## Select Seam®

### Narrow Batten

### Installation Guide

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General Notes

The attached installation details are intended to be a design aid and do not depict all situations. Modifications are the responsibility of the designer/user and should take into account climate conditions such as wind and snow, governing code requirements, and the actual usage and maintenance of the structure.

Flashings:

Where possible, flashings should be lapped away from prevailing winds. Certain flashings should be supported if it is likely that equipment (ladder, etc.) will be used against them or if foot traffic is anticipated. Check with AEP Span any time you intend to specify a prefinished flashing in a gauge or finish different than the roof panels. It is good practice to specify that all flashings be of the same material (gauge, color, finish) as the roof panels to ensure long-term durability. Field-painted flashings rarely equal the durability and color fastness of factory baked-on paint systems. The enclosed details have minimized the use of exposed fasteners where possible. The edges of flashings have also been shown hemmed to strengthen and to minimize the exposure of cut edges.

Flashings design and fabrication is generally the responsibility of the contractor. For convenience, we have provided some flashing drawings on our website at http://www.aepspan.com/roof/prodDetailad08.html?id=35. Applicable Select Seam® flashing part numbers are referenced within this installation guide.

Substrates:

Select Seam® roofing panels can be used over solid substrates only.

Slope Requirements:

Panels should be used on slopes of 3:12 or greater. Select Seam® Narrow Batten panels can be used for curved applications. Inquire with your AEP Span Representative for details.

Condensation, Insulation, & Ventilation:

It is the designer's responsibility to determine the need and composition of condensation control materials including insulation and vapor retarders, as well as ventilation requirements. Metal roofing is susceptible to condensation and its control should be carefully considered. Applications over rigid insulation may require solid blocking/framing for installation of perimeter flashings and drag load fasteners.

Underlayments:

Prior to installation, an underlayment material may be installed over the roof substrate. The designer should select and specify an appropriate material. The specified material must have a non-abrasive top surface that will not mar, scratch, or abrade the underside of the metal panels and flashings.

"Pinning" Requirements:

The panels must only be "pinned" at one location only to resist the "drag" loads caused by the panel weight, live loads, and snow loads. The intensity of the drag load is a function of the slope, the loads involved, and the length of the panels. Panels must not be pinned at more than one location otherwise damages induced by thermal movement will occur. Appendix ‘A’ gives the drag loads for various slopes and snow loading conditions, and Appendix ‘B’ shows the number of fasteners required to resist the drag loads.
Thermal Movement:
Both panels and flashings must allow for thermal movement (expansion and contraction) of the materials, especially where long lengths are used. Appropriate gaps or provisions must be provided to accommodate thermal movement.

Snow Design:
Select Seam® panels are suitable for light snow loads only. If possible, valleys, gutters, roof elevation changes and penetrations should be minimized or eliminated in snow areas. Roof penetrations should be located as close to the ridge or peak of the roof as possible to minimize accumulations of ice and snow and the effects of thermal movement of the roof panels. Premium membrane underlayments should be used. Valleys in snow areas require special consideration due to the accumulation of snow and ice from tributary roof areas.

Valleys:
Valley dimensions must be the proper width to account for slope, snow, ice, and rain conditions. Valleys should receive a premium underlayment since they are susceptible to water buildup. Valleys must have positive slope for drainage and be kept free of debris so that water does not back up and intrude under the panels.

Oil Canning:
Flat metal surfaces often display waviness commonly referred to as 'oil canning'. This can be caused by variations in raw material, processing variations, product handling, or variations in the substrate and roofing underlayments. Oil canning is a characteristic, not a defect, of panels manufactured from light-gauge metal. Panels are factory "corrective leveled" to minimize oil canning. Oil canning is not a cause for panel rejection. Additional information is available upon request.

References:
The Sheet Metal and Air Conditioning Contractors' National Association Inc. (SMACNA) manual is an excellent reference for sheet metal contractors. It's guidelines for underlayments, gutter and downspout size requirements, and expansion/contraction of metals and flashing joints should be followed.

Technical Assistance:
Contact your AEP Span Sales Representative for additional information.
SELECT SEAM (NARROW BATTEN):

12" 16" 21-1/4"
STANDARD WIDTHS

1"

FACTORY INSTALLED SEALANT

NARROW BATTEN CAP

PANEL CLIP

SPECIFIED UNDERLayment (NOT BY AEP-SPAN)

PANCAKE HEAD FASTENER (1/CLIP)

AVAILABLE MATERIALS:
STEEL: 22 & 24GA
NOTE:
1) IF IT IS NECESSARY TO RAISE THE TABS OF A CLIP UP AFTER THEY HAVE BENT DOWN INTO PLACE, THE CLIP MUST BE REPLACED TO PREVENT CLIP FAILURE.
CLEARANCE FOR THERMAL MOVEMENT PER CALCULATIONS

3/8" BEAD OF NON-SKINNING BUTYL SEALANT BETWEEN PANEL RIBS

JOGGLER CLEAT (#JC095)

EAVE TRIM
DIM 'A':
#ETO41 = 3"
#ETO43 = 4"

3/16"x7/8" DOUBLE BEAD BUTYL TAPE

PANCAKE HEAD FASTENERS @ 12" O.C.

SPECIFIED UNDERLAYERMENT (NOT BY AEP-Span)

SUBSTRATE

PANCAKE HEAD FASTENERS @ 12" O.C.

TRIM CLEAT (#TC209)
**STEP 1**

Select Seam Panel

Notch panel at both panel ribs.

As req'd

1/8"

**STEP 2**

Use hemming tool to field bend tab under panel

**STEP 3**

Apply 3/8" bead of non-skinning butyl sealant on outside of male rib as shown

3/4"

Male rib of select seam panel

Joggle cleat (#JC095)

Clearance for thermal movement per calculations

Narrow batten cap

Select seam panel

Finished eave hem

**SELECT SEAM**

NARROW BATTEN

**EAVE HEM**

SSNB-04
FIELD CUT SIDES OF BATTEN, NOTCH BOTTOM HEMS ON UPPER PORTION AS REQUIRED (VARIES PER ROOF SLOPE), BEND LOWER PORTION INTO PLACE. APPLY NON-SKINNING SEALANT TO OVERLAPS AND FASTEN IN PLACE WITH 1/8" RIVETS.

NARROW BATTEN

PANEL CLIP

SPECIFIED UNDERLAYMENT (NOT BY AEP-SPAN)

FIELD CUT BOTH RIBS OF PANEL AND BEND OVER EDGE & SEAL OPEN ENDS OF PANEL RIB BEFORE INSTALLING SEAM COVER

SELECT SEAM PANEL

DESIGN CAUTION:
TURNING PANELS DOWN FOR FASCIA MAY ESTABLISH UNWANTED POINT OF PANEL FIXITY.

DESIGN NOTE:
THIS TRANSITION DETAIL IS NOT RECOMMENDED IN REGIONS WITH HEAVY SNOW AND ICE CONDITIONS.
NOTE:
FIELD CUT FIRST
AND LAST PANELS
TO EQUAL WIDTH.

3/4" MIN. ENGAGEMENT

CONTINUOUS CURING
SEALANT AS REQUIRED

ALTERNATE DETAIL

1/8" POP RIVETS
RECEIVER TRIM
(#PR135)

FIELD CUT AND BEND
 PANEL UP 1"
RAKE TRIM
#RT175: 4"
#RT181: 5 1/4"
#RT183: 4 1/2"
#RT185: 5 1/2"
#RT187: 4 3/4"
#RT189: 5 3/4"
#RT191: 5"
#RT193: 6"
#RT195: 7"

TRIM CLEAT
(#TC209)

3/16"x7/8" DOUBLE
BEAD BUTYL TAPE
ANGLE TRIM
(#AT001)
SUBSTRATE
SPECIFIED
UNDERLAYMENT
(NOT BY AEP-SPAN)
PANCAKE HEAD FASTENER
@ 12" O.C.

3/16"x7/8" DOUBLE
BEAD BUTYL TAPE
SPECIFIED
UNDERLAYMENT
(NOT BY AEP-SPAN)
PANCAKE HEAD FASTENER
@ 12" O.C.

ALT. RAKE TRIM
#RT197: 3"
#RT199: 4"

RAKE STARTER
(#JS096)

TRIM CLEAT
(#TC209)
CONSTRUCTION SEALANT (NOT BY AEP-SPAN)
3/8" BEAD NON-SKINNING BUTYL SEALANT
ENGINEERED FASTENER (NOT BY AEP-SPAN)

#RG145: 4"
#RG147: 5"
#RG149: 6"

REGLET TRIM
RAKE WALL TRIM (#RW209)
1/8" RIVETS @ 12" O.C.

3/8" BEAD NON-SKINNING BUTYL SEALANT

NARROW BATTEN

SUBSTRATE

RECEIVER TRIM (#PR135)
FIELD CUT AND BEND PANEL UP 1"
SPECIFIED UNDERLAYMENT (NOT BY AEP-SPAN)

FASTENERS @ 12" O.C.

CONT. 3/8" BEAD NON-SKINNING BUTYL SEALANT

3/4" MIN. ENGAGEMENT
ALT. RAKE WALL TRIM (#RW207)

FILL POCKET OF TRIM WITH NON-SKINNING BUTYL SEALANT PRIOR TO INSERTING ROOF PANEL

NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTH.

SPECIFIED UNDERLAYMENT (NOT BY AEP-SPAN)
PANCAKE HEAD FASTENER 12" O.C.

ALTERNATE DETAIL
INSTALLATION NOTES:
- ZEE CLOSURE MUST BE CONTINUOUS AND BE NOTCHED FOR PANEL RIBS.
- BATTEN MUST STOP AT OUTSIDE FACE OF ZEE CLOSURE AND NOT PASS THROUGH.

CONTINUOUS ZEE CLOSURE (#ZC216) NOTCHED FOR RIB ONLY

3/16"x7/8" CONTINUOUS DOUBLE BEAD BUTYL TAPE

RIDGE CAP

DIM 'A'
#RH162: 6''
#RH164: 7''
#RH166: 8''

ZEE CLOSURE (#ZC216)

1/8" RIVET @ 12" O.C.

EQUALLY SPACED PANCAKE FASTENERS
(3) FOR 12'' & 16''
(4) FOR 21 1/4'' WIDE PANELS

SPECIFIED UNDERLAYERMENT (NOT BY AEP-SPAN)

BATTEN STOPS AT ZEE CLOSURE

NON-SKINNING BUTYL SEALANT AT ENDS - FILL ALL GAPS

A

SUBSTRATE

AEP SPAN
A BlueScope Steel Company

SELECT SEAM NARROW BATTEN

RIDGE/ HIP

SSNB-08

REV. 04/12
3/16"x7/8" CONTINUOUS DOUBLE BEAD BUTYL TAPE

CONSTRUCTION SEALANT (NOT BY AEP-Span)

ENGINEERED FASTENER (NOT BY AEP-Span)

SPECIFIED UNDERLAMINATE (NOT BY AEP-Span)

EQUALLY SPACED PANCAKE FASTENERS
(3) FOR 12" & 16"
(4) FOR 21 1/4" WIDE PANELS

INSTALLATION NOTES:
- ZEE CLOSURE MUST BE CONTINUOUS AND BE NOTCHED FOR PANEL RIBS.
- BATTEN MUST STOP AT OUTSIDE FACE OF ZEE CLOSURE AND NOT PASS THROUGH.
HIGH EAVE TRIM

CONTINUOUS ZEE CLOSURE (#ZC216)
NOTCHED FOR RIB ONLY

3/16"x7/8" CONTINUOUS DOUBLE BEAD BUTYL TAPE

1/8" RIVET @ 12" O.C.

ZEE CLOSURE TRIM (#ZC216)

BATTEN STOPS AT ZEE CLOSURE

EQUALLY SPACED PANCake FASTENERS
(3) FOR 12" & 18"
(4) FOR 21 1/4"
WIDE PANELS

HIGH EAVE TRIM
DIM 'A'
#HE069: 6"
#HE071: 7"
#HE073: 8"

SPECIFIED UNDERLAYERMENT
(NOT BY AEP-SPAN)

NON—SKINNING BUTYL SEALANT AT ENDS,
FILL ALL GAPS

SUBSTRATE

PANCake HEAD FASTENER @ 12" O.C.

TRIM CLEAT (#TC209)

INSTALLATION NOTES:
- ZEE CLOSURE MUST BE CONTINUOUS
  AND BE NOTCHED FOR PANEL RIBS.
- BATTEN MUST STOP AT OUTSIDE FACE
  OF ZEE CLOSURE AND NOT PASS THROUGH.
INSTALLATION NOTES:
- ZEE CLOSURE MUST BE CONTINUOUS AND BE
  NOTCHED FOR PANEL RIBS.
- BATTEN MUST STOP AT OUTSIDE FACE OF ZEE
  CLOSURE AND NOT PASS THROUGH.
- REFER TO EAVE & RIDGE DETAILS FOR FURTHER
  INFORMATION ON PROPER PANEL TERMINATIONS.
JOGGLE CLEAT (#JC095)

PANEL

NON-SKINNING BUTYL SEALANT - BETWEEN PANEL RIBS

FIELD NOTCH AND HEM PANEL. FILL POCKET WITH NON-SKINNING BUTYL SEALANT BEFORE ENGAGING JOGGLE CLEAT.

VALLEY (#VF210)

12" MIN.

3/16" X 7/8" CONTINUOUS DOUBLE BEAD BUTYL TAPE

SPECIFIED UNDERLayment (NOT BY AEP-SPAN)

PANCAKE HEAD FASTENERS

VALLEY SUPPORT (NOT BY AEP-SPAN)

AEP SPAN
A BlueScope Steel Company

SELECT SEAM
NARROW BATTEN

VALLEY

SSNB-12

REV. 6/4/12
SLIDE UPPER BATTEN OVER LOWER BATTEN 3"
POP RIVET TOGETHER AS NECESSARY.

NOTCH BOTH BOTTOM HEMS
OF LOWER BATTEN 3"
LONG AND 1/8" WIDE
**ROOF JACK**

- **generic panel shown**
- **pipe penetration**
- **stainless steel hose clamp** (not by AEP-Span)
- **specified underlayment** (not by AEP-Span)
- **3" min both sides**

**Notes:**
1. Penetrations should be centered in panels if at all possible.
2. Substrate must be cut out enough so that roof jack is only attached to roof panel.

**field cut hole 1" min. larger than pipe. locate all pipe in the broad flat of the panel.**

**ROOF CURB**

- **pancake head fasteners under curb flashing to fix lower panel to substrate.**
- **cricket / uphill flashing refer to detail #ssnb-17**
- **4" min clearance**
- **lower panel must extend 9" min under curb flashing.**
- **curb side wall flashing refer to detail #ssnb-16**
- **curb downhill flashing refer to detail #ssnb-17**

---

**SELECT SEAM**

- **narrow batten**

---

**AEP SPAN**

A BlueScope Steel Company

**ROOF PENETRATIONS**

SSNB-15

REV. 04/12
NOTE:
DETAIL PROVIDED FOR GUIDANCE ONLY. BARREL ROOF DETAILS CAN VARY GREATLY DEPPENDING ON APPLICATION. CONSULT AEP SPAN REP. FOR ASSISTANCE WITH SPECIFIC PROJECT CONDITIONS.
PANEL LAP LOCATIONS
MINIMUM SLOPE AT LAP = 3:12
REFER TO DETAIL #SSNB-13 FOR LAP

NO LAPS, FASTENERS, OR OTHER PANEL PENETRATIONS AT PEAK

(2) POP RIVETS RIVET PANEL TO CLIP TO ESTABLISH POINT OF FIXITY AT PEAK

'S' STYLE EAVE TRIM
#ET033
#ET035
#ET037
#ET039

SUBSTRATE

TURN UNDER AT BOTH EAVES

3/8" BEAD OF NON-SKINNING BUTYL SEALANT BETWEEN PANEL RIBS

TRIM CLEAT (#TC209)

CLEARANCE FOR THERMAL MOVEMENT PER CALCULATIONS

NOTE:
DETAIL PROVIDED FOR GUIDANCE ONLY. BARREL ROOF DETAILS CAN VARY GREATLY DEPENDING ON APPLICATION. CONSULT AEP SPAN REP. FOR ASSISTANCE WITH SPECIFIC PROJECT CONDITIONS.
CONTINUOUS CURING SEALANT AS REQ'D

STARTER TRIM

BATTEN

CURVED OR SEGMENTED GABLE TRIM OR FIELD NOTCH TO CONFORM TO RADIUS (NOT BY AEP–SPAN)

SPECIFIED SELF–ADHERING MEMBRANE (NOT BY AEP–SPAN)

3/16"x7/8" CONTINUOUS DOUBLE BEAD BUTYL TAPE

FILL POCKET OF STARTER TRIM (#JS096) WITH NON–SKINNING BUTYL SEALANT PRIOR TO INSERTING ROOF PANEL

PANCAKE HEAD FASTENER 12" O.C.

NOTES:
1) FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTH.
2) ALL CURVED TRIM – NOT BY AEP SPAN.
CONSTRUCTION SEALANT
(NOT BY AEP–SPAN)

ENGINEERED FASTENER
(NOT BY AEP–SPAN)

CURVED COUNTER
FLASHING (NOT BY AEP–SPAN)

CONTINUOUS NON–SKINNING
BUTYL SEALANT

ENGINEERED FASTENER
(NOT BY AEP–SPAN)

CONTINUOUS CURING
SEALANT AS REQUIRED

3/16"x7/8" CONTINUOUS
DOUBLE BEAD BUTYL TAPE

CURVED OR SEGMENTED
SIDE WALL TRIM
(NOT BY AEP–SPAN)

SPECIFIED
SELF–ADHERING
MEMBRANE (NOT
BY AEP–SPAN)

NOTES:
1) FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTH.
2) ALL CURVED TRIM – NOT BY AEP SPAN.
ADDITIONAL REQUIREMENTS FOR APPLICATIONS COVERED
BY AEP SPAN WEATHERTIGHTNESS WARRANTY (WTW)

FIELD APPLICATION OF SEALANT REQUIRED
UNDER CLIP TABS

ICE & WATER SHIELD UNDERLAYMENT
(NOT BY AEP SPAN)
Appendix A: Snow Drag Loads (lbs/lft of panel)

Select Seam 12" Narrow Batten

<table>
<thead>
<tr>
<th>Slope</th>
<th>Ground Snow Load, $P_g$ (psf)</th>
<th>Snow Drag Load per lft of panel (lb/lft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>3:12</td>
<td>2.9</td>
<td>4.4</td>
</tr>
<tr>
<td>4:12</td>
<td>3.8</td>
<td>5.7</td>
</tr>
<tr>
<td>5:12</td>
<td>4.7</td>
<td>7.0</td>
</tr>
<tr>
<td>6:12</td>
<td>5.4</td>
<td>8.1</td>
</tr>
<tr>
<td>7:12</td>
<td>6.1</td>
<td>9.1</td>
</tr>
<tr>
<td>8:12</td>
<td>6.7</td>
<td>10.1</td>
</tr>
<tr>
<td>9:12</td>
<td>7.3</td>
<td>10.9</td>
</tr>
<tr>
<td>10:12</td>
<td>7.7</td>
<td>11.6</td>
</tr>
<tr>
<td>11:12</td>
<td>8.2</td>
<td>12.3</td>
</tr>
<tr>
<td>12:12</td>
<td>8.6</td>
<td>12.8</td>
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Select Seam 16" Narrow Batten

<table>
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<th>Slope</th>
<th>Ground Snow Load, $P_g$ (psf)</th>
<th>Snow Drag Load per lft of panel (lb/lft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>3:12</td>
<td>3.9</td>
<td>5.9</td>
</tr>
<tr>
<td>4:12</td>
<td>5.1</td>
<td>7.7</td>
</tr>
<tr>
<td>5:12</td>
<td>6.2</td>
<td>9.3</td>
</tr>
<tr>
<td>6:12</td>
<td>7.2</td>
<td>10.8</td>
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<tr>
<td>7:12</td>
<td>8.1</td>
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<td>8:12</td>
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<td>11:12</td>
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<tr>
<td>12:12</td>
<td>11.4</td>
<td>17.1</td>
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Select Seam 21 1/4" Narrow Batten

<table>
<thead>
<tr>
<th>Slope</th>
<th>Ground Snow Load, $P_g$ (psf)</th>
<th>Snow Drag Load per lft of panel (lb/lft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>15</td>
</tr>
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<td>3:12</td>
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<td>6:12</td>
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<td>7:12</td>
<td>10.8</td>
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<td>13.7</td>
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<td>11:12</td>
<td>14.5</td>
<td>21.7</td>
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<tr>
<td>12:12</td>
<td>15.2</td>
<td>22.7</td>
</tr>
</tbody>
</table>

Notes:
- To determine drag load forces per panel, multiply the tabulated value by the panel length. Then refer to Appendix B for fastener schedule.
- Values assume Ground Snow Load ($P_g$) is provided. Drag Loads may be reduced if actual Roof Snow Loads ($P_r$) per ASCE-7, are provided by customer.
- For roof slopes and snow loads greater than listed above, please contact your AEP Span representative.
Appendix B: Drag Load Resistance

<table>
<thead>
<tr>
<th>Fastener Type</th>
<th>Substrate</th>
<th>Capacity (lbs)</th>
<th>Number of Fasteners per Panel</th>
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<td></td>
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<td>2</td>
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<tr>
<td>#12-14 x 1&quot; SD HWH</td>
<td>16ga Steel min.</td>
<td>234</td>
<td>468</td>
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<tr>
<td>1/4-14 x 7/8&quot; Lap SD HWH</td>
<td>22ga Steel min.</td>
<td>184</td>
<td>368</td>
</tr>
<tr>
<td>#14 x 1&quot; Type A Mill. Point HWH</td>
<td>1/2&quot; Plywood min.</td>
<td>128</td>
<td>256</td>
</tr>
<tr>
<td>#14 x 1&quot; Type A Mill. Point HWH</td>
<td>2x Douglas Fir</td>
<td>57</td>
<td>114</td>
</tr>
<tr>
<td>#10-16 x 1&quot; SD Pancake Head</td>
<td>16ga Steel min.</td>
<td>206</td>
<td>412</td>
</tr>
<tr>
<td>#10-16 x 1&quot; SD Pancake Head</td>
<td>22ga Steel min.</td>
<td>154</td>
<td>308</td>
</tr>
<tr>
<td>#10-12 x 1&quot; Type A Pancake Head</td>
<td>1/2&quot; Plywood min.</td>
<td>108</td>
<td>216</td>
</tr>
<tr>
<td>#10-12 x 1&quot; Type A Pancake Head</td>
<td>2x Douglas Fir</td>
<td>54</td>
<td>108</td>
</tr>
</tbody>
</table>

Example:
16" Select Seam Narrow Batten attached to 1/2" plywood.
4:12 slope
30psf snow load
40ft maximum panel length

a) From Appendix A, find the drag load per linear foot of panels: 4:12 & 30psf snow load = 15.3lbs/lft
b) Multiply the load by the panel length = 15.3lbs/lft X 40ft = 612lbs drag load per panel.
c) Find the drag load in Appendix B.
   The nearest value is 648 lbs for Qty=6, #10-12 x 1" Type A Pancake Head fasteners.

Notes:
- Contact your AEP Span representative if there are any questions regarding the use of these appendices.
- Fasteners must be located a minimum of 1" from each other and from the end of the panel.
- Fastener capacities per AISI S100, NASPEC, and APA recommendations.