The application and detail drawings in this manual are strictly for illustration purposes and may not be applicable to all building designs or product installations. All projects should conform to applicable building codes for that particular area. It is recommended to follow all building regulations and standard industry practices.

Metal Sales Manufacturing Corporation is not responsible for the performance of the roof system if it is not installed in accordance with the suggested instructions referenced in this installation manual or in the product overview. (See Product Manual or Product Technical Literature). If there is a conflict between this manual and the actual erection drawings, the erection drawings are to take precedence.

Prior to ordering and installing materials, all dimensions should be verified by field measurements.

Metal Sales reserves the right to modify, without notice, any details, recommendations or suggestions. Any questions you may have regarding proper installation of the roofing system should be directed to your Metal Sales representative, see pages 2 and 3.

Consult Metal Sales for any additional information not outlined in this manual.

This manual is designed to be utilized as a guide when installing Post Frame and Residential roofing systems. It is the responsibility of the erector to ensure the safe installation of this product system.

**SAFETY**

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

The installation of metal wall systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. USE EXTREME CARE WHILE INSTALLING WALL 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 wall system is responsible for reading these instructions and determining the safest way to install the wall system.

These instructions are provided only as a guide to show a knowledgeable, trained erector the correct relationship of parts to one 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. Fall protection for workers installing wall panels must be provided.
NOTE: Shaded areas represent territories served by each location.
1. DENVER
7990 East I-25 Frontage Road
Longmont, CO 80504
303.702.5440
800.289.7663
800.289.1617 Fax

2. JACKSONVILLE
7110 Stuart Avenue
Jacksonville, FL 32254
904.783.3660
800.394.4419
904.783.9175 Fax
800.289.1617 Fax

3. JEFFERSON
352 East Erie Street
Jefferson, OH 44047
440.576.9070
800.321.5833
440.576.9242 Fax
800.233.5719 Fax

4. INDEPENDENCE
1306 South Powell Road
Independence, MO 64057
816.796.0900
800.747.0012
816.796.0906 Fax

5. SELLERSBURG
7800 Highway 60
Sellersburg, IN 47172
812.246.1866
800.999.777 Fax
812.246.0893 Fax

6. ROGERS
22651 Industrial Boulevard
Rogers, MN 55374
763.428.8080
800.328.9316
763.428.8525 Fax
800.938.9119 Fax

7. NASHVILLE
4314 Hurricane Creek Boulevard
Antioch, TN 37013
615.641.7100
800.251.8508
615.641.7118 Fax
800.419.4372 Fax

8. SPOKANE
2727 East Trent Avenue
Spokane, WA 99202
509.536.6000
800.572.6565
509.534.4427 Fax

9. KELSO
2680 Coweeman Park Drive
Kelso, WA 98626
253.872.5750
800.431.3470
253.872.2008 Fax

10. NEW ALBANY
999 Park Place
New Albany, IN 47150
812.944.2733
812.944.1418 Fax

11. ROCK ISLAND
8111 West 29th Street
Rock Island, IL 61201
309.787.1200
800.747.1206
309.787.1833 Fax
888.777.0112 Fax

12. DEER LAKE
29 Pinedale Industrial Road
Orwigsburg, PA 17961
570.366.2020
800.544.2577
570.366.1648 Fax
800.544.2574 Fax

13. TEMPLE
3838 North General Bruce Drive
Temple, TX 76501
254.791.6650
800.543.4415
254.791.6655 Fax
800.543.4473 Fax

14. WOODLAND
1326 Paddock Place
Woodland, CA 95776
530.668.5690
800.759.6019
530.668.0901 Fax

15. FONTANA
14213 Whittram Avenue
Fontana, CA 92335
909.829.8618
800.782.7953
909.829.9083 Fax

16. ANCHORAGE
4637 Old Seward Highway
Anchorage, AK 99503
907.646.7663
866.640.7663
907.646.7664 Fax

17. BAY CITY
5209 Mackinaw Road
Bay City, MI 48706
989.666.5879
888.777.7640
989.666.5870 Fax
888.777.0112 Fax

18. DETROIT LAKES
1435 Egret Avenue
Detroit Lakes, MN 56501
218.847.2988
888.594.1394
218.847.4835 Fax
888.594.1454 Fax

19. MOCKSVILLE
188 Quality Drive
Mocksville, NC 27028
336.751.6301 Fax
800.228.6119
336.751.6301 Fax
800.228.7916 Fax

20. FORT SMITH
7510 Ball Road
Fort Smith, AR 72908
479.646.1176
479.646.5204 Fax
877.452.3915

21. SIOUX FALLS
2700 West 3rd Street, Suite 4
Sioux Falls, SD 57104
605.335.2745
888.299.0024

TECH SERVICES DEPT.
7800 Highway 60
Sellersburg, IN 47172
800.406.7387
800.944.688 Fax

CORPORATE OFFICE
7800 Highway 60
Sellersburg, IN 47172
800.406.7387
800.944.688 Fax

TECHNICAL SUPPORT
7800 Highway 60
Sellersburg, IN 47172
502.855.4300
800.406.7387
800.944.688 Fax
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Installation Overview

Residential Panel Installation

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**POST FRAME**

**CLASSIC RIB®**

**POST FRAME**

**Finishes:** MS Colorfast45®, ColorFit40™, MS Crinkle Finish and Acrylic Coated Galvalume®

**Corrosion Protection:** AZ55 per ASTM A 792 for unpainted Galvalume®
AZ50 per ASTM A 792 for painted Galvalume®
AZ35 per ASTM A 792 for painted Galvalume® (ColorFit40™ only)
G60, G90 or G100 per ASTM A 653 for Galvanized

**Gauges:** 29 ga and 26 ga standard; 24 ga optional

**Panel Length:** Minimum: 5'-0"; Maximum: 45'-0" recommended

**Profile:** 36" panel coverage, 3/4" rib height

**Info:** Exposed fastened panel, low profile, 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 331, Water Penetration, with Strip Mastic in sidelap
- ASTM E 455, Diaphragm Capacity
- Texas Windstorm - Evaluations RC-161 and RC-391
- 2023 FBC Approvals - FL9482.2, FL9482.3, 10999.3, FL 10999.4, FL14645.6, FL14645.7, FL14645.8, FL14645.9 and FL 46539.1
- Miami-Dade County, Florida NOA 21-0629.10 expires 8/24/2026
- ICC Evaluation Report - ESR-2385

---

**SECTION PROPERTIES**

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<tr>
<th>Ga</th>
<th>Width in</th>
<th>Yield ksi</th>
<th>Weight psf</th>
<th>Top in Compression</th>
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<td>Ixx in³/ft</td>
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<td>Ixx in³/ft</td>
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1. Theoretical section properties have been calculated per AISI 2016 ‘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 2016 specifications considering bending, shear, combined bending & shear and deflection. Allowable load does not address web crippling, fasteners, support material or load testing. Allowable load considers the three or more equal spans condition. 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 - 246 psf average Ultimate Shear Strength using the above fastening pattern on 2x supports located 2’ on center, per ASTM E 455.
**CLASSIC RIB®**

**PANEL LAP DETAIL**

- Classic Rib Panel
- Anti-Siphon Groove
- Side Lap Fastener 12" o.c. (roof only)
- Panel Fastener

**FASTENING PATTERNS**

**FIELD OF PANEL**

- Side Lap Fastener (for roof only 12" o.c.)
- Panel Fastener

**END OF PANEL**

- Side Lap Fastener (for roof only 12" o.c.)
- Panel Fastener
**POST FRAME**

**PRO-PANEL II®**

---

### PANEL OVERVIEW

- **Finishes:** MS Colorfast45®, ColorFit40™, MS Crinkle Finish and Acrylic Coated Galvalume®
- **Corrosion Protection:**
  - AZ55 per ASTM A 792 for unpainted Galvalume®
  - AZ50 per ASTM A 792 for painted Galvalume®
  - AZ35 per ASTM A 792 for painted Galvalume® (ColorFit40™ only)
  - G60, G90 or G100 per ASTM A 653 for Galvanized
- **Gauges:** 29 ga and 26 ga standard
- **Panel Length:** Minimum: 5'; Maximum: 45' recommended
- **Profile:** 36" panel coverage, 5/8" rib height
- **Info:** Exposed fastened, low profile roof and wall panel; 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
- ASTM E 283 Air Leakage - 0.0076 cfm/ft² at 6.24 psf *
- ASTM E 331 Water Penetration - none at 12 psf *
- ASTM E 330 Structural Performance
- ASTM E 455 Diaphragm Capacity
- 2023 FBC Approvals - FL14645.12 and FL46539.2

* uses tape sealant and stitch screws 1' on center in side lap

### SECTION PROPERTIES

**ALLOWABLE UNIFORM LOADS, psf**

For various fastener spacings

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<th>Width in</th>
<th>Yield ksi</th>
<th>Weight psf</th>
<th>Top In Compression</th>
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1. Theoretical section properties have been calculated per AISI 2016 '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 2016 specifications considering bending, shear, combined bending & shear and deflection. Allowable load does not address web crippling, fasteners, support material or load testing. Allowable load considers the three or more equal spans condition. 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.
POST FRAME  PRO-PANEL II®

PANEL LAP DETAIL

- Side Lap Fastener 12" o.c. (roof only)
- Panel Fastener
- Anti-Siphon Groove

FASTENING PATTERNS

END OF PANEL

- Side Lap Fastener 12" o.c. (for roof only 12" o.c.)
- Panel Fastener

FIELD OF PANEL

- Side Lap Fastener 12" o.c. (for roof only 12" o.c.)
- Panel Fastener

Optional Profile
POST FRAME DELTA RIB

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®
  G90 per ASTM A 653 for Galvanized
- **Gauges**: 29 ga and 26 ga standard, 24 ga optional
- **Panel Length**: Minimum: 5'; Maximum: 40' recommended
- **Profile**: 24" panel coverage, 13/16" rib height
- **Info**: Exposed fastened, low profile roof and wall panel; Trapezoidal rib on 8" 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

SECTION PROPERTIES

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2. Allowable load is calculated in accordance with AISI 2016 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.
PANEL LAP DETAIL

- Panel Fastener
- Side Lap Fastener 12" o.c. (roof only)
- Tape Sealant (roof only)

FASTENING PATTERN

- Sidelap Fastener (roof only 12" o.c.)
- Panel Fastener
- Tape Sealant (roof only)
**POST FRAME**

**5V-CRIMP**

---

**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®
  - G90 per ASTM A 653 for Galvanized
- **Gauges:** 26 ga standard; 24 ga optional
- **Panel Length:** Minimum: 5'; Maximum: 45' recommended
- **Profile:** 24” panel coverage, 1/2” rib height
- **Minimum roof slope:** 3:12
- **Info:** "V" rib roof panel 12" on center. Applies over plywood with minimum 30# felt underlayment

---

**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: #579 and #453
- Texas Windstorm - Evaluation RC-160
- 2023 FBC Approvals - FL14645.2 and FL14645.3
- Miami-Dade County, Florida NOA 23-0222.06 (26 ga) expires 6/29/2028
- Miami-Dade County, Florida NOA 24-0212.05 (0.032" Aluminum) expires 4/24/2029

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**SECTION PROPERTIES**

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<tbody>
<tr>
<td></td>
<td>in</td>
<td>ksi</td>
<td>psf</td>
<td>Ixx in^3/ft</td>
<td>Sxx in^3/ft</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td>1'</td>
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<td>3'</td>
<td>50</td>
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</tbody>
</table>

1. Theoretical section properties have been calculated per AISI 2016 ‘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 2016 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.

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POST FRAME  5V-CRIMP

PANEL LAP DETAIL

FIRST PANEL INSTALLED

FASTENER

INSIDE CLOSURE

FASTENING PATTERN

FIELD & END OF PANEL

Panel Fastener

OPTIONAL FASTENING PATTERNS

END OF PANEL

Panel Fastener

FIELD OF PANEL

Panel Fastener
POST FRAME 2.5” CORRUGATED ROOF

21-1/3” Coverage

PANEL OVERVIEW

- Finishes: MS Colorfast®45 and Acrylic Coated Galvalume®
- Corrosion Protection: AZ55 per ASTM A 792 for unpainted Galvalume®
  AZ50 per ASTM A 792 for painted Galvalume®
  G90 per ASTM A 653 for Galvanized
- Gauges: 26 ga standard; 24 ga optional
- Panel Length: Minimum: 5’; Maximum: 45’ recommended
- Profile: 21-1/3” panel coverage, 1/2” rib height
- Minimum roof slope: 3:12
- Info: Ribs on 2.66” centers. Applies over plywood with minimum 30# felt underlayment

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
- Texas Windstorm - Evaluation RC-159
- 2023 FBC Approval - FL14645.1
- ICC Evaluation Report - ESR-2385

SECTION PROPERTIES

SECTION PROPERTIES

<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 in²/ft</td>
<td>Sxx in²/ft</td>
<td>Ixx in²/ft</td>
<td>Sxx in²/ft</td>
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</tbody>
</table>

1. Theoretical section properties have been calculated per AISI 2016 ‘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 2016 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.

ALLOWABLE UNIFORM LOADS, psf
For various fastener spacings
POST FRAME  2.5" CORRUGATED ROOF

ROOF PANEL LAP DETAIL

FASTENING PATTERNS

END OF PANEL

FIELD OF PANEL
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®
  - G90 per ASTM A 653 for Galvanized
- Gauges: 26 ga standard; 24 ga optional
- Panel Length: Minimum: 5'; Maximum: 45' recommended
- Profile: 24” panel coverage, 1/2” rib height
- Minimum roof slope: 3:12
- Info: Ribs on 2.66” centers. Applies over plywood with minimum 30# felt underlayment

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

SECTION PROPERTIES

<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>
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</tbody>
</table>

1. Theoretical section properties have been calculated per AISI 2016 '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 2016 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.
WALL PANEL LAP DETAIL

Panel Fastener

FASTENING PATTERN

Panel Fastener
1. Theoretical section properties have been calculated per AISI 2016 'North American Specification for the Design of Cold-Formed Steel Structural Members'. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with AISI 2016 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.

### 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®
  - G90 per ASTM A 653 for Galvanized
- **Gauges**: 26 ga standard; 24 ga optional
- **Panel Length**: Minimum: 3'; Maximum: 30' recommended
- **Profile**: 24" panel coverage, 1/2" rib height
- **Minimum roof slope**: 3:12
- **Info**: Ribs on 1.25" centers. Applies over plywood with minimum 30# felt underlayment

### 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

### SECTION PROPERTIES

#### ALLOWABLE UNIFORM 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>
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<tr>
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<td>0.0015</td>
<td>0.0085</td>
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</table>

1. Theoretical section properties have been calculated per AISI 2016 'North American Specification for the Design of Cold-Formed Steel Structural Members'. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
POST FRAME 1.25" CORRUGATED

PANEL LAP DETAIL

Side Lap Fastener (12" o.c.)

Panel Fastener

FASTENING PATTERN

Side Lap Fastener (12" o.c.)

Panel Fastener

ENDS AND FIELD OF PANEL
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.
POST FRAME FLASHING PROFILES

1. BASE MOLDING
   - 1" x 1" x 1"

2. ANGLE BASE
   - 1 1/2" x 7/8" x 45°

3. J-CHANNEL
   - 1" x 2" x 7/8"

4. 14" UNIVERSAL RIDGE
   - 3/8" x 143° x 1 3/4"

5. 20" UNIVERSAL RIDGE
   - 3/8" x 143° x 2"

6. SOFFIT
   - 5 1/2" x 12" x 3 1/2"

7. 12" SOFFIT
   - 5 1/2" x 1 3/4" x 5 1/8"

8. 24" SOFFIT
   - 5 1/2" x 1 3/4" x 5 1/8"
<table>
<thead>
<tr>
<th><strong>POST FRAME</strong></th>
<th><strong>FLASHING PROFILES</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>6</strong> UNIVERSAL SIDEWALL</td>
<td><strong>7</strong> MINI ANGLE</td>
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<tr>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
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<tr>
<td><strong>9</strong> POST TRIM</td>
<td><strong>10</strong> NATIONAL TRACK COVER</td>
</tr>
<tr>
<td><img src="image4" alt="Diagram" /></td>
<td><img src="image5" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>10</strong> CANNONBALL TRACK COVER</td>
<td><strong>11</strong> GABLE TRIM</td>
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<tr>
<td><img src="image7" alt="Diagram" /></td>
<td><img src="image8" alt="Diagram" /></td>
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<tr>
<td><strong>13</strong> OUTSIDE CORNER</td>
<td><strong>14</strong> OVERHEAD DOOR TRIM</td>
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<tr>
<td><img src="image10" alt="Diagram" /></td>
<td><img src="image11" alt="Diagram" /></td>
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<tr>
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<td>---</td>
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<td>1</td>
<td>14&quot; UNIVERSAL RIDGE COVER</td>
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<td><img src="image4.png" alt="Diagram" /></td>
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<td>4</td>
<td>PITCH BREAK</td>
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<td><img src="image7.png" alt="Diagram" /></td>
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## POST FRAME FOAM CLOSURES

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<th>APPLICATION</th>
<th>SIZE</th>
<th>TYPE</th>
<th>WEIGHT</th>
<th>COLOR</th>
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</thead>
<tbody>
<tr>
<td>Inside Closure</td>
<td>36&quot;</td>
<td>Polyethylene Foam</td>
<td>0.3 lbs</td>
<td>Grey</td>
<td></td>
</tr>
<tr>
<td>Outside Closure</td>
<td>36&quot;</td>
<td>Polyethylene Foam</td>
<td>0.3 lbs</td>
<td>Grey</td>
<td></td>
</tr>
</tbody>
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<table>
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<tr>
<th>PRO-PANEL II</th>
<th>APPLICATION</th>
<th>SIZE</th>
<th>TYPE</th>
<th>WEIGHT</th>
<th>COLOR</th>
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<tbody>
<tr>
<td>Inside Closure</td>
<td>36&quot;</td>
<td>Polyethylene Foam</td>
<td>0.3 lbs</td>
<td>Grey</td>
<td></td>
</tr>
<tr>
<td>Outside Closure</td>
<td>36&quot;</td>
<td>Polyethylene Foam</td>
<td>0.3 lbs</td>
<td>Grey</td>
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<table>
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<tr>
<th>5V-CRIMP</th>
<th>APPLICATION</th>
<th>SIZE</th>
<th>TYPE</th>
<th>WEIGHT</th>
<th>COLOR</th>
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<tbody>
<tr>
<td>Inside Closure</td>
<td>24&quot;</td>
<td>Polyethylene Foam</td>
<td>0.2 lbs</td>
<td>Grey</td>
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<tr>
<td>Outside Closure</td>
<td>24&quot;</td>
<td>Polyethylene Foam</td>
<td>0.2 lbs</td>
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<tr>
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<th>SIZE</th>
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<td>0.2 lbs</td>
<td>Grey</td>
<td></td>
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<tr>
<td>Outside Closure</td>
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<tr>
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<td>24&quot;</td>
<td>Polyethylene Foam</td>
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<table>
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<th>COLOR</th>
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<tbody>
<tr>
<td>Inside/Outside Closure</td>
<td>24&quot;</td>
<td>Polyethylene Foam</td>
<td>0.2 lbs</td>
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### POST FRAME CLOSURES & RIDGE VENTS

#### UNIVERSAL CLOSURE

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<thead>
<tr>
<th>SIZE</th>
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<th>PRODUCT NO.</th>
<th>WT/100</th>
<th>COLOR</th>
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</thead>
<tbody>
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<td>Polyethylene Foam</td>
<td>6411499</td>
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<td>Grey</td>
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<tr>
<td>1&quot; x 1'/2&quot; x 50'</td>
<td>Polyethylene Foam</td>
<td>6411299</td>
<td>4.0 lbs</td>
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#### LP2 RIDGE VENT - CLASSIC RIB

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<thead>
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<th>SIZE</th>
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<th>PRODUCT NO.</th>
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<td>6451899</td>
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#### LP2 RIDGE VENT - PRO-PANEL II

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<td>36&quot; Wide</td>
<td>Python™ Polyester Vent Material</td>
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<td>Grey</td>
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#### LP2 RIDGE VENT - DELTA-RIB

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<th>COLOR</th>
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#### PROFILE VENT

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<th>COVERAGE</th>
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<td>2 Rolls at 25'</td>
<td>6442100</td>
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<td>25' Ridge</td>
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<tr>
<td>Classic Rib</td>
<td>100'</td>
<td>2 Rolls at 50'</td>
<td>6441699</td>
<td>10.7 lbs</td>
<td>50' Ridge</td>
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<td>Pro-Panel II</td>
<td>50'</td>
<td>2 Rolls at 25'</td>
<td>6442200</td>
<td>4.7 lbs</td>
<td>25' Ridge</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>100'</td>
<td>2 Rolls at 50'</td>
<td>6441599</td>
<td>10.7 lbs</td>
<td>50' Ridge</td>
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<tr>
<td>5V-Crimp</td>
<td>50'</td>
<td>2 Rolls at 25'</td>
<td>6423106</td>
<td>4.7 lbs</td>
<td>25' Ridge</td>
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<tr>
<td>5V-Crimp</td>
<td>100'</td>
<td>2 Rolls at 50'</td>
<td>6423000</td>
<td>10.7 lbs</td>
<td>50' Ridge</td>
</tr>
</tbody>
</table>

#### VERSA VENT

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>WT/100</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; x 1'/2&quot; x 25'</td>
<td>Polyethylene Foam</td>
<td>6442100</td>
<td>2.0 lbs</td>
<td>Grey</td>
</tr>
<tr>
<td>1&quot; x 1'/2&quot; x 50'</td>
<td>Polyethylene Foam</td>
<td>6411299</td>
<td>4.0 lbs</td>
<td>Grey</td>
</tr>
</tbody>
</table>
## POST FRAME ACCESSORIES

### SINGLE BEAD TUBE SEALANT

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>WT/24</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot; x 3/32&quot; x 50'</td>
<td>Butyl</td>
<td>6404099</td>
<td>48.0 lbs 24 Rolls</td>
</tr>
</tbody>
</table>

### DOUBLE BEAD TUBE SEALANT

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>WT/CTN</th>
<th>CTN QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/8&quot; x 3/16&quot; x 25'</td>
<td>Butyl</td>
<td>6403899</td>
<td>57.6 lbs 24 Rolls</td>
<td></td>
</tr>
<tr>
<td>7/8&quot; x 3/16&quot; x 40'</td>
<td>Butyl</td>
<td>6403999</td>
<td>48.0 lbs 10 Rolls</td>
<td></td>
</tr>
</tbody>
</table>

### TUBE SEALANT

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>WT/CTN</th>
<th>CTN QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.3 oz</td>
<td>Urethane White</td>
<td>6402830</td>
<td>29.1 lbs 30 Tubes</td>
<td></td>
</tr>
<tr>
<td>10.3 oz</td>
<td>Urethane Bronze</td>
<td>6402999</td>
<td>29.1 lbs 30 Tubes</td>
<td></td>
</tr>
<tr>
<td>10.3 oz</td>
<td>Urethane Grey</td>
<td>6402829</td>
<td>29.1 lbs 30 Tubes</td>
<td></td>
</tr>
</tbody>
</table>

### MS-HT UNDERLAYMENT

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>COVERAGE</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>36&quot; x 67'-0&quot;</td>
<td>Peel and Stick</td>
<td>2 Squares</td>
<td>44 lbs</td>
</tr>
</tbody>
</table>
## POST FRAME

### POLYCARBONATE PANELS

<table>
<thead>
<tr>
<th>PROFILE</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>PRODUCT NO.</th>
<th>WEIGHT</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic Rib</td>
<td>2'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151000</td>
<td>1.5 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>2'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151030</td>
<td>1.5 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>8'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151300</td>
<td>6.1 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>8'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151330</td>
<td>6.1 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>10'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151400</td>
<td>7.6 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>10'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151430</td>
<td>7.6 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>12'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151500</td>
<td>9.2 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>12'-0&quot;</td>
<td>37.88&quot;</td>
<td>6151530</td>
<td>9.2 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>8'-0&quot;</td>
<td>37.88&quot;</td>
<td>6197900</td>
<td>6.1 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>10'-0&quot;</td>
<td>37.88&quot;</td>
<td>6198000</td>
<td>7.6 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>10'-0&quot;</td>
<td>37.88&quot;</td>
<td>6198030</td>
<td>7.6 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>12'-0&quot;</td>
<td>37.88&quot;</td>
<td>6198100</td>
<td>9.2 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>12'-0&quot;</td>
<td>37.88&quot;</td>
<td>6198130</td>
<td>9.2 lbs</td>
<td>White</td>
</tr>
<tr>
<td>5V-Crimp</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6198400</td>
<td>7.7 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>5V-Crimp</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6198430</td>
<td>7.7 lbs</td>
<td>White</td>
</tr>
<tr>
<td>1.25&quot; Corrugated</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6193800</td>
<td>8.0 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>1.25&quot; Corrugated</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6193830</td>
<td>8.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>2.5&quot; Corrugated</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6193700</td>
<td>8.1 lbs</td>
<td>Clear</td>
</tr>
<tr>
<td>2.5&quot; Corrugated</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6193730</td>
<td>8.1 lbs</td>
<td>White</td>
</tr>
</tbody>
</table>

### FIBERGLASS PANELS

<table>
<thead>
<tr>
<th>PROFILE</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>PRODUCT NO.</th>
<th>WEIGHT</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic Rib</td>
<td>2'-0&quot;</td>
<td>37.88&quot;</td>
<td>6150702</td>
<td>1.6 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>8'-0&quot;</td>
<td>37.88&quot;</td>
<td>6150730</td>
<td>8.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>10'-0&quot;</td>
<td>37.88&quot;</td>
<td>6150830</td>
<td>10.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Classic Rib</td>
<td>12'-0&quot;</td>
<td>37.88&quot;</td>
<td>6150930</td>
<td>12.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>8'-0&quot;</td>
<td>37.88&quot;</td>
<td>6140230</td>
<td>8.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>10'-0&quot;</td>
<td>37.88&quot;</td>
<td>6140430</td>
<td>10.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Pro-Panel II</td>
<td>12'-0&quot;</td>
<td>37.88&quot;</td>
<td>6140630</td>
<td>12.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Delta-Rib</td>
<td>8'-0&quot;</td>
<td>26.25&quot;</td>
<td>6115230</td>
<td>6.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Delta-Rib</td>
<td>10'-0&quot;</td>
<td>26.25&quot;</td>
<td>6115430</td>
<td>8.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>Delta-Rib</td>
<td>12'-0&quot;</td>
<td>26.25&quot;</td>
<td>6115630</td>
<td>10.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>1.25&quot; Corrugated</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6105630</td>
<td>10.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>2.5&quot; Corrugated</td>
<td>10'-0&quot;</td>
<td>26&quot;</td>
<td>6110530</td>
<td>8.0 lbs</td>
<td>White</td>
</tr>
<tr>
<td>2.5&quot; Corrugated</td>
<td>12'-0&quot;</td>
<td>26&quot;</td>
<td>6110630</td>
<td>10.0 lbs</td>
<td>White</td>
</tr>
</tbody>
</table>
### POST FRAME

**ROOF JACKS**

#### ROUND BASE

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>BASE DIAMETER</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Flasher</td>
<td>Rubber</td>
<td>68501XX*</td>
<td>¼&quot; - 2&quot;</td>
<td>0.9 lbs</td>
</tr>
<tr>
<td>#2 Flasher</td>
<td>Rubber</td>
<td>68502XX*</td>
<td>1½&quot; - 3½&quot;</td>
<td>1.5 lbs</td>
</tr>
<tr>
<td>#3 Flasher</td>
<td>Rubber</td>
<td>68503XX*</td>
<td>½&quot; - 5&quot;</td>
<td>2.1 lbs</td>
</tr>
<tr>
<td>#4 Flasher</td>
<td>Rubber</td>
<td>68504XX*</td>
<td>3&quot; - 6½&quot;</td>
<td>2.8 lbs</td>
</tr>
<tr>
<td>#5 Flasher</td>
<td>Rubber</td>
<td>68505XX*</td>
<td>4½&quot; - 7½&quot;</td>
<td>3.9 lbs</td>
</tr>
<tr>
<td>#6 Flasher</td>
<td>Rubber</td>
<td>68506XX*</td>
<td>5&quot; - 9&quot;</td>
<td>4.6 lbs</td>
</tr>
<tr>
<td>#7 Flasher</td>
<td>Rubber</td>
<td>68507XX*</td>
<td>6&quot; - 11&quot;</td>
<td>5.9 lbs</td>
</tr>
<tr>
<td>#8 Flasher</td>
<td>Rubber</td>
<td>68508XX*</td>
<td>7&quot; - 13&quot;</td>
<td>7.0 lbs</td>
</tr>
<tr>
<td>#9 Flasher</td>
<td>Rubber</td>
<td>68509XX*</td>
<td>10&quot; - 19&quot;</td>
<td>10.2 lbs</td>
</tr>
</tbody>
</table>

*Special order colors: 93=Brown; 94=Green; 95=Red; 96=Blue; 97=White; 98=Grey; 99=Black

#### RETROFIT

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>PIPE DIAMETER</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Masterflash</td>
<td>Retrofit HT</td>
<td>6850060</td>
<td>1/4&quot; - 2&quot;</td>
<td>1.2 lbs</td>
</tr>
<tr>
<td>#2 Masterflash</td>
<td>Retrofit HT</td>
<td>6850061</td>
<td>1-1/4&quot; - 3&quot;</td>
<td>2.5 lbs</td>
</tr>
<tr>
<td>#3 Masterflash</td>
<td>Retrofit HT</td>
<td>6850062</td>
<td>1/4&quot; - 4&quot;</td>
<td>3.9 lbs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>PIPE DIAMETER</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850073</td>
<td>3/4&quot; - 2-3/4&quot;</td>
<td>1.2 lbs</td>
</tr>
<tr>
<td>#2 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850074</td>
<td>2&quot; - 7-1/4&quot;</td>
<td>2.5 lbs</td>
</tr>
<tr>
<td>#3 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850075</td>
<td>3/4&quot; - 10&quot;</td>
<td>3.9 lbs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>PIPE DIAMETER</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850070</td>
<td>3/4&quot; - 2-3/4&quot;</td>
<td>1.2 lbs</td>
</tr>
<tr>
<td>#2 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850071</td>
<td>2&quot; - 7-1/4&quot;</td>
<td>2.5 lbs</td>
</tr>
<tr>
<td>#3 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850072</td>
<td>3/4&quot; - 10&quot;</td>
<td>3.9 lbs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIZE</th>
<th>TYPE</th>
<th>PRODUCT NO.</th>
<th>PIPE DIAMETER</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850046</td>
<td>1/2&quot; - 4&quot;</td>
<td>1.2 lbs</td>
</tr>
<tr>
<td>#2 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850047</td>
<td>1-1/4&quot; - 3&quot;</td>
<td>2.5 lbs</td>
</tr>
<tr>
<td>#3 Masterflash</td>
<td>Retrofit E.P.D.M</td>
<td>6850048</td>
<td>1/4&quot; - 5&quot;</td>
<td>3.9 lbs</td>
</tr>
</tbody>
</table>
POST FRAME
MATERIAL HANDLING

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.

Metal Sales is not responsible for any damages or shortages unless they are documented in writing and presented to Metal Sales within 48 hours. A claim should be made against the carrier as soon as possible.

After receiving material:
• Check the condition of the material
• Review the shipment against the shipping list to ensure all materials are all accounted for
• If damages or shortages are discovered, it should be noted on the Bill of Lading at the time of delivery

BUNDLE HANDLING

Each bundle should be handled carefully to avoid being damaged. Care should be taken to prevent bending of the panel or scratching of the finish. Whenever possible, the bundle should remain crated until it is located in its place of storage or use. If bundles must be opened, we recommend you re-cratter them before lifting. To avoid damage 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. 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". 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.
UNSTACKING MATERIAL

For panels over 5'-0” in length at least two people on the ends of the panel are required. Additional help will be needed for every 10'-0” in length beyond that.

Take care when unstacking to ensure panels are lifted up and not across other panels in the stack. Minimize handling of panels when unstacking and stacking to avoid damage. Be sure to wear appropriate safety equipment including clean gloves, as panel edges are sharp.

Inspect panels before lifting. Metal Sales is not responsible for damage created by unstacking panels incorrectly. Dragging or sliding the panels will cause the corners and edges to scratch the paint.

Defect claims must be reported upon inspection and before panels are handled or installed.

Restacking – Align bottom-side edge with the stack and lay panel onto the stack, nesting with the panels.

TRANSPORTING MATERIAL

Handling of individual panels should be done carefully and properly to avoid bending or damaging. Panels should be carried by grasping the edge so that the panel is vertical to the ground. Normally, individual panels can be handled by people placed every 6'-0” to 8'-0” along the length of the panel.

The panel should not be carried horizontal to the ground as this could cause the panel to buckle or bend in the center.
POST FRAME  STORAGE

GENERAL

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 Tarp. Do not use tight fitting plastic-type Tarp 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.

FOOT TRAFFIC

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.

REQUIRED TOOLS

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
POST FRAME DESIGN / INSTALLATION CONSIDERATIONS

GENERAL

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.

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.

CONDITION OF SUBSTRUCTURE

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.

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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.

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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.

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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.
<table>
<thead>
<tr>
<th>POP RIVET</th>
<th>SIZE</th>
<th>TYPE</th>
<th>FINISH</th>
<th>APPLICATION</th>
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<th>PANCAKE HEAD WOODSCREW</th>
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<tr>
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<td>#10-12 x 1&quot;</td>
<td>A</td>
<td>Plated</td>
<td>Panel or Flashing to wood substructure</td>
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<td>#10-14 x 1&quot;</td>
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<td>Stitch</td>
<td>Painted</td>
<td>Flashing to Panel, Flashing to Flashing, Panel Sidelap</td>
</tr>
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</table>
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.

Anti-Siphon groove side of panel must be overlapped with the non siphon groove side of the adjacent panel (if applicable).

When endlapping panels: at the side laps, both of the ridge panels must overlap both eave panels.

At Endlaps apply Tape Sealant across the full width of the upper end of the eave panels.

**NOTE:** Panel 2 must overlap Panel 1 and 3. Panel 4 must overlap Panel 1, Panel 2, Panel 3 and Panel 5.
POST FRAME PANEL INSTALLATION

NOTE:  
- Eave Molding 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 highside.

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 29 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 patterns on pages 7, 9, 11, 13, 15 or 19). Fasteners must penetrate closure and sealant.  
3. After securing panel at eave, repeat the fastening pattern at all panel support locations.
POST FRAME

POST FRAME PANEL INSTALLATION

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 patterns on pages 7, 9, 11, 13, 15 or 19). Fasteners must penetrate sealant.
3. After securing panel, repeat the fastening pattern at all panel support locations.

Note: when endlapping multiple panels: at the side laps, both the ridge panels must overlap both eave panels.

INSTLLING 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 patterns on pages 7, 9, 11, 13, 15 or 19). Fasteners must penetrate closure and sealant.
3. After securing panel, repeat the fastening pattern at all panel support locations.

STITCH SCREW — 12” o.c.
POST FRAME BUILDING DETAILS

14" UNIVERSAL RIDGE DETAIL

- Roof Panel
- Stitch Screw (Every Major Rib*)
- Outside Closure
- Tape Sealant
- Fastener
- 14" or 20" Universal Ridge

* Fastener to be 8"-12" O.C. depending on panel profile.

LOW PROFILE RIDGE VENT DETAIL

- Ridge Vent
- Ridge / Hip Cover
- Fastener (Every Major Rib*)

* Fastener to be 8"-12" O.C. depending on panel profile.

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
**GABLE TRIM DETAIL**

1. ROOF PANEL
2. STITCH SCREW (1'-0" O.C.)
3. TAPE SEALANT
4. GABLE TRIM
5. FASTENER
6. OUTSIDE CLOSURE
7. STITCH SCREW (EVERY MAJOR RIB*)
8. TAPE SEALANT

* Fastener to be 8"-12" O.C. depending on panel profile.

**RAKE TRIM DETAIL**

1. ROOF PANEL
2. STITCH SCREW (1'-0" O.C.)
3. TAPE SEALANT
4. RAKE TRIM
5. FASTENER
6. OUTSIDE CLOSURE
7. STITCH SCREW (EVERY MAJOR RIB*)
8. TAPE SEALANT

* Fastener to be 8"-12" O.C. depending on panel profile.

**UNIVERSAL SIDEWALL DETAIL**

1. WALL PANEL
2. INSIDE CLOSURE
3. FASTENER
4. TAPE SEALANT
5. UNIVERSAL SIDEWALL
6. ROOF PANEL
7. STITCH SCREW (1'-0" O.C.)

**UNIVERSAL ENDWALL DETAIL**

1. INSIDE CLOSURE
2. FASTENER
3. TAPE SEALANT
4. WALL PANEL
5. UNIVERSAL ENDWALL
6. ROOF PANEL
7. STITCH SCREW (EVERY MAJOR RIB*)
8. OUTSIDE CLOSURE

* Fastener to be 8"-12" O.C. depending on panel profile.
EAVE MOLDING DETAIL

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

* Fastener to be 8"-12" O.C. depending on panel profile.

UNIVERSAL GAMBREL DETAIL

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

* Fastener to be 8"-12" O.C. depending on panel profile.

ANGLE BASE DETAIL

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

DOUBLE ANGLE DETAIL

- WALL PANEL
- FASTENER
- TAPE SEALANT
- INSIDE CLOSURE
- DOUBLE ANGLE
- INSIDE CLOSURE
- 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.
- Anti-Siphon groove side of panel must be overlapped with the non-siphon groove side of the adjacent panel (if applicable).
**POST FRAME RESIDENTIAL PANEL INSTALLATION**

**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**

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 29 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 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 patterns on pages 7, 9, 11, 13, 15 or 19). 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.

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**INSIDE CLOSURE**

**TAPE SEALANT**

**FASTENER**

**ROOF PANEL**

**INSIDE CLOSURE w/ TAPE SEALANT**
### INSTALLING SECOND PANEL

**STEP 3**

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 patterns on pages 7, 9, 11, 13, 15 or 19). Fasteners must penetrate sealant.
3. After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.

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### INSTALLING SECOND EAVE PANEL

**STEP 4**

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 patterns on pages 7, 9, 11, 13, 15 or 19). 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.
**POST FRAME RESIDENTIAL DETAILS**

**14" UNIVERSAL RIDGE DETAIL**

- **ROOF PANEL**
- **STITCH SCREW (EVERY MAJOR RIB*)**
- **OUTSIDE CLOSURE**
- **TAPE SEALANT**
- **FASTENER**
- **14" UNIVERSAL RIDGE**
- **MOISTURE BARRIER**

* Fastener to be 8"-12" O.C. depending on panel profile.

**RIDGE / HIP COVER DETAIL**

- **ROOF PANEL**
- **STITCH SCREW (EVERY MAJOR RIB*)**
- **OUTSIDE CLOSURE (RDG)**
- **UNIVERSAL CLOSURE (HIP)**
- **TAPE SEALANT**
- **FASTENER**
- **RIDGE / HIP COVER**
- **MOISTURE BARRIER**

**VENTED RIDGE DETAIL**

- **ROOF PANEL**
- **STITCH SCREW (EVERY MAJOR RIB*)**
- **COBRA RIDGE VENT**
- **13" STEP RIDGE COVER**
- **TAPE SEALANT**
- **MOISTURE BARRIER**

* Fastener to be 8"-12" O.C. depending on panel profile.

**GABLE TRIM DETAIL**

- **ROOF PANEL**
- **STITCH SCREW (1'-0" O.C.)**
- **TAPE SEALANT**
- **MOISTURE BARRIER**
- **GABLE TRIM**
- **FASTENER**
- **OUTSIDE CLOSURE**
- **STITCH SCREW (EVERY MAJOR RIB*)**
- **TAPE SEALANT**

* Fastener to be 8"-12" O.C. depending on panel profile.
POST FRAME 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
- TAPE SEALANT
- MOISTURE BARRIER
- VALLEY
- UNIVERSAL CLOSURE
- PANCAKE HEAD SCREW (1'-0" O.C.)

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

* Fastener to be 8"-12" O.C. depending on panel profile.
Though factory applied prepainted 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.

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

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.

DO NOT USE A WIRE BRUSH

HOSE OR PRESSURE SPRAY FOR ADEQUATE CLEANING

USE MILD DETERGENT AND WATER FOR HEAVY DIRT DEPOSITS