 12” apart along the length of the trim.
Preformed Valley

*Numbers indicate suggested trim assembly sequence.*

1. **Roof Substrate**
   - Install the roof substrate according to local building code requirements.

2. **Moisture Barrier**
   - Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.

3. **Preformed Valley Trim**
   - Install the Valley trim and overlap the ends 4”.
   - See lapping diagram in this manual.

4. **Trim Pancake Screw**
   - Fasten trim with Pancake Screws spaced 12” apart along the length of the trim. See lapping diagram fastener pattern in this manual.

5. **Panel**
   - Install the panel a minimum of 3” up from the water diverter at the bottom of the Valley and minimum of 3” down from the top of the Valley. See panel squaring method in this manual.

6. **Tube Sealant**
   - Apply Optional Tube Sealant to the top side of the Closure.

7. **Expanding Closure**
   - Place Expanding Closure, parallel to each side of the Valley center water diverter. Closure should be up from the panel end about 1”. See panel minimum set back above.

8. **Panel Wood Screw**

**Notes:**
1. See Valley Lapping - Page 25
2. See Valley Cutting - Page 26
Panel
Install the panel up 1" the transition bend. See panel squaring method in this manual.

Trim Pancake Screw
Fasten trim with Pancake Screws spaced 12" apart along the length of the trim.

Inside Closure
Place the Inside Closure over the top of the Butyl Tape. The closure should be about 1" up from the panel end.

Optional Tube Sealant
Apply Tube Sealant to the top side of the Inside Closure.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Transition Trim
Place the Transition Flashing Trim over the Outside Closure.

Trim Wood Screw
Fasten trim with Wood Screws spaced 18" apart along the length of the trim, through the rib. See lapping diagram.

Optional Butyl Tape
Apply optional Butyl tape across the width of the panel.

Optional Tube Sealant
Apply optional Tube Sealant to the top side of the Outside Closure.

Outside Closure
Place the Outside Closure over the top of the optional Butyl Tape.

Optional Butyl Tape
Apply optional Butyl Tape across the width of the panel.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Panel
Install the panel and overhang the panel a minimum of 1" beyond the eave edge. See panel squaring method in this manual.

Moisture Barrier
Install moisture barrier according to the manufacture’s recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.

Numbers indicate suggested trim assembly sequence.
Gambrel

Numbers indicate suggested trim assembly sequence.

Panel
Install the panel up 1” the transition bend. See panel squaring method in this manual.

Trim Pancake Screw
Fasten trim with Pancake Screws spaced 12” apart along the length of the trim.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Optional Tube Sealant
Apply optional Tube Sealant to the top side of the Inside Closure.

Gambrel Trim
Place the Gambrel Flashing Trim over the Outside Closure.

Opt. Tube Sealant
Apply optional Tube Sealant to the top side of the Inside Closure.

Trim Wood Screw
Fasten trim with Wood Screws spaced 18” apart along the length of the trim, through the rib.

Panel
Install the panel and overhang the panel a minimum of 1” beyond the eave edge.

Inside Closure
Place the Inside Closure over the top of the Butyl Tape up about 1” from the panel end.

Opt. Butyl Tape
Apply optional Butyl Tape across the width of the panel.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Outside Closure
Place the Outside Closure over the top of the Butyl Tape.

Opt. Butyl Tape
Apply opt. Butyl Tape across the width of the panel.

Moisture Barrier
Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.
Trim Wood Screw
Fasten trim with Wood Screws spaced 18” apart along the length of the trim, through the rib. See lapping diagram.

Opt. Tube Sealant
Apply optional Tube Sealant to the top side of the Expanding Closure.

Hip Trim
Place the Hip Trim over the Expanding Closure.

Expanding Closure
Place Expanding Closure parallel to each side of the hip center line so that hip fastener penetrates the center of the closure. Closure should be up from the panel end about 1”.

Opt. Butyl Tape
Apply optional Butyl Tape across width of panel.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Panel
Install the panel and overhang the panel a minimum of 1” beyond the eave edge. See panel squaring method in this manual.

Moisture Barrier
Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.

Numbers indicate suggested trim assembly sequence.
Trim Wood Screw
Fasten trim with Wood Screws spaced 18” apart along the length of the trim, through the rib. See lapping diagram.

Opt. Tube Sealant
Apply optional Tube Sealant to the top side of the Outside Closure.

Ridge Trim
Place the Ridge Trim over the Outside Closure.

Outside Closure
Place the Outside Closure over the top of the Butyl Tape.

Opt. Tape Sealant
Apply optional Butyl Tape across the width of the panel.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Panel
Install the panel and overhang the panel a minimum of 1” beyond the eave edge. See panel squaring method in this manual.

Moisture Barrier
Install moisture barrier according to the manufacturer's recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.
Vented Ridge

Numbers indicate suggested trim assembly sequence.

Trim Wood Screw
Fasten trim with Wood Screws spaced 18" apart along the length of the trim, through the rib. See lapping diagram fastener pattern in this manual.

Ridge Trim
Place the Ridge Trim over the Outside Closure.

Vent Material
Apply ridge vent material along the outside edge of the Ridge Cap Trim.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Panel
Install the panel and overhang the panel a minimum of 1" beyond the eave edge. See panel squaring method in this manual.

Moisture Barrier
Install moisture barrier according to the manufacture's recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.
High Side Peak

Numbers indicate suggested trim assembly sequence.

Trim Wood Screw
Fasten trim with Wood Screws spaced 2’ apart along the length of the trim. See lapping diagram.

High Side Peak Trim
Place the High Side Peak Trim over the Outside Closure.

Trim Wood Screw
Fasten trim with Wood Screws spaced 18” apart along the length of the trim, through the rib. See lapping diagram.

Opt. Tube Sealant
Apply optional Tube Sealant to the top side of the Inside Closure.

Outside Closure
Place the Outside Closure over the tip of the optional Butyl Tape.

Panel
Install the panel and overhang the panel a minimum of 1” beyond the eave edge. See panel squaring method in this manual.

Opt. Butyl Tape
Apply optional Butyl Tape across the width of the panel.

Panel Wood Screw
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

Moisture Barrier
Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.

Roof Substrate
Install the roof substrate according to local building code requirements.
Side Wall

Numbers indicate suggested trim assembly sequence.

**Tube Sealant**
Apply Tube Sealant continuously along the Counter Flashing and generously filling the space between the flashing and the wall. Round or slope the Sealant top so that water will run off.

**Trim Wood Screw**
Fasten trim with Wood Screws spaced 2’ apart along the length of the trim. If wall material is not wood, fasteners will be by others.

**Counter Flashing**
Position the Counter Flashing above the Side Wall Trim as shown. Some applications may not need counter flashing.

**Side Wall Trim**
Place the Side Wall Trim over the Butyl tape and overlap the ends 4”.
See lapping diagram in this manual.

**Roof Substrate**
Install the roof substrate according to local building code requirements.

**Butyl Tape**
Apply Butyl Tape along the length of the panel.

**Trim Wood Screw**
Fasten trim with Wood Screws spaced 2’ apart along the length of the trim. See lapping diagram.

**Panel Wood Screw**
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.

**Panel**
Install the panel and overhang the panel a minimum of 1” beyond the eave edge. See panel squaring method in this manual.

**Moisture Barrier**
Install moisture barrier according to the manufacturer’s recommended procedure and in compliance with local building code requirements.
End Wall

Numbers indicate suggested trim assembly sequence.

**Tube Sealant**
Apply Tube Sealant continuously along the Counter Flashing and generously filling the space between the flashing and the wall. Round or slope the Sealant top so that water will run off.

**Trim Wood Screw**
Fasten trim with Wood Screws spaced 18” apart along the length of the trim. If wall material is not wood, fasteners will be by others.

**Counter Flashing**
Position the Counter Flashing above the Side Wall Trim as shown. Some applications may not need counter flashing.

**End Wall Trim**
Place the End Wall Trim over the Butyl tape and overlap the ends 4”. See lapping diagram in this manual.

**Outside Closure**
Place the Outside Closure over the top of the Butyl Tape.

**Tube Sealant**
Apply Tube Sealant along the length of the Outside Closure.

**Trim Wood Screw**
Fasten trim with Wood Screws spaced 18” apart along the length of the trim, through the rib. See lapping diagram.

**Panel**
Install the panel and overhang the panel a minimum of 1” beyond the eave edge. See panel squaring method in this manual.

**Moisture Barrier**
Install moisture barrier according to the manufacturer’s recommended procedure.

**Roof Substrate**
Install the roof substrate according to local building code requirements.

**Butyl Tape**
Apply Butyl Tape along the length of the panel.

**Panel Wood Screw**
Fasten panels to the roof substrate using Wood Screws spaced according to the recommended fastening pattern and frequency, and in compliance with local building codes.
**Valley Lapping**

After cutting notches and applying Tube Sealant, slide the up slope valley into the hem groove (if applicable) while lapping over the top of the low slope valley 4"...
Valley Cutting at Eave

Valley starter cutting diagram with water diverter tabs.

1. Cut along dashed lines

2. Bend line, bend left tab down 90°
3. Bend line, bend right tab down 90°
Cut pipe flashing along the pipe diameter marking.

Apply tube sealant to the underside of the pipe flashing.

Slide pipe flashing down over the pipe.

Press the pipe flashing into contours of panel configuration and fasten to the panel with wood screws or stitch screws. Apply additional sealant around base if desired.
CURB DETAIL (Chimneys & Skylights)

STEP 1
Install panels around curb.

STEP 2
Apply End Wall and Side Wall flashings.

Note: Curb framing and underlayment not shown for clarity. Curb must be properly wrapped with approved membrane underlayment prior to installation of panels/flashings.
CURB DETAIL (Chimneys & Skylights) (cont.)

STEP 3
Install low wall flashing.

STEP 4
Install Counter Flashing.
CURB DETAIL (Chimneys & Skylights) (cont.)

**STEP 5**
Install foam closure and prepare for upper panel install.

**STEP 6**
Fasten upper panel over Low Wall flashing.
PANEL ENDLAP DETAIL (Short Run)

Use when total panel run is less than 35 feet

- **Upper Panel**
  - Lap over lower panel minimum 6"

- **Panel Wood Screw**
  - Install both sides of each major rib location
  - Locate at row of tape sealant

- **Tape Seaiant**
  - Install 3" up from lap

- **Tube Sealant Bead**
  - Install 1-1/2" up from lap

- **Lower Panel**
  - Provide for minimum 6" lap

Purlin location when over open framing

1-1/2" 1-1/2"
6" MIN. LAP
12" MIN. LAP FOR SLOPES LESS THAN 4:12

PANEL ENDLAP DETAIL (Long Run)

Use when total panel run is 35 feet or greater

- **Upper Panel**
  - Lap over lower panel minimum 6"

- **Panel Wood Screw**
  - Install both sides of each major rib location.

- **1" Pancake Head Wood Screw**
  - Install in lower panel at both sides of each major rib location

- **Tube Sealant Bead**
  - Install 2 rows at 1-1/2" and 3" up from lap

- **Lower Panel**
  - Provide for minimum 6" lap

Purlin location when over open framing

1-1/2" 1-1/2"
6" MIN. LAP
12" MIN. LAP FOR SLOPES LESS THAN 4:12