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 METL-SPAN 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

Metl-Span designs it’s standing seam roofs to meet the load requirements dictated by governing codes and project specifications, including applicable snow loads. However, Metl-Span 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 Metl-Span. Metl-Span 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.

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Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, Metl-Span reserves the right to discontinue products at any time or change specifications and/or designs without incurring obligation. To ensure you have the latest information available, please inquire or visit our website at metlspan.com. Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs or panel profiles. Projects should be designed to conform to applicable building codes, regulations and accepted industry practices. If there is a conflict between this manual and project erection drawings, the erection drawings will take precedence.
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*Note: The document appears to be a section of a manual or catalog, providing detailed installation instructions for roofing systems. The sections are organized into categories such as Engineering, General Information, Installation Sequence, Special Erection Techniques, and Details, each listing specific steps and methods in a logical order.*
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ROOFING SYSTEM

GENERAL DESCRIPTION

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.
ROOFING SYSTEM

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', ¾" 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 1½" (*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.**

---

**CAUTION**

Application and design details are for illustration purposes only, and may not be appropriate for all environmental conditions or building designs. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices.
Low Floating System - With or without ¾" thermal spacer. See Insulation/Thermal Spacer Selection Chart below.

High Floating System - With ¾", ⁵⁄₈" 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>Low System</th>
<th>High System</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Insulation</td>
<td>¾&quot; Thermal Spacer</td>
<td>High System Not Recommended</td>
</tr>
<tr>
<td>3&quot; Insulation</td>
<td>Thermal Spacer Not Recommended</td>
<td>¾&quot; Thermal Spacer Recommended</td>
</tr>
<tr>
<td>4&quot; Insulation</td>
<td>Thermal Spacer Not Recommended</td>
<td>¾&quot; Thermal Spacer Recommended</td>
</tr>
<tr>
<td>6&quot; Insulation</td>
<td>Low System Not Recommended</td>
<td>Thermal Spacer 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.

IMPORTANT
READ THIS FIRST

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.

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.
# BattenLok® HS

## UNDERWRITERS LABORATORIES APPROVAL

<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 1/4&quot;</td>
<td>Open Framing</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>176</td>
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<td>24 min.</td>
<td>N/A</td>
<td>5'-0 1/4&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 1/4&quot;</td>
<td>Open Framing</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
</tr>
<tr>
<td>238B</td>
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<td>24 min.</td>
<td>**</td>
<td>2'-6&quot;</td>
<td>Composite System</td>
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<td>Class A</td>
<td>Class 90</td>
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<tr>
<td>437</td>
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<td>**</td>
<td>5'-0&quot;</td>
<td>Plywood</td>
<td>Class 4</td>
<td>Class A</td>
<td>Class 90</td>
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<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>
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<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”.

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Galvalume® is a registered trademark of BIEC International, Inc.
Vise-Grip® is a registered trademark of American Tool Companies, Inc.
### SECTIONS PROPERTIES

<table>
<thead>
<tr>
<th>PANEL</th>
<th>Fy</th>
<th>WEIGHT</th>
<th>NEGATIVE BENDING</th>
<th>POSITIVE BENDING</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(KSI)</td>
<td>(PSF)</td>
<td>Ixe</td>
<td>Sxe</td>
</tr>
<tr>
<td>24</td>
<td>50</td>
<td>1.41</td>
<td>0.0836</td>
<td>0.0749</td>
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<tr>
<td>22</td>
<td>50</td>
<td>1.81</td>
<td>0.1157</td>
<td>0.1077</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.

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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.
### 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>
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<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>
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<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>
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<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>
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<th>4.5</th>
<th>5.0</th>
<th>5.5</th>
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<tbody>
<tr>
<td>SINGLE</td>
<td>LIVE</td>
<td></td>
<td>311.2</td>
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<td>259.5</td>
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<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 Metl-Span for the most current data.
## BattenLok® HS

**SECTION PROPERTIES**

<table>
<thead>
<tr>
<th>PANEL</th>
<th>Fy (KSI)</th>
<th>WEIGHT (PSF)</th>
<th>NEGATIVE BENDING</th>
<th>POSITIVE BENDING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ixe (IN.4/FT.)</td>
<td>Sxe (IN.3/FT.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAUGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>50</td>
<td>1.38</td>
<td>0.0574</td>
<td>0.0538</td>
</tr>
<tr>
<td>22</td>
<td>50</td>
<td>1.72</td>
<td>0.0794</td>
<td>0.0776</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.

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.
## 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>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>SINGLE</td>
<td>162.0</td>
<td>135.0</td>
</tr>
<tr>
<td>2-SPAN</td>
<td>162.0</td>
<td>126.9</td>
</tr>
<tr>
<td>3-SPAN</td>
<td>162.0</td>
<td>135.0</td>
</tr>
<tr>
<td>4-SPAN</td>
<td>162.0</td>
<td>135.0</td>
</tr>
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</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>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>SINGLE</td>
<td>233.4</td>
<td>194.5</td>
</tr>
<tr>
<td>2-SPAN</td>
<td>233.4</td>
<td>182.7</td>
</tr>
<tr>
<td>3-SPAN</td>
<td>233.4</td>
<td>194.5</td>
</tr>
<tr>
<td>4-SPAN</td>
<td>233.4</td>
<td>194.5</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 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 the 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 Metl-Span for the most current data.
GENERAL INFORMATION

PRODUCT CHECKLIST

BattenLok® HS Panel
- Low – For use with or without ¼" thermal spacer.

Clip, Floating
- Low – For use with or without ¼" thermal spacer.

Clip, Fixed
- Low – For use with or without ¼" thermal spacer

Clip, Utility
- For applications that do not require the clearance provided by the low and high clips.

BattenLok® HS
- 16" or 12"
- With Striations
- Striated with Pencil Ribs

Clip, Floating (Optional)
- Recommended for use when clips are attached directly to bar joists.

Back-Up Plate
- For use at ridge and endlaps
- Prepunched
- 16 gauge red oxide

Rake Support
- 20'-0" length
- 14 gauge red oxide
- Factory slots
- For use with low or high clip

Rake Support Utility
- 20'-0" length
- 14 gauge red oxide
- Factory slots
- For use with utility clip

Bearing Plate
- 16 gauge red oxide
- For use with low or utility systems
- For use with rigid board insulation

HW-218
HW-220
HW-222
HW-226
HW-224
HW-240
HW-242
HW-7712 - Low
HW-7722 - High
HW-7764
HW-7766
HW-7732
HW-7500

REV 01.01  BHS-11

SUBJECT TO CHANGE WITHOUT NOTICE  SEE metispan.com FOR CURRENT INFORMATION
## GENERAL INFORMATION

### PRODUCT CHECKLIST

<table>
<thead>
<tr>
<th>Eave Plate, Low</th>
<th>8'-0&quot; length</th>
<th>14 gauge</th>
<th>Red Oxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW-7600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floating Eave Plate, Low</td>
<td>8'-0&quot; length</td>
<td>14 gauge</td>
<td>Red Oxide</td>
</tr>
<tr>
<td>HW-7617</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Slope Fixed Plate, Low</td>
<td>14 gauge</td>
<td>Red Oxide</td>
<td></td>
</tr>
<tr>
<td>HW-7630 (10'-0&quot; Long)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HW-7631 (10'-0&quot; Long)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HW-7632 (6'-0&quot; Long)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HW-7637 (6'-0&quot; Long)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HW-7631 (10'-0&quot; Long)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HW-7632 (20'-0&quot; Long)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Subject to change without notice.
### GENERAL INFORMATION

#### PRODUCT CHECKLIST

<table>
<thead>
<tr>
<th>Product Type</th>
<th>System Type</th>
<th>Dimensions</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley Support Plate</td>
<td>Low or Utility Systems</td>
<td>10'-0&quot;</td>
<td>P-106</td>
</tr>
<tr>
<td><strong>Valley Support Plate</strong></td>
<td>High Systems</td>
<td>12&quot;</td>
<td>P-140</td>
</tr>
<tr>
<td><strong>Valley Support Plate</strong></td>
<td>Low or Utility Systems</td>
<td>18&quot;</td>
<td>P-164</td>
</tr>
<tr>
<td><strong>Valley Support Plate</strong></td>
<td>High Systems</td>
<td>11 ¹¹⁄₁₆&quot;</td>
<td>P-145</td>
</tr>
<tr>
<td><strong>Ridge/Hip Support Plate</strong></td>
<td>Low Fixed Systems</td>
<td>7&quot;</td>
<td>P-105</td>
</tr>
<tr>
<td><strong>Ridge/Hip Support Plate</strong></td>
<td>High Fixed Systems</td>
<td>7&quot;</td>
<td>P-155</td>
</tr>
<tr>
<td><strong>Ridge/Hip Support Plate</strong></td>
<td>Low Floating Systems</td>
<td>7&quot;</td>
<td>P-141</td>
</tr>
<tr>
<td><strong>Ridge/Hip Support Plate</strong></td>
<td>High or Low Floating Systems</td>
<td>7&quot;</td>
<td>P-162</td>
</tr>
</tbody>
</table>

**General Information:**

- **Valley Support Plate** - Low or Utility Systems
  - Standard Width
  - Use Over Purlins/Joists

- **Valley Support Plate** - High Systems
  - Standard Width
  - Use Over Rigid Insulation

- **Valley Support Plate** - Low or Utility Systems
  - Standard Width
  - Use Over Rigid Insulation

- **Valley Support Plate** - Low or Utility Systems
  - Extended Width
  - Use Over Purlins/Joists

- **Valley Support Plate** - High Systems
  - Extended Width
  - Use Over Purlins/Joists

- **Valley Support Plate** - High Systems
  - Extended Width
  - Use Over Solid Substrate

- **Valley Support Plate** - Low or Utility Systems
  - Use with all Substrates

- **Valley Support Plate** - High Systems
  - Use with all Substrates

**Subject to Change Without Notice:**

See [metlspan.com](http://metlspan.com) for current information.
### GENERAL INFORMATION

#### PRODUCT CHECKLIST

<table>
<thead>
<tr>
<th>Tape Sealer</th>
<th>Thermal Spacer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tape Sealer</strong></td>
<td><strong>Thermal Spacer</strong></td>
</tr>
<tr>
<td>• ⅜&quot; x ⅔&quot; x 20'</td>
<td>• Polystyrene block used to increase the insulation capacity along the purlins</td>
</tr>
<tr>
<td>• For use at valley when using exposed fasteners</td>
<td></td>
</tr>
<tr>
<td>• For use with roof curbs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Triple Bead</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HW-502</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tri-Bead</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HW-504</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tape Sealer-Swaged</th>
<th>Panel Hemming Tool</th>
<th>Tube Sealant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tape Sealer-Swaged</strong></td>
<td><strong>Panel Hemming Tool</strong></td>
<td><strong>Tube Sealant</strong></td>
</tr>
<tr>
<td>6&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metal Vent Material</th>
<th>Outside Closure</th>
<th>Light Transmitting Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metal Vent Material</strong></td>
<td><strong>Outside Closure</strong></td>
<td><strong>Light Transmitting Panel</strong></td>
</tr>
<tr>
<td></td>
<td>• 24 gauge</td>
<td>• Std. Insulated - HW-1803HSB</td>
</tr>
<tr>
<td></td>
<td>• Painted</td>
<td>• Std. Uninsulated - HW-1802HSB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Light Transmitting Panel (Reinforced) ‡</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<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.
PRODUCT CHECKLIST

Ridge Flashing

- Part No.: FL-200, FL-202, FL-213, FL-214
- Roof Pitch: -3¾:12, 3 -6:12
- Dimensions: 3", 4" "A"
- Note: For use without ventilator 18" peak purlin spacing

Ridge Flashing for Perforated Vent Drip

- Part No.: FL-300, FL-302, FL-303, FL-304
- Roof Pitch: -3¾:12, 3 -6:12
- Dimensions: 4", 5", 7" "A"
- Note: For use with perforated vent drip (FL-254) 18" peak purlin spacing

Ridge/Hip Flashing - Fixed

- Part No.: FL-209, FL-211, FL-212
- Roof Pitch: -3¾:12, 3 All Pitches
- Dimensions: 6", 7", 11" "A"
- Note: For use without vent material 18" peak purlin spacing

Floating Peak Box

- Includes Cinch Angles and Flexible Membrane
- Specify Roof Slope

- Part No.: FL-125, FL-126
- Length: 2'-1", 2'-6"
- Girth: 33", 37"
- Note: For use with FL-200, FL-202, FL-213, FL-214, FL-300, FL-302, FL-540 or FL-541 Ridge Flashing

Perforated Vent Drip

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

- Part No.: FL-254
- Length: 2'-6"
- Girth: 37"
- Note: For use with FL-205, FL-207, FL-303, FL-304, FL-543 or FL-544 Ridge Flashing

ZEE Closure

- Use at Hips

- Part No.: FL-361
- Length: 2'-6"
- Girth: 37"
- Note: For use with FL-205, FL-207, FL-303, FL-304, FL-543 or FL-544 Ridge Flashing

Sculptured High Side Eave Trim

- Specify open hem when using with continuous cleat

- Part No.: FL-265, FL-265B
- Roof Pitch: -1, 1
- Dimensions: 12", 14"
- Note: For use with FL-200, FL-202, FL-213, FL-214, FL-300, FL-302, FL-540 or FL-541 Ridge Flashing

Ridge End Cap

- Specify Ridge to be used and Roof Slope

- Part No.: FL-201
- Roof Pitch: -1
- Dimensions: 12"
### 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>-4:12</td>
<td>7&quot;</td>
<td>23&quot;</td>
</tr>
<tr>
<td>FL-248B</td>
<td>4 -6:12</td>
<td>7&quot;</td>
<td>24&quot;</td>
</tr>
</tbody>
</table>

**Gutter Strap**

- For use with Sculptured Gutter

**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**

**Rake Slide - High Wind**

**Sculptured Eave Trim**

- Specify Roof Pitch

**Box High Side Eave Trim**

- Specify Roof Pitch

**Box Eave Trim**

- Specify open hem when using with continuous cleat

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BHS-16 REV 01.01

SEE metlspan.com FOR CURRENT INFORMATION

SUBJECT TO CHANGE WITHOUT NOTICE
### General Information

**BattenLok® HS**

#### General Information

- Parapet High Side Eave Flashing - Fixed
- Box Gutter with Drip Edge
- Parapet Rake Flash

#### Product Checklist

<table>
<thead>
<tr>
<th>Box Rake Trim</th>
<th>Parapet Rake Cleat - High Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLOR 3&quot;</td>
<td>COLOR 1&quot; Small</td>
</tr>
<tr>
<td>5&quot;</td>
<td>1 ³⁄₄&quot; Small</td>
</tr>
<tr>
<td>5¹⁄₂&quot;</td>
<td>³⁄₄&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Box Gutter with Drip Edge</th>
<th>Gutter Strap</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLOR 6&quot;</td>
<td>24 Gauge Material</td>
</tr>
<tr>
<td>1 ³⁄₄&quot;</td>
<td></td>
</tr>
<tr>
<td>5¹⁄₂&quot;</td>
<td></td>
</tr>
<tr>
<td>4 ¹⁄₂&quot;</td>
<td></td>
</tr>
<tr>
<td>5¹⁄₄&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parapet High Side Eave Flash - Fixed</th>
<th>Gutter Ends Left or Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLOR 6&quot;</td>
<td>Use with T-5271Box Gutter with Drip Edge</td>
</tr>
<tr>
<td>5 ¹⁄₂&quot;</td>
<td>Specify left or right</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parapet Rake Flash</th>
<th>Parapet High Side Eave Flash - Floating</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLOR 4&quot;</td>
<td>COLOR 1&quot;</td>
</tr>
<tr>
<td>&quot;A&quot; 1&quot; HEM</td>
<td>&quot;A&quot; 3⁄₄&quot;</td>
</tr>
<tr>
<td>OPEN HEM</td>
<td>2 ¹⁄₂&quot;</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1 ¹⁄₄&quot;</td>
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#### Part Numbers

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dim. A</th>
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<tbody>
<tr>
<td>FL-285</td>
<td>3&quot;</td>
</tr>
<tr>
<td>FL-286</td>
<td>5&quot;</td>
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<tr>
<td>FL-287</td>
<td>7&quot;</td>
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<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dim. A</th>
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<tbody>
<tr>
<td>FL-275</td>
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<tr>
<td>FL-274</td>
<td>4&quot;</td>
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**NOTE:** All trim to be 26 gauge material unless noted. Refer to current price book for part numbers and descriptions.
### General Information

**Product Checklist**

<table>
<thead>
<tr>
<th>Offset Cleat</th>
<th>Continuous Cleat</th>
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<tr>
<td><img src="OffsetCleat.png" alt="Diagram" /></td>
<td><img src="ContinuousCleat.png" alt="Diagram" /></td>
</tr>
<tr>
<td>24 Gauge Material</td>
<td>24 Gauge Material</td>
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<tr>
<td>FL-337</td>
<td>FL-338</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Counter Flash</th>
<th>Alternate Counter Flash</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="CounterFlash.png" alt="Diagram" /></td>
<td><img src="AlternateCounterFlash.png" alt="Diagram" /></td>
</tr>
<tr>
<td>24 Gauge Material</td>
<td>24 Gauge Material</td>
</tr>
<tr>
<td>FL-341</td>
<td>FL-343</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Box Panel Cap Trim</th>
<th>Offset Panel Cap Trim</th>
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</thead>
<tbody>
<tr>
<td><img src="BoxPanelCapTrim.png" alt="Diagram" /></td>
<td><img src="OffsetPanelCapTrim.png" alt="Diagram" /></td>
</tr>
<tr>
<td>Specify Roof Pitch</td>
<td>FL-272</td>
</tr>
<tr>
<td>FL-271</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Valley - Utility, Low and High Systems</th>
<th>Extended Valley - Utility, Low and High Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="StandardValley.png" alt="Diagram" /></td>
<td><img src="ExtendedValley.png" alt="Diagram" /></td>
</tr>
<tr>
<td>24 Gauge Material</td>
<td>24 Gauge Material</td>
</tr>
<tr>
<td>FL-705</td>
<td>FL-711</td>
</tr>
</tbody>
</table>

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**Notes:**
- BattenLok® HS
- SEE metlspan.com FOR CURRENT INFORMATION
- SUBJECT TO CHANGE WITHOUT NOTICE

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**Revision Information:**
- BHS-18
- REV 01.01
- Subject to change without notice.
<table>
<thead>
<tr>
<th>Fastener #1B</th>
<th>Fastener #1E</th>
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</thead>
<tbody>
<tr>
<td>• Clip to purlin (Up to 4&quot; insulation between panel and purlin)</td>
<td>• Panel to eave plate or eave strut</td>
</tr>
<tr>
<td>⅛&quot;-14 x 1 ¼&quot; Self Driller</td>
<td>⅛&quot;-14 x 1 ¼&quot; Long Life Self Driller</td>
</tr>
<tr>
<td>½&quot; Hex Washer Head with no washer</td>
<td>½&quot; Hex Washer Head, with sealing washer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fastener #142</th>
<th>Fastener #2A</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clip to purlin (Over 4&quot; insulation between panel and purlin)</td>
<td>• Use in place of Fasteners #1E, #2B and #4 at all strip outs</td>
</tr>
<tr>
<td>⅛&quot;-14 x 1 ½&quot; Self Driller</td>
<td>17 x 1&quot; Long Life AB</td>
</tr>
<tr>
<td>½&quot; Hex Head, with ½&quot; O.D. washer</td>
<td>½&quot; Hex Washer Head, with sealing washer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fastener #2B</th>
<th>Fastener #55</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Endlap over plywood</td>
<td>• Clip to purlin (Up to 4&quot; insulation between panel and purlin)</td>
</tr>
<tr>
<td>⅛&quot;-14 x 1&quot; Long Life AB</td>
<td>12-24 x 1 ⅛&quot; with #5 Drill Point</td>
</tr>
<tr>
<td>½&quot; Hex Washer Head, with sealing washer</td>
<td>½&quot; Hex Washer Head, with no washer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fastener #4</th>
<th>Fastener #70</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ridge and other flashing to outside closure</td>
<td>• Clip to purlin (Over 4&quot; insulation between panel and purlin)</td>
</tr>
<tr>
<td>• Gutter to panel</td>
<td>⅛&quot;-14 x ½&quot; with #5 Drill Point</td>
</tr>
<tr>
<td>• Gutter to strap</td>
<td>½&quot; Hex Washer Head, with no washer</td>
</tr>
<tr>
<td>• Trim to trim connections</td>
<td>½&quot; Hex Washer Head, with no washer</td>
</tr>
<tr>
<td>• Sculptured eave trim to panel</td>
<td>½&quot; Hex Washer Head, with no washer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fastener #5</th>
<th>Fastener #11</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rake support to purlin (Floating System Only)</td>
<td>• Special application fastener</td>
</tr>
<tr>
<td>• Floating eave plate to eave strut</td>
<td>• For attaching trim to masonry walls</td>
</tr>
<tr>
<td>⅛&quot;-14 x 1 ¼&quot; Shoulder Tek® 2 Self Driller</td>
<td>⅛&quot; x 1 ¼&quot; Nail Drive Masonry Anchor</td>
</tr>
<tr>
<td>½&quot; Hex Washer Head, with no washer</td>
<td>½&quot; Hex Washer Head, with no washer</td>
</tr>
</tbody>
</table>
## General Information

### Product Checklist

| Fastener #12A | • Rake angle to purlin  
• Hip and valley support plates to purlins  
• Valley flashing to valley support plate |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12 x 1” #2 Phillips/Square Drive Pancake Head Driller</td>
<td></td>
</tr>
</tbody>
</table>

| Fastener #13A | • Offset cleat to plywood  
• Rake angle to plywood  
• Clip to plywood |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12 x 1” #2 Phillips/Square Drive Pancake Type ”A”</td>
<td></td>
</tr>
</tbody>
</table>

| Fastener #14 | • Trim to trim connections  
• Outside closure to angle on floating hip detail |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel Pop Rivet ½” diameter x ⅝” grip range</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fastener #14A</th>
<th>• Use at lower endlap of LTP’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>⅛” Hex Head, with ⅜” O.D. washer</td>
<td></td>
</tr>
</tbody>
</table>

| Fastener #226 | • Dekstrip to Expansion Ridge/Expansion Lap  
• ¾” x ¾” Rivet Cendalum  
Closed End Rivet |
| -------------- |--------------------------------------------------------------------------------|

| Fastener #228 | • Dekstrip to Expansion Ridge/Expansion Lap  
10 x ½” Aluminum Grommet Washer |
| -------------- |--------------------------------------------------------------------------------|

| Fastener #26 | • Panel clips to wood deck  
• Outside closure to panel over wood deck |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>⅛” x ⅛” Hex Washer Head, with ⅜” O.D. washer</td>
<td></td>
</tr>
</tbody>
</table>

| Fastener #18 | • Panel endlaps over solid substrate  
• ¼”-14 x ½” Long Life Type B with washer |
| -------------- |--------------------------------------------------------------------------------|

<table>
<thead>
<tr>
<th>Deck Screw</th>
<th>• 18 Gauge maximum drilling thickness</th>
</tr>
</thead>
</table>

| Fastener #209 14 x 2” |
| Fastener #210 14 x 3” |
| Fastener #211 14 x 4” |
| Fastener #15D 14 x 6” |
GENERAL INFORMATION

BattenLok® HS

Panel Orientation

BLANK

FEMALE

MALE

ONE PANEL FROM EAVE TO PEAK

PEAK

FEMALE

MALE

1½” SWAGED END

DOWN SLOPE

MORE THAN ONE PANEL FROM EAVE TO PEAK

MID

FEMALE

MALE

4½” SWAGED END

DOWN SLOPE

THREE OR MORE PANELS FROM EAVE TO PEAK

EAVE

FEMALE

MALE

4½” SWAGED END

DOWN SLOPE

MORE THAN ONE PANEL FROM EAVE TO PEAK

INSTALLATION GUIDELINES

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.

SHEETING DIRECTION FOR ROOFS WITH PANEL ENDLAPS

LEFT TO RIGHT OR RIGHT TO LEFT

SHEETING DIRECTION FOR ROOFS WITHOUT PANEL ENDLAPS

RIGHT TO LEFT ONLY
GENERAL INFORMATION

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 PANELS.

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.
GENERAL INFORMATION

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.
GENERAL INFORMATION

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.
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.
**INSTALLATION SEQUENCE**

**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.

---

**Symbol Key**

- **FASTENER #1**
- **FASTENER #14**
- **TRI-BEAD TAPE SEALER**
- **HIGH EAVE PLATE**
- **EAVE STRUT**
- **FACE OF WALL**
- **OFFSET PANEL CAP TRIM**
- **BOX PANEL CAP TRIM**
- **WALL PANEL**
- **URETHANE SEALANT**
- **2" LAP**
- **1" ENDLAP DETAIL**

*Not by Manufacturer*
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.
**BattenLok® HS**

**INSTALLATION SEQUENCE**

**STEP 5**

**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.

**CLIP FASTENER REQUIREMENTS**

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

**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.
**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.

---

**ENDLAP-PANEL**

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.
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.
BattenLok® HS

INSTALLATION SEQUENCE

STEP 8

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.

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

FASTENER SEQUENCE
**INSTALLATION SEQUENCE**

**STEP 10**

**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 OPERACION

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 OPERATON (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 wheels should be even with the edge of the panel. Push the locking arm down to engage the tools and turn the seamer on.

CAUTION

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.

- 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.
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.
SPECIAL ERECTION TECHNIQUES

BattenLok® HS

1. BattenLok® HS PANEL
2. BattenLok® HS LIGHT TRANSMITTING PANEL
3. LIGHT TRANSMITTING PANEL STIFFENER PLATE
4. BACK-UP PLATE
5. PURLIN

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.

FIELD NOTCH PANEL FOR ENDLAP

FASTENER #1E (TWO EACH SIDE)

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.
SPECIAL ERECTION TECHNIQUES

RIVETED RAIL LTP INSTALLATION

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.
SPECIAL ERECTION TECHNIQUES

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.

1 1/2” FROM END OF PANEL

1/4-14 X 1 1/2” LONG-LIFE
S.D. W/OVERSIZED BONDED
WASHER (FASTENER #43L)
SPECIAL ERECTION TECHNIQUES

RIVETED RAIL LTP INSTALLATION (cont’d.)

STEP 5

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

1. Field cut male leg 6” as shown.
2. Field open female leg 6” to allow panel lap to engage.

UPPER BATTENLOK HS PANEL DOWN SLOPE END

UPSLOPE END OF LTP

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SEE metlspan.com FOR CURRENT INFORMATION

SUBJECT TO CHANGE WITHOUT NOTICE
SPECIAL ERECTION TECHNIQUES

RIVETED RAIL LTP INSTALLATION (cont’d.)

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.
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.
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.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION
CURB BASE INSTALLATION #4

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.
CURB INSTALLATION
CAP CELL INSTALLATION

FILL THE END OF THE CAP CELL WITH URETHANE TUBE SEALANT

STEP 1

LOOSE CAP CELL (SUPPLIED BY CURB MFG.)

TRIPLE BEAD TAPE SEALER (HW-502)

STEP 2

FASTENER #1E
1/4 - 14 X 1 1/4"
AT 1" O.C.

Curb Base

ROOF PANEL #4

ROOF PANEL #3

ROOF PANEL #2

ROOF PANEL #1

PANEL RIB

FILL THE END OF THE CAP CELL WITH URETHANE TUBE SEALANT

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.
NOTES:
Field cut male and female panel ribs from an extra roof panel supplied by the manufacturer.

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. 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.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION
MALE PANEL FIN INSTALLATION

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.
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.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION
CURB BASE INSTALLATION #7

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.
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.
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.
SPECIAL ERECTION TECHNIQUES

CURB INSTALLATION
UP SLOPE CURB BASE 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.

BattenLok® HS PANEL

FASTENER #1E
⅛"-14 X 1 ¼"
(5 PER PANEL)

FASTENER #5
⅛"-14 X 1 ¼"
SHOULDER TEK® 2
@ 12" O.C.

TRIPLE-BEAD TAPE SEALER (HW-502)

TRIPLE-BEAD TAPE SEALER (HW-502)

BLANKET INSULATION

LOW 10" 4" 6"

MOVEMENT ± 1 ¼"

1 1/2"

FASTENER #5
⅛"-14 X 1 ¼"
SHOULDER TEK® 2
@ 12" O.C.

UP SLOPE PANEL SUPPORT (8C 3 ½" X 14GA)

FLOATING EAVE PLATE

LOW
HW-7601

HIGH
HW-7611

BattenLok® HS PANEL

CURB BASE

1 ½"

1 ½"

4"

6"

10"
**SPECIAL ERECTION TECHNIQUES**

**PIPE PENETRATION INSTALLATION**

RECOMMENDED SMALL AND LARGE PIPE PENETRATION INSTALLATION

![Diagram showing correct and incorrect methods of pipe penetration installation.]

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

**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.
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

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

STEP 2

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

STAINLESS STEEL CLAMP
(NOT BY BUILDING MANUFACTURER)

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

STEP 3

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

TRI-BEAD TAPE SEALER
(HW-504)

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

DETAILS

OPEN FRAMING
FIXED EAVE WITH HANG ON GUTTER

GUTTER STRAP ATTACHMENT

BattenLok® HS PANEL

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

EAVE END OF PANEL

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

EAVE SEALANT DETAIL

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

GUTTER STRAP (FL-246)
@ EVERY OTHER RIB

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

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

BOX PANEL CAP TRIM
(FL-272)

1/4" x 3/8" POP RIVET
(FASTENER #14)
@ 3'-0" O.C.

SCULPTURED GUTTER
(FL-248A)

EAVE 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

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

1/4" x 3/8" 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

BUILDING DIM.

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

BattenLok® HS PANEL

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

BattenLok® HS PANEL

1/4"-14 x 1/4" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)
(2) PER STRAP
DETAILS

OPEN FRAMING
FIXED EAVE WITH EAVE TRIM

BattenLok® HS

BattenLok® HS Panel

URETHANE TUBE SEALANT BETWEEN PANEL RIBS

EAVE SEALANT DETAIL

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

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

BOX PANEL CAP TRIM (FL-272)
1/4" x 3/8" POP RIVET (FASTENER #14)
@ 12" O.C.

Sculptured Eave Trim

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

WALL PANEL

TRI-BEAD TAPE SEALER

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

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

EAVE STRUT

BUILDING DIM.
DETAILS

OPEN FRAMING
FLOATING VENTED RIDGE

BattenLok® HS

PERFORATED VENT DRIP (FL-254)
TRI-BEAD TAPE SEALER (HW-504)
LOW FLOATING CLIP (HW-220)
Tri-Bead Tape Sealer
BattenLok® HS PANEL

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

LAP (MIN.)
1"

URETHANE SEALANT [HW-504]
PERFORATED VENT DRIP (FL-254)

RIDGE TRIM (FL-303)

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 3/4" LONG-LIFE LAP TEK W/WASHER (FASTENER #4) @ 6" O.C.
   (DO NOT INSTALL THRU PANEL RIB)
¢ 1/4"-14 x 3/4" LONG-LIFE LAP TEK W/WASHER (FASTENER #4) @ 6" O.C.
   OUTSIDE CLOSURE (HW-440) @ 16" PANEL (HW-446) @ 12" PANEL

2"
12"
5"
5"

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

TRI-BEAD TAPE SEALER
HW-504) CONTINUED 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

2 1/2"

ZEE PURLIN

BHS-70  REV 01.01  SEE metlspan.com FOR CURRENT INFORMATION  SUBJECT TO CHANGE WITHOUT NOTICE
DETAILS
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 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 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 FLOATING CLIP (HW-220)**
- **LOW RAKE SUPPORT ANGLE (HW-7712)**

- **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. ANGLE**

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

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

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

**ZEE PURLIN**
BattenLok® HS

DETAILS

OPEN FRAMING 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

LOW RAKE SUPPORT ANGLE (HW-7712)

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

MASONRY WALL (NOT BY METL-SPAN)

BUILDING DIM.

1 1/2" (MIN.)

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)

1/4"-14 x 1 1/2" LONG-LIFE S.D. WWASHER (FASTENER #1E) @ 24" O.C.

LOW FLOATING CLIP (HW-220)

BattenLok® HS PANEL

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

(2) PER CLIP

1/4"-14 x 1 1/2" 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

ZEE PURLIN

COUNTERFLASH (FL-341)

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

LOW RAKE SUPPORT ANGLE (HW-7712)

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

MASONRY WALL (NOT BY METL-SPAN)
DETAILS

OPEN FRAMING
FLOATING HIGH SIDE EAVE

BattenLok® HS

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

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

2" x 2" x 16 GA. BACK UP ANGLE

SCULPTURED HIGH SIDE EAVE TRIM (FL-265)

BattenLok® HS PANEL

HIGHT EAVE SEALANT DETAIL

2 1/2" x 2 1/2" x 16 GA. BACK UP ANGLE

TRI-BEAD TAPE SEALER (HW-504)

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

ALTERNATE DETAIL

1/4"-14 x 3/4" 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

TRI-BEAD TAPE SEALER (HW-504)

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)

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

2 1/4" x 1/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)
@ 12" O.C.

OUTSIDE CLOSURE

BHS-74
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DETAILS

OPEN FRAMING
PARAPET FLOATING HIGH SIDE EAVE

MASONRY WALL
(NOT BY METL-SPAN)

URETHANE TUBE SEALANT
CONTINUOUS

COUNTER FLASH (FL-341)

PARAPET HIGH EAVE TRIM
(FL-275)

BUILDING DIM.

2"

2"

2"

1/4"-14 x 1/4" 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

LOW FLOATING CLIP (HW-220)

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

ZEE PURLIN

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

14-10 x 2" DECK SCREW
(FASTENER #208) @ 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

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

SUBJECT TO CHANGE WITHOUT NOTICE
SEE metlspan FOR CURRENT INFORMATION
REV 01.01 BHS-75
BattenLok® HS
OPEN FRAMING
FIXED VALLEY

DETAIL "A"

TRIPPLE-BEAD TAPE SEALER
(HW-502)

1/2"-14 x 1 1/2" LONG-LIFE
SELF-DRILLER W/WASHER
(FASTENER #1E) @ 3" O.C.
(FASTNER MUST GO THROUGH
TAPE SEALER)

URETHANE SEALANT BETWEEN PANEL RIBS

VALLEY TRIM
(FL-705)

4 1/4"

ZEE PURLIN

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

VALLEY SUPPORT PLATE
(P-106)

FIELD NOTCH PLATE @
PURLIN AS REQUIRED

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

BattenLok® HS PANEL

VALEY END OF PANEL

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

BEVELED EDGE OF ROOF PANEL

DETAIL "A"

URETHANE SEALANT

BattenLok® HS PANEL

BATTENLOK® HS PANEL

SEE metlspan.com FOR CURRENT INFORMATION
SUBJECT TO CHANGE WITHOUT NOTICE
DETAILS

FIELD HEMMING PANEL END

BattenLok® HS PANEL

FIELD NOTCH

1 1/2"

BattenLok® HS PANEL

PANEL HEMMING TOOL

NOTching PANEL END

ENGAGING HEMMING TOOL

FORMING OPEN HEM

OFFSET CLEAT

1 1/2"

1 1/2"

PANEL ENGAGEMENT

BattenLok® HS PANEL

PANEL HEMMING TOOL

SEE metlspan.com FOR CURRENT INFORMATION

SUBJECT TO CHANGE WITHOUT NOTICE
BattenLok® HS

DETAILS

WOOD DECK
ENDLAP

VIEW “A”

SWAGED ENDLAP TAPE SEALER (HW-515)

LOWER CLI (HW-230)

MOISTURE BARRIER
(NOT BY METL-SPAN)

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

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

3/8” PLYWOOD (MIN.)
(NOT BY METL-SPAN)

UPPER SWAGED BattenLok® HS PANEL

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

LOW FLOATING CLIP
(HW-230)

BattenLok® HS PANEL (LOWER)

PREPUNCHED HOLES

UPPER SWAGED BattenLok® HS PANEL

TRI-BEAD TAPE SEALER
(HW-504)

FASTENER INSTALLATION SEQUENCE

23 4 5 1

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

SWAGED ENDLAP TAPE SEALER
(HW-515)

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)

BattenLok® HS PANEL (LOWER)

23 4 5 1

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

BattenLok® HS PANEL (LOWER)
DETAILS
WOOD DECK
FLOATING EAVE WITH GUTTER

BattenLok® HS

EAVE SELANT DETAIL

1/6" x 3/8" POP RIVET
(FASTENER #14)
(2) PER STRAP

1/6"-14 x 1" LONG-LIFE
'TYPE AB' SELF-TAPPER
W/WASHER (FASTENER #2B)

1/6" PLYWOOD (MIN.)
(NOT BY METL-SPAN)

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

3/8" PLYWOOD SPACER
(NOT BY METL-SPAN)

WOOD BLOCKING
(NOT BY METL-SPAN)

FIELD NOTCH PANEL
LEG AND BEND PAN
TO FORM OPEN HEM

BOX GUTTER W/DRI
EDGE (T-5271)

LOW FLOATING CLIP
(HW-220)

BattenLok® HS

MOISTURE BARRIER
(NOT BY METL-SPAN)

BUTYL SEALANT MUST
COME IN CONTACT WITH
THE DRIP EDGE TO FORM A
WEATHERTIGHT SEAL

NON-SKINNING BUTYL
SEALANT (HW-549)
BETWEEN PANEL RIBS

WALL PANEL

EAVE END
OF PANEL

1 1/2"

1/2"

1/6"

1/2"

1/6"

1 1/2"

1 1/2"

1/2"

1/2"

1/6"

1/6"

1/6"

1/6"
WOOD DECK
FLOATING EAVE WITH EAVE TRIM

EAVE SELANT DETAIL

BUTYL SEALANT MUST COME IN CONTACT WITH THE DRIP EDGE TO FORM A WEATHERTIGHT SEAL

BattenLok® HS PANEL

NON-SKINNING BUTYL SEALANT (HW-549) BETWEEN PANEL RIBS

EAVE END OF PANEL

FIELD NOTCH PANEL LEGS AND BEND PAN TO FORM OPEN HEM

EAVE TRIM W/DRIP EDGE (T-5271)

1½”

1½”

1½”

1½”

1½”

WALL PANEL THICKNESS

WALL PANEL

OUTSIDE CLOSURE

BUILDING DIM.

12-11 x 1” PANCAKE HEAD SELF-TAPPER (FASTENER #13A) @ 12” O.C.

LOW FLOATING CLIP (HW-220)

BattenLok® HS PANEL

MOISTURE BARRIER (NOT BY METL-SPAN))

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

½" PLYWOOD (MIN.) (NOT BY METL-SPAN))

CONT. ¾" PLYWOOD SPACER (NOT BY METL-SPAN))

12-11 x 1” PANCAKE HEAD SELF-TAPPER (FASTENER #13A) @ 12” O.C.

¼"-14 x 1” LONG-LIFE 'TYPE AB' SELF-TAPPER W/WASHER (FASTENER #2B)

¼"-14 x ½” LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 12” O.C.

WOOD BLOCKING (NOT BY METL-SPAN))

12-11 x 1” PLYWOOD HEAD SELF-TAPPER (FASTENER #13A) @ 12” O.C.

1½" x 1" LONG-LIFE 'TYPE AB' SELF-TAPPER W/WASHER (FASTENER #2B)

1½" x ¾” LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 12” O.C.

EAVE TRIM W/DRIP EDGE (T-5151)

EAVE SELANT DETAIL

BattenLok® HS PANEL

NON-SKINNING BUTYL SEALANT (HW-549) BETWEEN PANEL RIBS

BUTYL SEALANT MUST COME IN CONTACT WITH THE DRIP EDGE TO FORM A WEATHERTIGHT SEAL

SUBJECT TO CHANGE WITHOUT NOTICE

SEE metlspan FOR CURRENT INFORMATION

REV 01.01

BHS-81
BattenLok® HS
DETAILS
WOOD DECK
FIXED RIDGE

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

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

TRI-BEAD TAPE SEALER (HW-504)

BattenLok® HS PANEL

1/4" PLYWOOD SPACER (NOT BY METL-SPAN)

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 METL-SPAN)

1/8" PLYWOOD (MIN. (NOT BY METL-SPAN))

6" O.C. (DO NOT INSTALL THRU PANEL RIB)

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 1/8" LONG-LIFE LAPTEK W/WASHER (FASTENER #4)

BHS-82 REV 01.01
SEE metlspan.com FOR CURRENT INFORMATION
SUBJECT TO CHANGE WITHOUT NOTICE
DETAILS

WOOD DECK
FIXED VENTED RIDGE

- TRI-BEAD TAPE SEALER (HW-504)
- RIDGE END OF PANEL
- BattenLok® HS PANEL
- URETHANE SEALANT (HW-504)
- PERFORATED VENT DRIP (FL-254)
- ⅛"-14 x 1¼" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB
- TRI-BEAD TAPE SEALER (HW-504)

- ⅛"-14 x ⅛" 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
- MOISTURE BARRIER (NOT BY METL-SPAN)
- ¼" PLYWOOD (MIN.) (NOT BY METL-SPAN)

- 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
- ¼" PLYWOOD SPACER (NOT BY METL-SPAN)

- PERFORATED VENT DRIP (FL-254)
- ⅛"-14 x 1¼" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB

- RIDGE TRIM (FL-300)

- BattenLok® HS PANEL

- URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL VOIDS
- ¼"-14 x ⅛" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

- PERFORATED VENT DRIP (FL-254)
- ⅛"-14 x 1¼" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB

- BattenLok® HS PANEL

SUBJECT TO CHANGE WITHOUT NOTICE
SEE metlspan FOR CURRENT INFORMATION
REV 01.01 BHS-83
DETAILS

WOOD DECK RAKE

BattenLok® HS

1⁄4"-14 x 3⁄4" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.
HIGH WIND PARAPET RAKE CLEAT (F-292)
1⁄4"-14 x 1½" LONG-LIFE SELF DRILLER W/WASHER (FASTENER #1E) @ 24" O.C.
FIELD CUT & BEND UP 2" PANEL LEG AS REQUIRED WHEN ENDING OFF MODULE

BattenLok HS PANEL

LOW FLOATING CLIP (HW-220)
12-11 x 1" PANCAKE HEAD SELF-TAPPER (FASTENER #13A) (2) PER CLIP
MOISTURE BARRIER (NOT BY METL-SPAN)

1⁄4" PLYWOOD (MIN.) (NOT BY METL-SPAN)
12-11 x 1" PANCAKE HEAD SELF-TAPPER (FASTENER #13A) @ 24" O.C. (PRE-DRILL ANGLE)
1⁄4"-14 x 1½" SHOULDER TEK® 2 SELF-DRILLER (FASTENER #6) @ 24" O.C. (CENTER IN SLOT)
WOOD BLOCKING (NOT BY METL-SPAN)

TRI-BEAD TAPE SEALER (HW-504)
LOW RAKE SUPPORT ANGLE (HW-7712)
BOX RAKE TRIM 2 x 4 x 16 GA. ANGLE
1⁄4"-14 x 1" LONG-LIFE "TYPE AB" SELF-TAPPER W/WASHER (FASTENER #2B)

1⁄8" x 3⁄16" POP RIVET (FASTENER #14) @ 12" O.C.
CONTINUOUS CLEAT (FL-338)
OUTSIDE CLOSURE
WALL PANEL

BUILDING DIM.
1½"
WOOD DECK PARAPET RAKE

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

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

FLEXIBLE MEMBRANE

2 x 4 x 16 GAUGE ANGLE

LOW RAKE SUPPORT ANGLE (HW-7712)

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

MASONRY WALL (NOT BY METL-SPAN)

WOOD BLOCKING (NOT BY METL-SPAN)

PLYWOOD (MIN.) (NOT BY METL-SPAN)

1/4"-14 x 1 1/2" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 24" O.C.

HIGH WIND PARAPET RAKE CLEAT (F-292)

COUNTERFLASH (FL-341)

PARAPET RAKE TRIM (FL-285)

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

URETHANE TUBE SEALANT CONTINUOUS

MOISTURE BARRIER (NOT BY METL-SPAN)

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

12-11 x 1" PANCAKE HEAD SELF-TAPPER (FASTENER #13A) @ 24" O.C. (PRE-DRILL ANGLE)

WOOD BLOCKING (NOT BY METL-SPAN)

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

COUNTERTRADE (FL-341)

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

URETHANE TUBE SEALANT CONTINUOUS

MOISTURE BARRIER (NOT BY METL-SPAN)

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

12-11 x 1" PANCAKE HEAD SELF-TAPPER (FASTENER #13A) @ 24" O.C. (PRE-DRILL ANGLE)

WOOD BLOCKING (NOT BY METL-SPAN)
BattenLok® HS

DETAILS

WOOD DECK
FIXED HIGH SIDE EAVE

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

1/4" PLYWOOD SPACER (NOT BY METL-SPAN)

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

BOX HIGH SIDE EAVE TRIM (FL-331)

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

OUTSIDE CLOSURE

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

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

WALL PANEL

BUILDING DIM.

MOISTURE BARRIER (NOT BY METL-SPAN)

1/2" PLYWOOD (MIN.) (NOT BY METL-SPAN)

WOOD BLOCKING (NOT BY METL-SPAN)
WOOD DECK
PARAPET FIXED HIGH SIDE EAVE

BattenLok® HS

HIGH EAVE SEALANT DETAIL

HIGH EAVE END OF PANEL

BUILDING DIM.

FIELD SAWCUT

MASONRY WALL
(NOT BY METL-SPAN)

URETHANE TUBE SEALANT CONTINUOUS

COUNTER FLASH (FL341)

HIGH EAVE END OF PANEL

BattenLok® HS PANEL

MOISTURE BARRIER
(NOT BY METL-SPAN)

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

14-10 x 1" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.

(1) PER RIB

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

1/4" x 3/4" LONG-LIFE LAPTEK W/WASHER

(FASTENER #1E) (1) PER RIB

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

(1) PER 16" PANEL
(3) PER 12" PANEL

1/8" x 1/4" POLYWOOD (MIN.)
(NOT BY METL-SPAN)

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

2" OUTSIDE CLOSURE
(HW-446) @ 12" PANEL

1/4" x 1/4" POLYWOOD SPACER
(NOT BY METL-SPAN)
DETAILS
WOOD DECK
FLOATING VALLEY

NOTE: DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
DETAILS

RIGID INSULATION OVER METAL DECK
ENDLAP

BattenLok® HS

SWAGED ENDLAP TAPE SEALER (HW-515)

VIEW “A”

1/2"-14 x 5/8" LONG-LIFE TYPE 'B' SELF-TAPER 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 METL-SPAN)

BEARING PLATE (HW-7500)

DECK SCREW (2) PER CLIP
(MIN. 1/2" PENETRATION INTO METAL DECK)

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

FASTENER INSTALLATION SEQUENCE

SWAGED ENDLAP TAPE SEALER (HW-515)

PREPUNCHED HOLES
(16" PANEL ONLY)

SWAGED ENDLAP TAPE SEALER (HW-515)

UPPER SWAGED BattenLok® HS PANEL

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

LOWER BattenLok® HS PANEL

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

BattenLok® HS PANEL

UPPER BattenLok® HS PANEL

LOW FLOATING CLIP
(HW-220)

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

VAPOR BARRIER
(NOT BY METL-SPAN)

BEARING PLATE
(HW-7500)

DECK SCREW (2) PER CLIP
(MIN. 1/2" PENETRATION INTO METAL DECK)

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

FASTENER INSTALLATION SEQUENCE

SWAGED ENDLAP TAPE SEALER (HW-515)

PREPUNCHED HOLES
(16" PANEL ONLY)

BattenLok® HS PANEL

UPPER SWAGED BattenLok® HS PANEL

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

LOWER BattenLok® HS PANEL

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

BattenLok® HS PANEL

UPPER BattenLok® HS PANEL

LOW FLOATING CLIP
(HW-220)

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

VAPOR BARRIER
(NOT BY METL-SPAN)

BEARING PLATE
(HW-7500)

DECK SCREW (2) PER CLIP
(MIN. 1/2" PENETRATION INTO METAL DECK)

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

FASTENER INSTALLATION SEQUENCE
DETAILS
RIGID INSULATION OVER METAL DECK
FLOATING EAVE WITH GUTTER

BUTYL SEALANT MUST COME IN CONTACT WITH DRIPE EDGE TO FORM A WEATHERTIGHT SEAL

FIELD NOTCH PANEL LEGS AND BEND PAN TO FORM OPEN HEM

LOW FLOATING CLIP
(HW-220)

DECK SCREW (2) PER CLIP
(MIN. ⅜ " PENETRATION INTO METAL DECK)

BEARING PLATE (HW-7500)
BattenLok® HS PANEL

RIGID INSULATION
(NOT BY METL-SPAN)

VAPOR BARRIER
(NOT BY METL-SPAN)

METAL DECK
(NOT BY METL-SPAN)
RIGID INSULATION OVER METAL DECK
FLOATING EAVE WITH EAVE TRIM

BattenLok® HS PANEL

BUTYL SEALANT MUST COME IN CONTACT WITH THE DRIP EDGE TO FORM A WEATHERTIGHT SEAL

EAVE END OF PANEL

NON-SKINNING BUTYL SEALANT (HW-549) BETWEEN PANEL RIBS

LOW FLOATING CLIP (HW-220)

BATTENLOK® HS PANEL

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

BEARING PLATE (HW-7500)

RIGID INSULATION (NOT BY METL-SPAN)

VAPOUR BARRIER (NOT BY METL-SPAN)

METAL DECK (NOT BY METL-SPAN)

BUILDING DIM.

BATTENLOK® HS PANEL

BUTYL SEALANT MUST COME IN CONTACT WITH THE DRIP EDGE TO FORM A WEATHERTIGHT SEAL

EAVE END OF PANEL

NON-SKINNING BUTYL SEALANT (HW-549) BETWEEN PANEL RIBS

LOW FLOATING CLIP (HW-220)

BATTENLOK® HS PANEL

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

BEARING PLATE (HW-7500)

RIGID INSULATION (NOT BY METL-SPAN)

VAPOUR BARRIER (NOT BY METL-SPAN)

METAL DECK (NOT BY METL-SPAN)

BUILDING DIM.
BattenLok® HS

DETAILS

RIGID INSULATION OVER METAL DECK
FIXED RIDGE

BattenLok® HS PANEL

TRI-BEAD TAPE SEALER (HW-504)

RIDGEBEAD TAPE SEALER (HW-504)

RIDGE END OF PANEL

1/4 "-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)

BattenLok® HS PANEL

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

1/4 "-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)

1/4 "-14 x 7/8 " LONG-LIFE LAPTEK W/WASHER (FASTENER #4)

@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)

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

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

RIDGE TRIM (FL-209)

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)

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

1/4 "-14 x 7/8 " 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

RIDGE TRIM (FL-209)
DETAILS

RIGID INSULATION OVER METAL DECK
FIXED VENTED RIDGE

BattenLok® HS

1" LAP (MIN.)

URETHANE SEALANT (HW-504)
PERFORATED VENT DRIP (FL-254)

1/4" -1/4 x 1 1/4" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB
TRI-BEAD TAPE SEALER (HW-504)

BattenLok® HS PANEL

2"

2"

2"

2"

TRI-BEAD TAPE SEALER (HW-504)

1/4" -1/4 x 1 1/2" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E)
(4) PER 16" PANEL
(3) PER 12" PANEL
LOW MID-SLOPE FIXED PLATE (HW-504)

URETHANE TUBE SEALANT @ CLOSURE ENDS/PANEL RIB & LAPPING CLOSURE TABS TO SEAL ALL Voids
1/4" -1/4 x 1 1/4" LONG LIFE LAPTEK W/WASHER (FASTENER #4)
@ 6" O.C. (DO NOT INSTALL THRU PANEL RIB)
TRI-BEAD TAPE SEALER (HW-504)

RIDGE TRIM (FL-300)

URETHANE SEALANT (HW-504)
LOW MID-SLOPE FIXED PLATE (HW-504)

VAPOR BARRIER (NOT BY METL-SPAN)
METAL DECK (NOT BY METL-SPAN)

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

RIDGE END OF PANEL

URETHANE SEALANT (HW-504)

RIDGE END OF PANEL

TRI-BEAD TAPE SEALER (HW-504)

1" (MIN.)

DECK SCREW @ 12" O.C. (MIN. 5/4" PENETRATION INTO METAL DECK)
DETAILS
RIGID INSULATION OVER METAL DECK
RAKE

- TRI-BEAD TAPE SEALER (HW-504)
- BOX RAKE TRIM
- LOW RAKE SUPPORT ANGLE (HW-7712)
- 12 - 24 x 1⅛" PAN HEAD TEK 4.5 SELF-DRILLER (FASTENER #78)
- CONTINUOUS CLEAT (FL-338)
- ½" x ½" POP RIVET (FASTENER #14) @ 12" O.C.
- OUTSIDE CLOSURE
- WALL PANEL

BATTENLOK® HS PAANEL
LOW FLOATING CLIP (HW-220)
BEARING PLATE (HW-7500)

1½" - 14 x ⅝" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.
HIGH WIND PARAPET RAKE CLEAT (F-292)
¼" - 14 x 1½" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 24" O.C.
FIELD CUT & BEND UP 2" PANEL LEG AS REQUIRED WHEN ENDING OFF MODULE

12 - 24 x 1½" LONG-LIFE TEK 4.5 W/WASHER (FASTENER #16) @ 12" O.C.

1½" - 14 x ⅝" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #4) @ 6" O.C.

HIGH WIND RAKE TRIM

12 - 24 x 1½" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 24" O.C.
FIELD CUT & BEND UP 2" PANEL LEG AS REQUIRED WHEN ENDING OFF MODULE

BATTENLOK® HS PANEL
LOW FLOATING CLIP (HW-220)
BEARING PLATE (HW-7500)

1½" - 14 x ⅝" LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 6" O.C.

HIGH WIND PARAPET RAKE CLEAT (F-292)
¼" - 14 x 1½" LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 24" O.C.
FIELD CUT & BEND UP 2" PANEL LEG AS REQUIRED WHEN ENDING OFF MODULE

12 - 24 x 1½" LONG-LIFE TEK 4.5 W/WASHER (FASTENER #78)
CONTINUOUS CLEAT (FL-338)

1½" x ½" POP RIVET (FASTENER #14) @ 12" O.C.
OUTSIDE CLOSURE
WALL PANEL

2 x 4 x 16 GA. ANGLE

1½" - 14 x ⅝" SHOULDER TEK® 2 SELF-DRILLER (FASTENER #5) @ 24" O.C.(CENTER IN SLOT)
STRUCTURAL ANGLE (NOT BY METL-SPAN)

VAPOR BARRIER (NOT BY METL-SPAN)
DECK SCREW (2) PER CLIP (MIN. ½" PENETRATION INTO METAL DECK)
METAL DECK (NOT BY METL-SPAN)
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

FLEXIBLE MEMBRANE

LOW RAKE SUPPORT ANGLE
(HW-7712)

FIELD CUT & BEND UP 2"

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

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

1 1/2" * (MIN.)

URRETHANE 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)

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

DECK SCREW @ 24" O.C.
(MIN. 1/2" PENETRATION
INTO METAL DECK)

STRUCTURAL ANGLE
(NOT BY METL-SPAN)

BEARING PLATE
(HW-7500)

BattenLok® HS PANEL

LOW FLOATING CLIP (HW-220)

DECK SCREW @ (2) PER CLIP
(MIN. 1/2" PENETRATION
INTO METAL DECK)

VAPOR BARRIER
(NOT BY METL-SPAN)

RIGID INSULATION
(NOT BY METL-SPAN)

METAL DECK
(NOT BY METL-SPAN)
BattenLok® HS

DETAILS

RIGID INSULATION OVER METAL DECK
FIXED HIGH SIDE EAVE

HIGH EAVE SEALANT DETAIL

½ "-14 x ½ " 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. ½ " PENETRATION INTO METAL DECK)

½ "-14 x 1½ " LONG-LIFE SELF DRILLER W/WASHER (FASTENER #1E) (1) PER RIB
OUTSIDE CLOSURE (HW-440) @ 16" PANEL
TRI-BEAD TAPE SEALER (HW-504)
BOX HIGH SIDE EAVE TRIM (FL-331)

½ "-14 x ½ " LONG-LIFE LAPTEK W/WASHER (FASTENER #4) @ 12" O.C.
OUTSIDE CLOSURE
12-24 x 1½ " LONG-LIFE TEK 4.5 W/WASHER (FASTENER #78)
WALL PANEL

BattenLok® HS PANEL
RIGID INSULATION (NOT BY METL-SPAN)
VAPOR BARRIER (NOT BY METL-SPAN)
METAL DECK (NOT BY METL-SPAN)

STURCTURAL ANGLE (NOT BY METL-SPAN)
BUILDING DIM.

SEE metlspan FOR CURRENT INFORMATION
REV 01.01
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

HIGH EAVE SEALANT DETAIL

PARAPET HIGH EAVE TRIM (FL-276)

\[
\frac{1}{4}" \times 1/4" \text{ LONG-LIFE LAPTEK W/WASHER (FASTENER #4)} @ 6" \text{ O.C. (DO NOT INSTALL THRU PANEL RIB)}
\]

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

LOW MID-SLOPE FIXED PLATE (HW-7631)

MASTONRY WALL (NOT BY METL-SPAN)

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

\[
\frac{1}{4}" \times 1/4" \text{ LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (1) PER RIB}
\]

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

TRI-BEAD TAPE SEALER (HW-504)

\[
\frac{1}{4}" \times 1/4" \text{ LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) (4) PER 16" PANEL (3) PER 12" PANEL}
\]

RIGID INSULATION (NOT BY METL-SPAN)

VAPOR BARRIER (NOT BY METL-SPAN)

METAL DECK (NOT BY METL-SPAN)

DECK SCREW @ 12" O.C. (MIN. \( \frac{1}{4}" \) PENETRATION INTO METAL DECK)
BattenLok® HS

DETAILS

RIGID INSULATION OVER METAL DECK
FLOATING VALLEY

1 1/2”

BattenLok® HS PANEL

VALLEY END OF PANEL

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

LOW FLOATING CLIP (HW-220)
BEARING PLATE (HW-7500)

1'-0” MAX

OFFSET CLEAT (FL-337)

VALLEY TRIM (FL-707)

1 1/2”

MELTSPAN
INSULATED METAL PANELS

12-14 X 1” PANCAKE HEAD SELF-DRILLER (FASTENER #12A) @ 12” O.C. (FASTENER MUST GO THROUGH TAPE SEALER)

TRI-BEAD TAPE SEALER (HW-504)

BattenLok® HS PANEL

DECK SCREW @ 12” O.C. (MIN. 1 1/2” PENETRATION INTO METAL DECK)

DECK SCREW (2) PER CLIP (MIN. 1 1/2” PENETRATION INTO METAL DECK)

VALLEY SUPPORT PLATE (P-105)
RIGID INSULATION (NOT BY METL-SPAN)
VAPOR BARRIER (NOT BY METL-SPAN)
METAL DECK (NOT BY METL-SPAN)

NOTE: DO NOT USE THIS DETAIL ON ROOF SLOPES LESS THAN 3:12
DETAILS

RIGID INSULATION OVER METAL DECK

FIXED HIP

BattenLok® HS

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

HIP SUPPORT PLATE (P-145)

$\frac{1}{4}" \times 1\frac{1}{4}"$ LONG-LIFE SELF-DRILLER W/WASHER (FASTENER #1E) @ 6" O.C.

DECK SCREW @ 12" O.C. (MIN. $\frac{3}{4}"$ PENETRATION INTO METAL DECK)

$\frac{1}{4}" \times 14 \times \frac{3}{8}"$ 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 ($\frac{1}{4}"$ BEAD MIN.)

RIDGE/HIP TRIM (FL-209)

METAL DECK (NOT BY METL-SPAN)

VAPOR BARRIER (NOT BY METL-SPAN)

RIGID INSULATION (NOT BY METL-SPAN)

BattenLok® HS PANEL

TRI-BEAD TAPE SEALER (HW-504)

HIP END OF PANEL

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