Standard Details for Metal Roofing & Siding

Post Frame and Residential Structures
Disclaimer
The details and written instructions described in this manual are suggested installation methods to ensure a quality application of our products, and should be considered as a guideline only. FABRAL recognizes that installation techniques can vary based upon builder and geographical preferences, and that there are other acceptable ways to install our products.
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**Due to Product improvements, changes and other factors, Fabral reserves the right to change or delete information herein without prior notice or obligation to make changes in products previously purchased.**
Installation Instructions

Building Design and Construction

In order to ensure the anticipated performance and longevity, protect metal panels from potentially corrosive situations and materials. When treated lumber will be in direct contact with metal panels or flashings please note the following: Galvanized steel is compatible with the CCA (Chromated Copper Arsenate) pressure-treated lumber that was predominantly used before 2004, but not with the older Penta treated lumber or the new ACQ (Alkaline Copper Quaternary), CA (Copper Azole), or CBA (Copper Boron Azole). Stainless steel or other special treated fasteners should be used into these non-compatible pressure treated lumbers. Aluminum must be separated from contact with all treated wood since the soluble copper in the preservative is corrosive to aluminum. Likewise, dissimilar metals also require a protective barrier between them to prevent galvanic corrosion. Request FABRAL Technical Bulletins #803, 106, and 107 for more information on treated lumber and dissimilar metals.

Plastic, builders’ felt, bituminous paint, caulking, or gas-ket material may be used to separate panels from treated wood and dissimilar metals. When using aluminum panels in direct contact with steel, use a separator as described above and fasten with Stainless Steel screws.

Fertilizer, lime, acids, feeds, manure, soils, and many other compounds also cause corrosion in metal panels. Contact between metal panels and any potentially corrosive materials should be prevented.

Porous insulation materials may absorb and retain moisture, and should not be used in direct contact with metal panels. Use a vapor vented.

Metal panels and any potentially corrosive materials should be prevented.

Porous insulation materials may absorb and retain moisture, and should not be used in direct contact with metal panels. Use a vapor barrier such as polyethylene plastic or 30-lb felt to prevent moisture from contacting both the insulation and the metal panel.

FABRAL’s translucent panels are intended for siding applications only. In all situations, foot traffic should be avoided on translucent panels. Translucent panels used in roofing applications will break down in a short time and cause staining and premature corrosion of the metal panels below. If used on roofs, apply butyl caulking to separate the fiberglass panels from the metal. Translucent panels should be cleaned and sealed regularly, as recommended by the translucent panel manufacturer.

Purlins, Girts and Roof Deck

The substructure to which the metal panels are fastened must be properly spaced and sufficiently thick to provide a roof or wall system able to meet required design loads.

A 2" nominal lumber thickness provides the maximum pullout values for both screws and nails when the fasteners penetrate a minimum of 1" into the wood. Since 1" nominal lumber and solid decking are thinner, they provide somewhat lower pullout values. When using purlins, FABRAL recommends a maximum spacing of 24" on-center (note that 5V requires solid decking). Pullout values decrease if the fasteners protrude completely through the purlins. Kiln-dried softwood is recommended for purlins or decking (pine, fir, hemlock, and spruce). Hardwoods are difficult to fasten into without splitting and contain tannic acids that are corrosive to metal panels. Green (non-kiln-dried) lumber may warp, twist, and shrink as the wood seasons fully, causing waviness in the panels as well as loosening and leaking of the fasteners.

Solid decking is highly recommended for all residential applications. When using solid decking or sheathing, always use 30-lb felt or underlayment and plan on using closer fastener spacing and larger diameter #14 screws. (Refer to the tables on page 31).

On re-roofing projects where the condition of the old decking is in question, or where existing shingles will be left in place, new 2x4 purlins should be fastened through the decking and into the rafters. This will provide a solid framework for attaching the metal panels. For more detailed information on Re-roofing applications, consult FABRAL Technical Bulletin #721, Re-Roofing With Metal. Load tables are available for all FABRAL panels; contact FABRAL for additional information.

Roofing

Panel sidelaps should face away from wind driven rain. To accomplish this, begin by installing the first sheet square with the eave and gable at the down wind end of the roof, farthest away from the source of prevailing winds.

In applications requiring a panel endlap, please refer to the detailed instructions in this booklet. For best results, lap panels as shown and install in the indicated sequence. All endlaps require sealant. When weather-tightness is critical, use sealant tape in all sidelaps.

To provide a drip edge, allow an overhang of 1 to 2 inches at the eave. At the gable edge, use a gable or sidewall flashing. This will keep weather out, prevent lifting in high winds, and provide a neat, finished appearance. The trim and roof sheet should be fastened every 12 to 24 inches along the gable edge.

Roof Pitch

The metal roofing panels shown in this manual require a minimum slope of 2½" per foot to ensure proper drainage. Refer to the rain-carrying table in this booklet for the maximum allowable panel length per slope that will provide adequate drainage. For longer slopes and lower roof pitches, contact FABRAL for other suitable profiles.

Bending and Bowing

Aluminum roofing and siding sheets are rollformed from hardened, tempered metal for maximum strength. If a sheet must be bent, a gentle 90-degree bend is the maximum recommended. Metal should not be re-bent once it has been formed, nor should it be folded back on itself. When a metal roofing sheet must be installed on a curved roof, screws should be installed at every overlapping rib at the sheet ends to resist the natural tendency of the metal to spring back. The standard fastening pattern is permitted over the rest of the sheet. When installing the metal panels shown in this booklet over a curved arch, the minimum radius of the arch is 18’ for aluminum panels and 24’ for steel panels. Use sealant tape or butyl caulking at all sidelaps and endlaps. Additional care and fasteners must be provided when securing the top and bottom purlins on an arched rafter building to prevent the curved panels from pulling the purlins loose from the rafters. Ring-shank pole barn nails, heavy wood screws, lag screws, or bolts are often used for attaching these purlins.

Siding

Siding should be installed using the standard fastening and overlap patterns to ensure optimum performance. For strong, neat corners use hemmed corner flashings. Do not run siding sheets all the way to the ground. Instead, provide a protective base of concrete, masonry, treated wood, or similar material and terminate the siding sheets 6” above grade.

If siding sheets are installed horizontally, use sealant tape or butyl caulking at the vertical laps to ensure weather-tight joints. Install panels from the bottom up so that water is directed away from, and not into, the lap joints.
Fastening

FABRAL can supply either screws or nails for fastening into dimension lumber. Woodgrip screws for use with steel panels are galvanized and then coated with an organic polymer for optimum corrosion resistance. For best results with aluminum panels, use #300 series stainless steel screws.

The FabrOseal® galvanized ring-shank nail, with its premium long-life silicone rubber gasket, assures a lasting seal and is the best nail available for steel panels when screws are not the method to be used by the installer.

The correct way to fasten steel panels with nails is to drive the nail through the top of the rib so the washer is compressed securely against the metal. Nail placement must be in the ribs for roofing applications to minimize the potential for roof leaks. Over-driving the nail can split the washer and dimple the metal, causing leaks.

Wood screws with combination metal and neoprene washers should be installed in the flat area of the panel adjacent to the ribs, and tightened such that the washer is compressed as illustrated above. This will ensure a lasting, leak-proof seal. See pages 4 to 5 for the correct fastener locations. Refer to the fastening schedules in this booklet for the correct fastener locations.

Flashing and Trim

Always begin flashing installation from the bottom and work up, so that upper flashings are lapped on top of lower flashings. This will prevent moisture from leaking under the flashings and into the structure. Endlap flashings a minimum of 6" and seal the lap joints with sealant. Extend flashings 4-6" beyond the building, cut along the bend lines, apply sealant, and fold the side flaps in and the top flaps down to cap off the ends. Secure with pop-rivets or stitch screws.

Some roof conditions, such as valleys, may require a longer endlap and/or a larger flashing to properly drain moisture from the roof. Factors that influence flashing size, shape, and endlap requirements include roof pitch, roof geometry, slope length, and climatic factors (such as heavy snowfall or rainfall).

Whenever possible, begin trim installation at the downwind end of the roof, farthest away from the source of prevailing winds, to allow flashing laps to face away from wind-driven rain. Refer to the details in this book for the proper location of fasteners and sealants.

The flashings and trims shown in this book are standard parts.

Cutting and Drilling Steel Panels

Steel panels may be cut with metal snips, electric or pneumatic shears, a portable profile shear, or an electric nibbler. Some installers prefer using a circular saw with a metal cutting blade (a fine-tooth hardwood blade, or a standard combination blade reversed in the saw works also). Light oil or soap on the blade will make cutting easier.

Cutting Aluminum Panels

To make a cut parallel to the ribs, score the panel deeply with a sharp utility knife and bend back-and-forth along the score, breaking the metal off cleanly. For cuts across the ribs, use straight-cut snips, electric or pneumatic shears, or a portable profile shear, or an electric nibbler. Some installers prefer using a circular saw with a metal cutting blade (a fine-tooth hardwood blade, or a standard combination blade reversed in the saw works also). Light oil or soap on the blade will make cutting easier.

Proper Storage

Store metal panels indoors when possible; if outdoors, cover and elevate. Elevate one side higher for water drainage. Never cover in plastic; use a tarp that can breath. Allow for air circulation. If a bundle gets wet, break bands and separate sheets; allow sheets to dry completely and only restack if completely dry. Product should be stored for a maximum of 2-4 weeks before being installed.
Paint System & Warranties

Enduracote™ is a paint system that takes performance to the next level. Based on cutting edge resin technology, this system offers unbeatable durability and superior long-term performance against the elements.

The Enduracote™ Warranty
- Lifetime film integrity for walls & roofs
- 30-year against fade & chalk
- 10-year edge rust against acid rain
For profiles: Grand Rib 3®, Alu-Tuff II, 5V Crimp, ProClad, StrongClad, Mighti-Rib®

The Enduracote™ PLUS Warranty
- Lifetime film integrity for walls & roofs
- 30-year against fade & chalk
- 15-year edge rust against acid rain
- 25-year non-perforation against acid rain for walls; 20-years for roofs
For profiles: Grand Rib 3® PLUS, Alu-Tuff, 1 1/2” SSR, Climaguard™

Other Warranties
- Polyester Paint Warranty
  - 25-year limited film integrity
  - 10-year against fade & chalk
  For profiles: MP Panel, Shelterguard®, 5-Rib

- Aluminum-Zinc Alloy Warranty
  - 20-year limited non-perforation
  For Bare Galvalume® Products

- Aluminum Product Guarantee
  - 30-year corrosion guarantee

The Energy Star® Program
The Energy Star Program promotes highly reflective roof systems that reflect solar energy. These roof systems allow buildings to stay cooler and, in turn, use less electricity for air conditioning; less electricity means a reduction in power generation and a reduction of pollutants discharged at power plants. Fabral has attained Energy Star approval for many of its Enduracote™ system colors. Ask for Technical Bulletin #724 titled “Energy Star Approval”, for program details and a list of approved Enduracote™ colors.

Please contact your Fabral representative for more information about Fabral warranties and paint systems.
Steel Panel Profiles

Grandrib 3®
29 Gauge steel, Plain, and Painted Galvanized

MP Panel™
Screw patterns are the same as the Grandrib 3

Alu-Tuff

Screw patterns are the same as the Grandrib 3

CORRECT SIDELAP FOR ALU-TUFF, GRANDRIB 3, AND MULTI-PURPOSE STEEL PANELS.

BUTYL SEALANT LOCATION (OPTIONAL FIELD APPLIED)

PURLIN BEARING LEG

Intermediate Roof Purlins and All Siding

Eaves and Endlaps - Roof Purlins

SCREW PATTERNS

80 screws per square or 1 pound of nails per square
See page 32 for a table showing screw spacing

5V Crimp
USE ON SOLID DECKING

1 1/4" Corrugated

1 1/4" Corrugated

*Not all profiles are available in all areas. Please contact Fabral for availability.
Steel Panel Profiles

2 1/2" Corrugated

NAIL PATTERN
- ROOFING - EAVES, RIDGES, AND ENDLAPs
- ROOFING - INTERMEDIATE SUPPORTS
- SIDING - ALL SUPPORTS

SCREW PATTERN
- ROOFING - EAVES, RIDGES, AND ENDLAPs
- ROOFING - INTERMEDIATE SUPPORTS
- SIDING - ALL SUPPORTS

1/2" NAIL PATTERN
- ROOFING - INTERMEDIATE SUPPORTS
- SIDING - ALL SUPPORTS
- ROOFING - EAVES, RIDGES, AND ENDLAPs

38 3/8" FORMED WIDTH
36" COVERAGE
5/8" Proclad

Intermediate Roof Purlins and All Siding
Eaves and Endlaps - Roof Purlins

SCREW PATTERNS

*Not all profiles are available in all areas. Please contact Fabral for availability.

Other Steel Profiles Available

1 1/2" SSR
24 Gauge Standing Seam Roofing

Mighti-Rib®
26 Gauge Roofing & Siding

Climaguard™
26 Gauge Roofing

Grandbeam®
26 Gauge Roofing & Siding

*The panels above are available at certain locations and have their own particular details, flashings, and accessories. Please contact Fabral for more information.
Aluminum Panel Profiles

Grandrib 3®
3/4" 37 3/4" FORMED WIDTH 36" COVERAGE

Alu-Tuff
3/4" 37 3/4" FORMED WIDTH 36" COVERAGE

Strongrib®
.018 Aluminum, Plain, and Painted White

Fabrib
51 3 16" FORMED WIDTH 48" COVERAGE

AluTwin
501 4" FORMED WIDTH 48" COVERAGE

2 1/2" Corrugated
51 2" OVERALL 48" COVERAGE (SIDING)
48" COVERAGE (ROOFING)

ROOFING - EAVES, Ridges, AND ENDLAPS
ROOFING - INTERMEDIATE SUPPORTS
SIDING - ALL SUPPORTS

Correct Strongrib Sidelap
BUTYL SEALANT LOCATION (OPTIONAL FIELD APPLIED)
PURLIN BEARING LEG

ScREW PATTERN
INTERMEDIATE ROOF PURLINS AND ALL SIDING
EAVE AND ENDLAPS - ROOF PURLINS

*Not all profiles are available in all areas. Please contact Fabral for availability.
Estimating Metal Roofing, Siding & Flashings

Panel lengths are to be determined by the truss top chord or actual field measurements. Remember to add for overhangs at the eaves; subtract for a gap at the ridge. Siding should be kept up away from the ground with a skirt board.

Number of Panels

The coverage of the panel being used will determine the number of panels at a length (i.e.: 3’ coverage panel on a 30 ft. long building would require 10 panels on each side of the ridge or 20 panels at the particular length.)

Horizontal Measurement to a Roof

Divide the building width in half, then multiply by the slope factor (i.e.: 40’ wide building with 4/12 slope. 40 divided by 2 equals 20’ times 1.054 equals 21’-1” in slope dimension.) Allow for 1/2” to 1” gap at peak and 1” to 2” eave overhang.

<table>
<thead>
<tr>
<th>Roof Pitch</th>
<th>Slope Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/12</td>
<td>1.031</td>
</tr>
<tr>
<td>4/12</td>
<td>1.054</td>
</tr>
<tr>
<td>5/12</td>
<td>1.083</td>
</tr>
<tr>
<td>6/12</td>
<td>1.120</td>
</tr>
<tr>
<td>8/12</td>
<td>1.202</td>
</tr>
<tr>
<td>10/12</td>
<td>1.302</td>
</tr>
<tr>
<td>12/12</td>
<td>1.414</td>
</tr>
</tbody>
</table>

Flashing Conditions

Roof - Eave, Ridge, Gable, Sidewall, Endwall, Valley, Hip, Transition, Gambrel, Soffits
Siding - Base Perimeter, Corners, Inside Corners, Man Doors, Windows, Sliding Doors, Overhead Doors

Please contact Fabral’s Engineering Department for all your estimating & specification needs.

1-800-916-1413
1-800-322-1030 Fax
Post Frame Building Details

- Ridge/peak pg 11, 16-18
- Eave pg 11, 15-16
- Outside corner pg 13, 24
- Sidewall pg 12, 22
- Sliding door track covers pg 28-29
- Inside corner pg 13, 25
- Endwall pg 12, 21
- Zee pg 13
- Drip cap pg 14
- J-channel/doors/windows pg 11, 13, 26-27, 30
- Gable/rake pg 11, 14, 18-20
- Base guard pg 13, 25
- Outside corner pg 13, 24
- Sliding door track covers pg 28-29
1. Apply 3/32" x 1/2" butyl endlap sealant on bottom panel just below centerline of purlin (see endlap diagram for location) on panel #1.
2. Apply sidelap sealant on panel #1 and connect to endlap sealant.
3. Place panel #2 so it overlaps panel #1, 12" as shown. Install screws per endlap fastening pattern.
4. Apply sidelap sealant on panel #2 to connect to sidelap sealant of panel #1.
5. Place panel #3 over sidelap of #1 and #2.
6. Apply endlap sealant on panel #3.
7. Apply sidelap sealant on panel #3 and connect with endlap sealant.
8. Place panel #4 over endlap of panel #3. Install screws per endlap pattern.
9. Repeat sequence for entire roof.

### ALLOWABLE PANEL LENGTHS (ft.) ALONG THE SLOPE FOR 4" RAINFALL PER HOUR

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Minimum Slope</th>
<th>2 1/2:12</th>
<th>3:12</th>
<th>3 1/2:12</th>
<th>4:12</th>
<th>5:12</th>
<th>6:12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alu-Tuff</td>
<td>2 1/2:12</td>
<td>58</td>
<td>61</td>
<td>64</td>
<td>67</td>
<td>73</td>
<td>78</td>
</tr>
<tr>
<td>Grandrib 3</td>
<td>2 1/2:12</td>
<td>58</td>
<td>61</td>
<td>64</td>
<td>67</td>
<td>73</td>
<td>78</td>
</tr>
<tr>
<td>Prime Rib</td>
<td>2 1/2:12</td>
<td>39</td>
<td>41</td>
<td>43</td>
<td>45</td>
<td>49</td>
<td>53</td>
</tr>
<tr>
<td>5V</td>
<td>2 1/2:12</td>
<td>43</td>
<td>45</td>
<td>47</td>
<td>49</td>
<td>54</td>
<td>58</td>
</tr>
<tr>
<td>2 1/2&quot; Corrugated</td>
<td>2 1/2:12</td>
<td>28</td>
<td>29</td>
<td>31</td>
<td>32</td>
<td>35</td>
<td>38</td>
</tr>
<tr>
<td>1 1/4&quot; Corrugated</td>
<td>2 1/2:12</td>
<td>16</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Alu-Twin</td>
<td>2 1/2:12</td>
<td>37</td>
<td>39</td>
<td>41</td>
<td>43</td>
<td>46</td>
<td>50</td>
</tr>
<tr>
<td>Fabrib</td>
<td>2 1/2:12</td>
<td>32</td>
<td>34</td>
<td>36</td>
<td>38</td>
<td>41</td>
<td>44</td>
</tr>
</tbody>
</table>

**Notes For Rain-Carrying Tables**

1. All values based on a 1-hour duration storm of 4"/hr. intensity.
2. Values represent the point at which the panel ribs will flood.
3. Size and frequency of penetrations can greatly reduce the amount of water removed from a roof.
4. All panel endlaps must be caulked.
5. When weather-tightness is critical, use sealant tape in all sidelaps.
Standard Post Frame Flashing/Trims

All flashing is 10’ 6” in length & available in steel & aluminum, unless otherwise noted. Please contact Fabral for specifics on the trim available in your area.

AJ6
Jamb Trim
(for 2x wood)

AR3
Ridge Cap

RR1
Universal Ridge/Hip Flash
Steel Only
Customer to specify roof pitch

AR3 w/ VersaVent RX-10
Ridge Cap
Grandrib 3 & Alutuff net free area = 10.66 sq. in. per lineal feet of ridge (5.33 per side)

AE1
Eave Flash

SunSky Ridge
Ridge Cap
Clear Only

CP1
Monoslope Ridge
Steel Only
Customer to specify roof pitch

CE1
Denver Eave
Steel Only
Customer to specify roof pitch

RJ9
F-J Trim

PJFB
One Piece Door Trim
Standard Post Frame Flashing/Trims

**AGR4N4**
- For Grandrib 3 401/2" Length
- Notched Gambrel Flash

**RV1**
- Valley Flash
- Customer to specify roof pitch

**RV2**
- W-Valley Flash
- Steel Only
- Customer to specify roof pitch

**RV3**
- Valley Flash
- Notched

**AT1**
- Transition Flash
- Typical for 8/12 to 4/12 (otherwise specify pitches)
- Steel Only

**ASW1**
- Sidewall/Endwall Flash

**AEWN4**
- For Grandrib 3 40 1/4" Length
- Notched Endwall Flash

**AB1**
- Soffit Box

**AB2**
- Soffit Box

**AB3**
- Soffit Box

**AB4**
- Soffit Box

**Soff Vent A**
- Vented Aluminum Soffit
- Net free area = 12.96 sq. in. per lineal ft. of soffit

**AT2**
- Gambrel Flash
- Typical for 3/12 to 15/12 (otherwise specify pitches)
Standard Post Frame Flashing/Trims

AC1 Corner
Aluminum 10' 14'-6" in select colors

AL2,3,4,5 Angle Flashing
AL2 = 3 1/2"
AL3 = 5 1/2"
AL4 = 7 1/4"
AL5 = 9 1/4"

AC2 Inside Corner

ABG1 Base Guard

AZ2 Zee

AC3 Corner
Available in Lancaster service area only

AJ3 Jamb Trim
Steel Only
(For 2x wood)

AL6 Angle Flashing

AL7 Angle Flashing

AJ4 Jamb Trim

AH5 10'-6" Length
Face-Mount Track Cover for Cannonball Track with 2" Track Plank
(Replaces STC-503)
Matches Cannonball Trim #646225

AH3 10'-6" Lengths
Fits National 5100, 5103 and 5105 box rail.
Matches National trim #5120
(Replaces STC-504)
Standard Post Frame Flashing/Trims

AC4
Corner Steel Only

AD1
Drip Cap Steel Only

AJ5
Jamb Trim (For 4x wood)

AH4
10'-6" Length Face-Mount Track Cover for Cannonball Track with 1" Track Plank Matches Cannonball Trim #646224

AH2
10'-6" Length Fits National 5110 & 59 bo rail. Matches National trim #5122

AH6
10'-6" Length Fits National Top-Mount #5433 Rail with #5436 Bracket or National Top-Mount #5460 Rail with

Post Frame Flashing Details

BOX GABLE

2" LONG FASTENER @ 24" C/C MAX

ROOFING

SEALANT TAPE

SEALANT TAPE

ROOF PURLIN END RAFTER

SEALANT TAPE TOP & BOTTOM OF CLOSURE

OUTSIDE CLOSURE (OPTIONAL)

1"x6" FASCIA

FASTENER @ EVERY MAIN RIB OR 12" C/C MAX.

7 1/2" OR 11 1/2"

SIDING

FASTENER 24" C/C MAX

FLASH AG-1

FLASH AB-1, AB-2, AB-3, OR AB-4

SEALANT TAPE
Post Frame Flashing Details

EAVE

- INSIDE CLOSURE
- ROOF PANEL
- FASTENER PER STANDARD EAVE PATTERN
- SEALANT TAPE
- FASTENER @ EVERY RIB OR 12" C/C MAX.
- OUTSIDE CLOSURE (OPTIONAL)
- SIDING
- FASTENER
- ROOF PURLIN
- ROOF TRUSS
- POST
- TOP PLATE

FLASH CE-1
- SEALANT TAPE
- FASTENER @ EVERY RIB OR 12" C/C MAX.
- OUTSIDE CLOSURE (OPTIONAL)
- SIDING
- FASTENER
- ROOF PURLIN
- ROOF TRUSS
- POST
- TOP PLATE

BOX EAVE

- FASTENER PER STANDARD EAVE PATTERN
- MODIFIED AL-2
- FASTENER @ 24" C/C MAX.
- 5 1/2" OR 7 1/2"
- SEALANT TAPE
- FLASH AB-1, AB-2, AB-3, OR AB-4 AS REQUIRED
- EAVE PURLIN
- FASCIA BOARD
- INSIDE CLOSURE
- ROOF PANEL
- FASTENER
- OUTSIDE CLOSURE (OPTIONAL)
- SIDING
- FASTENER
- ROOF TRUSS
- POST
- TOP PLATE

PROVIDES 8" OR 12" OVERHANG WITH GRANDRIB 3, ALU-TUFF, OR STRONGBRIB SIDING
**VENTED EAVE**

- INSIDE CLOSURE WITH SEALANT TAPE TOP & BOTTOM
- FASTENER PER STANDARD EAVE PATTERN
- EAVE TRIM
- FASCIA BOARD
- FABRAL ALUMINUM SOFFIT
- FABRAL METAL SIDING PANEL
- TRUSS OR RAFTER
- 16" COVERAGE

If closures are omitted, Fabral suggests using screen wire between panels and ridge gap area to keep insects and birds out of attic area.

**RIDGE/PEAK - NON VENTED**

- 2" LONG FASTENER @ EVERY MAIN RIB OR 12" C/C MAX.
- SEALANT TAPE TOP & BOTTOM OF CLOSURE
- PURLIN
- ROOF PANEL
- OUTSIDE CLOSURE (ON HIP ROOFS, USE 1"X1"X19'-8" SEALER STRIP & RR-1 FLASHING)

If closures are omitted, Fabral suggests using screen wire between panels and ridge gap area to keep insects and birds out of attic area. Closures and sealant are recommended for optimum weather resistance.
VersaVent RX-10 Factory Applied To Ridge Cap
Vent Material and Ridge Cap Install As A Unit

ALTERNATE VENTED RIDGE

FabraRR-1 Ridge Flash with CoraVent (shown). The RR-1 can be modified to fit many other solid, plastic vents. Other solid, plastic vents (i.e., Ridge Master, ...) are available from local lumberyards or dealers. The metal ridge flashing may have to be customized to fit the particular vent. Mesh vents or fiber-type vents are not recommended because a metal ridge can not be fastened securely. They are not rigid enough to give good support or appearance to the metal flash. Coravent is available from Fabral.
Profile Vent is pre-notched and self adhesive. Fabral stocks Profile Vent for Grandrib 3, Alu-Tuff, and 5v Crimp.

GABLE - STRONGRIB, GRANDRIB 3

2" LONG FASTENER @ 24" C/C MAX

ROOFING
SEALANT TAPE

ROOF PURLIN END RAFTER
SEALANT TAPE TOP & BOTTOM OF CLOSURE
OUTSIDE CLOSURE (OPTIONAL)
SIDING

1"x6" FASCIA

FASTENER @ EVERY MAIN RIB OR 12" C/C MAX.

FLASH AB-1, AB-2, AB-3, OR AB-4

FLASH AG-1

SEALANT TAPE

FASTENER 24" C/C MAX
GABLE - FABRIB

- Flash AG-4
- Fastener @ 24" C/C Max
- Roofing
- Roofing Purlin
- Sealant Tape
- End Rafter
- Outside Closure (Optional)
- Siding

GABLE - GRANDRIB 3, STRONGBRIB

- Flash AC-1 or AC-4
- Fastener @ 24" C/C Max
- Roofing
- Roofing Purlin
- Sealant Tape
- End Rafter
- Outside Closure (Optional)
- Siding

Optional Sealant Tape Top & Bottom of Closure
FLYING GABLE DETAIL

- FASTENER
- ROOF FELT
- SEALER STRIP (ASPHALT IMPREGNATED)
- BUTYL SEALANT TOP AND BOTTOM OF SEALER STRIP
- CE1
- FASCIA BOARD
ENDWALL

FLASH ASW-1

ROOF PANEL

OUTSIDE CLOSURE

SEALANT TAPE TOP & BOTTOM OF CLOSURE

PURLIN

ENDWALL - NOTCHED

NOTCHED FLASH AEW-N4 OR AEW-N5

ROOF PANEL

OUTSIDE CLOSURE

SEALANT TAPE TOP & BOTTOM OF CLOSURE

PURLIN
**SIDEWALL**

- **SEALER STRIP** with Butyl Sealant Tape
- **Siding**
- **Girt**
- **Sealant Tape**
- **Fastener per standard eave pattern**
- **Space as required**
- **Flash ASW-1 Field Bend as required**
- **2" Fastener @ 24" C/C Max.**
- **Purlin**
- **Sloping Rafter**

**VALLEY**

- **Butyl Sealant Top & Bottom of Sealer Strip**
- **Cut Panel as necessary**
- **6" Minimum**
- **Sealer Strip, 1"x1"x19'-8" block closure fills rib voids**
- **Roof felt and ice & water shield**
- **Metal Roof Panel**
- **Screws each side of main rib (eave/endlap pattern)**
- **RV-2 shown**

**NOTE:** Valley Flash must have solid support.

For additional information on the valley detail refer to pages 42 and 43 of this book.
**GAMBREL**

- **NOTE:** Specify both roof pitches for AT-2 flash. AGRN-4 for Grandrib 3 and AGRN-5 for Strongrib are for 3/12 to 15/12 Gambrel's.

**TRANSITION**

- **NOTE:** Specify both roof pitches when ordering AT-1. Standard is 9/12 to 3/12.
* Available in Lancaster service area only.

OUTSIDE CORNER

2" FASTENER THROUGH PANEL RIB @ 24" C/C MAX.

FLASH AC-3 *

SEALANT TAPE

POST

GIRT

SIDING
Post Frame Flashing Details

**INSIDE CORNER**

- GIRT
- POST
- SEALANT TAPE
- FASTENER @ 24" C/C MAX.
- FLASH AC-2

**BASE GUARD**

- BARRIER BETWEEN METAL AND ACQ TREATED LUMBER
- TREATED BASE PLANK
- FLOOR
- 4"
- 6" MIN.
- FLASH ABG-1
- FASTENER PER STANDARD SIDING PATTERN
- INSIDE CLOSURE (OPTIONAL)
- SIDING PANEL
- GRADE
DOOR JAMBS

FLASH PJFB

FLASH AL-2, AL-3, AL-4, AL-5, OR AL-7 DEPENDING ON WIDTH OF JAMB

SEALANT

FIELD BEND OR CUT THIS AREA IF NECESSARY

FLASH AJ-3

FASTENER

SIDING

DOOR STOP

DOOR

DOOR JAMB

GIRT

SIDING

FASTENER

1x3 DOOR STOP

FLASH AJ-2

SEALANT TAPE
OVERHEAD DOOR JAMBS

- Door Jamb
- Post
- Girt
- Siding
- Fastener

FIELD BEND OR CUT THIS AREA IF NECESSARY

- Door
- 1 x 3 Guide
- Flash AL-5 or AL-7
- Fastener
- Sealant Tape
- Flash AJ-4

- Door Opening

- Door Jamb
- Girt
- Siding
- Fastener

- Door
- 1 x 3 Guide
- Flash AL-3, AL-4, AL-5 or AL-7
- Sealant
- Flash AJ-3

- Door Opening

- Door Jamb
- Post
- Girt
- Siding
- Fastener

- Door
- 1 x 3 Guide
- Flash PJFB

- Door Opening
DOOR HEADER

FASTENER PER SIDING PATTERN

FLASH AD-1

SIDING

DOOR HEADER

FLASH AL-2, AL-3, AL-4, AL-5 OR AL-7

OVERHEAD DOOR

DOOR STOP

MAN DOOR

SLIDING DOOR JAMB DETAIL

OPTIONAL AL-3 TRIM

AJ-4 JAMB TRIM

2 x 2 FILLER BLOCK

POST

WALL GIRT

SIDING PANEL

FLASH AL-6

SEALANT TAPE

FLASH AJ-3

FASTENER

SLIDING DOOR
SIDING

FLASH AH-2, AH-3 (SHOWN), AH-4, OR AH-5. REFER TO PAGE 11 FOR CORRECT FLASHING FOR PARTICULAR MANUFACTURER’S DOOR TRACK BEING USED.

SIDING BEYOND OPENING

2x6 TRACK BOARD

2x2 FILLER BLOCK

TRACK SUPPORT

TREATED BASE PLANK

SIDING ON SLIDING DOOR

DOOR GIRT

AD-1 OR BOTTOM RAIL FROM DOOR MFR.

TRANSLUCENT PANEL

USE TRANSLUCENT PANELS AS SIDING PANELS TO ALLOW LIGHT INTO THE BUILDING. DO NOT USE ON ROOFS.
**Post Frame Flashing Details**

**WINDOW DETAILS**

**SILL**

- WINDOW UNIT 1x6 BEVELED
- FASTENER PER STANDARD PATTERN
- SIDING 2x4
- FLASH AJ-3
- 1"

**HEAD**

- WINDOW UNIT
- SEALANT TAPE TOP & BOTTOM OF CLOSURE
- FASTENER PER STANDARD PATTERN
- AD1 DRIP CAP
- INSIDE CLOSURE (OPTIONAL)

**JAMB**

- WINDOW UNIT
- FLASH AJ-3
- FASTENER
- 2x4
- OPTIONAL SEALANT TAPE
- SIDING GIRT
- SIDING
Residential Building Details

1. Determine the thickness and type of substrate to be used to support the metal roofing. **Solid decking is highly recommended for all residential applications (i.e., plywood, OSB).**

2. Refer to the Load-Span tables to select the proper fastener and spacing to meet loads on your structure. **Nails are NOT recommended for residential applications.**

3. Consult local building codes and restrictions to determine acceptable methods of construction for residential applications in your area.

4. Solid decking with 30# felt or Pro Master® underlayment for residential applications is recommended. Ice & water shield or similar self-adhesive membrane is recommended at all valleys, dormers, chimneys, transitions, skylights and other critical areas.

5. When re-roofing with metal panels over an existing shingle roof, 2x4 purlins or 1x4 furring strips run parallel with the ridge of the roof and must be securely fastened into the roof rafters or trusses.

6. Request Fabral’s technical bulletins # 720 and # 721 for more details on residential roofing.
### Residential Load Table

**GRANDRIB 3®**

Load-Span Tables For 29 Gauge Grandrib 3® & Alu-Tuff

Allowable Wind Uplift Loads (psf)

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Fastener</th>
<th>9&quot;</th>
<th>12&quot;</th>
<th>15&quot;</th>
<th>18&quot;</th>
<th>21&quot;</th>
<th>24&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot; Plywood</td>
<td>#14 Woodtite</td>
<td>275.6</td>
<td>206.7</td>
<td>165.4</td>
<td>137.8</td>
<td>118.1</td>
<td>103.4</td>
</tr>
<tr>
<td>5/8&quot; Plywood</td>
<td>#14 Woodtite</td>
<td>160</td>
<td>120</td>
<td>96</td>
<td>80</td>
<td>68.6</td>
<td>60</td>
</tr>
<tr>
<td>1/2&quot; Plywood</td>
<td>#14 Woodtite</td>
<td>135.9</td>
<td>101.9</td>
<td>81.5</td>
<td>67.9</td>
<td>58.2</td>
<td>51.0</td>
</tr>
<tr>
<td>23/32&quot; OSB</td>
<td>#14 Woodtite</td>
<td>115.9</td>
<td>86.9</td>
<td>69.5</td>
<td>57.9</td>
<td>49.7</td>
<td>43.5</td>
</tr>
<tr>
<td>19/32&quot; OSB</td>
<td>#14 Woodtite</td>
<td>100.7</td>
<td>75.5</td>
<td>60.4</td>
<td>50.3</td>
<td>43.1</td>
<td>37.8</td>
</tr>
<tr>
<td>7/16&quot; OSB</td>
<td>#14 Woodtite</td>
<td>61.5</td>
<td>46.1</td>
<td>36.9</td>
<td>30.7</td>
<td>26.3</td>
<td>23.1</td>
</tr>
<tr>
<td>Solid 2x SPF</td>
<td>#14 Woodtite</td>
<td>293</td>
<td>220.0</td>
<td>176.0</td>
<td>146.7</td>
<td>125.7</td>
<td>110.0</td>
</tr>
<tr>
<td>Solid 1x Pine</td>
<td>#14 Woodtite</td>
<td>207.1</td>
<td>155.3</td>
<td>124.2</td>
<td>103.5</td>
<td>88.7</td>
<td>77.7</td>
</tr>
<tr>
<td>Solid 2x SPF</td>
<td>#9 WoodFast</td>
<td>218.7</td>
<td>164.0</td>
<td>131.2</td>
<td>109.3</td>
<td>93.7</td>
<td>82.0</td>
</tr>
<tr>
<td>Solid 1x Pine</td>
<td>#9 WoodFast</td>
<td>168.4</td>
<td>126.3</td>
<td>101.0</td>
<td>84.2</td>
<td>72.2</td>
<td>63.2</td>
</tr>
</tbody>
</table>

Screws per Square

The above loads and fastener quantities are based on the standard fastening schedule shown on page 5 of this book, with the fastener having an embedment depth of 1" into the solid wood or penetrating the plywood or OSB. Contact FABRAL for additional design information on our products.

### Other Residential Profiles

1 1/2” SSR
24 Gauge Standing Seam Roofing

Climaguard™
26 Gauge Roofing

5V Crimp
26 Gauge Roofing

The above Fabral profiles have their own detail manuals, flashings, and accessories. Please contact Fabral for additional information.
All flashing is 10’ 6” in length & available in steel & aluminum, unless otherwise noted. Please contact Fabral for specifics on the trim available in your area.
All residential flashings are formed for a 4/12 pitch unless otherwise requested by the customer.

**RESIDENTIAL RIDGE/ZIP**

- 2" LONG FASTENER @ EVERY MAIN RIB OR 12" C/C MAX.
- SEALANT TAPE
  - TOP & BOTTOM OF CLOSURE OR SEALER STRIP
- RIDGE CAP
  - RR-1 or AR-3
- ROOF PANEL
- OUTSIDE CLOSURE
  - (ON HIP ROOFS USE 1" x 1" x 19'-8"
    - SEALER STRIP AND RR-1 FLASHING)

**RESIDENTIAL VENTED RIDGE**

- 2" LONG FASTENER @ EVERY MAIN RIB OR 12" C/C MAX.
- RIDGE CAP
  - RR-1 or AR-3
- ROOF PANEL
- VERSAVENT RX-10 OR PROFILEVENT
- ROOF STRUCTURE
**Residential Flashings Detail**

**Residential Vented Eave**

- Inside closure with sealant tape top & bottom
- Fabral metal roof panel
- Eave trim
- Fascia board
- F/J trim
- Butyl tape top & bottom of closure
- Fastener per standard eave pattern
- Fastener @ 24" C/C max.

**Residential Eave**
**Residential Flashings Detail**

**Residential Gable**

- Screw fastener @ 24" C/C max.
- RG-1, WG-1 or AG-4
- Butyl tape
- Roof panel
- Roof structure
- Cut panel as necessary

**Residential Endwall**

- 2" fastener @ every main rib
- Flash ASW-1
- Roof panel
- Butyl tape top & bottom of closure
- Siding
- Outside closure
**Residential Flashings Detail**

**Residential Gambrel**

- **Inside Closure**
  - Flash at AT-2 or AGR-N4 (GrandRib 3)
  - BUTYL SEALANT TAPE top & bottom of closure
  - 2" FASTENER@ EVERY MAIN RIB OR 12" C/C MAX.

- **Outside Closure**
  - BUTYL SEALANT TAPE top & bottom of closure
  - Roof panel
  - Outside closure

- **Fastener per standard eave pattern**

**Residential Sidewall**

- **Siding**
  - Flash ASW-1
  - 2" FASTENER @ 12" C/C

- **Roofing**
  - BUTYL SEALANT
  - Roof panel
  - Roof sheathing
  - Roofing felt and ice and water shield for added weather tightness
**Residential Flashings Detail**

**Residential Transition**
- Butyl tape top & bottom of closure
- Fastener @ every main rib or 12" C/C max.
- Fastener per eave fastening pattern
- Inside closure
- Outside closure
- Flash AT-1 outside closure
- 30# felt and ice and water shield for added weathertightness
- Roof panel

**Residential Pipe Boots**
- Butyl sealant tape under base of pipe boot
- Plywood deck
- Ventilation pipe
- (Optional) silicone sealant around cut of boot
- Screws spaced 2" to 3" max around base to secure
- Pipe boot sizes
  - #3: 3/8" to 5" pipe dia.
  - #5: 4 1/2" to 7 1/2" dia.
  - #8: 7" to 13" dia.
CUT TRIANGULAR CRICKET TOP
FOLD UP WIDE END OF TRIANGLE.
SLIT CENTER OF FOLD AND BEND SLIGHTLY DOWN THE CENTER.

NOTE: SEE CROSS SECTIONS A-A, B-B, C-C

For optimum weathertightness, use ice and water shield or similar around penetrations.

CRICKET FIELD FORMING

FLANGE CAP 2’ MIN.
VERTICAL FLANGE 2’ MIN.

UNIT WIDTH
FLAT STOCK

RIDGE

OVERALL HEIGHT TO BE MIDWAY PLUS ON HEAD JAMB

ALTERNATIVE CRICKET DETAIL

1 1/2” SSR WHC1 “HIP CLOSURE” USE TO CREATE BASE/FRAME OF CRICKET

TOP OF CRICKET FIELD FORMED FROM FLAT SHEET

FASTEN TOP OF CRICKET TO BASE USING #14 MP. CAULK ALL JOINTS AND SEAMS WITH ONE-PART POLYURETHANE SEALANT.

FABRICATE SMALL CAP TO COVER AREA WHICH WAS SLIT

CUT TRIANGULAR CRICKET TOP FOLD UP WIDE END OF TRIANGLE SLIT CENTER OF FOLD AND BEND SLIGHTLY DOWN THE CENTER.
SKYLIGHT DETAILS

CUSTOM DIVERTER FLASH CONTINUE SUCH THAT THE DIVERTER AND VALLEY FLASH OVERLAP

SIDEWALL DETAIL
SECTION A-A

CRICKET FIELD FORMING
SECTION B-B

SIDEWALL DETAIL
ALTERNATE SECTION A-A

ENDWALL DETAIL
SECTION C-C
Residential Flashings Detail

CHIMNEY DETAILS

- Saw cut reglet 1/2" - 1" deep
- Blow out dust & fill with Sikaflex sealant. Set flash & fasten with compatible masonry anchor

- Flushing ASW-1 - field modify as required
- Fastener @ 6" C/C
- Ice and water shield and 30# felt or titanium UDL underlayment

SIDEWALL DETAIL

- Saw cut reglet 1/2" - 1" deep
- Blow out dust & fill with Sikaflex sealant. Set flash & fasten with compatible masonry anchor

- Flushing - reverse
- Ice and water shield and 30# felt or titanium UDL underlayment

CRICKET FIELD FORMING

- Saw cut reglet 1/2" - 1" deep
- Blow out dust & fill with Sikaflex sealant. Set flash & fasten with compatible masonry anchor

- ASW-1 flashing field modified to fit
- 2" fastener @ every main rib or 12" C/C max.

ENDWALL DETAIL

- Saw cut reglet 1/2" - 1" deep
- Blow out dust & fill with Sikaflex sealant. Set flash & fasten with compatible masonry anchor

- Alien flashing
- Ice and water shield and 30# felt or titanium UDL underlayment

- Continuous Sikaflex caulking @ perimeter
- Fastener @ 6" C/C
- Roof panel

- Sealant tape between flash and roof panel

- 1/2" plywood
- 1/2 rigid insulation

- Custom diverter flash continue such that the diverter and valley flash overlap

- Ice and water shield and 30# felt or titanium UDL underlayment

- Fastener @ 6" C/C max.

- Roof panel inside closure

- Sealant tape top & bottom of closure
SOLID SUPPORT IS REQUIRED UNDER THE VALLEY. EPDM LINING IS RECOMMENDED UNDER LAPPED PANELS AND VALLEY FLASHING. LINING MUST CONTINUE DOWN TO EAVE LINE.
DORMER DETAILS

CUT VALLEY PEAKS TO JOIN CLEANLY AND SEAL; COVER JOINT WITH ADDITIONAL FLASHING AND SEAL

METAL FLASHING TO COVER LAP AT VALLEY PEAKS (CAULK)

6" MIN

SECTION A-A
Pipe Flashing

<table>
<thead>
<tr>
<th>Item</th>
<th>Pipe Size</th>
<th>Pipe Size</th>
<th>Pipe Size</th>
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</thead>
<tbody>
<tr>
<td>Gray EPDM</td>
<td>No.</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Base Diameter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 1/4&quot;</td>
<td>3</td>
<td>1&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>10 1/2&quot;</td>
<td>5</td>
<td>4 1/4&quot;</td>
<td>7 1/2&quot;</td>
</tr>
<tr>
<td>16 1/2&quot;</td>
<td>8</td>
<td>7&quot;</td>
<td>13&quot;</td>
</tr>
</tbody>
</table>

Pipe Boots

5/16” hex head, EPDM/metal washer, Oxyseal Long-Life Coating. Plain or Painted

1”, 1 1/2”, 2”, 2 1/2” and 3”

USE AS STITCH SCREW & TO FASTEN METAL TO PLYWOOD OR OSB

Translucent Panels

Fiberglass
- Grandrib 3 - White, Green - 8’’, 10’, 12’
- Strongrib - White - 10’, 12’
- Fabrib - Green -12’

SunSky Polycarbonate
- Grandrib 3 & Alutuff
- Clear & White - 8’,10’,12’

(interior by location - check with sale service rep.)

Profile Vent

Grandrib 3 & Alu-Tuff (shown), 5V Crimp

Grandrib 3 net free area = 10.66 sq. in. per lineal ft. of ridge (5.33 per side)

Sealant Tape

3 16” x 1 1/4” x 40’
3 32” x 1 1/2” x 40’
50’

Asphalt Impregnated Sealer Strip

1”x1”x19’-6.8” long

USE AT VALLEYS AND HIPS

Flat Sheet

Flat 29 gauge painted and plain galvanized sheets available in full width (40-13/16” x 10’ or 10’6”). Flat sheets are made in grade 33 steel for better hemming, forming and for flexibility for field forming. Used for field forming crickets around chimneys, skylights, and penetrations. Also used for field forming special flashing as necessary.

Accessories

Fasteners

#9-16 WoodFast

3/8” hex head, EPDM/metal washer, Oxyseal Long-Life Coating

Available in 1”, 1 1/2”, 2”, 2 1/2” and 3”

- Plain or Painted

#10-16 Ultimate WoodTite

5/16” cast Zinc hex head

Available in 1”, 1 1/2”, 2”, 2 1/2” and 3”

USE WITH GALVALUME PANELS

#14-10 WoodTite

5/16” hex head, EPDM/metal washer, Oxyseal Long-Life coating. Plain or Painted

1”, 1 1/2”, 2”

USE AS STITCH SCREW & TO FASTEN METAL TO PLYWOOD OR OSB

Pipe Boots

Flat Sheet