IMPORTANT NOTICE

READ THIS MANUAL COMPLETELY PRIOR TO BEGINNING THE INSTALLATION OF THE BattenLok® HS ROOFING SYSTEM. THE MANUFACTURER DETAILS MUST BE FOLLOWED AS A MINIMUM TO INSURE APPROPRIATE WARRANTIES WILL BE ISSUED.

ALWAYS INSPECT EACH AND EVERY PANEL AND ALL ACCESSORIES BEFORE INSTALLATION. NEVER INSTALL ANY PRODUCT IF ITS QUALITY IS IN QUESTION. NOTIFY MBCI IMMEDIATELY IF ANY PRODUCT IS BELIEVED TO BE OUT OF TOLERANCE, SPECIFICATION OR HAS BEEN DAMAGED DURING SHIPMENT.

IF THERE IS A CONFLICT BETWEEN PROJECT INSTALLATION DRAWINGS PROVIDED OR APPROVED BY THE MANUFACTURER AND DETAILS IN THIS MANUAL, PROJECT INSTALLATION DRAWINGS WILL TAKE PRECEDENCE.

Ice Dam Disclaimer

MBCI designs its standing seam roofs to meet the load requirements dictated by governing codes and project specifications, including applicable snow loads. However, MBCI expressly disclaims responsibility for weathertightness or roof point loading issues or other hazards resulting from ice dam situations. Any time ice and snow can melt on the main body of the roof and refreeze at the eave or in the shadow of an adjacent wall, an ice dam situation may develop. In addition to local climate, ice dam formation is affected by many other factors, including but not limited to, roof insulation R value, roof panel color, interior temperature of building, heater location in building, eave overhangs, parapet walls, shading of building roof areas from adjacent trees, parapets, buildings, etc. These factors are design and maintenance issues and are outside the control of MBCI. MBCI specifically disclaims any liability for damage due to ice dam formation, although the following issues should be taken into consideration concerning standing seam roofs installed in freezing climates:

- Always use field seamed panels. These machine-folded seams are more durable when subjected to occasional icing.
- Eliminate “cold” eave overhangs and parapet walls from the building design. Roof overhangs outside the heated envelope of the building will tend to be colder than the roof areas over the heated envelope. Simple roof designs are preferred. Parapet walls at the eave allow ice and snow to collect due to shading effects and the lower roof temperatures caused thereby.
- Make sure the interior of the building is adequately insulated and the heating is properly distributed. Inadequate insulation in the roof and/or improper heat distribution causes heat flow through the main body of the roof. On days when the temperature is below freezing, this heat gain can cause ice and snow to melt and refreeze at the eave where the roof is colder.
- Lay out the building to prevent the eaves and other roof areas from being shaded during the winter. This may mean eliminating adjacent trees or reconsidering roof geometries.
- Consider using self-regulating heating cables at the eaves to mitigate the effects of ice dams.
- On building designs using attics, over-insulate the attic floor and provide adequate ventilation in the attic. This will reduce heat transfer through the roof resulting in more consistent roof temperatures between eave and field of roof.
- Increase the degree of diligence with respect to underlayment materials at roof areas prone to icing. This may include valleys, eaves, dormers and roof areas near dormers, parapets and the like where shading may occur.

For more information on this subject, please refer to the MCA’s Metal Roof Design For Cold Climates manual.

The engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.
TABLE OF CONTENTS

ROOFING SYSTEM

General Description ........................................................................................................... BHS-3
Architect/Engineering Information ....................................................................................... BHS-4

ENGINEERING

Read This First .................................................................................................................... BHS-5
UL 90 Requirements ........................................................................................................... BHS-6
12" Properties/Load Tables ............................................................................................... BHS-7 – BHS-8
16" Properties/Load Tables ............................................................................................... BHS-9 – BHS-10

GENERAL INFORMATION

Product Checklist ............................................................................................................... .BHS-11 – BHS-20
Panel Orientation .............................................................................................................. BHS-21
Installation Guidelines ....................................................................................................... BHS-21
Preparatory Requirements ............................................................................................... BHS-22
Unloading .......................................................................................................................... BHS-23 – BHS-24
Handling/Panel Storage .................................................................................................... BHS-25
Proper Handling, Storage and Maintenance of Painted and Galvalume Plus® Panels ........ BHS-26 – BHS-27

INSTALLATION SEQUENCE

Step 1 — Rake Attachments ............................................................................................. BHS-28
Step 2 — Low System Eave ............................................................................................. BHS-29
Step 2A — High System Eave .......................................................................................... BHS-30
Step 3 — Thermal Spacer (For High Systems Only) .......................................................... BHS-31
Step 4 — First Panel ........................................................................................................... BHS-32
Step 5 — Clip Installation ................................................................................................. BHS-33
Step 6 — Endlap ............................................................................................................... BHS-34
Step 7 — Ridge ................................................................................................................ BHS-35
Step 8 — Subsequent Runs Eave ....................................................................................... BHS-36
Step 9 — Subsequent Runs Endlap .................................................................................. BHS-37
Step 10 — Subsequent Runs Ridge ................................................................................... BHS-38
Step 11 — Last Panel Run ................................................................................................. BHS-39
Step 12 — Seaming Operation .......................................................................................... BHS-40 – BHS-41
Step 13 — Outside Closure Installation ............................................................................ BHS-42

SPECIAL ERECTION TECHNIQUES

UL 90 Light Transmitting Panel Installation ...................................................................... BHS-43
Riveted Rail Light Transmitting Panel Installation .............................................................. BHS-44 – BHS-47
Curb Installation ............................................................................................................... BHS-48 – BHS-64
Pipe Penetration Installation ............................................................................................ BHS-65 – BHS-66

DETAILS

Open Framing
Fixed Eave With Hang On Gutter ...................................................................................... BHS-67
Fixed Eave With Eave Trim .............................................................................................. BHS-68
Floating Ridge .................................................................................................................. BHS-69
Fixed Vented Eave .......................................................................................................... BHS-70
Rake ................................................................................................................................. BHS-71
Rake With Cleat ............................................................................................................... BHS-72
Parapet Rake .................................................................................................................. BHS-73
Floating High Side Eave .................................................................................................... BHS-74
Parapet Floating High Side Eave ...................................................................................... BHS-75
Fixed Valley .................................................................................................................... BHS-76
Floating Hip ..................................................................................................................... BHS-77
# TABLE OF CONTENTS

## Wood Deck
- Field Hemming Panel End ................................................................. BHS-78
- Endlap ................................................................................................ BHS-79
- Floating Eave with Gutter ............................................................ BHS-80
- Floating Eave with Eave Trim ..................................................... BHS-81
- Fixed Ridge .................................................................................... BHS-82
- Fixed Vented Ridge ..................................................................... BHS-83
- Rake ................................................................................................ BHS-84
- Parapet Rake ............................................................................... BHS-85
- Fixed High Side Eave .................................................................. BHS-86
- Parapet Fixed High Side Eave ...................................................... BHS-87
- Floating Valley ............................................................................. BHS-88
- Fixed Hip ....................................................................................... BHS-89

## Rigid Insulation Over Metal Deck
- Endlap ............................................................................................ BHS-90
- Floating Eave With Gutter .......................................................... BHS-91
- Floating Eave With Eave Trim with Extended Drip Edge .......... BHS-92
- Fixed Ridge ................................................................................... BHS-93
- Fixed Vented Ridge ..................................................................... BHS-94
- Box Rake ....................................................................................... BHS-95
- Parapet Rake ............................................................................... BHS-96
- Fixed Box High Side Eave ............................................................ BHS-97
- Parapet Fixed High Side Eave ...................................................... BHS-98
- Floating Valley ............................................................................. BHS-99
- Fixed Hip ....................................................................................... BHS-100
Coverage Width - 16" or 12"
Minimum Slope - 1/2:12
Panel Attachment - Low, High (Fixed or Floating) or Utility (No insulation clearance)
Panel Substrate - Galvalume® (standard)
Gauge - Standard: 24 ; Optional: 22
Finishes - Smooth Striated (standard)* or Embossed Striated and Smooth or Embossed Striated with Pencil Ribs
Coatings - Signature® 200, Signature® 300, Signature® 300 Metallic

**PRODUCT SELECTION CHART**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>Signature® 300 Metallic</th>
<th>Signature® 300</th>
<th>Signature® 200</th>
<th>Galvalume Plus®</th>
</tr>
</thead>
<tbody>
<tr>
<td>BattenLok® HS</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>16&quot; Wide</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>12&quot; Wide</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

Signature is a registered trademark of NCI Group, Inc. Galvalume Plus is a registered trademark of BIEC International.

- ● — Available in any quantity.
- ■ — Minimum quantity may be required.

Other colors, finishes, gauges, and materials available; please inquire.
* Striated panels are standard to reduce “oil canning”.

**CAUTION**

Diaphragm capabilities and purlin stability are not provided by manufactures BattenLok® HS roof system. Therefore, other bracing may be required to conform to A.I.S.C. or A.I.S.I. specifications.
ARCHITECT/ENGINEER INFORMATION

1. **BattenLok® HS** is a mechanically seamed roof system. **BattenLok® HS** panels are available in 12” and 16” widths. Factory applied mastic inside of female leg of panel is standard.

2. **BattenLok® HS** is a structural roofing panel. This panel can be installed directly over purlins or bar joists. It does not require a solid substructure for support. The **BattenLok® HS** roof system has several different UL 90 construction numbers.

3. **BattenLok® HS** is recommended for roof slopes of ½:12 or greater.

4. Weathertight and aesthetically pleasing endlaps may be accomplished through the use of swaged and prepunched panels. **12” wide panels are not prepunched for endlaps.** The manufacturer provides a prepunched back-up plate at the endlap for weathertightness. Swaged endlaps require the roof erection to proceed from right to left as viewed from the eave looking toward the ridge. Roofs with no endlaps and less than 6:12 may be erected from either direction.

5. Heavier gauges, striations and embossing and installation over a solid deck minimize oil canning. Industry standard is a minimum 24 gauge material. Striations are standard to reduce oil canning. Oil canning is not a cause for rejection. Panels are available with the option of striated with pencil ribs.

6. Substructure must be on an even plane from eave to ridge to avoid panel distortion (¼” in 20’, ⅜” in 40’ tolerance).

7. All panels require end sealant at eave and valley conditions; however, for illustration purposes, this sealant is not shown on all drawings.

8. For proper fastener application, see Product Checklist.

9. All perimeter trim dimensions in this manual are based on a wall panel thickness of 1¼” (“PBR” Panel). Any variation from this wall panel thickness may affect the perimeter trim dimensions.

10. The information in this manual is believed to be correct and accurate.

11. Drawings in this manual utilize the low floating clip. Clips are available in low or high fixed, low or high floating and utility.

12. **Avoid restricting the thermal expansion and contraction of the BattenLok® HS panels.** (ie: Do not attach panel to the substructure at both the eave and ridge.) However, panels must be attached to the substructure at one end to prevent their sliding downslope.

13. **BattenLok® HS panels are not designed to be work platforms.** Avoid any unnecessary foot traffic on **BattenLok® HS** panels. If foot traffic is required, protect the roof panels by using soft soled shoes and some type of roof pad, temporary deck, or walkway.

14. **WARNING:** Light transmitting panels are not designed or intended to bear the weight of any person walking, stepping, standing or resting on them. **THE MANUFACTURER DISCLAIMS ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED,** that any person can safely walk, step, stand or rest on or near these light transmitting panels or that they comply with any OSHA regulation.

15. A vapor retarder may be necessary to protect roofing components when high interior humidity is a factor. The need for a vapor retarder, as well as the type, placement and location should be determined by an architect or engineer. The following are examples of conditions that may require a vapor retarder: (A) Projects where outside winter temperatures below 40°F are anticipated and where average winter interior relative humidity of 45% or greater is expected. (B) Building usages with high humidity interiors, such as indoor swimming pools, textile manufacturing operations, food, paper or other wet-process industrial plants. (C) Construction elements that may release moisture after the roof is installed, such as interior concrete and masonry, plaster finishes and fuel burning heaters.

16. Typically, when wood decks are used, they are temporarily protected by the installation of a moisture barrier over the wood deck. If utility clips are to be used, the **BattenLok® HS** panel will lay tight to the wood deck. If tin tabs are used to attach the moisture barrier to the deck, they must be covered with duct tape or some other material to prevent them from rusting the back side of the panels. Also, plastic washers may “telegraph” through the panels.

17. Field cutting of the panels should be avoided where possible. If field cutting is required, the panels must be cut with nibblers, snips, or shears to prevent edge rusting. **Do not cut the panels with abrasive saw blades, grinders, or torches.**
Low Floating System - With or without ⅜” thermal spacer. See Insulation/Thermal Spacer Selection Chart below.

High Floating System - With ⅜”, ⅝” or 1” thermal spacer. See Insulation/Thermal Spacer Selection Chart below.

Thermal calculations should be performed for each project to ensure that the thermal movement of the roof is not greater than the floating clip’s capacity. Various densities of blanket insulation may affect the installation and or the appearance of a metal roof system. The installer is responsible for selecting the proper clip and thermal spacer for their conditions.

<table>
<thead>
<tr>
<th>Insulation Thickness</th>
<th>Insulation/Thermal Spacer Selection Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Insulation</td>
<td>Low System ¾” Thermal Spacer</td>
</tr>
<tr>
<td>3” Insulation</td>
<td>Thermal Spacer Not Recommended</td>
</tr>
<tr>
<td>4” Insulation</td>
<td>Thermal Spacer Not Recommended</td>
</tr>
<tr>
<td>6” Insulation</td>
<td>Low System Not Recommended</td>
</tr>
</tbody>
</table>

CAUTION

The use of any field seaming machine other than that provided by the manufacturer will damage the panels and void all warranties and will void all engineering data.

CAUTION

The use of any field seaming machine other than that provided by the manufacturer will damage the panels and void all warranties and will void all engineering data.

IMPORTANT

READ THIS FIRST

Low Floating System - With or without ⅜” thermal spacer. See Insulation/Thermal Spacer Selection Chart below.

High Floating System - With ⅜”, ⅝” or 1” thermal spacer. See Insulation/Thermal Spacer Selection Chart below.

Thermal calculations should be performed for each project to ensure that the thermal movement of the roof is not greater than the floating clip’s capacity. Various densities of blanket insulation may affect the installation and or the appearance of a metal roof system. The installer is responsible for selecting the proper clip and thermal spacer for their conditions.

<table>
<thead>
<tr>
<th>Insulation Thickness</th>
<th>Insulation/Thermal Spacer Selection Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Insulation</td>
<td>Low System ¾” Thermal Spacer</td>
</tr>
<tr>
<td>3” Insulation</td>
<td>Thermal Spacer Not Recommended</td>
</tr>
<tr>
<td>4” Insulation</td>
<td>Thermal Spacer Not Recommended</td>
</tr>
<tr>
<td>6” Insulation</td>
<td>Low System Not Recommended</td>
</tr>
</tbody>
</table>

Warning

As with all standing seam roof systems, sound attenuation (example: blanket insulation) should be installed between the panels and open framing, such as purlins or joists, to prevent “roof rumble” during windy conditions.

Applications over solid deck such as rigid insulation over a metal deck or a wood deck may require additional acoustical consideration to ensure that thermal vibration noises are isolated from the building interior. This is especially important if the bottom of the deck is left open to the interior, in cathedral ceiling applications or when the attic space is used as a return air plenum.

A vapor retarder may be necessary to protect roofing components when high humidity is a factor. The need for a vapor retarder, as well as the type, placement and location should be determined by an architect or engineer. The following are examples of conditions that may require a vapor retarder: (A) a project where outside winter temperatures below 40 degrees F. are anticipated and where average winter interior relative humidity of 45% or greater is expected. (B) building usages with high humidity interiors such as indoor swimming pools, textile manufacturing operations, food, paper or other wet-process industrial plants. (C) Construction elements that may release moisture after the roof is installed, such as interior concrete, masonry or plaster work and fuel burning heaters.

Thermal Spacer Disclaimer

The above thermal spacer chart is intended to be used as a general guideline only. Because of the various densities of insulation currently available, the manufacturer cannot guarantee that this chart will be accurate in all situations. Further, the manufacturer does not specifically require that the roofing contractor use thermal spacers with its BattenLok® HS roof system. However, please review the following information:

- Although the manufacturer does not require a thermal spacer, the architect or building owner may.
- In certain environments, the compression of the fiberglass insulation, without a thermal spacer, may create a thermal break which can cause condensation to form on the purlins/joists.
- On uninsulated buildings, eliminating the thermal spacer: (1) may cause “roof rumble” and (2) you may encounter problems holding panel module.
- When a high clip is used without a thermal spacer: (1) you may encounter problems holding panel module and (2) foot traffic on the panel ribs may result in bent clips.
- Using a low clip with too much insulation or too thick of a thermal spacer: (1) may cause “purlin read” (2) may cause difficulty in properly installing the panel side laps, and (3) you may encounter problems holding panel module.
<table>
<thead>
<tr>
<th>Construction Number</th>
<th>Panel Width (In.)</th>
<th>Gauge</th>
<th>Clip Type</th>
<th>Clip Spacing</th>
<th>Substrate</th>
<th>UL-2218 Impact Resistance</th>
<th>UL-263 Fire Rating</th>
<th>UL-580 Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>*</td>
<td>5'-0 ½&quot;</td>
<td>Open Framing</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>176</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>N/A</td>
<td>5'-0 ½&quot;</td>
<td>Open Framing</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>180</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>**</td>
<td>5'-0 ⅛&quot;</td>
<td>Open Framing</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>238B</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>**</td>
<td>2'-6&quot;</td>
<td>Composite System</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>437</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>**</td>
<td>5'-0&quot;</td>
<td>Plywood</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>449</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>*</td>
<td>5'-0&quot;</td>
<td>Open Framing</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>451</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>*</td>
<td>2'-0&quot;</td>
<td>Composite System</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>452</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>*</td>
<td>2'-0&quot;</td>
<td>Composite System</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>487</td>
<td>16&quot;</td>
<td>24 min.</td>
<td>**</td>
<td>4'-0&quot;</td>
<td>Composite System</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
</tbody>
</table>

* Fixed or Floating (high or low)
** Fixed or Floating (high, low, or utility)

NOTES:
1. Tests procedures are in accordance with Underwriters Laboratories Standard UL-580 under “Tests For Uplift Resistance of Roof Assemblies”.
2. A detailed installation method is available for each Construction Number above and can be found in the UL Roofing Materials and Systems Directory. The panels must be installed in a certain manner to achieve the published results.
3. The panel qualifies for a Class A fire rating in compliance with Underwriters Laboratories Standard UL-263 when installed over a non-combustible substrate. A Class C fire rating can be obtained over a combustible deck.
5. BattenLok® HS panels carry a Class 4 rating under UL-2218 “Test Standard For Impact Resistance”.

BattenLok® is a registered trademark of NCI Building Systems, L.P.
Galvalume® is a registered trademark of BIEC International, Inc.
Vise-Grip® is a registered trademark of American Tool Companies, Inc.
### BattenLok® HS Panel

#### SECTION PROPERTIES

<table>
<thead>
<tr>
<th>GAUGE</th>
<th>Fy (KSI)</th>
<th>WEIGHT (PSF)</th>
<th>Ixe (IN.4/FT.)</th>
<th>Sxe (IN.3/FT.)</th>
<th>Maxo (KIP-IN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>50</td>
<td>1.41</td>
<td>0.0836</td>
<td>0.0749</td>
<td>2.2421</td>
</tr>
<tr>
<td>22</td>
<td>50</td>
<td>1.81</td>
<td>0.1157</td>
<td>0.1077</td>
<td>3.2247</td>
</tr>
</tbody>
</table>

**NOTES:**
1. All calculations for the properties of BattenLok® HS panels are calculated in accordance with the 2012 edition of the North American Specification For Design Of Cold-Formed Steel Structural Members.
2. Ixe is for deflection determination.
3. Sxe is for bending.
4. Maxo is allowable bending moment.
5. All values are for one foot of panel width.
## ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

### 24 Gauge (Fy = 50 KSI)

<table>
<thead>
<tr>
<th>SPAN TYPE</th>
<th>LOAD TYPE</th>
<th>SPAN IN FEET</th>
<th>2.5</th>
<th>3.0</th>
<th>3.5</th>
<th>4.0</th>
<th>4.5</th>
<th>5.0</th>
<th>5.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE</td>
<td>LIVE</td>
<td></td>
<td>216.0</td>
<td>180.0</td>
<td>154.3</td>
<td>145.3</td>
<td>114.8</td>
<td>93.0</td>
<td>76.8</td>
</tr>
<tr>
<td>2-SPAN</td>
<td>LIVE</td>
<td></td>
<td>216.0</td>
<td>166.1</td>
<td>122.0</td>
<td>93.4</td>
<td>73.8</td>
<td>59.8</td>
<td>49.4</td>
</tr>
<tr>
<td>3-SPAN</td>
<td>LIVE</td>
<td></td>
<td>216.0</td>
<td>180.0</td>
<td>152.5</td>
<td>116.8</td>
<td>92.3</td>
<td>74.7</td>
<td>61.8</td>
</tr>
<tr>
<td>4-SPAN</td>
<td>LIVE</td>
<td></td>
<td>216.0</td>
<td>180.0</td>
<td>142.4</td>
<td>109.0</td>
<td>86.2</td>
<td>69.8</td>
<td>57.7</td>
</tr>
</tbody>
</table>

### 22 Gauge (Fy = 50 KSI)

<table>
<thead>
<tr>
<th>SPAN TYPE</th>
<th>LOAD TYPE</th>
<th>SPAN IN FEET</th>
<th>2.5</th>
<th>3.0</th>
<th>3.5</th>
<th>4.0</th>
<th>4.5</th>
<th>5.0</th>
<th>5.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE</td>
<td>LIVE</td>
<td></td>
<td>311.2</td>
<td>259.5</td>
<td>237.3</td>
<td>191.7</td>
<td>151.5</td>
<td>122.7</td>
<td>101.4</td>
</tr>
<tr>
<td>2-SPAN</td>
<td>LIVE</td>
<td></td>
<td>311.2</td>
<td>238.9</td>
<td>175.5</td>
<td>134.4</td>
<td>106.2</td>
<td>86.0</td>
<td>71.1</td>
</tr>
<tr>
<td>3-SPAN</td>
<td>LIVE</td>
<td></td>
<td>311.2</td>
<td>259.5</td>
<td>219.4</td>
<td>168.0</td>
<td>132.7</td>
<td>107.5</td>
<td>88.8</td>
</tr>
<tr>
<td>4-SPAN</td>
<td>LIVE</td>
<td></td>
<td>311.2</td>
<td>259.5</td>
<td>204.8</td>
<td>156.8</td>
<td>123.9</td>
<td>100.4</td>
<td>82.9</td>
</tr>
</tbody>
</table>

**NOTES:**

1. **THE ABOVE LOADS ARE NOT FOR USE WHEN DESIGNING PANELS TO RESIST WIND UPLIFT.**
3. Allowable loads are applicable for uniform loading and spans without overhangs.
4. LIVE load capacities are for those loads that push the panel against its supports. The applicable limit states are flexure, shear, combined shear and flexure, web crippling at end and interior supports, and a deflection limit of L/180 under strength-level loads.
5. Panel pullover and Screw pullout capacity must be checked separately using the screws employed for each particular application when utilizing this load chart.
6. The use of any field seaming equipment or accessories including but not limited to clips, fasteners, and support plates (eave, backup, rake, etc.) other than that provided by the manufacturer may damage panels, void all warranties and will void all engineering data.
7. This material is subject to change without notice. Please contact MBCI for the most current data.

The Engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.
### SECTION PROPERTIES

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>50</td>
<td>1.38</td>
<td>0.0574</td>
<td>0.0538</td>
<td>1.6096</td>
<td>0.1324</td>
<td>0.0779</td>
<td>2.3324</td>
</tr>
<tr>
<td>22</td>
<td>50</td>
<td>1.72</td>
<td>0.0794</td>
<td>0.0776</td>
<td>2.325</td>
<td>0.1779</td>
<td>0.1057</td>
<td>3.1654</td>
</tr>
</tbody>
</table>

### NOTES:
1. All calculations for the properties of BattenLok® HS panels are calculated in accordance with the 2012 edition of the North American Specification For Design Of Cold-Formed Steel Structural Members.
2. Ixe is for deflection determination.
3. Sxe is for bending.
4. Maxo is allowable bending moment.
5. All values are for one foot of panel width.
### ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

#### 24 Gauge (Fy = 50 KSI)

<table>
<thead>
<tr>
<th>SPAN TYPE</th>
<th>LOAD TYPE</th>
<th>SPAN IN FEET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td>SINGLE</td>
<td>LIVE</td>
<td>162.0</td>
</tr>
<tr>
<td>2-SPAN</td>
<td>LIVE</td>
<td>162.0</td>
</tr>
<tr>
<td>3-SPAN</td>
<td>LIVE</td>
<td>162.0</td>
</tr>
<tr>
<td>4-SPAN</td>
<td>LIVE</td>
<td>162.0</td>
</tr>
</tbody>
</table>

#### 22 Gauge (Fy = 50 KSI)

<table>
<thead>
<tr>
<th>SPAN TYPE</th>
<th>LOAD TYPE</th>
<th>SPAN IN FEET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td>SINGLE</td>
<td>LIVE</td>
<td>233.4</td>
</tr>
<tr>
<td>2-SPAN</td>
<td>LIVE</td>
<td>233.4</td>
</tr>
<tr>
<td>3-SPAN</td>
<td>LIVE</td>
<td>233.4</td>
</tr>
<tr>
<td>4-SPAN</td>
<td>LIVE</td>
<td>233.4</td>
</tr>
</tbody>
</table>

### NOTES:
1. THE ABOVE LOADS ARE NOT FOR USE WHEN DESIGNING PANELS TO RESIST WIND UPLIFT.
3. Allowable loads are applicable for uniform loading and spans without overhangs.
4. LIVE load capacities are for those loads that push the panel against its supports. The applicable limit states are flexure, shear, combined shear and flexure, web crippling at end and interior supports, and a deflection limit of L/180 under strength-level loads.
5. Panel pullover and Screw pullout capacity must be checked separately using the screws employed for each particular application when utilizing this load chart.
6. The use of any field seaming equipment or accessories including but not limited to clips, fasteners, and support plates other than that provided by the manufacturer may (eave, backup, rake, etc.) damage panels, void all warranties and will void all engineering data.
7. This material is subject to change without notice. Please contact MBCI for the most current data.
## GENERAL INFORMATION

### PRODUCT CHECKLIST

<table>
<thead>
<tr>
<th>BattenLok® HS Panel</th>
<th>Clip, Floating (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>• Low – For use with or without ¾&quot; thermal spacer.</td>
<td></td>
</tr>
<tr>
<td>HW-220</td>
<td>• Recommended for use when clips are attached directly to bar joists.</td>
</tr>
<tr>
<td>HW-222</td>
<td>• Low – For use with or without ¾&quot; thermal spacer.</td>
</tr>
<tr>
<td>HW-226</td>
<td>HW-240</td>
</tr>
<tr>
<td>HW-224</td>
<td>• High – For use with ¾&quot;, ½&quot; or 1&quot; thermal spacer.</td>
</tr>
<tr>
<td>HW-242</td>
<td>HW-220</td>
</tr>
<tr>
<td>HW-7500</td>
<td>HW-7764</td>
</tr>
<tr>
<td>HW-7766</td>
<td>HW-7712 - Low</td>
</tr>
<tr>
<td>HW-7722 - High</td>
<td>HW-7772 - High</td>
</tr>
<tr>
<td>HW-7732</td>
<td>HW-77732</td>
</tr>
</tbody>
</table>

### Clip, Floating

- ![Diagram](image3.png)
- • Low – For use with or without ¾" thermal spacer.
- HW-220

### Back-Up Plate

- ![Diagram](image4.png)
- • For use at ridge and endlaps
- • Prepunched
- • 16 gauge red oxide
- 12" Wide HW-7764
- 16" Wide HW-7766

### Clip, Fixed

- ![Diagram](image5.png)
- • Low – For use with or without ¾" thermal spacer
- HW-226

### Rake Support

- ![Diagram](image6.png)
- • 20'-0" length
- • 14 gauge red oxide
- • Factory slots
- • For use with low or high clip
- HW-7712 - Low
- HW-7722 - High

### Rake Support Utility

- ![Diagram](image7.png)
- • 20'-0" length
- • 14 gauge red oxide
- • Factory slots
- • For use with utility clip
- HW-7732

### Clip, Utility

- ![Diagram](image8.png)
- • For applications that do not require the clearance provided by the low and high clips.
- HW-218

### Bearing Plate Standard

- ![Diagram](image9.png)
- • 16 gauge red oxide
- • For use with low or utility systems
- • For use with rigid board insulation
- HW-7500
## GENERAL INFORMATION

### PRODUCT CHECKLIST

<table>
<thead>
<tr>
<th>Eave Plate, Low</th>
<th>Eave Plate, High</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 8'-0&quot; length</td>
<td>• 8'-0&quot; length</td>
</tr>
<tr>
<td>• 14 gauge</td>
<td>• 14 gauge</td>
</tr>
<tr>
<td>• Red Oxide</td>
<td>• Red Oxide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Floating Eave Plate, Low</th>
<th>Floating Eave Plate, High</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 8'-0&quot; length</td>
<td>• 8'-0&quot; length</td>
</tr>
<tr>
<td>• 14 gauge</td>
<td>• 14 gauge</td>
</tr>
<tr>
<td>• Red Oxide</td>
<td>• Red Oxide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mid-Slope Fixed Plate, Low</th>
<th>Mid-Slope Fixed Plate, High</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 14 gauge</td>
<td>• 14 gauge</td>
</tr>
<tr>
<td>• Red Oxide</td>
<td>• Red Oxide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HW-7600</th>
<th>HW-7616</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HW-7617</th>
<th>HW-7618</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HW-7630 (10'-0&quot; Long)</th>
<th>HW-7637 (6'-0&quot; Long)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW-7631 (10'-0&quot; Long)</td>
<td>HW-7631 (10'-0&quot; Long)</td>
</tr>
<tr>
<td>HW-7632 (6'-0&quot; Long)</td>
<td>HW-7632 (20'-0&quot; Long)</td>
</tr>
</tbody>
</table>

---

BHS-12  REV 01.02  SEE www.mbcicom FOR CURRENT INFORMATION  SUBJECT TO CHANGE WITHOUT NOTICE
**GENERAL INFORMATION**

**PRODUCT CHECKLIST**

<table>
<thead>
<tr>
<th>Valley Support Plate – Low or Utility Systems</th>
<th>Extended Valley Support Plate – Low or Utility Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>SPECIFY ANGLE</td>
<td>SPECIFY ANGLE</td>
</tr>
<tr>
<td>14&quot;</td>
<td>17&quot;</td>
</tr>
<tr>
<td>1&quot; 90°</td>
<td>1&quot; 90°</td>
</tr>
<tr>
<td>• Standard Width</td>
<td>• Extended Width</td>
</tr>
<tr>
<td>• Use Over Purlins/Joists</td>
<td>• Use Over Purlins/Joists</td>
</tr>
<tr>
<td>10'-0&quot; Long P-106</td>
<td>10'-0&quot; Long P-101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valley Support Plate – High Systems</th>
<th>Valley Support Plate – High Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
<tr>
<td>SPECIFY ANGLE</td>
<td>SPECIFY ANGLE</td>
</tr>
<tr>
<td>12&quot;</td>
<td>21&quot;</td>
</tr>
<tr>
<td>1 135°</td>
<td>1 135°</td>
</tr>
<tr>
<td>1&quot; 135°</td>
<td>1&quot; 135°</td>
</tr>
<tr>
<td>17½&quot; 135°</td>
<td>17½&quot; 135°</td>
</tr>
<tr>
<td>• Standard Width</td>
<td>• Extended Width</td>
</tr>
<tr>
<td>• Use Over Purlins/Joists</td>
<td>• Use Over Purlins/Joists</td>
</tr>
<tr>
<td>10'-0&quot; Long P-164</td>
<td>10'-0&quot; Long P-162</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valley Support Plate – Low or Utility Systems</th>
<th>Valley Support Plate – Low or Utility Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Diagram" /></td>
<td><img src="image6.png" alt="Diagram" /></td>
</tr>
<tr>
<td>SPECIFY ANGLE</td>
<td>SPECIFY ANGLE</td>
</tr>
<tr>
<td>15°</td>
<td>18°</td>
</tr>
<tr>
<td>SPECIFY ANGLE</td>
<td>SPECIFY ANGLE</td>
</tr>
<tr>
<td>15°</td>
<td>18°</td>
</tr>
<tr>
<td>• Standard Width</td>
<td>• Extended Width</td>
</tr>
<tr>
<td>• Use Over Rigid Insulation</td>
<td>• Use Over Rigid Insulation</td>
</tr>
<tr>
<td>10'-0&quot; Long P-105</td>
<td>10'-0&quot; Long P-100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hip Support Plate – High or Low Floating Systems</th>
<th>Hip Support Plate – Low Floating Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Diagram" /></td>
<td><img src="image8.png" alt="Diagram" /></td>
</tr>
<tr>
<td>SPECIFY ANGLE</td>
<td>SPECIFY ANGLE</td>
</tr>
<tr>
<td>1 &quot; 10° 1/16&quot;</td>
<td>1 &quot; 11 1/16&quot;</td>
</tr>
<tr>
<td>• Use Over Purlins/Joists</td>
<td>• Use Over Solid Substrate</td>
</tr>
<tr>
<td>10'-0&quot; Long P-141</td>
<td>10'-0&quot; Long P-140</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image9.png" alt="Diagram" /></td>
<td><img src="image10.png" alt="Diagram" /></td>
</tr>
<tr>
<td>SPECIFY ANGLE</td>
<td>SPECIFY ANGLE</td>
</tr>
<tr>
<td>7&quot; 135°</td>
<td>7&quot; 135°</td>
</tr>
<tr>
<td>9 1/16&quot; 135°</td>
<td>9 1/16&quot; 135°</td>
</tr>
<tr>
<td>1&quot; 135°</td>
<td>1&quot; 135°</td>
</tr>
<tr>
<td>1&quot; 11/16&quot;</td>
<td>1&quot; 11/16&quot;</td>
</tr>
<tr>
<td>• Use with all Substrates</td>
<td>• Use with all Substrates</td>
</tr>
<tr>
<td>10'-0&quot; Long P-145</td>
<td>10'-0&quot; Long P-155</td>
</tr>
</tbody>
</table>

Subject to change without notice. See [www.mbcicom](http://www.mbcicom) for current information. Rev 01.02 BHS-13
<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Dimensions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape Sealer</td>
<td>• 3/16&quot; x 2 1/2&quot; x 20' • For use at valley when using exposed fasteners • For use with roof curbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tri-Bead</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 3/8&quot; x 3/8&quot; x 25' • For use at eave, ridge, endlaps and trim connections</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW-504</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Spacer</td>
<td>• Polystyrene block used to increase the insulation capacity along the purlins</td>
<td>15 7/8&quot; x 3&quot; x 1/4&quot;, 3/8&quot;, 5/8&quot;, or 1&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW-583</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW-582</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW-581</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tape Sealer-Swaged</td>
<td>• 1/16&quot; x 3/8&quot; x 25' • For use at eave, ridge, endlaps and trim connections</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW-515</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel Hemming Tool</td>
<td>• 24 gauge • Painted</td>
<td></td>
<td>HW-602</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tube Sealant</td>
<td>Urethane (White) - HW-540 • Urethane (Gray) - HW-541 • Urethane (Bronze) - HW-542 • Non-Skinning Butyl - HW-549</td>
<td>1/16&quot; x 3/8&quot; x 20'</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW-525</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal Vent Material</td>
<td>• Std. Insulated - HW-1803HSB • Std. Uninsulated - HW-1802HSB • UL 90 Insulated - HW-1801HSB • UL 90 Uninsulated - HW-1800HSB</td>
<td>12&quot; wide HW-446 • 16&quot; wide HW-440</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside Closure</td>
<td>• Std. Insulated - HW-1803HSB • Std. Uninsulated - HW-1802HSB • UL 90 Insulated - HW-1801HSB • UL 90 Uninsulated - HW-1800HSB</td>
<td>12&quot; wide HW-446 • 16&quot; wide HW-440</td>
<td></td>
</tr>
<tr>
<td>Light Transmitting Panel</td>
<td>(Reinforced) ‡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† It is the user’s responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railings, or other acceptable safety controls that prevent fall-through.
**Ridge Flashing**

- **FL-200**
  - PART NO.: FL-200
  - ROOF PITCH: 1/2-3 3/4:12
  - DIM. “A”: 3 1/2"
  - NOTE: For use without ventilator 18" Peak purlin spacing

- **FL-202**
  - PART NO.: FL-202
  - ROOF PITCH: 3 1/2%-6:12
  - DIM. “A”: 4 1/2"

- **FL-213**
  - PART NO.: FL-213
  - ROOF PITCH: 1/2-3 3/4:12
  - DIM. “A”: 6 1/2"
  - NOTE: For use without ventilator 24" Peak purlin spacing

- **FL-214**
  - PART NO.: FL-214
  - ROOF PITCH: 3 1/2%-6:12
  - DIM. “A”: 7 1/2"

**Floating Peak Box**

- **FL-125**
  - Length: 2'-1" Girth: 33 1/4"
  - For use with FL-200, FL-202, FL-213, FL-214, FL-300, FL-302, FL-540 or FL-541 Ridge Flashing

- **FL-126**
  - Length: 2'-6" Girth: 37 1/4"
  - For use with FL-205, FL-207, FL-303, FL-304, FL-543 or FL-544 Ridge Flashing

**Ridge Flashing for Perforated Vent Drip**

- **FL-300**
  - PART NO.: FL-300
  - ROOF PITCH: 1/2-3 3/4:12
  - DIM. “A”: 4 1/2"
  - NOTE: For use with perforated vent drip (FL-254) 18" Peak purlin spacing

- **FL-302**
  - PART NO.: FL-302
  - ROOF PITCH: 3 1/2%-6:12
  - DIM. “A”: 5 1/2"

- **FL-303**
  - PART NO.: FL-303
  - ROOF PITCH: 1/2-3 3/4:12
  - DIM. “A”: 7 1/2"
  - NOTE: For use with perforated vent drip (FL-254) 24" Peak purlin spacing

- **FL-304**
  - PART NO.: FL-304
  - ROOF PITCH: 3 1/2%-6:12
  - DIM. “A”: 8 1/2"

**Perforated Vent Drip**

- Use with FL-300, FL-302, FL-303 or FL-304 Ridge Flashing

**ZEE Closure**

- Use at Hips

**Ridge/Hip Flashing - Fixed**

- **FL-209**
  - PART NO.: FL-209
  - ROOF PITCH: 1/2-3 3/4:12
  - DIM. “A”: 6"
  - NOTE: For use without vent material 18" Peak purlin spacing

- **FL-211**
  - PART NO.: FL-211
  - ROOF PITCH: 3 1/2%-6:12
  - DIM. “A”: 7"

- **FL-212**
  - PART NO.: FL-212
  - ROOF PITCH: All Pitches
  - DIM. “A”: 11 1/2"
  - NOTE: For use without vent material 24" Peak purlin spacing

**Sculptured High Side Eave Trim**

- Specify open hem when using with continuous cleat

**Ridge End Cap**

- Specify Ridge to be used and Roof Slope

- **FL-201**
  - PART NO.: FL-201
## General Information

### Product Checklist

#### Sculptured Gutter - Standard

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Roof Pitch</th>
<th>Dim. &quot;A&quot;</th>
<th>Girth</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL-248A</td>
<td>1/2-4:12</td>
<td>7 7/16&quot;</td>
<td>23 3/4&quot;</td>
</tr>
<tr>
<td>FL-248B</td>
<td>4 3/4-6:12</td>
<td>7 7/16&quot;</td>
<td>24 3/4&quot;</td>
</tr>
</tbody>
</table>

#### Gutter Strap

- For use with Sculptured Gutter
- 18 Gauge Material

#### Gutter Ends

- Left or Right
- Use with all Sculptured or Style Gutters
- End Caps will be made to fit gutter ordered
- Specify left or right
- Specify gutter part number

#### Variable Termination

- COLOR
- 90°

#### Rake Slide - High Wind

- COLOR
- 90°

#### Eave with Extended Drip Edge

- Use with Roof Slopes 1/2 - 6:12
- Specify open hem when using with continuous cleat

#### Box Eave Trim

- Specify open hem when using with continuous cleat

---

BHS-16 REV 01.02

SEE www.mbcicom FOR CURRENT INFORMATION

SUBJECT TO CHANGE WITHOUT NOTICE
BattenLok® HS

GENERAL INFORMATION

PRODUCT CHECKLIST

Box Rake Trim

COLOR
3"
5"
5½"

FL-306

Parapet Rake Cleat - High Wind

1"
¾"
COLOR

FL-292

Box Gutter with Drip Edge

6" 1½" 5¼" 4½" 5½"

Specify Roof Pitch

T-5271

Gutter Strap

24 Gauge Material

FL-310

Parapet High Side Eave Flashing - Fixed

6" COLOR

FL-276

Gutter Ends

Left or Right

T-5291

Parapet Rake Flash

OPEN HEM


"A"
1"
4"

Parapet High Side Eave Flash - Floating

4¾" "A" 2½"

COLOR

FL-285

FL-286

FL-287

FL-275

FL-274

NOTE: All trim to be 26 gauge material unless noted. Refer to current price book for part numbers and descriptions.
**GENERAL INFORMATION**

**PRODUCT CHECKLIST**

**Offset Cleat**

![Diagram of Offset Cleat]

- 24 Gauge Material
- FL-337

**Continuous Cleat**

![Diagram of Continuous Cleat]

- 24 Gauge Material
- FL-338

**Counter Flash**

![Diagram of Counter Flash]

- 24 Gauge Material
- FL-341

**Alternate Counter Flash**

![Diagram of Alternate Counter Flash]

- 24 Gauge Material
- FL-343

**Box Panel Cap Trim**

![Diagram of Box Panel Cap Trim]

- Specify Roof Pitch
- FL-272

**Offset Panel Cap Trim**

![Diagram of Offset Panel Cap Trim]

- FL-271

**Standard Valley - Utility, Low and High Systems**

![Diagram of Standard Valley]

- 24 Gauge Material
- FL-705

**Extended Valley - Utility, Low and High Systems**

![Diagram of Extended Valley]

- 24 Gauge Material
- FL-711
# PRODUCT CHECKLIST

| Fastener #1B | • Clip to purlin (Up to 4" insulation between panel and purlin) |
|             | ¼”-14 x 1 ¼” Self Driller |
|             | ¼" Hex Washer Head with no washer |

| Fastener #1E | • Panel to eave plate or eave strut |
|             | • Rake trim to roof panel |
|             | • Standard endlaps |
|             | • Panel to valley plate |
|             | • Outside closure to panel with back-up plate or support plate |
|             | ¼”-14 x 1 ¼” Long Life Self Driller |
|             | ¼" Hex Washer Head, with sealing washer |

| Fastener #142 | • Clip to purlin (Over 4" insulation between panel and purlin) |
|              | ¼”-14 x 1 ½” Self Driller |
|              | ¾" Hex Washer Head, with ¾” O.D. washer |

| Fastener #2A | • Use in place of Fasteners #1E, #2B and #4 at all strip outs |
|              | 17 x 1” Long Life AB |
|              | ¾" Hex Washer Head, with sealing washer |

| Fastener #2B | • Endlap over plywood |
|              | ¼”-14 x 1” Long Life AB |
|              | ¾" Hex Washer Head, with sealing washer |

| Fastener #4 | • Ridge and other flashing to outside closure |
|            | • Gutter to panel |
|            | • Gutter to strap |
|            | • Trim to trim connections |
|            | • Sculptured eave trim to panel |
|            | ¼”-14 x ¾” Long Life Lap Tek® Self Driller |
|            | ¾" Hex Washer Head, with sealing washer |

| Fastener #5 | • Rake support to purlin (Floating System Only) |
|            | • Floating eave plate to eave strut |
|            | ¼”-14 x 1 ¼” Shoulder Tek® 2 Self Driller |
|            | ¾" Hex Washer Head, with no washer |

| Fastener #70 | • Clip to purlin (Up to 4" insulation between panel and purlin) |
|              | 12-24 x 1 ¼” with #5 Drill Point |
|              | ¾" Hex Washer Head, with no washer |

| Fastener #11 | • Special application fastener |
|              | • For attaching trim to masonry walls |
|              | ⁵⁄₈” x 1 ¼” Nail Drive Masonry Anchor |
## General Information

### BattenLok® HS

#### Product Checklist

| Fastener #12A | Offset cleat to plywood  
| Hip and valley support plates to purlins  
| Valley flashing to valley support plate |

12 x 1" Phillips/Square Drive Pancake Head Driller

| Fastener #13A | Offset cleat to plywood  
| Rake angle to plywood  
| Clip to plywood |

12 x 1" Phillips/Square Drive Pancake Type "A"

| Fastener #14 | Trim to trim connections |

Stainless Steel Pop Rivet ⁷⁄₈" diameter x ⁷⁄₈" grip range

| Fastener #14A | Outside closure to angle on floating hip detail |

Stainless Steel Pop Rivet ⁷⁄₈" diameter x ⁷⁄₈" grip range

| Fastener #226 | Dekstrip to Expansion Ridge/Expansion Lap |

³⁄₈" x ³⁄₈" Rivet Cendalum  
Closed End Rivet

| Fastener #18 | Panel clips to wood deck  
| Outside closure to panel over wood deck |

14 x 1" Type A  
⁷⁄₈" Hex Washer Head, with ⁷⁄₈" O.D. washer

| Fastener #228 | Dekstrip to Expansion Ridge/Expansion Lap |

10 x ½" Aluminum Grommet Washer

| Fastener #129 | ¹⁄₄"-14 x ⁹⁄₁₆" Long Life Lap TEK  
| ⁹⁄₁₆" Hex Head, with ¹⁄₄" O.D. washer |

| Fastener #14 | Use at lower endlap of LTP's |

| Fastener #1 | Eave plate to eave strut  
| Mid-slope fixed plate to purlin  
| Rake support to angle (Fixed system only) |

¾"-14 x ¹⁄₂" Self Driller  
⁷⁄₈" Hex Head, with ¾" O.D. washer

| Fastener #46 | Panel endlaps over solid substrate |

¹⁄₄"-14 x ⁹⁄₁₆" Long Life Type B with washer

| Deck Screw | 18 Gauge maximum drilling thickness |

Fastener #209 14 x 2"  
Fastener #210 14 x 3"  
Fastener #211 14 x 4"  
Fastener #15D 14 x 6"
I. Jobsite Storage and Handling
   A. Check the shipment against the shipping list.
   B. Damaged material must be noted on Bill of Lading.
   C. Panel crates should be handled carefully. A spreader bar of appropriate length is recommended for hoisting.
   D. Check to see that moisture has not formed inside the bundles during shipment. If moisture is present, panels should be uncrated and wiped dry, then restacked and loosely covered so that air can circulate between the panels.

II. Application Checklist
   A. Check substructure for proper alignment and uniformity to avoid panel distortion.
   B. Periodic check of panel alignment is crucial to proper panel alignment.
   C. If there is a conflict between this manual and the project erection drawings, the erection drawings will take precedence.

III. LTP Warning
   A. WARNING: Light transmitting panels are not designed or intended to bear the weight of any person walking, stepping, standing or resting on them. THE MANUFACTURER DISCLAIMS ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, that any person can safely walk, step, stand or rest on or near these light transmitting panels or that they comply with any OSHA regulation.
PREPARATORY REQUIREMENTS

1. For the purpose of this manual, we have assumed that the BattenLok® HS roof will be installed over purlins and an eave gutter will be installed. Please refer to the Design Section of the manuals for details of BattenLok® HS over other substrates.
2. A rake angle or an alternate structural flat surface must be installed on top of the purlins to accept the rake support.
3. All primary and secondary framing must be erected, plumbed and squared with bolts tightened according to accepted building practices.
4. The substructure (eave to ridge) must be on plane (¼” in 20’ or ¾” in 40’ tolerance).
5. It is critical that the purlins or bar joists at the ridge and endlaps be located exactly as detailed and that they are straight from rafter to rafter. Any mislocation or bowing of these members can cause the fasteners at the ridge or endlaps to foul as the panels expand and contract.
6. The manufacturer recommends the use of a screw gun with a speed range of 0-2000 RPM to properly install all fasteners referenced in this manual. Tools rated to 4000 RPM should never be used for self drilling fasteners typically supplied with metal roof and wall systems.
7. Field cutting of the panels should be avoided where possible. If field cutting is required, the panels must be cut with nibblers, snips, or shears to prevent edge rusting. Do not cut the panels with saws, abrasive blades, grinders, or torches. All metal shavings must be removed from panel surfaces immediately.

NOTE
It is the responsibility of the erector to install this roof using safe construction practices that are in compliance with OSHA regulations. The manufacturer is not responsible for the performance of this roof system if it is not installed in accordance with the instructions shown in this manual. Deviations from these instructions and details must be approved in writing by the manufacturer.

CAUTION
Diaphragm capabilities and purlin stability are not provided by the BattenLok® HS roof system. Therefore, other bracing may be required.

CAUTION
Avoid restricting the thermal expansion and contraction of the BattenLok® HS panels.
(i.e. Do not attach panel to the substructure at both the eave and ridge.)

WARNING: Light transmitting panels are not designed or intended to bear the weight of any person walking, stepping, standing or resting on them. THE MANUFACTURER DISCLAIMS ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, that any person can safely walk, step, stand or rest on or near these light transmitting panels or that they comply with any OSHA regulation.
UNLOADING

Upon receiving material, check shipment against shipping list for shortages and damages. The manufacturer will not be responsible for shortages or damages unless they are noted on the shipping list.

Each bundle should be lifted at its center of gravity. Where possible, bundles should remain branded until final placement on roof. If bundles must be opened, they should be retied before lifting.

When lifting bundles with a crane, a spreader bar and nylon straps should be used. NEVER USE WIRE ROPE SLINGS, THEY WILL DAMAGE THE PAELS.

When lifting bundles with a forklift, forks must be a minimum of five feet apart. Do not transport open bundles. Drive slowly when crossing rough terrain to prevent panel buckling.

CAUTION
Improper unloading and handling of bundles and crates may cause bodily injury or material damage. The manufacturer is not responsible for bodily injuries or material damages during unloading and storage.
UNLOADING (Continued)

BLOCK AND BAND

This method of bundling is used for orders that are to be picked up by the customer or shipped by common carrier. 2 x 4’s are strapped under the bundles to allow access for straps or a forklift. Bundles less than 25’ long may be handled by a forklift. The forklift should have at least 5’ between forks. Bundles longer than 25’ should be lifted utilizing a spreader bar with nylon straps.

FULL CRATE

This method is used on all overseas shipments or by customer’s order. Handling requirements are the same as block and band.
HANDLING/PANEL STORAGE

Standing on one side of the panel, lift it by the seam. If the panel is over 10' long, lift it with two or more people on one side of the panel to prevent buckling.

Do not pick panels up by the ends.

Store bundled sheets off the ground sufficiently high to allow air circulation beneath bundle and to prevent rising water from entering bundle. Slightly elevate one end of bundle. Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpaulin and the ground. **PROLONGED STORAGE OF SHEETS IN A BUNDLE IS NOT RECOMMENDED.** If conditions do not permit immediate erection, extra care should be taken to protect sheets from white rust or water marks.

Check to see that moisture has not formed inside the bundles during shipment. If moisture is present, panels should be uncrated and wiped dry, then restacked and loosely covered so that air can circulate between the panels.
PROPER HANDLING, STORAGE AND MAINTENANCE OF PAINTED AND GALVALUME PLUS® PANELS

PANEL HANDLING

• All panel bundles must be inspected during unloading and carrier advised immediately if damage is noted.

• Never unload or move panel bundles that have been opened without adequately clamping them. Without the banding to hold the bundle stable, panels may shift during unloading or movement, causing the bundle to fall.

• Never use wire slings to unload or move panel bundles.

• When unloading or moving panel bundles over 20’ long, a spreader bar may be required. It is the erector’s responsibility to determine the location and number of lift points required to safely unload or move panel bundles.

• When handling individual panels, always wear protective gloves. OSHA safety regulations must be followed at all times.

• When cutting panels, always wear all required safety equipment such as safety glasses and gloves. Cut panels with nibblers, shears or snips. Do not use abrasive blade saws as these will melt the Galvalume® coating causing the panel edge to rust which will void the Galvalume® and Paint warranties. Drilling fasteners into panels will create metal filings that will rust and create an unsightly stain. Metal filings must be removed by sweeping or wiping down panels immediately after installation to avoid this occurrence.

PANEL STORAGE

• If water is permitted to enter panel bundles, it is necessary to open bundles, separate the panels and dry all surfaces.

• Store bundled panels off the ground sufficiently high to allow air circulation beneath bundle and to prevent rising water from entering bundle. Slightly elevate one end of bundle.

• Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpalin and the ground.

• Prolonged storage of panels in a bundle is not recommended. If conditions do not permit immediate erection, extra care should be taken to protect panels from white rust or water marks. If panels have not been erected within three weeks of receipt, the panels should be removed from the bundle for inspection. Condensation may cause damage to panels. The manufacturer’s paint and Galvalume® warranties do not cover damage caused by improper panel storage.

PANEL MAINTENANCE

• Never allow Galvalume® panels to come into contact with or water runoff from dissimilar materials such as copper, lead, or graphite. These materials will cause galvanic corrosion of the panels and will void the Galvalume® warranty. This includes treated wood and AC condensate, both of which contain copper compounds. This also applies to painted panels.

• Always use long life fasteners in all exposed fastener applications. Non long life fasteners can rust through the panel at each exposed fastener location. Use of non long life fasteners in exposed applications will void the Galvalume® and Paint warranties.

• Panels should be protected against exposure to masonry products, strong acids or bases and solvents. Exposure to these agents may etch or stain Galvalume Plus® panels and cause painted panels to blister or peel.
GENERAL INFORMATION

- Never allow anyone to apply any coating or patching material to the panel surface. These products may contain chemicals that will adversely affect the Galvalume Plus® or paint coating. Also, water may become trapped between the coating material and the panel, causing premature corrosion.

If you have any question as to proper methods to use in the handling, storage or maintenance of these panels, call your nearest manufacturer representative.

NOTICE
Uniform visual appearance of Galvalume Plus® coated panels cannot be guaranteed. The Galvalume Plus® coating is subject to variances in spangle from coil to coil which may result in a noticeable shade variation in installed panels. The Galvalume Plus® coating is also subject to differential weathering after panel installation. Panels may appear to be different shades due to this weathering characteristic. If uniform visual appearance is required, the manufacturer recommends that our prepainted Signature® 200 or Signature® 300 panels be used in lieu of Galvalume Plus®. Shade variations in panels manufactured from Galvalume Plus® coated material do not diminish the structural integrity of the product. These shade variations should be anticipated and are not a cause for rejection.
RAKE ATTACHMENT

Attach the rake angle to the purlin with the Fastener #12A.

Attach the rake support on top of the rake angle with the proper self-drilling fasteners (See "Rake Support Fastener Requirements" Below) on 2'-0" centers with a fastener in the first and last prepunched slot. The vertical leg is to be installed flush with the steel line.

IT IS IMPORTANT THAT THE RAKE SUPPORT IS INSTALLED STRAIGHT AND SQUARE WITH THE EAVE AS IT CONTROLS THE ALIGNMENT OF THE ROOF SYSTEM.

Install 6" long pieces of double faced tape (not by Manufacturer) on 3'-0" centers to the top of the horizontal leg of the rake support. This will help hold the insulation in place at the rake.

RAKE SUPPORT FASTENER REQUIREMENTS

• Fixed System - Fastener #1
• Floating System - Fastener #5

CAUTION
(For Floating Systems Only)
It is important that shoulder fasteners are installed through the CENTER of the slotted holes of the rake support to allow for expansion and contraction.

IMPORTANT!
ALL PRIMARY AND SECONDARY FRAMING MUST BE INSTALLED, PLUMBED, AND BOLTS TIGHTENED PRIOR TO SHEETING.
**LOW SYSTEM EAVE**

For applications in which the wall panels have already been erected, install box panel cap trim or offset panel cap trim to the eave strut with Fastener #14. Eave trim must be pulled tight to wall panels with Fastener #14 before fastening to eave strut. **For applications in which the wall panels have not been erected, use offset panel cap trim.** If using panel cap trim, it will space itself for the wall offset panels. Use Fastener #14 installed at 36” O.C.

Install Tri-Bead tape sealer along top of the trim.

For vinyl insulation, install double faced tape (not by Manufacturer) along the length of the top leg of the trim. Double faced tape must be upslope from Tri-Bead tape sealer.

Lap trim 2”. Apply two beads of urethane sealant between the trim pieces, approximately 1” from the end of the bottom piece. Attach trim laps in flat eave trim with Fastener #14. Attach trim laps on panel cap trim with Fastener #4.
**HIGH SYSTEM EAVE**

Wall Panels Installed Before Roof

Install high eave plates flush with the outside face of the high crowns of the wall panels. Install Fastener #1 in prepunched slots (1'-0" on center) of the eave plate. The first eave plate will butt against the rake support. All of the eave plates may be installed at this time.

Be sure to butt each eave plate end to end without leaving a gap between the plates. Place an 8" length of Triple Bead tape sealer at each butt joint.

Install box panel cap trim to the top of the eave plates. Check to make sure the trim is flat against the wall. Attach the trim to the eave plate and the wall panel with a Fastener #14 at 10'-0" centers.

Lay Tri-Bead tape sealer across the top of the eave trim, flush with the outside edge. For vinyl back insulation, install double faced tape (not by Manufacturer) along the length of the bottom of the eave plate. Double faced tape must be upslope from the Tri-Bead tape sealer.

**Wall Panels Installed After Roof**

Install offset panel cap trim to the eave strut and wall panel with Fastener #14 at 10'-0" centers. Use three fasteners per trim piece.

Install high eave plates flush with the outside of the offset panel cap trim. Install Fastener #1 in each prepunched slot (1'-0" on center) of the eave plate. The first eave plate will butt against the rake support. All of the eave plates may be installed at this time.

Lay Tri-Bead tape sealer under the eave plate on top of the offset panel cap trim.

Be sure to butt each eave plate end to end without leaving a gap between the plates. Place an 8" length of Triple Bead tape sealer at each butt joint.

Lay Tri-Bead tape sealer across the top of the eave plates, flush with the outside edge. For vinyl back insulation, install double faced tape (not by Building Manufacturer) along the length of the bottom leg of the eave plate.

Lap trim 2". Apply two beads of urethane sealant between the trim pieces, approximately 1" from the end of the bottom piece. Attach trim laps in flat eave trim with Fastener #14. Attach trim laps on panel cap trim with Fastener #4.
**THERMAL SPACER**

**(FOR HIGH SYSTEM ONLY)**

Position the thermal spacer on top of the insulation over each purlin and against the rake support prior to installing the roof panel.

Using spray adhesive, (not by Manufacturer), adhere the thermal spacer to the insulation (First Panel Run Only). The thermal spacer increases the insulation capacity along the purlins.

*Not by Manufacturer*
FIRST PANEL

Position the panel so that it overhangs the eave strut by the dimension shown on the building drawings. The upper end of the panel must extend 7" beyond the web of the purlin if the panel covers eave to ridge. If more than one panel is required to cover eave to ridge, one or more endlaps will be required. The upper end of the panel will extend 10" beyond the web of the purlin at endlaps.

NOTE:

If an endlap is required then roof must be sheeted right to left as viewed from the eave looking toward the ridge.

Lay the female leg of the panel over the rake support. To prevent wind damage, secure the female leg of the panel to the rake support with Vise Grip® Locking C-Clamps or temporary fasteners. Fasteners must go through the rake support. The panel will not be fastened permanently to the rake support until the rake trim is installed.

Attach the panel to the eave strut or eave plate with Fastener #1E. Five fasteners are required at this location. purlins.
**CAUTION**
The panel clip has factory applied mastic in the upper lip. This mastic is compressed when the clip is rotated in place. If, for some reason, a clip must be removed, a new clip must be used.

**CLIP INSTALLATION**
Hook the panel clip onto male leg of panel. Hold end of clip up to keep it engaged onto male leg and rotate the clip base down to completely engage clip onto male leg. Install panel clips at each purlin.

Before fastening clip to purlins, check to ensure that vertical leg of clip is tight to the vertical leg of the panel. Failure to keep this leg tight to the panel leg will affect panel module.

**STEP 5**

**CLIP FASTENER REQUIREMENTS**
Purlins - Fastener #1B - Up to 4” Insulation
Fastener #142 - Over 4” Insulation
Bar Joists - Fastener #6A (Two fasteners per clip)

**RIGHT WAY**

**WRONG WAY**
**INSTALLATION SEQUENCE**

**ENDLAP-PANEL**

**NOTE:**
Step 6 applies only where more than one panel is used in a single slope.

Slide a prepunched back-up plate onto the upslope end of the bottom panel. Make sure the teeth on top of the back-up plate are on top of the panel. Visually check to ensure that the prepunched holes in the back-up plate are aligned with the prepunched holes in the panel. At upslope end of bottom panel, install Tri-Bead tape sealer across entire width of panel. Tape sealer must be centered over prepunched holes in panel. Apply swaged endlap tape sealer to swaged vertical male leg of upper panel. Pigtail portion of tape sealer must lap over vertical leg of panel.

Using an awl to align the prepunched holes, install upper panel by nesting it over the lower panel for 6”. Rotate the male leg of the upper panel under the male leg of the bottom panel, then force the female leg of the upper panel down onto the female leg of the bottom panel. Install Fastener #1E in the prepunched holes in the proper sequence. Install clips as outlined in Step 5.

Repeat this endlap procedure as required until ridge is reached.

**NOTE:**
If you are using 12” *BattenLok® HS* panels, they are not prepunched for endlaps. Use Triple Bead Tape Sealant at endlaps with 12” wide panels.
RIDGE

At the ridge, the panel should extend 7" past the web of the peak purlin.

At the ridge install a back-up plate as outlined in Step 6.

Install clips as outlined in Step 5.

Install a 3" piece of Tri-Bead tape sealer at ridge conditions or 7" piece of Tri-Bead tape sealer at high eave conditions along the length of the male leg beginning at the upslope end of the panel and extending downslope. Install a second piece of Tri-Bead tape sealer along the underside of the male leg beginning at the upslope end and extending downslope.

CAUTION

Installing the tape sealer to the male leg at the ridge is important. Without it, water could be driven behind the outside closure by a strong wind.
**CAUTION**

Panel must be crimped at all clip locations as they are installed to provide temporary wind resistance.

---

**SUBSEQUENT RUNS EAVE**

Apply urethane sealant to the male leg of the first panel directly over the Tri-Bead tape sealer at the eave. This will prevent water infiltration through the end of the panel seam.

Position the next panel with the female leg over the male leg of the previous panel with panel ends flush.

Clamp the panel seam together at both ends. Long panels may require one or more clamps in the middle. This will help hold panel module.

Install fasteners at eave as outlined in Step 4.

Install clips as outlined in Step 5.

Crimp panel seam at all clip locations with hand crimping tool. Panels should be fully seamed with electric seamer as quickly as possible after a section of the roof is completed.
SUBSEQUENT RUNS ENDLAP

Install endlap panels as outlined in Step 6.

Install clips as described in Step 5.

Repeat endlap procedures as required until ridge is reached.
SUBSEQUENT RUNS
ENDLAP

Install back-up plate and Tri-Bead tape sealer as outlined in Step 6 and Step 7.

Install clips as described in Step 5.

CAUTION
Installing the tape sealer to the male leg at the ridge is important. Without it, water could be driven behind the outside closure by a strong wind.
LAST PANEL RUN

Install rake support at the finishing end of the roof as outlined in Step 1.

FINISHING DIMENSION RUN OF 8” TO 14”

Field cut and bend a 2” tall vertical leg on the panels in the last run of roof. The vertical leg must be tight to the rake support angle. Secure the vertical leg to the rake support angle with clamps or temporary fasteners. At the endlap and ridge, a partial back-up plate must be cut.

FINISHING DIMENSION RUN OF LESS THAN 8”

If the width of the last panel run is 8” or less, a second run of rake support angle must be installed for attachment of the vertical leg of the panel. A variable termination trim will be required to seal the gap between the vertical leg of the panel and the rake trim.

The male leg of the panel and the termination trim must be field cut to fit the condition.
**SEAMING OPERATON**

As panels are installed, hand seam at each clip with hand crimper. Panels should be completely seamed with electric seamer as soon as possible.

Push locking arm down to lock hand crimper onto seam. If difficulty is encountered, check to make sure that hand crimper is properly aligned on seam. **Do not force locking arm.**

Push crimping arm down to crimp panel. Return both the crimping arm and locking arm to the up position and remove tool from seam.
SEAMING OPERATION (Continued)

The electric seamer will run upslope and downslope and is controlled by a hand held forward and reverse remote switch. The seamer will form the seam in either direction. When the panels are installed from right to left forward is upslope and when the panels are installed left to right forward is downslope. An orientation plate on the seamer indicates forward and reverse. When the roof has endlaps, the panels will always be installed right to left.

The remote switch is designed to stop the seamer when the button is released. On lower sloped roofs walking with the seamer is recommended. On steep sloped roofs (6:12 and greater) a 12-gauge extension cord (not by Building Manufacturer) may be installed between the remote switch and the seamer. Seaming can then be accomplished by starting the seamer at the eave from a safety lift. When using this method the seam will be formed upslope and then the seamer will be reversed down the seam to the eave, removed, and placed on the next seam. During panel installation hand crimp the end of the panels 12" downslope from the ridge or high side of the roof. Stop the seamer at this point to prevent the seamer from running into the flashing or running off the roof. Finish remainder of seam with the hand crimper.

To begin seaming, set the seamer on the seam with the locking arm up and to the open side of the seam. The wheel should be even with the edge of the panel. Push the locking arm down to engage the tools and turn the seamer on.

CAUTION

- Seamer operation should be closely supervised at all times.
- A safety line should be attached to the seamer.
- Be aware of which direction the seamer will move before engaging the switch.
- Do not entangle the electrical cords in the seamer tooling while it is in operation. This could cause serious injury or death to the operator and severely damage the seamer.
- Electrical cords should be 10-gauge to provide power to the seamer and never be over 200 feet from the electrical source.
- The seamer will move approximately 6 to 8 inches after the hand switch is released.
- Bring seamer to a complete stop before changing direction.

The use of any field seaming machine other than that provided by the manufacturer may damage the panels, void all warranties and will void all engineering data.
Panels must be hand folded flat (90°) for 3" with a hand tool to allow the outside closure to be installed. Place Tri-Bead tape sealer across full width of panels, including under panel seams at ridge. Center of tape sealer should be 1½" from end of panels.

Field cut the end of the outside closure that fits to the open side of the panel seam. Notch and bend the vertical leg of the closure above the end tab back to the dimple formed into the closure. It is important that the closures fit tight to the panel seams to prevent the need for excess urethane sealant at this location.

Install outside closures by rotating the end cut for the panel seam into place first. Then rotate the other end of the outside closure into place. The vertical leg of the outside closure should be 2" from the upslope end of the panel. Attach the outside closure to the panel with Fastener #1E at each prepunched hole in the closure. Before installing the next outside closure, install a piece of Tri-Bead tape sealer onto the top flange of the outside closure previously installed. This is to prevent water being blown between the outside closures where the top flanges overlap. After all closures are in place, install Tri-Bead tape sealer across the top flange.

Use urethane sealant to fill any voids around the panel seams on the upslope side of the outside closures.
BattenLok® HS

SPECIAL ERECTION TECHNIQUES

NOTES:
1. Maximum width of purlin flange to be 3½”.
2. Stiffener plate is to be field installed on bottom side of light transmitting panel over mid-purlin.
3. Light transmitting panel rivets that obstruct stiffener plate must be drilled out and replaced with Fastener #1E. Minimum two fasteners per side.
4. Stiffener plate must be centered exactly over mid-purlin so that thermal movement of the system is not restrained by the purlin.
5. Endlaps created by the use of light transmitting panels require roof erection to proceed from right to left as viewed from the eave looking toward the ridge.

WARNING
It is the user’s responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railings, or other acceptable safety controls that prevent fall-through.
**STEP 1**

LOWER BATTENLOK HS PANEL
1. Install Back-up plate on lower panel.
2. Install Triple Bead Tape as shown on lower panel.
3. Install Butyl Sealant as shown up the vertical legs and over the male and female seam.

**STEP 2**

DOWN SLOPE END OF LTP
1. Field cut male leg 6" as shown.
2. Field open female leg 6" to allow panel lap to engage.
RIVETED RAIL LTP INSTALLATION (cont’d.)

STEP 3

UPPER AND LOWER PANELS
1. C-clamp both vertical male legs together prior to rotating upper panel into place.
2. Lift LTP up slightly in center of panel to help get male and female legs to nest properly.

STEP 4

UPPER AND LOWER PANELS
1. C-clamp both female vertical legs together.
2. Install 1/4-14 x 1 1/4” long life fasteners (43L) in the sequence shown.
UPSLOPE END OF LTP
1. Install Back-up plate on LTP panel.
2. Install Triple Bead Tape as shown on LTP Panel.
3. Install Butyl Sealant as shown up the vertical legs and over the male and female seam.
4. Apply generous bead of butyl sealant on top of triple bead tape sealer.

STEP 6

UPPER BATTENLOK HS PANEL DOWN SLOPE END
1. Field cut male leg 6" as shown.
2. Field open female leg 6" to allow panel lap to engage.
STEP 7

UPPER AND LOWER PANELS
1. C-clamp both vertical male legs together prior to rotating upper panel into place.
2. Lift panel up slightly in center of panel to help get male and female legs to nest properly.

STEP 8

UPPER AND LOWER PANELS
1. C-clamp both female vertical legs together.
2. Install 1/4-14 x 1 1/4" long life fasteners (#1E) in the sequence shown.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION
FLOATING ROOF CURB SUPPORT GUIDE

CAUTION

It is the user's responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.

* INDICATES ROOF PANEL SUPPORTS
▲ INDICATES CURB BASE SUPPORTS
* ADDITIONAL UPLIFT SUPPORTS ARE REQUIRED FOR THE ATTACHMENT OF THE CURB UP LIFT PLATES ONLY.

BattenLok® HS ROOF PANEL

PURLIN LINE

Curb

Curb Base Length

Curb Base Width

Panel Movement ± 1 1/4"

Curb Base Length

Curb Base Width

10" CLEAR OPENING + 3"

4" 6"

10" 6"

3" 3"

1'-2" 10"

28"

3/8" LOW CLIPS 1" HIGH CLIPS

FLOATING EAVE PLATE

BattenLok® HS ROOF PANEL

BattenLok® HS ROOF PANEL

INDICATES ROOF PANEL SUPPORTS
INDICATES CURB BASE SUPPORTS
* ADDITIONAL UPLIFT SUPPORTS ARE REQUIRED FOR THE ATTACHMENT OF THE CURB UP LIFT PLATES ONLY.
NOTES:
1. Install all lower roof panels to support the curb base.
2. Install back up plates.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
NOTES:
1. Apply Triple Bead tape sealer (HW-502) on roof panels as shown.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
NOTES:
1. For field located Panel Fin Caps, notch Curb Base at all Panel Fins.
2. Install Curb Base on lower roof panels with a 6" End Lap.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
NOTES:
1. Attach the Curb Base to the roof panels.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
NOTES:
Fill Fin cavity of Cap Cell with Urethane Tube Sealant. Apply Triple Bead tape sealer (HW-502) on the bottom of (2) loose the Cap Cell, install over the Panel Fins and attach with Fastener #1E at 1" O.C.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
CAUTION

It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.

NOTES:

Field cut male and female panel ribs from an extra roof panel supplied by the manufacturer.
NOTES:
1. Install Triple Bead tape sealer (HW-502) to panel #2 Male Fin, and along the edge of the Curb Base.
2. Install the Female Panel Rib over the tape sealer and attach with Fastener # 1E at 12" O.C.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
CAUTION

It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.

NOTES:
1. Notch the Male Panel Fin. Apply Triple Bead tape sealer (HW-502) to the top and side of the Male Panel Fin.
2. Apply Triple Bead tape sealer on the Curb Base under the Male Panel Fin.
3. Insert the field cut Male Panel Fin on top of the Triple Bead tape sealer.
CAUTION

It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
NOTES:
1. Apply Triple Bead tape sealer (HW-502) on Curb Base at the up hill end.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
NOTES:
1. Apply Triple Bead tape sealer (HW-502) between the Panel Ribs on Panels #5 and #6 for water seal.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION

CURB BASE INSTALLATION #8

NOTES:
1. Install Roof Panels #5, #6 & #7 to the Curb Base on Top of the tape sealer with Fastener #1E (5 per panel).
2. Install Roof Panel #8.

CAUTION
It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION
UPLIFT PLATE DETAIL

NOTE: SLOT LOCATION IS DETERMINED BY THE CURB LENGTH, MAXIMUM SPACING IS 12" O.C.

CAUTION
It is the user's responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
Curbing Notching

Uplift plate must be field notched around the building purlin to allow for panel movement.

Caution

It is the user's responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
CAUTION

It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
CAUTION

It is the user’s responsibility to ensure that openings cut into the roof for installation of roof curbs comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding roof openings with plywood, fixed standard railings or other acceptable safety controls that prevent fall-through.
SPECIAL ERECTION TECHNIQUES

PIPE PENETRATION INSTALLATION
RECOMMENDED SMALL AND LARGE PIPE PENETRATION INSTALLATION

RIGHT WAY

RECOMMENDED SMALL PIPE PENETRATION INSTALLATION
INSTALL PIPE IN CENTER OF PANEL TO ALLOW BASE OF RUBBER ROOF JACK TO LAY FLAT ON PANEL.

WRONG WAY

RECOMMENDED LARGE PIPE PENETRATION INSTALLATION
THIS METHOD TO BE USED IN ALL CASES WHERE A PIPE PENETRATION INTERSECTS A PANEL RIB OR WHEN THE PIPE IS TOO LARGE AND WILL NOT ALLOW ADEQUATE WATER FLOW DOWN THE PANEL.

STAINLESS STEEL CLAMP (NOT BY BUILDING MANUFACTURER)

1'-0" (MIN) (TYP)

PURLIN

ROOF SLOPE

BattenLok® HS Panel

PIPE CURB

BattenLok® HS PANEL
SPECIAL ERECTION TECHNIQUES

PIPE PENETRATION INSTALLATION
DECK-TIGHT INSTALLATION

STEP 1

STAINLESS STEEL CLAMP (NOT BY BUILDING MANUFACTURER)

TRI-BEAD TAPE SEALER (HW-504)

DECK-TIGHT (NOT BY BUILDING MANUFACTURER) ROLL TOP OF DECK-TIGHT DOWN

¼"-14 x ¾" LONG LIFE LAP TEK® S.D. W/WASHER (FASTENER #4) @ 1" O.C.

STEP 2

STAINLESS STEEL CLAMP (NOT BY BUILDING MANUFACTURER)

APPLY TRI-BEAD TAPE SEALER CONTINUOUSLY AROUND PIPE (HW-504)

TRI-BEAD TAPE SEALER (HW-504)

½"-14 x ¾" LONG LIFE LAP TEK® S.D. W/WASHER (FASTENER #4) @ 1" O.C.

STEP 3

STAINLESS STEEL CLAMP (NOT BY BUILDING MANUFACTURER)

TRI-BEAD TAPE SEALER (HW-504)

DECK-TIGHT (NOT BY BUILDING MANUFACTURER)

TRI-BEAD TAPE SEALER (HW-504)

¼"-14 x ¾" LONG LIFE LAP TEK® S.D. W/WASHER (FASTENER #4) @ 1" O.C.

NOTE: ROLL DECK-TIGHT UP OVER TRI-BEAD TAPE SEALER AND SECURE CLAMP AROUND TOP OF DECK-TIGHT
BattenLok® HS

DETAILS

OPEN FRAMING
FIXED EAVE WITH HANG ON GUTTER

1/4"-14 x 1/4" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)
(2) PER STRAP
BattenLok® HS PANEL

GUTTER STRAP ATTACHMENT

1/4"-14 x 3/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)
(2) PER STRAP
BattenLok® HS PANEL

GUTTER STRAP (FL-246)
@ EVERY OTHER RIB

EAVE SEALANT DETAIL

URETHANE SEALANT MUST COME IN CONTACT WITH TAPE SEALER TO FORM A WEATHERTIGHT SEAL

EAVE END OF PANEL

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)
(5) PER 16" PANEL
(4) PER 12" PANEL

FASTENER SPACING @ EAVE

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)

URETHANE SEALANT MUST COME IN CONTACT WITH TAPE SEALER TO FORM A WEATHERTIGHT SEAL

EAVE END OF PANEL

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

1/4"-14 x 1/4" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)
(2) PER STRAP
BattenLok® HS PANEL

GUTTER STRAP (FL-246)
@ EVERY OTHER RIB

1/4"-14 x 3/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)
@ 12" O.C.
BOX PANEL CAP TRIM (FL-272)

1/4" x 3/16" POP RIVET (FASTENER #14)
@ 3'-0" O.C.
SCULPTURED GUTTER (FL-248A)

WALL PANEL

BUILDING DIM.

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)

1/8" x 3/16" POP RIVET (FASTENER #14)
@ 10'-0" O.C.
TRI-BEAD TAPE SEALER (HW-504)

12-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #3)

EAVE STRUT
OPEN FRAMING
FIXED EAVE WITH EAVE TRIM

EAVE SEALANT DETAIL

URETHANE SEALANT MUST COME IN CONTACT WITH TAPE SEALER TO FORM A WEATHERTIGHT SEAL

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

1/8" x 1/4" LONG-LIFE LAPTEK
W/WASHER (FASTENER #4)
(2 PER STRAP)

BOX PANEL CAP TRIM
(FL-272)

1/8" x 3/16" POP RIVET
(Fastener #14)
@ 12" O.C.

SCULPTURED EAVE TRIM
(FL-253)

1/8" x 1/4" LONG-LIFE LAPTEK
W/WASHER [FASTENER #4]
(2 PER STRAP)

WALL PANEL

VARIES W/ ROOF SLOPE

VARIES WITH PANEL THICKNESS

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

1/8" x 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)
(5) PER 16" PANEL
(4) PER 12" PANEL

FASTENER SPACING @ EAVE

1/8" x 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

1/8" x 1/4" POP RIVET
(Fastener #14)
@ 10'-0" O.C.

TRI-BEAD TAPE SEALER
(HW-504)

12-14 x 1/4" LONG-LIFE SELF-DRILLER W/WASHER [FASTENER #3]

EAVE STRUT

BUILDING DIM.
BattenLok® HS

DETAILS

OPEN FRAMING
FLOATING RIDGE

TRI-BEAD TAPE SEALER (HW-504)
RIDGE END OF PANEL

TRI-BEAD TAPE SEALER (HW-504)
LOW FLOATING CLIP (HW-220)
BattenLok® HS PANEL

1/4"-14 x 1 1/4" SELF DRILLER W/O WASHER (FASTENER #1B)
(2) PER CLIP

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E) CONTINUE ACROSS PANEL

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E)
(4) PER 16" PANEL
(3) PER 12" PANEL

BACK-UP PLATE (HW-7766) @ 16" PANEL
(HW-7764) @ 12" PANEL

TRI-BEAD TAPE SEALER (HW-504) CONTINUE ACROSS PANEL

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/4"-14 x 1 1/4" LONG LIFE LAPTEK W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

ZEE PURLIN

1/4"-14 x 1/2" SELF DRILLER W/ WASHER (FASTENER #1B)
(2) PER CLIP

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1/2" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/4"-14 x 1/2" LONG LIFE LAPTEK W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

ZEE PURLIN

1/4"-14 x 1/2" SELF DRILLER W/ WASHER (FASTENER #1B)
(2) PER CLIP

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1/2" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/4"-14 x 1/2" LONG LIFE LAPTEK W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

ZEE PURLIN

1/4"-14 x 1/2" SELF DRILLER W/ WASHER (FASTENER #1B)
(2) PER CLIP

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1/2" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/4"-14 x 1/2" LONG LIFE LAPTEK W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

ZEE PURLIN

1/4"-14 x 1/2" SELF DRILLER W/ WASHER (FASTENER #1B)
(2) PER CLIP

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1/2" LONG-LIFE SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/4"-14 x 1/2" LONG LIFE LAPTEK W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

ZEE PURLIN
OPEN FRAMING
FLOATING VENTED RIDGE

BattenLok® HS

URETHANE SEALANT
(HW-504)

PERFORATED VENT DRIP
(FL-254)

TRI-BEAD TAPE SEALER
(HW-504)

LOW FLOATING CLIP (HW-220)

BattenLok® HS PANEL

1/2"-14 x 1 1/2" SELF-DRILLER
W/O WASHER (FASTENER #1B)
(2) PER CLIP

BATTENLOK® HS

RIDGE TRIM
(FL-303)

URETHANE TUBE SEALANT
@ CLOSURE ENDS/PANEL RIB
& LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/2"-14 x 1 1/4" LONG-LIFE
SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/2"-14 x 7/8" LONG-LIFE LAP TEK
W/WASHER (FASTENER #4) @ 6" O.C.
(DO NOT INSTALL THRU PANEL RIB)

1/2"-14 x 7/8" LONG-LIFE LAP TEK
W/WASHER (FASTENER #4) @ 6" O.C.

OUTSIDE CLOSURE
(HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

BACK-UP PLATE
(HW-7766) @ 16" PANEL
(HW-7764) @ 12" PANEL

ZEE PURLIN

1/2"-14 x 1 1/4" SELF-DRILLER
W/WASHER (FASTENER #1E)
(4) PER 16" PANEL
(3) PER 12" PANEL

TRI-BEAD TAPE SEALER
(HW-504) CONTINUED
ACROSS PANEL

1/2"-14 x 1 1/4" LONG-LIFE
SELF-DRILLER W/WASHER
(FASTENER #1E)
(2) PER CLIP

URETHANE SEALANT
[HW-504]

PERFORATED VENT DRIP
(FL-254)

TRI-BEAD TAPE SEALER
(HW-504)

RIDGE END OF PANEL

1" LAP (MIN.)

1/2"-14 x 1 1/4" LONG-LIFE
SELF-DRILLER W/WASHER
(FASTENER #4) @ 6" O.C.

(1) PER RIB

(4) PER 16" PANEL
(3) PER 12" PANEL
DETAILS

OPEN FRAMING
RAKE

1/4" - 14 x 1 1/4" LONG LIFE SELF DRILLER W/WASHER (FASTENER #1E) @ 24" O.C.

FIELD CUT & BEND UP 2" PANEL LEG AS REG'D WHEN ENDING OFF MODULE

1/4" - 14 x 1 1/4" SHOULDER TEK® 2 SELF DRILLER (FASTENER #5) @ 24" O.C. (CENTER IN SLOT)

12-14 X 1" PANCAKE HEAD SELF DRILLER (FASTENER #12A) (1) PER CONN. @ EACH PURLIN

2" X 4" X 16 GA. RAKE ANGLE

1/4" - 14 x 1 1/4" SELF DRILLER W/O WASHER (FASTENER #1B) (2) PER CLIP

2%" Tri-Bead Tape Sealer (HW-504)

Low Floating Clip (HW-220)

Low Rake Support Angle (HW-7712)

BattenLok® HS Panel

2%" X 4" X 16 GA. RAKE ANGLE

Zee Purlin

12-14 X 1/4" Long-Life Laptek WWasher (FASTENER #4) @12" O.C.

Scultped Rake Trim (FL-111)

High Wind Rake Slide (F-215)

Outside Closure

Wall Panel

Subject to change without notice. See www.mbcicom for current information.
OPEN FRAMING
RAKE WITH CLEAT

1/4"-14 x 1/4" LONG LIFE S.D. W/WASHER (FASTENER #1E) @ 24" O.C.
12-14 x 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #3)

SCULPTURED RAKE TRIM (FL-111)

HIGH WIND RAKE SLIDE (F-215)
1/4"-14 x 3/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 12" O.C.

OUTSIDE CLOSURE WALL PANEL

1/4"-14 x 1/4" SHOULDER TEK® 2 SELF DRILLER (FASTENER #5) @ 24" O.C. (CENTER IN SLOT)
12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) (1) PER CONN. @ EACH PURLIN

2 X 4 X 16 GA. ANGLE

ZEE PURLIN

1/4"-14 x 1/4" SELF DRILLER W/O WASHER (FASTENER #1B) (2) PER CLIP

1/4"-14 x 3/8" LONG LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.

HIGH WIND PARAPET RAKE CLEAT (F-292)
FIELD CUT & BEND UP 2" PANEL LEG AS REQ'D WHEN ENDING OFF MODULE
LOW RAKE SUPPORT ANGLE (HW-7712)

Low Floating Clip (HW-220)

SuperLok® PANEL

1/4"-14 x 1/4" SELF DRILLER W/WASHER (FASTENER #4) @ 6" O.C.

1/4"-14 x 3/8" LONG LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.

TRI-BEAD TAPE SEALER (HW-504)
### OPEN FRAMING PARAPET RAKE

- **BattenLok® HS**

**MASONRY WALL**

- Field Sawcut
- Tri-Bead Tape Sealer
- Flexible Membrane
- Low Rake Support Angle
- Field Cut & Bend Up 2" Panel Leg as Req’d When Ending Off Module
- Masonry Wall (Not by MBCI)

**OPENING DIM.**

- 1½" (MIN.)
- 1½"-14 x 1½" Shoulder Tek® 2 Self Driller (Fastener #5) @ 24" O.C. (Center in Slot)
- 12-14 X 1" Pancake Head Self Driller (Fastener #12A) (1) Per Conn. @ Each Purlin
- 2 X 4 X 16 Ga. Rake Angle

**DETAILS**

- Urethane Tube Sealant Continuous
- Counterflash (FL-341)
- Parapet Rake Trim (FL-285)
- Tri-Bead Tape Sealer (HW-504) Ea. Side of Flexible Membrane
- High Wind Parapet Rake Cleat (HW-292)
- ¼"-14 x 1½" Long-Life S.D. w/Washer (Fastener #1E) @ 24" O.C.

**FASTENERS**

- 14-10 X 2" Deck Screw (Fastener #209) @ 24" O.C. (Pre-Drill Hole)
- ⁴⁄₉-14 X 1¾" Shoulder Tek® 2 Self Driller (Fastener #1B) W/O Washer (Fastener #1B) (2) Per Clip

**FLEXIBLE MEMBRANE**

- Flexible Membrane

**URETHANE TUBE SEALANT**

- Continuous

**COUNTERFLASH**

- (FL-341)

**PARAPET RAKE TRIM**

- (FL-285)

**TRI-BEAD TAPE SEALER**

- (HW-504)

**FLEXIBLE MEMBRANE**

- Flexible Membrane

**LOW FLOATING CLIP**

- (HW-220)

**LOW RAKE SUPPORT ANGLE**

- (HW-7712)

**FIELD CUT & BEND UP 2" PANEL LEG AS REQ’D WHEN ENDING OFF MODULE**

**ZEE PURLIN**

- BattenLok® HS Panel

**2 X 4 X 16 GA. RAKE ANGLE**

**CONSTRUCTION**

- Open Framing

---

**SUBJECT TO CHANGE WITHOUT NOTICE**

SEE [www.mbcicom.com](http://www.mbcicom.com) FOR CURRENT INFORMATION

REV 01.02  BHS-73
**OPEN FRAMING**

**FLOATING HIGH SIDE EAVE**

---

**TRI-BEAD TAPE SEALER (HW-504)**

**HIGH EAVE END OF PANEL**

**HIGH EAVE SEALANT DETAIL**

---

1/4"-14 x 1/2" LONG-LIFE LAPTEK W/ WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

TRI-BEAD TAPE SEALER (HW-504)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL (HW-446) @ 12" PANEL

LOW FLOATING CLIP (HW-230)

---

1/4"-14 x 1/2" LONG-LIFE SELF-DRILLER W/O WASHER (FASTENER #1B) (2) PER CLIP

---

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/ WASHER (FASTENER #1E) (1) PER RIB

BATTENlok® HS PANEL

---

BACKUP PLATE (HW-7766) @ 16" PANEL (HW-7764) @ 12" PANEL

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/ WASHER (FASTENER #1E) (4) PER 16" PANEL (3) PER 12" PANEL

Sculptured High Side Eave Trim (FL-265)

12-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/ WASHER (FASTENER #3)

1/4"-14 x 3/8" LONG-LIFE LAPTEK W/ WASHER (FASTENER #4) @ 12" O.C.

---

OUTSIDE CLOSURE

WALL PANEL

---

EAVE STRUT

BUILDING DIM.
DETAILS

OPEN FRAMING
FIXED VALLEY

BattenLok® HS PANEL

URETHANE SEALANT

VALLEY END
OF PANEL

URETHANE SEALANT MUST COME IN CONTACT WITH TAPE SEALER TO FORM A WEATHERTIGHT SEAL

TRIPPLE-BEAD TAPE SEALER (HW-502)

¼"-14 x 1¼" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 3" O.C. (FASTNER MUST GO THROUGH TAPE SEALER)

BattenLok® HS PANEL

PANEL RIB

BEVELED EDGE
OF ROOF PANEL

DETAIL "A"

FIELD NOTCH PLATE @ PURLIN AS REQUIRED

12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) @ 5'-0" O.C.

12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) (2) PER CONN. @ EACH PURLIN

ZHUE SEALANT BETWEEN PANEL RIBS

VALLEY TRIM (FL-705)

ZEE PURLIN

12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) @ 5'-0" O.C.

VALLEY SUPPORT PLATE (P-106)

BattenLok® HS PANEL

PANEL RIB

4½
BattenLok® HS

DETAILS

OPEN FRAMING
FLOATING HIP

TRI-BEAD TAPE SEALER (HW-504)

HIP END OF PANEL

2 x 2 x 16 GA. BACK-UP ANGLE

TRI-BEAD TAPE SEALER (HW-504)
CONTINUED ACROSS PANEL

12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) (2) PER CONN. @ EACH PURLIN

8 x ⅛" NIBBED DRILLER (FASTENER #24) @ 4" O.C.

HIDE SUPPORT PLATE (P-141)
(FIELD NOTCH @ PURLINS)

1/4"-14 x 1⅛" SELF DRILLER W/O WASHER (FASTENER #1B) (2 PER CLIP)

LOW FLOATING CLIP (HW-220)

ZEE PURLIN

2 ½" x 7/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.
(DO NOT INSTALL THRU PANEL RIB)

ZEE CLOSURE (FL-361)
(FIELD CUT TO LENGTH & BEVEL CUT TO FIT PANEL)

URETHANE TUBE SEALANT @ CLOSURE ENDS

RIDGE/ HIP TRIM (FL-209) UP TO 4:12 SLOPE
(FL-211) OVER TO 4:12 SLOPE

1/4"-14 x 1¼" SELF DRILLER W/O WASHER (FASTENER #1B)
(2 PER CLIP)

TRI-BEAD TAPE SEALER (HW-504)

HIP END OF PANEL

8 x ⅝" NIBBED DRILLER (FASTENER #24) @ 4" O.C.

12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) (2) PER CONN. @ EACH PURLIN

ZEE PURLIN

2 ½" x 7/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.
(DO NOT INSTALL THRU PANEL RIB)

ZEE CLOSURE (FL-361)
(FIELD CUT TO LENGTH & BEVEL CUT TO FIT PANEL)

URETHANE TUBE SEALANT @ CLOSURE ENDS

RIDGE/ HIP TRIM (FL-209) UP TO 4:12 SLOPE
(FL-211) OVER TO 4:12 SLOPE

1/4"-14 x 1¼" SELF DRILLER W/O WASHER (FASTENER #1B)
(2 PER CLIP)

TRI-BEAD TAPE SEALER (HW-504)

HIP END OF PANEL

8 x ⅝" NIBBED DRILLER (FASTENER #24) @ 4" O.C.

12-14 X 1" PANCAKE HEAD SELF-DRILLER (FASTENER #12A) (2) PER CONN. @ EACH PURLIN

ZEE PURLIN
BattenLok® HS

FIELD HEMMING PANEL END

NOTCHING PANEL END

ENGAGING HEMMING TOOL

FORMING OPEN HEM

OFFSET CLEAT

PANEL ENGAGEMENT

1 1/2"

1/2"

1"

3/4"

1 1/2"
BattenLok® HS

DETAILS

WOOD DECK ENDLAP

VIEW "A"

SWAGED ENDLAP TAPE SEALER (HW-515)

BattenLok® HS PANEL (LOWER)

LOW FLOATING CLIP (HW-230)

MOISTURE BARRIER (NOT BY MBCI)

14-10 x 1" TYPE "A" SELF-TAPPER W/WASHER (FASTENER #18)
(2) PER CLIP

6" - 1 1/4"

1/4" - 14 x 5/8" LONG-LIFE TYPE "B" W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(2) PER 12" PANEL

UPPER SWAGED BattenLok® HS PANEL

BACK-UP PLATE (HW-7766) 16" PANEL
(HW-7766) 12" PANEL

1/4" - 14 x 5/8" LONG-LIFE TYPE "B" W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(2) PER 12" PANEL

FASTENER INSTALLATION SEQUENCE

TRI-BEAD TAPE SEALER (HW-504)

PREPUNCHED HOLES

BattenLok® HS PANEL (LOWER)

1/4" - 14 x 5/8" LONG-LIFE TYPE "B" W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(2) PER 12" PANEL

1/4" - 14 x 5/8" LONG-LIFE TYPE "B" W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(2) PER 12" PANEL

BACK-UP PLATE (HW-7766) 16" PANEL
(HW-7766) 12" PANEL

1/4" - 14 x 5/8" LONG-LIFE TYPE "B" W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(2) PER 12" PANEL
NOTE: DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
BattenLok® HS

DETAILS

WOOD DECK
FLOATING EAVE WITH EAVE TRIM

EAVE SEALANT DETAIL

1. BUTYL SEALANT MUST COME IN CONTACT WITH THE DRIP EDGE TO FORM A WEATHERTIGHT SEAL
2. WALL PANEL THICKNESS 1'-0" MAX.
3. BattenLok® HS PANEL

NOTE: DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
WOOD DECK
FIXED RIDGE

DETAILS

BattenLok® HS

1 3/8"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB

TRI-BEAD TAPE SEALER (HW-504)

RIDGE END OF PANEL

3/4" PLYWOOD SPACER (NOT BY MBCI)

TRI-BEAD TAPE SEALER (HW-504) CONT. ACROSS PANEL

14-10 x 1" TYPE 'A' SELF-TAPPER W/WASHER (FASTENER #18)
(4) PER 16" PANEL
(3) PER 12" PANEL

MOISTURE BARRIER (NOT BY MBCI)

1/4" PLYWOOD (MIN. (NOT BY MBCI)

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 3/8" LONG-LIFE LAPTEK W/ WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

OUTSIDE CLOSURE (HW-440) @ 16" PANEL (HW-446) @ 12" PANEL

BattenLok® HS PANEL

TRI-BEAD TAPE SEALER (HW-504)

3/4"

RIDGE TRIM (FL-209)
BattenLok® HS

WOOD DECK
FIXED HIGH SIDE EAVE

MOISTURE BARRIER
(WOOD BLOCKING)
(3/8" PLYWOOD)
(3/8" PLYWOOD (MIN.))
(BOTH BY MBCI)

WOOD DECK
FIXED HIGH SIDE EAVE

HIGH EAVE SEALANT DETAIL

1/4"-14 x 3/8" LONG-LIFE LAPTEK
W/WASHER (FASTENER #4) @ 6" O.C.
(DO NOT INSTALL THRU PANEL RIB)

TRI-BEAD TAPE SEALER
(HW-504)

OUTSIDE CLOSURE
(HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

3/8" PLYWOOD SPACER
(NOT BY MBCI)

BattenLok® HS PANEL

1/4"-14 x 7/8" LONG-LIFE LAP TEK® W/WASHER
(FASTENER #4) @ 6" O.C.

1/4"-14 x 1 1/4" LONG-LIFE
SELF DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

1/4"-14 x 1 1/4" LONG-LIFE
SELF-TAPPER W/WASHER
(FASTENER #2B)
(4) PER 16" PANEL
(3) PER 12" PANEL

WALL PANEL

BOX HIGH SIDE EAVE TRIM
(FL-331)

1/4"-14 x 3/8" LONG-LIFE
LAP TEK® W/WASHER
(FASTENER #4) @ 12" O.C.

OUTSIDE CLOSURE

1/4"-14 x 1" LONG-LIFE
‘TYPE AB’ SELF-TAPPER
W/WASHER
(FASTENER #2B)

BUILDING DIM.
WOOD DECK
PARAPET FIXED HIGH SIDE EAVE

DETAILS

HIGH EAVE SEALANT DETAIL

1/4"-14 x 7/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

TRI-BEAD TAPE SEALER (HW-504) @ TOP OF CLOSURE & TOP OF FLEXIBLE MEMBRANE

OUTSIDE CLOSURE (HW-440) @ 16" PANEL (HW-446) @ 12" PANEL

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL voids

1/4"-14 x 1 1/2" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB

TRI-BEAD TAPE SEALER (HW-504)

MOISTURE BARRIER (NOT BY MBCI)

5/8" PLYWOOD (MIN.) (NOT BY MBCI)

1/4"-14 x 1" TYPE ‘A’ SELF-TAPPER W/WASHER (FASTENER #18) (4) PER 16" PANEL (3) PER 12" PANEL

FLEXIBLE MEMBRANE

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB

14-10 x 2" DECK SCREW (FASTENER #209) @ 24" O.C. (PRE-DRILL HOLE)

FLEXIBLE MEMBRANE

COUNTER FLASH (FL341)

PARAPET HIGH EAVE TRIM (FL-276)

MASONRY WALL (NOT BY MBCI)

Building Dim.

HIGH EAVE END OF PANEL

TRI-BEAD TAPE SEALER (HW-504)

WOOD DECK
PARAPET FIXED HIGH SIDE EAVE

SUBJECT TO CHANGE WITHOUT NOTICE
SEE www.mbci.com FOR CURRENT INFORMATION
REV 01.02  BHS-67
BattenLok® HS

WOOD DECK
FLOATING VALLEY

BattenLok® HS PANEL

OFFSET CLEAT (FL-337)

1 1/2"

1/2"

1 1/2"

1 1/2"

1 1/2"

OFFSET CLEAT (FL-337)

1 1/2"

1/2"

1/2"

1 1/2"

TRI-BEAD TAPE SEALER (HW-504)

BattenLok® HS PANEL

12-11 x 1" PANCAKE HEAD SELF-TAPPER (FASTENER #13A)
@ 12" O.C. (FASTENER MUST GO THROUGH TAPE SEALER)

12-11 x 1" PANCAKE HEAD SELF-TAPPER (FASTENER #13A)
(2) PER CLIP

MOISTURE BARRIER (NOT BY MBCI)

3/8" PLYWOOD (MIN.) (NOT BY MBCI)

VALLEY END
OF PANEL

BUTYL SEALANT MUST COME IN CONTACT WITH THE OFFSET CLEAT TO FORM A WEATHERTIGHT SEAL

VALLEY TRIM (FL-707)

OFFSET CLEAT (FL-337)

1 1/2"

1/2"

1/2"

1/2"

LOW FLOATING CLIP (HW-220)

1'-0" MAX.

1/2"

1/2"

1/2"

1/2"

NOTE: DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
BattenLok® HS

DETAILS

WOOD DECK
FIXED HIP

TRI-BEAD TAPE SEALER (HW-504)

BattenLok® HS PANEL

14-10 x 1" TYPE "A" SELF-TAPPER W/WASHER (FASTENER #18) @ 6" O.C.

2" 2"

TRI-BEAD TAPE SEALER (HW-504)

RIDGE/HIP TRIM (FL-209)

URETHANE TUBE SEALANT @ CLOSURE ENDS

¼"-14 x ⅜" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 12" O.C.

ZEE CLOSURE (FL-361)
(FIELD CUT TO LENGTH & BEVEL CUT TO FIT PANEL)

3/8" PLYWOOD SPACER
(NOT BY MBCI)

2/8" PLYWOOD (MIN.)
(NOT BY MBCI)

MOISTURE BARRIER
(NOT BY MBCI)

TRI-BEAD TAPE SEALER (HW-504) CONTINUED ACROSS PANEL

SUBJECT TO CHANGE WITHOUT NOTICE
SEE www.mbci.com FOR CURRENT INFORMATION

REV 01.02
BHS-89
BattenLok® HS

RIGID INSULATION OVER METAL DECK

ENDLAP

VIEW "A"

SWAGED ENDLAP TAPE SEALER (HW-515)

¹⁄₄"-14 x ⁵⁄₈" LONG-LIFE TYPE "B" SELF-TAPPER W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(4) PER 12" PANEL

TRI-BEAD TAPE SEALER (HW-504) @ 16" PANEL
TRIPLE-BEAD TAPE SEALER (HW-502) @ 12" PANEL

LOW FLOATING CLIP (HW-220)

BattenLok® HS PANEL (LOWER)

VAPOR BARRIER (NOT BY MBCI)

BEARING PLATE (HW-7500)

DECK SCREW (2) PER CLIP (MIN. ¾" PENETRATION INTO METAL DECK)

1/4"-14 x 5/8" LONG-LIFE TYPE "B" SELF-TAPPER W/WASHER (FASTENER #46)
(5) PER 16" PANEL
(4) PER 12" PANEL

FASTENER INSTALLATION SEQUENCE

12"

16"

PREPUNCHED HOLES (16" PANEL ONLY)

1½" 1½" 6" 4½" 10"
RIGID INSULATION OVER METAL DECK
FLOATING EAVE WITH GUTTER

**NOTE:** DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
NOTE: DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
BattenLok® HS

DETAILS

RIGID INSULATION OVER METAL DECK
FIXED RIDGE

1/8"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB
TRI-BEAD TAPE SEALER (HW-504)
RIDGE/HIP SUPPORT PLATE (P-145)

1/8"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (4) PER 16" PANEL
(3) PER 12" PANEL
TRI-BEAD TAPE SEALER (HW-504)

3" TRIM (FL-209)
URETHANE TUBE SEALANT @ CLOSURE ENDS/-paneR RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS
1/8"-14 x 3/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)
OUTSIDE CLOSURE (HW-440) @ 16" PANEL (HW-446) @ 12" PANEL

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)
RIDGE END OF PANEL

VAPOR BARRIER (NOT BY MBCI)
METAL DECK (NOT BY MBCI)
RIGID INSULATION (NOT BY MBCI)

DECK SCREW @ 12" O.C. (MIN. 3/4" PENETRATION INTO METAL DECK)

3/8" VAPOR BARRIER (NOT BY MBCI)
RIGID INSULATION (NOT BY MBCI)
METAL DECK (NOT BY MBCI)

TRI-BEAD TAPE SEALER (HW-504)
RIGID INSULATION OVER METAL DECK
FIXED VENTED RIDGE

URETHANE SEALANT
(HW-504)

PERFORATED VENT DRIP
(FL-254)

BattenLok® HS PANEL

1"

TRI-BEAD TAPE SEALER
(HW-504)

2"

RIDGE END
OF PANEL

URETHANE TUBE SEALANT
@ CLOSURE ENDS/PANEL RIB
& LAPPING CLOSURE TABS TO
SEAL ALL VOIDS

³⁄₈"-14 x ⁷⁄₈" LONG LIFE LAPTEK
W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL
THRU PANEL RIB)

³⁄₈"-14 x ³⁄₄" LONG LIFE LAPTEK
W/WASHER (FASTENER #4)
@ 8" O.C.

OUTSIDE CLOSURE
(HW-440) @ 16" PANEL
(HW-446) @ 12" PANEL

1"

TRI-BEAD TAPE SEALER (HW-504)

¹⁄₄"-14 x 1½" LONG-LIFE
SELF-DRILLER W/WASHER
(FASTENER #1E) (1) PER RIB

BattenLok® HS

PERFORATED VENT DRIP
(FL-254)

LOW MID-SLOPE FIXED PLATE
(HW-504)

DECK SCREW
@ 12" O.C. (MIN. ¾" PENETRATION
INTO METAL DECK)

METAL DECK
(NOT BY MBCI)

VAPOUR BARRIER
(NOT BY MBCI)

RIGID INSULATION
(NOT BY MBCI)

1" LAP
(MIN.)
DETAILS

RIGID INSULATION OVER METAL DECK
PARAPET RAKE

FIELD SAWCUT

14-10 x 2" DECK SCREW
(FASTENER #209) @ 24" O.C.
(PRE-DRILL HOLE)

TRI-BEAD TAPE SEALER
(HW-504) EA. SIDE OF
FLEXIBLE MEMBRANE

LLow Rake Support Angle
(HW-7712)

FIELD CUT & BEND UP 2" PANEL LEG AS REQ'D WHEN ENDING OFF MODULE

BEARING PLATE
(HW 7500) @ 24" O.C.

1/4"-14 x 1 1/4" SHOULDER TEK® 2 SELF-DRILLER (FASTENER #6) @ 24" O.C

URETHANE TUBE SEALANT
CONTINUOUS

COUNTERFLASH
(FL-341)

Parapet Rake Trim
(FL-285)

Tri-Bead Tape Sealer
(HW-504) EA. SIDE OF FLEXIBLE MEMBRANE

High Wind Parapet Rake Cleat (F-292)

1/4"-14 x 1 1/4" Long-Life Self-Driller w/Washer (FASTENER #1E) @ 24" O.C.

Low Floating Clip (HW-220)

Deck Screw @ (2) Per Clip
(MIN. 3/8" PENETRATION INTO METAL DECK)

Bearing Plate
(HW-7500)

BattenLok® HS Panel

Vapor Barrier
(Not by MBCI)

Rigid Insulation
(Not by MBCI)

Metal Deck
(Not by MBCI)

WIND COUNTERFLASH
(F-292)

COUNTERFLASH
(Height-341)

DECK SCREW @ 24" O.C.
(MIN. 3/8" PENETRATION INTO METAL DECK)

Structural Angle
(Not by MBCI)
Rigid Insulation Over Metal Deck
Fixed High Side Eave

BattenLok® HS

High Eave Sealant Detail

1/4"-14 x 7/8" Long-Life Laptek W/Washer (Fastener #4) @ 6" O.C. (Do not install thru panel rib)
Tri-Bead Tape Sealer (HW-504)
Low Fixed Eave Plate (HW-7600)
Deck Screw @ 12" O.C. (Min. 1/4" penetration into metal deck)

Urethane Tube Sealant @ closure ends/panel rib & lapping closure tabs to seal all voids
1/4"-14 x 1 1/4" Long-Life Self Driller W/Washer (Fastener #1E) (1) per rib

Outside Closure (HW-440) @ 16" panel
(HW-440) @ 12" panel
Tri-Bead Tape Sealer (HW-504)
Box High Side Eave Trim (FL-331)

1/4"-14 x 7/8" Long-Life Laptek W/Washer (Fastener #4) @ 12" O.C.

Outside Closure

12-24 x 1 1/4" Long-Life Tek 4.5 W/Washer (Fastener #78)

Wall Panel

Vapor Barrier (Not by MBCI)
Metal Deck (Not by MBCI)
Rigid Insulation (Not by MBCI)

Subject to change without notice. See www.mbci.com for current information.

Rev 01.02
BHS-97
BattenLok® HS

DETAILS

RIGID INSULATION OVER METAL DECK
PARAPET FIXED HIGH SIDE EAVE

HIGH EAVE SEALANT DETAIL

- TRI-BEAD TAPE SEALER (HW-504)
- RIDGE END OF PANEL

PARAPET HIGH EAVE TRIM
(FL-276)

1/8"-14 x 3/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

TRI-BEAD TAPE SEALER (HW-504) @ TOP OF CLOSURE & TOP OF FLEXIBLE MEMBRANE

LOW MID-SLOPE FIXED PLATE (HW-7631)

BattenLok® HS PANEL

MASONRY WALL (NOT BY MBCI)

URETHANE TUBE SEALANT CONTINUOUS

COUNTER FLASH (FL-341)

FIELD SAWCUT

TRI-BEAD TAPE SEALER (HW-504) EA. SIDE OF FLEXIBLE MEMBRANE

14-10 x 2" DECK SCREW (FASTENER #209) @ 24" O.C. (PRE-DRILL HOLE)

FLEXIBLE MEMBRANE

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB

OUTSIDE CLOSURE
(HW-440) @ 16" PANEL
(HW-440) @ 12" PANEL

TRI-BEAD TAPE SEALER (HW-504)

1/4"-14 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)
(4) PER 16" PANEL
(3) PER 12" PANEL

URETHANE TUBE SEALANT @ TOP OF CLOSURE & TOP OF FLEXIBLE MEMBRANE

TRI-BEAD TAPE SEALER (HW-504) EA. SIDE OF FLEXIBLE MEMBRANE

FIELD SAWCUT

TRI-BEAD TAPE SEALER (HW-504) EA. SIDE OF FLEXIBLE MEMBRANE

14-10 x 2" DECK SCREW (FASTENER #209) @ 24" O.C. (PRE-DRILL HOLE)

FLEXIBLE MEMBRANE

URETHANE TUBE SEALANT CONTINUOUS

COUNTER FLASH (FL-341)

FIELD SAWCUT

TRI-BEAD TAPE SEALER (HW-504) EA. SIDE OF FLEXIBLE MEMBRANE

14-10 x 2" DECK SCREW (FASTENER #209) @ 24" O.C. (PRE-DRILL HOLE)

FLEXIBLE MEMBRANE

URETHANE TUBE SEALANT CONTINUOUS

COUNTER FLASH (FL-341)

FIELD SAWCUT
Rigid Insulation Over Metal Deck
Floating Valley

Non-silicone butyl sealant (HW-549) between panel ribs.

Butyl sealant must come in contact with the offset cleat to form a weather-tight seal.

NOTE: Do not use this detail on roof slopes less than 3:12.
DETAILS

RIGID INSULATION OVER METAL DECK
FIXED HIP

TRI-BEAD TAPE SEALER (HW-504)

BattenLok® HS PANEL

RIDGE/HIP TRIM (FL-209)

URETHANE TUBE SEALANT @ CLOSURE ENDS (¼" BEAD MIN.)

¼"-14 x ½" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

ZEE CLOSURE (FL-361) (FIELD CUT TO LENGTH & BEVEL CUT TO FIT PANEL)

DECK SCREW @ 12" O.C. (MIN. ¾" PENETRATION INTO METAL DECK)

¼"-14 x 1½" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 6" O.C.

TRI-BEAD TAPE SEALER (HW-504) CONTINUED ACROSS PANEL

HIP SUPPORT PLATE (P-145)

RIGID INSULATION (NOT BY MBCI)

VAPOUR BARRIER (NOT BY MBCI)

METAL DECK (NOT BY MBCI)