SAFETY

STUDY APPLICABLE OSHA AND OTHER SAFETY REQUIREMENTS BEFORE FOLLOWING THESE INSTRUCTIONS.

The installation of metal roof systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. USE EXTREME CARE WHILE INSTALLING ROOF PANELS. It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to exist. The erector of the roof system is responsible for reading these instructions and determining the safest way to install the roof system.

These instructions are provided only as a guide to show a knowledgeable, trained erector the correct part placement one to another. If following any of the installation steps would endanger a worker, the erector should stop work and decide upon a corrective action.

Provide required safety railing, netting, or safety lines for crew members working on the roof.

Do not use the roof panel as a walking platform. The roof panels will not withstand the weight of a person standing at the edge of the panel.

Do not stand on the roof panel until the panels have been attached.
For more than 50 years, Metal Sales Manufacturing Corporation has earned a reputation as the premier provider of innovative metal building components and accessories. We’ve backed this reputation with the industry’s largest professional sales and services team. We offer a full line of exceptional quality metal roof and wall panels for agricultural, commercial, architectural, industrial, and residential projects of every shape and size, new construction or retro-fit.
<table>
<thead>
<tr>
<th>Branch Location</th>
<th>Address</th>
<th>Phone</th>
<th>Toll Free Phone</th>
<th>Fax</th>
<th>Toll Free Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.) DENVER BRANCH</strong></td>
<td>7990 E. I-25 Frontage Road</td>
<td>303.702.5440</td>
<td>800.289.7663</td>
<td>800.289.1617</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Longmont, CO 80504</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.) JACKSONVILLE BRANCH</strong></td>
<td>7110 Stuart Avenue</td>
<td>904.783.3660</td>
<td>800.394.4419</td>
<td>904.783.9175</td>
<td>800.289.1617</td>
</tr>
<tr>
<td></td>
<td>Jacksonville, FL 32254</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3.) JEFFERSON BRANCH</strong></td>
<td>352 East Erie Street</td>
<td>440.319.3779</td>
<td>800.321.5833</td>
<td>440.576.9242</td>
<td>800.233.3292</td>
</tr>
<tr>
<td></td>
<td>Jefferson, OH 44047</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.) INDEPENDENCE BRANCH</strong></td>
<td>1306 South Powell Road</td>
<td>816.796.0900</td>
<td>800.747.0012</td>
<td>816.796.9006</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Independence, MO 64057</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5.) SELLERSBURG BRANCH</strong></td>
<td>7800 State Road 60</td>
<td>812.246.1866</td>
<td>800.999.7777</td>
<td>812.246.0893</td>
<td>800.477.9318</td>
</tr>
<tr>
<td></td>
<td>Sellersburg, IN 47172</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6.) ROGERS BRANCH</strong></td>
<td>22651 Industrial Boulevard</td>
<td>763.428.8080</td>
<td>800.328.9316</td>
<td>763.428.8525</td>
<td>800.938.9119</td>
</tr>
<tr>
<td></td>
<td>Rogers, MN 55374</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7.) NASHVILLE BRANCH</strong></td>
<td>4314 Hurricane Creek Boulevard</td>
<td>615.229.6570</td>
<td>800.251.8508</td>
<td>615.283.4283</td>
<td>800.419.4372</td>
</tr>
<tr>
<td></td>
<td>Antioch, TN 37013</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>8.) SPOKANE BRANCH</strong></td>
<td>East 2727 Trent Avenue</td>
<td>509.536.6000</td>
<td>800.572.6565</td>
<td>509.534.4427</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spokane, WA 99202</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>9.) SEATTLE BRANCH</strong></td>
<td>20213 84th Avenue, South</td>
<td>253.872.5750</td>
<td>800.431.3470</td>
<td>800.742.7900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kent, WA 98032</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10.) NEW ALBANY BRANCH</strong></td>
<td>999 Park Place</td>
<td>812.944.2733</td>
<td>812.944.1418</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Albany, IN 47150</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>11.) ROCK ISLAND BRANCH</strong></td>
<td>8111 West 29th Street</td>
<td>309.787.1280</td>
<td>800.747.1206</td>
<td>309.787.1833</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rock Island, IL 61201</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>12.) DEER LAKE BRANCH</strong></td>
<td>29 Pinedale Industrial Road</td>
<td>800.544.2577</td>
<td>800.544.1648</td>
<td>800.544.2574</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Owingsburg, PA 17961</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>13.) TEMPLE BRANCH</strong></td>
<td>3838 North General Bruce Drive</td>
<td>254.791.6650</td>
<td>800.543.4415</td>
<td>254.791.6655</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temple, TX 76501</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>14.) WOODLAND BRANCH</strong></td>
<td>1326 Paddock Place</td>
<td>530.668.5690</td>
<td>800.759.6019</td>
<td>530.668.0901</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Woodland, CA 95776</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>15.) FONTANA BRANCH</strong></td>
<td>14213 Whittram Avenue</td>
<td>909.829.8618</td>
<td>800.782.7953</td>
<td>909.829.9083</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fontana, CA 92335</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>16.) ANCHORAGE BRANCH</strong></td>
<td>4637 Old Seward Highway</td>
<td>907.646.7663</td>
<td>866.640.7663</td>
<td>907.646.7664</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anchorage, AK 99503</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>17.) BAY CITY BRANCH</strong></td>
<td>5209 Mackinaw Road</td>
<td>989.686.5879</td>
<td>888.777.7640</td>
<td>888.778.0112</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bay City, MI 48706</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>18.) DETROIT LAKES BRANCH</strong></td>
<td>1435 Egret Avenue</td>
<td>218.847.2988</td>
<td>888.594.1394</td>
<td>218.847.4835</td>
<td>888.594.1454</td>
</tr>
<tr>
<td></td>
<td>Detroit Lakes, MN 56501</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>19.) MOCKSVILLE BRANCH</strong></td>
<td>188 Quality Drive</td>
<td>704.859.0550</td>
<td>800.228.6119</td>
<td>704.859.0157</td>
<td>800.228.7916</td>
</tr>
<tr>
<td></td>
<td>Mocksvill, NC 27028</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>20.) FORT SMITH BRANCH</strong></td>
<td>7510 Ball Road</td>
<td>479.646.1176</td>
<td>877.452.3915</td>
<td>479.646.5204</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fort Smith, AR 72908</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>21.) SIOUX FALLS BRANCH</strong></td>
<td>2700 West 3rd Street, Suite 4</td>
<td>605.335.2745</td>
<td>888.299.0024</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sioux Falls, SD 57104</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TECHNICAL SUPPORT**

- **TECHNICAL SERVICES**
  - 545 South 3rd Street, Suite 200
  - Louisville, KY 40202
  - 502.855.4300 Phone
  - 800.406.7387 Toll Free
  - 502.855.4290 Fax
  - 800.944.6884 Toll Free Fax
**TABLE OF CONTENTS**

<table>
<thead>
<tr>
<th>General Information</th>
<th>PAGE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important Information</td>
<td>1</td>
</tr>
<tr>
<td>Metal Sales' Locations</td>
<td>2</td>
</tr>
<tr>
<td>Customer Service</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Overview</td>
<td>6</td>
</tr>
<tr>
<td>Testing and Approvals</td>
<td>6</td>
</tr>
<tr>
<td>Fastening Patterns</td>
<td>6</td>
</tr>
<tr>
<td>Panel Lap Detail</td>
<td>7</td>
</tr>
<tr>
<td>Section Properties</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classic Rib Fastener Installation</th>
<th>8</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Post Frame Flashing Profiles</th>
<th>9-11</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Residential Flashing Profiles</th>
<th>12</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Accessory Profiles</th>
<th>13</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Handling Material</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving Material</td>
<td>14</td>
</tr>
<tr>
<td>General Handling</td>
<td>14</td>
</tr>
<tr>
<td>Mechanical Handling</td>
<td>14</td>
</tr>
<tr>
<td>Manual Handling</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>16</td>
</tr>
<tr>
<td>Foot Traffic</td>
<td>16</td>
</tr>
<tr>
<td>Required Tools</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design / Installation Considerations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>17</td>
</tr>
<tr>
<td>Condition of Substructure</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Cutting and Touch-Up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Cutting</td>
<td>18</td>
</tr>
<tr>
<td>Touch-Up Paint</td>
<td>18</td>
</tr>
<tr>
<td>Ventilation</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fastener Selection Guide</th>
<th>19</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Installation Overview</th>
<th>20</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Post Frame Panel Installation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Installing Inside Closures (Step 1)</td>
<td>21</td>
</tr>
<tr>
<td>Installing First Panel (Step 2)</td>
<td>21</td>
</tr>
<tr>
<td>Installing Endlap Panel (Step 3)</td>
<td>22</td>
</tr>
<tr>
<td>Installing Sidelap Panel (Step 4)</td>
<td>22</td>
</tr>
<tr>
<td>14” Universal Ridge Detail</td>
<td>23</td>
</tr>
<tr>
<td>Low Profile Ridge Vent</td>
<td>23</td>
</tr>
<tr>
<td>Outside Corner Detail</td>
<td>23</td>
</tr>
<tr>
<td>Inside Corner Detail</td>
<td>23</td>
</tr>
<tr>
<td>Gable Trim Detail</td>
<td>24</td>
</tr>
<tr>
<td>Rake Trim Detail</td>
<td>24</td>
</tr>
<tr>
<td>Universal Sidewall Detail</td>
<td>24</td>
</tr>
<tr>
<td>Universal Endwall Detail</td>
<td>24</td>
</tr>
<tr>
<td>Eave Molding Detail</td>
<td>25</td>
</tr>
<tr>
<td>Universal Gambrel Detail</td>
<td>25</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS (cont.)

<table>
<thead>
<tr>
<th>Page No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Angle Base Detail</td>
</tr>
<tr>
<td>25</td>
<td>Double Angle Detail</td>
</tr>
<tr>
<td>26</td>
<td>Drip Cap Detail</td>
</tr>
<tr>
<td>26</td>
<td>Base Molding Detail</td>
</tr>
<tr>
<td>26</td>
<td>Cannonball Track Cover Detail</td>
</tr>
<tr>
<td>26</td>
<td>National Track Cover Detail</td>
</tr>
<tr>
<td>26</td>
<td>Door Jamb Molding Detail</td>
</tr>
<tr>
<td>27</td>
<td>Mini-Angle - U-Flashing Detail</td>
</tr>
<tr>
<td>27</td>
<td>Post Trim Detail</td>
</tr>
<tr>
<td>27</td>
<td>Door Post Trim Detail</td>
</tr>
<tr>
<td>27</td>
<td>Overhead Door Trim Detail</td>
</tr>
<tr>
<td>28</td>
<td>Soffit Detail</td>
</tr>
<tr>
<td>28</td>
<td>12&quot; Soffit Detail</td>
</tr>
<tr>
<td>28</td>
<td>24&quot; Soffit Detail</td>
</tr>
<tr>
<td>29</td>
<td>Installation Overview</td>
</tr>
<tr>
<td>30</td>
<td>Residential Panel Installation</td>
</tr>
<tr>
<td>30</td>
<td>Installing Inside Closures (Step 1)</td>
</tr>
<tr>
<td>30</td>
<td>Installing First Panel (Step 2)</td>
</tr>
<tr>
<td>31</td>
<td>Installing Second Panel (Step 3)</td>
</tr>
<tr>
<td>31</td>
<td>Installing Second Eave Panel (Step 4)</td>
</tr>
<tr>
<td>32</td>
<td>14&quot; Universal Ridge Detail</td>
</tr>
<tr>
<td>32</td>
<td>Ridge / Hip Cover Detail</td>
</tr>
<tr>
<td>32</td>
<td>Vented Ridge Detail</td>
</tr>
<tr>
<td>32</td>
<td>Gable Trim Detail</td>
</tr>
<tr>
<td>33</td>
<td>Eave Detail</td>
</tr>
<tr>
<td>33</td>
<td>Gutter Detail</td>
</tr>
<tr>
<td>33</td>
<td>Valley Detail</td>
</tr>
<tr>
<td>33</td>
<td>Pitch Break Detail</td>
</tr>
<tr>
<td>34</td>
<td>Chimney / Cricket Detail</td>
</tr>
<tr>
<td>34</td>
<td>Roof Penetration Detail</td>
</tr>
<tr>
<td>35</td>
<td>Care and Maintenance</td>
</tr>
</tbody>
</table>
CLASSIC RIB® PANEL INFORMATION

PANEL OVERVIEW

- Finishes: MS Colorfast45® and Acrylic Coated Galvalume®
- Corrosion Protection: AZ55 per ASTM A 792 for unpainted Galvalume®
  AZ50 per ASTM A 792 for painted Galvalume®
  G60, G90 or G100 per ASTM A 653 for Galvanized
- Gauges: 29 ga and 26 ga standard; 24 ga optional
- 36" panel coverage, 3/4" rib height
- Panel Length: Minimum: 5'; Maximum: 45' recommended
- Exposed fastened, low profile roof and wall system
- Bell-top trapezoidal rib on 9" centers
- Minimum roof slope: 3:12

TESTING AND APPROVALS

- UL 2218 Impact Resistance - Class 4
- UL 790 Fire Resistance Rating - Class A, per building code
- UL 263 Fire Resistance Rating - per assembly
- UL 580 Uplift Resistance - Class 90 Constructions: #560, 584
- ASTM E 455, Diaphragm Capacity
- Texas Windstorm - Evaluation RC-161 and RC-391
- 2014 FBC Approvals - FL9482.2, FL9482.3, FL10999.3, FL10999.4, FL14645.8, FL14645.9 and FL14645.10
- Miami-Dade County, Florida NOA 16-0218.02 expires 8/24/2021
- ICC Evaluation Report - ESR-2385

FASTENING PATTERNS

End of Panel

Field of Panel
# PANEL INFORMATION

## PANEL LAP DETAIL

- 7/16"-14 x 7/8" Stitch Screw (for roof only)
- #9-15 Woodscrew
- Anti-Siphon Groove

## SECTION PROPERTIES

### ALLOWABLE UNIFORM LIVE LOADS, psf

For various fastener spacings

<table>
<thead>
<tr>
<th>Ga</th>
<th>Width in</th>
<th>Yield ksi</th>
<th>Weight psf</th>
<th>Top in Compression</th>
<th>Bottom in Compression</th>
<th>Inward Load</th>
<th>Outward Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ixx in^2/ft</td>
<td>Sxx in^2/ft</td>
<td>Ixx in^2/ft</td>
<td>Sxx in^2/ft</td>
</tr>
<tr>
<td>29</td>
<td>36</td>
<td>80</td>
<td>0.62</td>
<td>0.0100</td>
<td>0.0151</td>
<td>0.0053</td>
<td>0.0118</td>
</tr>
<tr>
<td>26</td>
<td>36</td>
<td>80</td>
<td>0.79</td>
<td>0.0127</td>
<td>0.0192</td>
<td>0.0070</td>
<td>0.0153</td>
</tr>
<tr>
<td>24</td>
<td>36</td>
<td>50</td>
<td>1.03</td>
<td>0.0163</td>
<td>0.0249</td>
<td>0.0103</td>
<td>0.0208</td>
</tr>
</tbody>
</table>

1. Theoretical section properties have been calculated per AISI 2007 'North American Specification for the Design of Cold-Formed Steel Structural Members'. Ixx and Sxx are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with AISI 2007 specifications considering bending, shear, combined bending and shear and deflection. Allowable load considers the 3 or more equal spans condition. Allowable load does not address web crippling, fasteners, support material or load testing. Panel weight is not considered.
3. Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
4. Allowable loads do not include a 1/3 stress increase for wind.
5. **Diaphragm Capacity** - 296 plf average Ultimate Shear Strength using the above fastening pattern on 2x supports located 2’ on center, per ASTM E 445.
USING SCREWS:
For fastening with screws, it is best to use a painted or plated screw, Type A or driller tip with a flat rubber washer. The correct screw gun is also important to the proper installation of self-drilling or self-tapping screws. A tool with the appropriate speed and torque setting (as recommended by the fastener manufacturer) will help prevent fastener thread strip-out and possible damage to the panel or its coating. Typically 40 screws should be used per square for 2’ wide panels and 80 screws should be used per square for 3’ wide panels.

<table>
<thead>
<tr>
<th>CORRECT</th>
<th>TOO LOOSE</th>
<th>TOO TIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealing material slightly visible at edge of washer. Assembly is water tight.</td>
<td>Sealing material is not visible; not enough compression to seal.</td>
<td>Washer is deformed; sealing material pressed beyond fastener edge.</td>
</tr>
</tbody>
</table>

SEATING THE WASHER - Apply sufficient torque to seat the washer - do not overdrive the fastener.

TO PREVENT WOBBLING - Make sure fastener head is completely engaged in the socket. If the head does not go all the way in the socket - tap the magnet deeper into the socket to allow full head engagement. Metal chips will build up from drilling and should be removed from time to time.

PROTECT DRILL POINT - Push only hard enough on the screw gun to engage clutch. This prevents excess friction and burn out of the drill point. Correct pressure will allow screw to drill and tap without binding.
CLASSIC RIB® POST FRAME FLASHING PROFILES

1 - BASE MOLDING

1" 1"

1" 1"

1" 1"

1" 1"

1 - ANGLE BASE

1 1/2" 7/8"

1 1/2" 45°

1 1/2" 45°

1 1/2" 45°

2 - J-CHANNEL

1" 2"

1/8" 7/8"

1/8" 7/8"

1/8" 7/8"

3 - 14" UNIVERSAL RIDGE

1 3/4" 4"

3/8" 143°

3/8" 143°

3/8" 143°

4 - SOFFIT

5 1/2" 12"

5 1/2" 3 1/2"

5 1/2" 12"

5 1/2" 12"

4 - 12" SOFFIT

5 1/2" 1 3/4" 5 1/8"

5 1/2" 1 3/4" 5 1/8"

5 1/2" 1 3/4" 5 1/8"

5 1/2" 1 3/4" 5 1/8"

4 - 24" SOFFIT

5 1/2" 1 3/4" 5 1/8"

5 1/2" 1 3/4" 5 1/8"

5 1/2" 1 3/4" 5 1/8"

5 1/2" 1 3/4" 5 1/8"

5 - UNIVERSAL ENDWALL

5" 143°

3 1/2" 1/4"

7/8" 1/4"

7/8" 1/4"

6 - UNIVERSAL SIDEWALL

3 1/2" 4"

3 1/2" 4"

3 1/2" 4"

3 1/2" 4"
CLASSIC RIB® POST FRAME FLASHING PROFILES

7 - MINI ANGLE

8 - INSIDE CORNER

9 - POST TRIM

10 - NATIONAL TRACK COVER

11 - GABLE TRIM

12 - RAKE TRIM

13 - OUTSIDE CORNER

14 - OVERHEAD DOOR TRIM

15 - DOOR JAMB

16 - DRIP CAP

© Metal Sales Manufacturing Corporation / Subject to change without notice / Effective 6/14
CLASSIC RIB® POST FRAME FLASHING PROFILES

17 - DOOR POST TRIM
1 1/8" 5 5/8" 3 5/8"

1 1/2" 4 3/16" 3 7/8"

18 - FRAMING CLOSURE
3 1/4" 2"

3 3/4"

20 - TRANSLUCENT PANEL
See Panel Profile For Dimensions
LENGTHS: 8'-0",10'-0",12'-0"

21 - EAVE MOLDING
C
3 1/2"

11/8"

2"

22 - DOUBLE ANGLE
C
1 1/8" 7/8" 5/8"

11/4"

1 1/2" 2 3/4"

26 - 3/8" F & J-CHANNEL
C
1 1/4" 3/8" 1"

2 3/4"

2 3/4"

1 1/4"

26 - 3/4" F & J-CHANNEL
C
1 1/4" 3/4" 1"

2 1/4"
CLASSIC RIB® RESIDENTIAL FLASHING PROFILES

1 - RIDGE / HIP COVER

1 - 13" STEP RIDGE / HIP COVER

2 - GABLE TRIM

3 - EAVE

4 - UNIVERSAL ENDWALL

4 - PITCH BREAK

5 - UNIVERSAL SIDEWALL

6 - VALLEY

© Metal Sales Manufacturing Corporation / Subject to change without notice / Effective 6/14
### CLASSIC RIB® ACCESSORY PROFILES

#### CLASSIC RIB CLOSURES

- **OUTSIDE**
  - INSIDE
  - 1" x 3'-0"
  - POLYETHYLENE FOAM

#### UNIVERSAL CLOSURE

- 1" x 1 1/2" x 50'-0"
- 1" x 1 1/2" x 10'-0"

#### VERSA VENT

- Available in pints
  - PVDF / MS Colorfast45
  - URETHANE

#### TAPE SEALANT

- 3/8" x 1/8" x 50'
  - SINGLE BEAD
  - BUTYL - GRAY

#### TUBE SEALANT

- 10.3 oz. CARTRIDGE
  - URETHANE

#### TOUCH-UP PAINT

- AVAILABLE IN PINTS
  - PVDF / MS Colorfast45

#### RUBBER ROOF JACK

- MINI (1/4" TO 1 1/8" O.D. PIPE)
- #2 (1 1/4" TO 3" O.D. PIPE)
- #4 (3" TO 6" O.D. PIPE)
- #6 (6" TO 9" O.D. PIPE)
- #8 (7" TO 13" O.D. PIPE)

#### MS-HT UNDERLAYMENT

- OUTSIDE
- INSIDE

---

© Metal Sales Manufacturing Corporation / Subject to change without notice / Effective 6/14
CLASSIC RIB® HANDLING MATERIAL

RECEIVING MATERIAL

It is the responsibility of the installer to unload material from the delivery truck. The installer shall be responsible for providing suitable equipment for unloading of material from the delivery.

After receiving material, check the condition of the material, and review the shipment against the shipping list to ensure all materials are accounted for. If damages or shortages are discovered, it should be noted on the Bill of Lading at the time of delivery. A claim should be made against the carrier as soon as possible. Metal Sales is not responsible for any damages or shortages unless they are documented in writing and presented to Metal Sales within 48 hours.

GENERAL HANDLING

Each bundle should be handled carefully to avoid being damaged. Care should be taken to prevent bending of the panel or abrasion to finish. Whenever possible, the bundle should remain crated until it is located in its place of storage. If bundles must be opened, we recommend you re-crate them before lifting. To avoid damage please lift the bundle at its center of gravity.

CAUTION

Improper loading and unloading of bundles and crates may result in bodily harm and/or material damage. Metal Sales is not responsible for bodily injuries and/or material damages resulting from improper loading and unloading.

MECHANICAL HANDLING

Forklift - A forklift may be used for panels up to 20'-0" long. Please make sure the forks are at their maximum separation. Do not transport open bundles. When transporting bundles across rough terrain, or over a longer distance, some means of supporting the panel load must be used.

Crane - A crane should be used when lifting panels with lengths greater than 20'-0". Please be sure to utilize a spreader bar to ensure the even distribution of the weight to the pick up points. As a rule when lifting panels, no more than 1/3 of the length of the panel should be left unsupported. Never use wire rope because this will damage the panels.
When handling painted steel, care should be taken to prevent scratching of material. Clean gloves should be worn at all times to prevent a reaction with salts found on bare skin. Installers should wear rubber sole shoes to keep from scuffing material while walking on the roof.

Handling of individual panels should be done carefully and properly to avoid bending or damaging. Panels should be carried by grasping the edge of the panel so that the panel is vertical to the ground. The panel should not be carried horizontal to the ground as this could cause the panel to buckle or bend in the center.

Normally, individual panels can be handled by people placed every 6'-0” to 8'-0” along the length of the panel.
Please inspect panels for moisture accumulation. If moisture has formed, the panels should be unbundled, wiped dry, and allowed to dry completely. Once dry, carefully re-stack the panels and loosely recover allowing for ample air circulation.

Bundled sheets should be stored high enough off of the ground to allow for air circulation and prevent contact with accumulating water. Elevate one end of the bundle to allow any moisture to run off the panels. Metal Sales recommends covering the bundle with a tarpaulin. Do not use tight fitting plastic-type tarpaulins as panel bundle covers. While they may provide protection from heavy downpours, they can also retard necessary ventilation and trap heat and moisture that may accelerate metal corrosion. If panels are to be stored in possible bad weather, we suggest they be stored inside. Extended storage of panels in a bundle is not recommended. Under no circumstances should the panels be stored near or come in contact with salt water, corrosive chemicals, ash, or fumes generated or released inside the building or nearby plants, foundries, plating works, kilns, fertilizer, and wet or green lumber.

Care of metal panels and flashings must be exercised throughout erection. Foot traffic can cause distortion of panel and damage to finish. Traffic over the installed system must be kept to an absolute minimum. Installers should wear rubber sole shoes to keep from scuffing material while walking on the roof.

When walking on the roof panels is unavoidable, walk only in the flats of the panel. Walking on the ribs can cause damage to the panels.

Standard required tools for field installation include:

- Screw Guns
- Magnetic Bits
- Metal Nibbler or Shear
- Tin Snips
- Tape Measure
- Hammer
- Chalk Line
- Drill with bits
- Pop Rivet Gun
- Safety Goggles
- Gloves
- Ear Plugs
- Fall Protection
Metal Sales’ panels are designed to be installed over open framing and/or directly over a wood substrate (minimum 5/8”) with 30# felt moisture barrier (or an Ice and Water Shield when required by Local Building Codes).

Always check with local building codes prior to all installations for any additional requirements that may be specific to your area.

Galvanized and Galvalume panels should not be in contact with, or subject to, water runoff from copper, lead, or uncoated steel materials.

Condensate water from air conditioning units typically contains dissolved copper. This condensate should be discharged through a plastic pipe extended beyond the edge of the roof.

The roof should be inspected for any trapped moisture or structural damage such as bowing or sagging rafters and warped or loose roof purlins or solid decking. These areas should be repaired prior to installing new metal panels.

Prior to installation, make sure there are no nails or fasteners protruding from the roof framing or wood substrate which could damage the panels and impede the installation process.

When installed, panel distortion may occur if not applied over properly aligned and uniform substructure.

Whether installing over new or existing roof, the installer should check the roof deck for squareness before installing panels. Several methods can be used to verify squareness of the structure for proper installation of the panels.

METHOD “A” - One method for checking the roof for squareness is to measure diagonally across one slope of the roof from similar points at the ridge and eave and obtain the same dimension.

METHOD “B” - The 3-4-5 triangle system may also be used. To use this system, measure a point from the corner along the edge of the roof at a module of three (3). Measure a point from the same corner along another edge at a module of four (4). By measuring diagonally between the two points established, the dimension should be exactly a module of five (5) to have a square corner. Multiple uses of this system may be required to determine building squareness. If the endwall cannot be made square, the roof system cannot be installed as shown in these instructions.
FIELD CUTTING

Tin snips or a "nibbler" type electric tool are recommended for field cutting metal panels. Cutting the steel generates slivers or metal chips. These slivers and metal chips must be immediately removed from the panels because they will damage the finish and shorten the life of the product.

One method of preventing this problem is to flip the panels over when cutting. This allows the slivers and metal chips to be brushed from the back side and avoids damaging the paint on the top side of the panels.

When cutting metal panels and flashings, goggles must be worn for eye protection.

CAUTION

All product surfaces should be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface, voiding the warranty.

TOUCH-UP PAINT

All painted panels and flashings have a factory applied baked on finish. Handling and installing panels may result in some small scratches or nicks to the paint finish. Touch-up paint is available in matching colors from Metal Sales. It is recommended that a small brush be used to apply touch-up paint to those areas that are in need of repair. Touch-up paint does not have the superior chalk and fade resistance of the factory applied paint finish and will normally discolor at an accelerated rate. Aerosol paint should not be used because of the overspray that may occur.

VENTILATION

Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal buildings; these problems are common to all types of construction.

The underside of the metal roof on a typical metal building (no attic) should be protected from condensation by insulating with a faced insulation. This should reduce the potential of condensation forming on the underside of the panels. On buildings that have an attic space or are being retrofitted with a metal roofing system, vents should be placed at both the eave and peak of the roof in order to prevent a buildup of moisture (humidity) in the attic space.
## Fastener Selection Guide

### Pop Rivet

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>FINISH</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot; x 3/16&quot;</td>
<td>A</td>
<td>Unpainted</td>
<td>Flashing to Panel, Flashing to Flashing</td>
</tr>
<tr>
<td>1/8&quot; x 3/16&quot;</td>
<td>A</td>
<td>Painted</td>
<td>Flashing to Panel, Flashing to Flashing</td>
</tr>
</tbody>
</table>

### Pan Cake Head Wood Screw

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>FINISH</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>#10-12 x 1&quot;</td>
<td>A</td>
<td>Plated</td>
<td>Panel or Flashing to wood substructure</td>
</tr>
</tbody>
</table>

### Wood Screw

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>FINISH</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>#9-15 x 1&quot;</td>
<td>A</td>
<td>Painted</td>
<td>Panel or Flashing to wood substructure</td>
</tr>
<tr>
<td>#9-15 x 1 1/2&quot;</td>
<td>A</td>
<td>Painted</td>
<td>Panel or Flashing to wood substructure</td>
</tr>
<tr>
<td>#9-15 x 2&quot;</td>
<td>A</td>
<td>Painted</td>
<td>Painted to wood substructure</td>
</tr>
</tbody>
</table>

### Stitch Screw

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>FINISH</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3/4&quot; - 14 x 7/8&quot;</td>
<td>Stitch</td>
<td>Painted</td>
<td>Flashing to Panel, Flashing to Flashing, Panel Sidelap</td>
</tr>
</tbody>
</table>

### Panel

**Length** - Minimum factory cut length is 5'-0" on panels. Panels over 45'-0" require additional consideration in packaging, shipping, and erection. Please consult Metal Sales for recommendations.

There are two critical measurements involving metal panels: the length of panel overhang required at the eave, and the peak end. In each case a certain measurement is required. Check each measurement to ensure panel placement gives you the distance required at the eave and peak condition. In most cases any variance can be taken out at the eave or peak ends.
- As shown below with the number designations, install panel against the prevailing wind. Installing Wall Panels first then Roof Panels.
- To minimize corrosion, siding panels should not be installed all the way to the ground.
- Siding panels should lap over the foundations or splash boards at least three inches.
- Make sure panels are square and plumb, to assure straight and proper alignment of the entire row of panels.
- For areas with high wind considerations, closer fastener spacing may be required.
- It is necessary to attach a temporary guide to the foundation to use as an alignment guide when installing siding panels.
- Siphon groove side of panel must be overlapped with the non siphon groove side of the adjacent panel (if applicable).
NOTE:  
-Eave Molding, Gutter and Valley Flashings must first be installed before panel installation can begin. 
-Panels can be installed going from either left to right or right to lef / looking from eave to peak.

INSTALLING INSIDE CLOSURES

1. Apply a row of Tape Sealant across the top leg of the Eave Molding along the width of the building.  
2. Align and place Inside Closures over the Tape Sealant. It is critical that Inside Closures are square to building as this will control the alignment of the panels. (See page 24 to check building square). 
3. Apply a row of Tape Sealant across the top of the Inside Closure (not shown for clarity).

INSTALLING FIRST PANEL

1. Install the first panel over the Inside Closure allowing desired overhang. Make sure the panel is square to the eave and rake. 
2. Fasten through panel, closure, and sealants into decking with appropriate amount of fasteners to meet local building code. (see fastening pattern on page 6). Fasteners must penetrate closure and sealant. 
3. After securing panel at eave, repeat the fastening pattern at all panel support locations.
INSTALLING ENDLAP PANEL (IF REQUIRED)

1. Apply a row of Tape Sealant across and over the ribs of the eave panel about 3" from panel end.
2. Install the ridge panel over the eave panel and Tape Sealant with a 6" Endlap. Fasten through both panels and Tape Sealant into support with appropriate amount of fasteners to meet local building code. (See fastening pattern on page 6). Fasteners must penetrate sealant.
3. After securing panel, repeat the fastening pattern at all panel support locations.

INSTALLING SIDE LAP PANEL

1. Place the lapping seam of the second panel on top of previously installed panel so that panel ends are flush at eave (See below).
2. Fasten through panel, closure, and Tape Sealant into support with appropriate amount of fasteners to meet local building code. (See fastening pattern on page 6). Fasteners must penetrate closure and sealant.
3. After securing panel, repeat the fastening pattern at all panel support locations.
14" UNIVERSAL RIDGE DETAIL

- Roof panel
- Stitch screw (every rib*)
- Outside closure
- Tape sealant
- Fastener
- 14" or 20" universal ridge cap

* Fastener spacing to be 8" - 12" O.C.

LOW PROFILE RIDGE VENT DETAIL

- Ridge vent
- Ridge / hip cover
- Fastener (every rib*)

* Fastener spacing to be 8" - 12" O.C.

OUTSIDE CORNER DETAIL

- Wall panel
- Fastener
- Tape sealant
- Stitch screw (1'-0" O.C.)
- Outside corner

INSIDE CORNER DETAIL

- Tape sealant
- Stitch screw (1'-0" O.C.)
- Fastener
- Inside corner
- Wall panel
CLASSIC RIB® POST FRAME BUILDING DETAILS

EAVE MOLDING DETAIL

- ROOF PANEL
- TAPE SEALANT
- INSIDE CLOSURE
- FASTENER
- EAVE MOLDING
- OUTSIDE CLOSURE
- STITCH SCREW (EVERY RIB*)
- WALL PANEL

* FASTENER SPACING TO BE 8" - 12" O.C.

UNIVERSAL GAMBREL DETAIL

- ROOF PANEL
- TAPE SEALANT
- INSIDE CLOSURE
- FASTENER
- GAMBREL FLASHING
- OUTSIDE CLOSURE
- STITCH SCREW (EVERY RIB*)
- ROOF PANEL
- FASTENER

* FASTENER SPACING TO BE 8" - 12" O.C.

ANGLE BASE DETAIL

- WALL PANEL
- FASTENER
- TAPE SEALANT
- INSIDE CLOSURE
- ANGLE BASE

DOUBLE ANGLE DETAIL

- WALL PANEL
- FASTENER
- TAPE SEALANT
- INSIDE CLOSURE
- DOUBLE ANGLE
- OUTSIDE CLOSURE
- WALL PANEL

© Metal Sales Manufacturing Corporation / Subject to change without notice / Effective 6/14
OVERHEAD DOOR TRIM DETAIL

- WALL PANEL
- FASTENER
- TAPE SEALANT
- INSIDE CLOSURE
- OVERHEAD DOOR TRIM

* FASTENER SPACING TO BE 8" - 12" O.C.

12" SOFFIT DETAIL

- ROOF PANEL
- INSIDE CLOSURE
- FASTENER
- 12" SOFFIT
- FASTENER
- J-CHANNEL
- FASTENER
- WALL PANEL

24" SOFFIT DETAIL

- TAPE SEALANT
- INSIDE CLOSURE
- 24" SOFFIT
- FASTENER
- J-CHANNEL
- FASTENER
- WALL PANEL
As shown below with the number designations, install panel against the prevailing wind.
Make sure panels are square and plumb, to assure straight and proper alignment of the entire row of panels.
For areas with high wind considerations, closer fastener spacing may be required.
It is necessary to attach a temporary guide to the foundation to use as an alignment guide when installing siding panels.
Siphon groove side of panel must be overlapped with the non-siphon groove side of the adjacent panel (if applicable).
NOTE:  -Eave Molding, Gutter and Valley Flashings must first be installed before panel installation can begin.  
-Panels can be installed going from either left to right or right to left / looking from eave to peak.

**INSTALLING INSIDE CLOSURES**

**STEP 1**
1. Apply a row of Tape Sealant across the top leg of the Eave Molding along the width of the building.
2. Align and place Inside Closures over the Tape Sealant. It is critical that Inside Closures are square to building as this will control the alignment of the panels. (see page 24 to check building square).
3. Apply a row of Tape Sealant across the top of the Inside Closure (not shown for clarity).

**INSTALLING FIRST PANEL**

**STEP 2**
1. Install the first panel over the Inside Closure to allow for desired overhang. Make sure the panel is square to the eave and rake.
2. Fasten through panel, closure, and sealants into decking with appropriate amount of fasteners to meet local building code. (see fastening pattern on page 6). Fasteners must penetrate closure and sealant.
3. After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.
1. Apply a row of Tape Sealant across and over the ribs of the first panel about 3" from panel end.
2. Install the second panel over the first panel and Tape Sealant with a 6" Endlap. **Fasten through both panels and Tape Sealant into support with appropriate amount of fasteners to meet local building code.** (see fastening pattern on page 6). Fasteners must penetrate sealant.
3. After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.

**INSTALLED SECOND PANEL**

**STEP 3**

1. Place the lapping seam of the second panel on top of previously installed panel so that panel ends are flush at eave (see below).
2. Fasten through panel, closure, and Tape Sealant into support with appropriate amount of fasteners to meet local building code. (see fastening pattern on page 6). Fasteners must penetrate closure and sealant.
3. After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.

**INSTALLED SECOND EAVE PANEL**

**STEP 4**

*PANELS WITHOUT AN ANTI-SYPHON GROOVE REQUIRE TAPE SEALANT IN THE SIDELAP.*
**CLASSIC RIB® RESIDENTIAL DETAILS**

### 14" UNIVERSAL RIDGE DETAIL
- Roof Panel
- Stitch Screw (Every Rib*)
- Outside Closure
- Tape Sealant
- Fastener
- 14" Universal Ridge
- Moisture Barrier

*FASTENER SPACING TO BE 8" - 12" O.C.*

### RIDGE / HIP COVER DETAIL
- Roof Panel
- Stitch Screw (Every Rib*)
- Outside Closure (RDG)
- Universal Closure (Hip)
- Tape Sealant
- Fastener
- Ridge / Hip Cover
- Moisture Barrier

*FASTENER SPACING TO BE 8" - 12" O.C.*

### VENTED RIDGE DETAIL
- Roof Panel
- Stitch Screw (Every Rib*)
- Cobra Ridge Vent
- 13" Step Ridge Cover
- Tape Sealant
- Moisture Barrier

*FASTENER SPACING TO BE 8" - 12" O.C.*

### GABLE TRIM DETAIL
- Roof Panel
- Stitch Screw (1'-0" O.C.)
- Tape Sealant
- Moisture Barrier
- Gable Trim
- Fastener
- Outside Closure
- Stitch Screw (Every Rib*)
- Tape Sealant

*FASTENER SPACING TO BE 8" - 12" O.C.*
**CLASSIC RIB® RESIDENTIAL DETAILS**

**EAVE DETAIL**
- ROOF PANEL
- MOISTURE BARRIER
- FASTENER
- INSIDE CLOSURE
- TAPE SEALANT
- FASTENER (1'-0" O.C.)
- EAVE TRIM

**GUTTER DETAIL**
- ROOF PANEL
- MOISTURE BARRIER
- TAPE SEALANT
- FASTENER
- INSIDE CLOSURE
- DRIP EDGE (BY OTHERS)
- GUTTER (BY OTHERS)

**VALLEY DETAIL**
- ROOF PANEL
- PANCAKE HEAD SCREW (1'-0" O.C.)
- TAPE SEALANT
- FASTENER
- UNIVERSAL CLOSURE
- VALLEY MOISTURE BARRIER

**PITCH BREAK DETAIL**
- FASTENER
- WALL PANEL
- PITCH BREAK
- OUTSIDE CLOSURE
- STITCH SCREW (EVERY RIB*)
- TAPE SEALANT
- MOISTURE BARRIER
- FASTENER

* FASTENER SPACING TO BE 8" - 12" O.C.
CLASSIC RIB® RESIDENTIAL DETAILS

CHIMNEY / CRICKET DETAIL

- CHIMNEY
- RIDGE / HIP COVER
- ROOF PANEL
- SIDEWALL (FIELD CUT AND BEND)
- ENDWALL (FIELD CUT AND BEND)

ROOF PENETRATION DETAIL

- FASTENER
- TAPE SEALANT
- VENT PIPE
- RUBBER ROOF JACK
- ROOF PANEL

FIELD FABRICATE FLAT SHEET TO FIT PLYWOOD CRICKET

AVAILABLE SIZES
- MINI (1/4" TO 1 1/4" O.D. PIPE)
- #2 (1 1/4" TO 3" O.D. PIPE)
- #4 (3" TO 6" O.D. PIPE)
- #6 (6" TO 9" O.D. PIPE)
- #8 (7" TO 13" O.D. PIPE)
Though factory applied pre-painted finishes are very durable and will last many years, eventually it may be desirable to thoroughly clean or repaint them.

Dirt pickup may cause apparent discoloration of the paint when it has been exposed in some dirt-laden environments for long periods of time. In areas of strong sunlight, slight chalking may cause some change in appearance. A good cleaning will often restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will help maintain a good appearance.

In many cases, simply washing the building with plain water using a hose or pressure sprayer will be adequate. In areas where heavy dirt deposits dull the surface, a cloth or soft bristle brush and solution of water and detergent (1/3 cup of laundry detergent per gallon of water for example) may be used. This should be followed by an adequate rinse of water. Do not use wire brushes, abrasives, or cleaning tools which will damage the coating surface.

Mildew may occur in areas subject to high humidity but is not normally a problem due to the high inherent mildew resistance of the baked finish that is used. To remove mildew along with the dirt, the following solution is recommended.

\[
\begin{align*}
\frac{1}{3} \text{ cup detergent (Tide\textsuperscript{®} or equivalent)} \\
\frac{2}{3} \text{ cup trisodium phosphate (Solex\textsuperscript{®} or equivalent)} \\
1 \text{ quart of 5\% sodium hypochlorite solution (Clorox\textsuperscript{®} or equivalent)} \\
3 \text{ quarts of water}
\end{align*}
\]

Strong solvents and abrasive type cleaners should be avoided. Most organic solvents are flammable and toxic and must be handled accordingly. When using a solvent, consult maintenance professionals and label instructions for proper handling and disposal of washings. If required, a mild solvent such as mineral spirits can be used to remove caulking compounds, oil, grease, tars, wax, and similar substances. Use a cloth dampened with mineral spirits and apply only to areas which are contaminated. Follow up the use of this mild solvent with detergent cleaning and rinsing.