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<td>B-98</td>
</tr>
</tbody>
</table>
A. BERRIDGE BATTEN SEAM SYSTEM: AVAILABLE WITH A PAN WIDTH OF 16”, AND USES A 2” WIDE X 1-3/4” HIGH SNAP-ON BATTEN.

THE 16” WIDE DEEP VEE PANEL CAN EITHER BE FACTORY FABRICATED OR FIELD FABRICATED, USING THE BERRIDGE MODEL BP-21 PORTABLE ROLL FORMER

PLEASE CONTACT BERRIDGE MANUFACTURING COMPANY FOR FURTHER INFORMATION REGARDING THE BERRIDGE BP-21 PORTABLE ROLL FORMER.

B. MINIMUM SLOPE: THE BATTEN SEAM SYSTEM IS RECOMMENDED FOR SLOPES OF 1:12 AND GREATER IN MOST AREAS OF THE COUNTRY. IN HEAVY SNOW AREAS OR AREAS WHERE FREEZE-THAW CYCLES ARE PREVALENT, A MINIMUM ROOF SLOPE OF 3:12 IS RECOMMENDED

A DOUBLE LAYER OF NUMBER THIRTY FELT UNDERLAYMENT OR EQUAL COVERING THE ENTIRE SUBSTRATE IS RECOMMENDED FOR ALL APPLICATIONS WHERE THE ROOF SLOPE IS 3:12 OR LESS

C. MATERIAL STORAGE: CAUTION MUST BE EXERCISED IN STORAGE OF MATERIALS PRIOR TO INSTALLATION. KEEP ALL BERRIDGE PREFINISHED MATERIAL IN A DRY LOCATION WITH ADEQUATE VENTILATION AND OUT OF DIRECT SUNLIGHT

EXPOSURE TO DIRECT SUNLIGHT AND/OR MOISTURE MAY CAUSE THE FACTORY APPLIED STRIPPABLE PLASTIC FILM TO ADHERE TO THE METAL PERMANENTLY AND DISCOLOR THE FINISH.

D. STRIPPABLE FILM: THE STRIPPABLE FILM WHICH IS APPLIED OVER MOST BERRIDGE PREFINISHED PRODUCTS, PANELS, FLASHINGS, COILS AND FLAT SHEETS PROTECTS THE FINISH DURING FABRICATION AND TRANSIT. THIS FILM MUST BE REMOVED PRIOR TO INSTALLATION.

E. SOLID SHEATHING REQUIREMENTS: BERRIDGE MANUFACTURING COMPANY RECOMMENDS THE USES OF EITHER BERRIDGE 24 GA CORRUGATED METAL (NOMINAL 2-1/2” PITCH X 11/16” DEPTH) OR A MINIMUM OR 1/2” SOLID WOOD SHEATHING TO PROVIDE SUFFICIENT HOLDING POWER FOR FASTENERS. CONTACT BERRIDGE MANUFACTURING’S ENGINEERING DEPARTMENT FOR USE OF ANY OTHER TYPE OF SOLID SHEATHING.

DUE TO # 30 FELT TENDENCY TO TEAR WHEN USED OVER CORRUGATED DECKING, BERRIDGE MANUFACTURING RECOMMENDS GRACE ICE AND WATERSHIELD OR EQUAL TO BE USED AS AN UNDERLAYMENT FOR ALL CORRUGATED DECKS.

NOTE: FOR PROJECTS REQUIRING UL 90 ASSEMBLY, REFER TO UL 90 DETAILS

F. SHEATHING INSPECTION:
1. SHEATHING END JOINTS SHOULD BE STAGGERED.
2. ALL END JOINTS SHOULD MEET AT EITHER A JOIST OR RAFTER.
3. BLOCKING OR "H" CLIPS SHOULD BE USED ON PLYWOOD IF JOINTS DO NOT REMAIN FLAT
UNDER THE WEIGHT OF WORKMEN.
4. USE SHIMS TO KEEP ENTIRE SUBSTRATE EVEN. UNEVEN SUBSTRATE WILL RESULT IN “OIL-
CANNING” IN PANELS. SUBSTRATE SHOULD BE LEVEL TO 1/4” IN 20'-0”.
5. ALL CUTS AT PENETRATIONS SHOULD BE TIGHT, WITHOUT GAPS.
6. USE WOOD FRAMED CRICKETS AT LARGE PENETRATIONS.
7. MAKE SURE SUBSTRATE JOINTS ARE TIGHT AT ALL HIPS, VALLEYS AND RIDGES.

G. INSTALLATION OVER OPEN FRAMING: REFER TO LOAD TABLES ON PAGES BI-7 AND BI-8 FOR
STRUCTURAL PROPERTIES AND ALLOWABLE LOAD SPANS OF THE BERRIDGE BATTEN SEAM
SYSTEM.

DIAPHRAGM CAPABILITIES AND PURLING STABILITY ARE MINIMAL AS PROVIDED BY THE
BERRIDGE BATTEN SEAM SYSTEMS, THEREFORE OTHER BRACING MAY BE REQUIRED TO
CONFORM TO AISC OR AISI SPECIFICATIONS.

H. OPEN FRAMING INSPECTION:
1. PURLINS SHOULD BE ALIGNED WITH TOP FLANGES IN THE SAME PLANE TO A TOLERANCE
   OF 1/4” IN 20'-0”. UNEVENNESS IN THE TOP PLANE OF THE PURLINS WILL RESULT IN
   ABNORMAL “OIL-CANNING” PANELS. PURLINS SHALL BE ADEQUATELY BRACED.
2. BERRIDGE MANUFACTURING COMPANY RECOMMENDS SOLID SHEATHING IN VALLEY AND
   AROUND ROOF PENETRATIONS. DO NOT APPLY PANELS ON OPEN FRAMING AT VALLEYS OR
   ROOF PENETRATIONS WITHOUT REFERRING TO DETAILS B-72 AND B-87
3. FOOT TRAFFIC ON THE PANELS MUST BE KEPT TO A MINIMUM. ARCHITECTURAL PANEL ARE
   DESIGNED FOR AESTHETICS AND CAN BE EASILY DAMAGED OR DEFORMED IF EXTREME
   CARE IS NOT USED.

I. FASCIA/RAKE INSPECTION:
1. STRIKE A LINE THE FULL LENGTH OF THE FASCIA OR RAKE. IF NOT STRAIGHT, CORRECT
   WITH SHIMS.
2. MAKE SURE FASCIA/RAKE IS FLUSH WITH ROOF SUBSTRATE SHEATHING.

J. FELT UNDERLAYMENTS: A SINGLE LAYER OF NUMBER THIRTY FELT UNDERLAYMENT
   (OR EQUAL) MUST BE APPLIED OVER SOLID SHEATHING AS SHOWN IN THE BERRIDGE
   MANUFACTURING COMPANY TYPICAL FELTING DETAILS. THE USE OF ADDITIONAL LAYERS
   OF NUMBER THIRTY FELT IS RECOMMENDED ON LOW-SLOPED ROOFS, AT ALL VALLEY
   CONDITIONS, AT ROOF PENETRATIONS, AND CERTAIN OTHER FLASHING CONDITIONS AS
   DEPICTED IN THE BATTEN SEAM TYPICAL DETAILS. GRACE ICE AND WATER SHIELD MAYBE
   REQUIRED ON LOW SLOPED ROOFS OR AT CERTAIN FLASHING CONDITIONS. VERIFY
   CORRECT METHOD OF INSTALLING ICE AND WATERSHIELD WITH MANUFACTURER.

FELTING INSTALLATIONS:
1. DO NOT USE RED ROSIN PAPER UNDER METAL ROOFING PANELS.
2. SWEEP ROOF AREA CLEAN.
3. USE FLAT HEAD GALVANIZED ROOFING NAILS X 1-1/4” LONG WITH BERRIDGE GALVANIZED
   FELT CAPS.
4. INSTALL VALLEY FELT FIRST.
5. INSTALL FELT PARALLEL TO EAVE (2 LAYERS REQUIRED AT EAVE), STARTING AT EAVE AND USING MINIMUM 6" LAPS. USE TWO LAYERS OF FELT ON ENTIRE ROOF DECK OF ROOF SLOPE IS 3:12 OR LESS. 2 LAYERS REQUIRED AT EAVE REGARDLESS OF SLOPE.

6. INSULATED BETWEEN WOOD BLOCKING AND METAL WITH FELT OR ICE AND WATER SHIELD

L. THERMAL MOVEMENT: EXPANSION AND CONTRACTION OF PANELS WHICH EXCEED THIRTY FEET IN LENGTH CAN BE A FACTOR IN THE DESIGN AND INSTALLATION OF FLASHING AND PANELS. PLEASE REFER TO THE CHART ON PAGE BI-9 TO DETERMINE ANTICIPATED THERMAL MOVEMENT OF THE PANELS. IMPROPERLY DESIGNED FLASHING CAN ALLOW PANELS TO DISENGAGE FROM THE FLASHING, ALLOW OIL-CANNING IN PANEL AND/OR CAUSE FLASHING TO WORK LOOSE FROM ITS ANCHORAGE.

M. ELECTROLYSIS: AVOID ALLOWING FLASHING AND PANELS TO COME INTO CONTACT WITH EITHER LEAD OR COPPER, AND PREVENT EXPOSURE TO WATER RUNDOWN FROM COPPER AND/OR LEAD.

N. FLASHING: IF BERRIDGE MANUFACTURING COMPANY IS TO SUPPLY FLASHING, ALL FLASHINGS WILL BE FABRICATED ON 10'-0" LENGTHS WITH SQUARE END CUTS ONLY. THE PURCHASER MUST PROVIDE ALL DIMENSIONS AND DEGREE OF ANGLES.

O. FLASHING INSTALLATION:
1. REMOVE STRIPPABLE PLASTIC FILM FROM ALL FLASHINGS PRIOR TO INSTALLATION.
2. ALWAYS STAGGER JOINTS WHEN ONE FLASHING IS INSTALLED OVER OTHER FLASHINGS.
3. INSTALL ALL FLASHINGS ARE TO BE DESIGNED AND INSTALLED TO NOT TRAP WATER.

P. PANELS: BERRIDGE MANUFACTURING COMPANY WILL PROVIDE SQUARE END CUTS ONLY ON ALL BATTEN SEAM PANELS. COMPUTATION OF ALL QUANTITIES AND DIMENSIONS ARE RESPONSIBILITY OF THE PURCHASER.

Q. PANEL INSTALLATION:
1. REMOVE STRIPPABLE PLASTIC FILM FROM EACH PANEL PRIOR TO INSTALLATION.
2. DETERMINE CENTER LINE OF ROOF AREA AND START PANEL INSTALLATION AT THE CENTER OF THE ROOF, WORKING TOWARD THE GABLE ENDS. MAKE SURE PANELS ARE PERPENDICULAR TO THE EAVE. AT VALLEY AREAS, MAKE SURE PANELS ARE INSTALLED SO THAT DRAINAGE HAS FREE FLOW AND IS NOT OBSTRUCTED BY PANEL SEAMS.
3. INSTALL BATTEN CLIPS AS PER BERRIDGE TYPICAL DETAILS AND BATTEN CLIP INSTALLATION NOTES.
4. EACH PANEL IT TO BE KEPT TIGHT AGAINST THE LEG OF THE ADJOINING PANEL. NEVER PERMIT A GAP BETWEEN VERTICAL LEGS. ANY CRIMPS IN VERTICAL LEGS MUST BE STRAIGHTENED (TOTALLY STRAIGHT WITHOUT ANY BENDS, CRIMPS, CREASES, ETC.) PRIOR TO BATTEN INSTALLATION.
5. ALWAYS INSTALL BATTEN AS YOU INSTALL EACH PANEL. DO NOT INSTALL PANELS FIRST AND THEN FOLLOW LATER WITH BATTEN INSTALLATION.
6. KEEP PANELS AlIGNED SO THAT BATTENS MATCH AT HIPS. VALLEY AND WHERE VERTICAL PANELS ADJOIN ROOF PANELS. DO NOT INSTALL LONG CONTINUOUS RUNS OF PANELS ALL AT ONE TIME WHERE BATTEN LINE MUST MATCH. INSTALL 10 OR 12 PANELS IN ONE ELEVATION AND THEN FOLLOW WITH A LIKE NUMBER OF PANELS IN THE OTHER
ELEVATION. WHEN YOU INSTALL PANELS IN THIS MANNER, YOU WILL BE ABLE TO MAKE ANY
ADJUSTMENTS REQUIRED TO INSURE BATTEN MATCHING.

7. COPPER-COTE™, CHAMPAGNE, LEAD-COTE™ AND PREWEATHERED GALVALUME® PANEL
INSTALLATION: NOTE THE SERIES OF ARROWS PAINTED ON THE UNDERSIDE OF THE
Panel. All panels must be installed in a consistent manner, meaning that
the arrows in one panel are all pointing opposite of those on other panels. It will appear, from a distance, a different shade due to the granular
effect of the pigments in the finish. Metallic finishes are match-lot finishes.
Do not mix lots.

SNAP-ON BATTEN INSTALLATION:
R. 1. INSTALL BATTEN WITH HAND PRESSURE ONLY. DO NOT POUND OR HAMMER BATTENS INTO
PLACE; THIS WILL DAMAGE THE BATTEN.
2. INSPECT EACH BATTEN AS YOU INSTALL IT TO MAKE SURE IT IS PROPERLY SEATED AND IS
SNUGLY FITTED NEXT TO THE PANEL RIBS AND PAN.
3. USE TWO (2) WORKERS (OR MORE, DEPENDING ON BATTEN LENGTH) TO INSTALL BATTENS;
ONE WORKER (OR WORKERS) HOLDING ONE END OF THE BATTEN AT AN ANGLE OFF THE
ROOF SURFACE AND THE OTHER WORKER INSERTING THE BATTEN OVER THE PANEL RIBS.

BATTEN CLIP INSTALLATION:
S. 1. THE CLIPS ARE TO BE INSTALLED AS SHOWN IN THE BERRIDGE BATTEN SEAM DETAILS.
2. CLIP SPACING IS TYPICALLY TWENTY (20) INCHES ON CENTER.*
3. WHEN INSTALLING PANELS ON OPEN FRAMING, IF THE PURLIN SPACING EXCEEDS 20
INCHES YOU MUST USE A CLIP(S) BETWEEN THE PURLINS. THESE INTERMITTENT CLIPS ARE
USED TO KEEP THE SNAP-ON BATTENS HELD TIGHTLY IN PLACE.

FASTENERS: USE 3-1/2” LONG GALVANIZED RING SHANK NAILS FOR BATTEN SEAM CLIP
T. INSTALLATION TO WOOD SHEATHING. MAKE SURE NAILS ARE DRIVEN STRAIGHT AND SET
FLAT AGAINST TOP OF THE CLIP. DO NOT OVERDRIVE FASTENER CAUSING THE CLIP TO
DEFORM, DAMAGE RIB OF PANEL OR OIL CAN PANEL.

WHEN INSTALLING PANELS ON OPEN FRAMING A #10-16 X 3” LONG SCREW SHOULD BE USED
FOR ATTACHING CLIPS TO FRAMING.

WHEN USING POP RIVETS ON FLASHING, STAINLESS STEEL RIVETS ARE RECOMMENDED TO
AVOID RUST STAINS.

MAKE SURE ALL FASTENERS ARE DRIVEN STRAIGHT AND SET FLAT. DO NOT OVERDRIVE
FASTENERS, AS THIS WILL CAUSE THE CLIP AND/OR FLASHINGS TO BUCKLE OR BECOME
RECESSED BELOW THE ELEVATION OF THE SUBSTRATE.

* NOTE: IF LOCAL CODES OR OTHER REGULATIONS DICTATE SPECIFIC WIND UPLIFT
REQUIREMENTS, CONSULT THE BERRIDGE ENGINEERING DEPARTMENT, AT TI MAY BE
NECESSARY TO USE A DIFFERENT CLIP SPACING OR FASTENER.

** CONSULT BERRIDGE MANUFACTURING’S ENGINEERING DEPARTMENT REGARDING THE
USE OF ANY OTHER TYPE OF FASTENER.
U. UNDERWRITERS LABORATORIES RATINGS: THE BERRIDGE BATTEN SEAM SYSTEM COMPLIES WITH THE FOLLOWING UL RATINGS:
   1. NO. 580 “TEST FOR WIND UPLIFT RESISTANCE OF ROOF ASSEMBLIES” CLASS UL 90 CONSTRUCTION NUMBER 262. (REFER TO BERRIDGE TYPICAL DETAIL B-91 AND B-92)

V. CONTINUOUS INNER RIB TO DEEP VEE PANEL ERECTION PROCEDURE: IN ORDER TO AVOID BUCKING OR DISTORTION OF THE DEEP VEE PANEL PAN WHEN USED WITH THE CONTINUOUS INNER RIB IN THE BERRIDGE BATTEN SEAM ROOF SYSTEM, EACH CONTINUOUS INNER RIB MUST BE ALIGNED AND INSTALLED SIMULTANEOUSLY WITH EACH DEEP VEE PANEL. IN ORDER TO AVOID DISTORTION OF THE DEEP VEE PANEL PAN, THE FOLLOWING PROCEDURE MUST BE ADHERED TO:
   (A) WITH INNER RIB AND DEEP VEE PANEL IN ALIGNMENT, ATTACH ONE SIDE OF INNER RIB TO PURLIN OR SOLID SUBSTRATE.
   (B) NEXT, LIFT THE DEEP VEE PANEL AND ATTACH THE OTHER SIDE OF THE INNER RIB.
   (C) LAP THE NEXT PANEL OVER THE PREVIOUS PANEL AND ATTACH TO THE INNER RIB WITH #10 FASTENER AT THE CROWN OF THE PANEL RIB TO ASSURE PANEL AND INNER RIB STAY IN ALIGNMENT.

DO NOT LAY OUT INNER RIBS AHEAD OF PANELS
DO NOT OVERDRIVE #10 FASTENERS

W. INNER RIB EXPANSION CLIP APPLICATIONS: THE INNER RIB EXPANSION CLIP ALLOWS LARGER FASTENERS TO BE USED TO RESIST HIGHER UPLIFT LOADS, WITHOUT THE HEADS TELESCOPING THROUGH THE PANEL OR BATTEN; REFER TO DETAIL B-90. THE INNER RIB EXPANSION CLIP CAN ALSO BE USED WITH THE CONTINUOUS INNER RIB TO INCREASE THE ALLOWABLE FOR BOTH POSITIVE AND NEGATIVE LOADING.

X. SEALANT RECOMMENDATIONS: TREMCO INC. SPECTREM 1 OR EQUAL
   DO NOT USE CLEAR CAULK
BERRIDGE MANUFACTURING COMPANY STRIVES TO PROVIDE ITS CUSTOMERS WITH THE HIGHEST QUALITY STRETCHER LEVELED STEEL AVAILABLE. THE LATEST TECHNOLOGY IS ALSO INCORPORATED IN BERRIDGE’S HIGH-PRECISION COIL HANDLING AND ROLL FORMING EQUIPMENT TO MINIMIZE THE STRESS ON METAL DURING PRODUCTION. FURTHERMORE, BERRIDGE UTILIZES HEAVIER 24 GAUGE METAL RATHER THAN 26 GAUGE STEEL OR LIGHT GAUGE ALUMINUM AS OFFERED BY MANY COMPETITORS. ALL THESE MEASURES HAVE BEEN TAKEN TO MINIMIZE THE AMOUNT OF “OIL-CANNING” (WAVINESS) WHICH IS NATURALLY INHERENT IN FLAT SHEET METAL. MANY TIMES, HOWEVER, THE CAUSE OF WAVINESS OR “OIL-CANNING” CAN BE TRACED TO UNEVEN SHEATHING, IMPROPER FELT INSTALLATION, IMPROPER HANDLING, OR FOOT TRAFFIC ON THE PANELS.

ALL ARCHITECTURAL PANELS REQUIRE CARE IN HANDLING AND INSTALLATION TO AVOID DAMAGING OR DEFORMING THE PANELS.

THESE INSTALLATION INSTRUCTIONS AND THE FOLLOWING TYPICAL DETAILS ARE INTENDED TO PROVIDE OUR CUSTOMERS WITH THE INFORMATION REQUIRED FOR AN AESTHETICALLY PLEASING AND FUNCTIONAL INSTALLATION OF THE BERRIDGE BATTEN SEAM SYSTEM.

NOTE: ALL PRODUCTS, SPECIFICATIONS, DETAILS AND INSTRUCTIONS SUBJECT TO CHANGE WITHOUT NOTICE. FOR SPECIFIC PROJECT DETAILS, CONTACT BERRIDGE
A. **SOLID SHEATHING**: If solid sheathing is used, BMC recommends a minimum thickness of 1/2 inch to provide sufficient holding power for the fasteners. Contact BMC for use of any other type of solid sheathing.

B. **OPEN FRAMING**: The Berridge 16” wide batten seam system is a structural panel and may be used over open framing. The structural properties and allowable load table, shown below, should be used to determine the maximum span the panels can be applied on and meet applicable codes. Refer to BMC typical details for use of solid sheathing at valley and roof penetration areas when panels are applied over open framing.

### SECTION PROPERTIES BASED ON 24 GAUGE 40 K.S.I.

<table>
<thead>
<tr>
<th>BATTEN SEAM PANEL</th>
<th>(d_x\text{ (in}^4\text{/ft)})</th>
<th>(M_a\text{ (Ft-lbs/Ft)})</th>
<th>(V_a\text{ (Lbs)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSITIVE BENDING</td>
<td>0.0752</td>
<td>130.4</td>
<td>660</td>
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<tr>
<td>NEGATIVE BENDING</td>
<td>0.0405</td>
<td>81.0</td>
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Properties are effective and are per foot of panel coverage. Based on 1986 AISI Coldform Steel Design Manual, March 1987, and Rational Analysis. Design thickness = 0.0215 in.

### RECOMMENDED LOAD IN POUNDS PER SQUARE FOOT

(PANEL WEIGHT = 1.3 PSF)

<table>
<thead>
<tr>
<th>SPAN (FEET)</th>
<th>NET VERTICAL LIVE LOAD</th>
<th>NET VERTICAL WIND UPLIF</th>
<th>T (1-SPAN)</th>
<th>(2-SPAN)</th>
<th>(3-SPAN)</th>
<th>(1-SPAN)</th>
<th>(2-SPAN)</th>
<th>(3-SPAN)</th>
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<tr>
<td>2'-0&quot;</td>
<td>40 70 70 90 90 90</td>
<td>30 70 70 90 90 90</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2'-6&quot;</td>
<td>35 70 70 90 90 90</td>
<td>30 70 70 90 90 90</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>3'-0&quot;</td>
<td>30 70 70 90 90 90</td>
<td>30 70 70 90 90 90</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3'-6&quot;</td>
<td>25 50 60 60 90 90</td>
<td>25 50 60 60 90 90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4'-0&quot;</td>
<td>20 35 45 45 90 90</td>
<td>20 35 45 45 90 90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4'-6&quot;</td>
<td>30 35 35 35 90 90</td>
<td>30 35 35 35 90 90</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>5'-0&quot;</td>
<td>25 30 30 30 90 90</td>
<td>25 30 30 30 90 90</td>
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<td>6'-0&quot;</td>
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1. All loads meet L/240 deflection criteria.
2. Wind load allowable increased by 33 percent.
3. Use expansion clip for anchorage at these uplift loads.
4. All loads meet 200 lbs point load without structural failure; however, foot traffic on panels during or after installation will cause abnormal oil canning which may lead to aesthetic failure.
5. If local codes or other regulations dictate loads other than those shown, consult Berridge Manufacturing Company.
C. **UL 90 RATING:** WHEN THE BERRIDGE 16" WIDE BATTEN SEAM IS USED WITH THE CONTINUOUS INNER RIB, THE STRUCTURAL PROPERTIES AND ALLOWABLE LOAD TABLE, WHICH IS SHOWN BELOW, SHOULD BE USED TO DETERMINE THE MAXIMUM SPAN THE PANELS CAN BE APPLIED ON AND MEET UL 90 RATING REQUIREMENTS.

### SECTION PROPERTIES BASED ON 24 GAUGE 40 K.S.I.

<table>
<thead>
<tr>
<th></th>
<th>( d_i (\text{in}^4/\text{ft}) )</th>
<th>( M_A (\text{Ft-lbs/ft}) )</th>
<th>( V_A (\text{Lbs}) )</th>
</tr>
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<tbody>
<tr>
<td>POSITIVE BENDING</td>
<td>0.1003</td>
<td>187.3</td>
<td>1320</td>
</tr>
<tr>
<td>NEGATIVE BENDING</td>
<td>0.0615</td>
<td>131.3</td>
<td>1320</td>
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PROPERTIES ARE EFFECTIVE AND ARE PER FOOT OF PANEL COVERAGE. BASED ON 1986 AISI COLDFORM STEEL DESIGN MANUAL, MARCH 1987, AND RATIONAL ANALYSIS. DESIGN THICKNESS = 0.0215 IN.

### RECOMMENDED LOAD IN POUNDS PER SQUARE FOOT

(PANEL WEIGHT = 1.4 PSF)

<table>
<thead>
<tr>
<th>SPAN (FEET)</th>
<th>NET VERTICAL LIVE LOAD</th>
<th>NET VERTICAL WIND UPLIFT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-SPAN</td>
<td>2-SPAN</td>
</tr>
<tr>
<td>2'-0&quot;</td>
<td>45</td>
<td>70</td>
</tr>
<tr>
<td>2'-6&quot;</td>
<td>40</td>
<td>70</td>
</tr>
<tr>
<td>3'-0&quot;</td>
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<td>5'-0&quot;</td>
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<td>45</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7'-0&quot;</td>
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</tr>
</tbody>
</table>

1. ALL LOADS MEET L/240 DEFLECTION CRITERIA.
2. WIND LOAD ALLOWABLE INCREASED BY 33 PERCENT.
3. USE EXPANSION CLIP FOR ANCHORAGE AT THESE UPLIFT LOADS.
4. ALL LOADS MEET 200 LBS POINT LOAD WITHOUT STRUCTURAL FAILURE; HOWEVER, FOOT TRAFFIC ON PANELS DURING OR AFTER INSTALLATION WILL CAUSE ABNORMAL OIL CANNING WHICH MAY LEAD TO AESTHETIC FAILURE

REFER TO DETAILS B-91 & B-92 FOR UL 90 ASSEMBLY
EXPANSION AND CONTRACTION OF METAL PANELS OVER 30 FEET IN LENGTH, DUE TO LONGITUDINAL THERMAL MOVEMENT, MUST BE CONSIDERED IN BOTH DESIGN AND INSTALLATION. THE ABOVE CHART EMPHASIZES THE NEED TO PROVIDE AMPLE CLEARANCES FOR GUTTERS RIDGES, END WALLS, ETC.

MAXIMUM TEMPERATURE SHOULD BE NO LOWER THAN 140°F FOR WHITE PANELS, UP TO 180°F FOR DARK PAINTED PANELS, REGARDLESS OF AMBIENT MAXIMUM. MINIMUM SHOULD BE FIGURED WELL BELOW AMBIENT MINIMUM TO ALLOW OR RADIATION TO NIGHT SKY. IN ANY CASE, A MINIMUM OF 100°F DIFFERENTIAL IS RECOMMENDED.
THE DETAILS CONTAINED IN THE FOLLOWING PAGES ARE MERELY RECOMMENDATIONS AS TO HOW BERRIDGE MANUFACTURING MATERIALS SHOULD BE INSTALLED. THEY MAY REQUIRE ADAPTATIONS OR MODIFICATIONS FOR A SPECIFIC PROJECT AS CONDITIONS VARY IN BOTH BUILDING DESIGN AND LOCAL WEATHER PECULIARITIES.

BERRIDGE MANUFACTURING COMPANY SHALL BE HELD HARMLESS FROM ANY AND ALL CLAIMS ARISING FROM A LACK OF WATERTIGHTNESS AS A RESULT OF FOLLOWING THESE RECOMMENDED DETAILS. ENSURING WATERTIGHTNESS ON ANY GIVEN PROJECT IS THE FUNCTION OF THE INSTALLER. THE ARCHITECT/GENERAL CONTRACTOR/INSTALLER MUST ACCEPT THE RESPONSIBILITY TO ADAPT THESE DETAILS TO MEET PARTICULAR BUILDING REQUIREMENTS AND TO ASSURE ADEQUATE WATERTIGHTNESS.

THE INSTALLER CAN VIRTUALLY ASSURE WATERTIGHTNESS IF THESE FLASHING DETAILS HAVE BEEN PROPERLY ADAPTED, ADEQUATE LAPS HAVE BEEN PROVIDED, CORRECT TYPE OF SEALANT USED, ALL JOINTS ADEQUATELY CAULKED AND PROFESSIONAL WORKMANSHIP EMPLOYED.
BATTEN END CAP

SNAP ON BATTEN

20" O.C. MAX.

BERRIDGE DEEP VEE PANEL

BATTEN CLIP 20" O.C. MAX. PANELS INSTALLED ON OPEN FRAMING, WITH PURLINS EXCEEDING 20" SPACING WILL REQUIRE PLACEMENT OF BATTEN CLIPS BETWEEN THE PURLINS

1 1/2"

16"

DEEP VEE PANEL SECTION

BATTEN CLIP

SNAP ON BATTEN

BATTEN CLIP

BERRIDGE DEEP VEE PANEL

FASTENER

BATTEN SEAM SYSTEM

OVERVIEW

BATTEN SEAM SYSTEM

Batten Seam System

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B-3
TURN DOWN UPPER PANEL AND LOCK ON TO CONTINUOUS CLEAT ON LOWER PANEL

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT ALLOW 1 5/8" GAP AT ENDS NEXT TO RIBS

TWO CONTINUOUS BEADS OF CAULK

BERRIDGE DEEP VEE PANEL RIB

CONTINUOUS CLEAT

BATTEN CLIP; 2 CLIPS BELOW AND ABOVE PANEL SPLICE
FOR OPEN FRAMING PANEL SPLICE
CLEAT FASTENERS MUST BE FASTENED INTO ROOF PURLINS

MIN. 2 FASTENERS; PLACE SMALL AMOUNT OF CAULK BENEATH CLEAT AT FASTENER LOCATION, DRIVE FASTENERS THROUGH CLEAT THEN CAULK FASTENER HEADS.

NOTE: DO NOT LAP BATTENS & PANELS AT SAME LOCATION
1. All felt underlayment, structural members, corrugated deck, and insulating material, are items to be furnished and installed by others at the discretion of the architect.

2. Continuous wood blocking (by others) may be used in lieu of Zee purlins. Blocking must be exact same depth as insulation.

3. Purlin spacing and fastener type will be dependent on governing code and specification requirements. Contact Berridge for specific information.

4. Rigid insulation must have adequate compressive strength to support the weight of a 300 pound man without causing any deformation in the panel.

5. Depth of Zee purlins must be governed by insulation thickness. Any deviation could be cause for damage to panels or leaks.

Zee purlin: Minimum 24 gauge steel, depth determined by insulation depth and legs determined by pitch of metal deck
Butt insulation up to purlin

SEE ZEE PURLIN DETAIL BELOW
1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYMENT, CAULKING AND FASTENERS ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

F = FINISH SIDE

OPEN HEM

DRIP FLASHING

SPECIAL ZEE CLOSURE

# 30 FELT UNDERLAYMENT

FASTENERS; 20" O.C. MAX.

FASTENERS; 3 PER ZEE CLOSURE MIN.

# 30 FELT UNDERLAYMENT

CONTINUOUS CAULK BETWEEN ZEE CLOSURE, DEEP VEE PANEL AND SNAP ON BATTERY

SNIP BACK RIB AND FIELD FORM PANEL PAN AROUND FLASHING

SPECIAL ZEE CLOSURE; CUT TO FIT BETWEEN SNAP ON BATTENS

POP RIVET, 40" O.C. MAX.

BERRIDGE BATTEN SEAM SYSTEM

BATTEN CLIP

SNAP ON BATTEN TO BATTEN (OPTIONAL)

DRIP FLASHING: 4" END LAP WITH CONTINUOUS CAULK AT LAPS

BATTEN END CAP

POP RIVET BATTEN END CAP

BERRIDGE DEEP VEE PANEL

SNAP ON BATTEN

BATTEN CLIP
1. All caulking and fasteners are items to be furnished and installed by the roofing installer at the discretion of the architect.
1. FIELD CUT ZEE CLOSURES TO FIT BETWEEN SNAP ON BATTENS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELTING UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

F = FINISH SIDE

RIDGE/HIP CAP
RIDGE/HIP CAP; 4" END LAPS WITH CONTINUOUS CAULK AT LAPS. POP RIVET TO ZEE CLOSURE 40" O.C.
FASTENERS; 2 PER ZEE CLOSURE, MINIMUM
BERRIDGE DEEP VEE PANEL
BATTEN CLIP, 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN ZEE CLOSURE, DEEP VEE PANEL AND SNAP ON BATTEN

ZEE CLOSURE CUT TO FIT BETWEEN BATTENS
FASTENERS; 20" O.C. MAX.
PURLINS

1. FIELD CUT ZEE CLOSURE TO FIT BETWEEN SNAP ON BATTENS.

2. ALL CAULKING AND FASTENERS ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

OPEN HEMS
RIDGE/HIP CAP

SUB-FLASHING
ZEE CLOSURE

F = FINISH SIDE

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1. FIELD CUT ZEE CLOSURE TO FIT BETWEEN SNAP ON BATTENS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

\[ F = \text{FINISH SIDE} \]

1/2" OPEN HEM

1/2" RIDGE CAP

1 7/8" ZEE CLOSURE

1" 1"
SECTION VIEW

BATTEN END CAP

POP RIVET BATTEN END CAP TO BATTEN (OPTIONAL)

FIELD FORM END OF RIDGE FLASHING AND EXTEND UNDER CONTINUOUS CLEAT

RIDGE FLASHING; 4" END LAPS WITH CONTINUOUS CAULK AT LAPS

FIELD TAPERED ZEE CLOSURE WITH CONTINUOUS CAULK UNDER ZEE CLOSURE

SOLID SHEATHING

VALLEY FLASHING; 12" LAPS WITH CONTINUOUS CAULK AT LAPS

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PLAN VIEW

MAIN ROOF PANELS

RIDGE FLASHING

CONTINUOUS CLEAT

VALLEY FLASHING

DORMER PANEL

B-20

SNAP ON BATTEN

CONTINUOUS CLEAT; DO NOT CAULK ON OR UNDER CLEAT

BATTEN CLIP

# 30 FELT UNDERLAYMENT

FASTENERS; 20" O.C. MAX. PLACE A DAB OF CAULK AT FASTENER LOCATION DRIVE FASTENER AND CAULK FASTENER HEAD

6"

6"
1. Field cut and form last panel around drip flashing. Panel must be continuous from ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulk, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

F = Finish Side
1. FIELD CUT AND FORM LAST PANEL AROUND GABLE FLASHING PANEL MUST BE CONTINUOUS RIDGE TO EAVE.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. Field cut last panel and slip into J-Clip. Panel must be continuous ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulkking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

F = Finish Side

Drip flashing: 4" end laps with continuous caulk at laps

Solid sheathing

#30 felt underlayment

Fasteners; 20" O.C. Max. Place a small amount of caulk at J-Clip fastener location, drive fastener through caulk, then caulk fastener head

J-Clip; 20" O.C. Max. Place a small amount of caulk at J-Clip fastener location, drive fastener through caulk, then caulk fastener head

Batten clip; 20" O.C. Max. Place a small amount of caulk at J-Clip fastener location, drive fastener through caulk, then caulk fastener head

Batten Seam System

Gable Detail

Berridge Deep Vee Panel

Snap on batten

Batten clip; 20" O.C. Max.

Field cut last panel and slip into J-Clip (panel must be continuous from ridge to eave)

Continuous bead of caulk

J-Clip; 4" end laps with continuous caulk at laps

Drip flashing; 4" end laps with continuous caulk at laps

Top layer of felt to be parallel with roof slope

3/4"
1. Field cut last panel and slip into J-clip. Panel must be continuous ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulkking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.
1. Field cut Zee closures to fit between Snap on battens.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulkking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.
1. Field cut Zee closures to fit between snap on battens.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulk, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.
1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. FIELD CUT ZEE CLOSURES TO FIT BETWEEN SNAP ON BATTENS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. FIELD CUT LAST PANEL AND FORM NEW LEG. PANEL MUST BE CONTINUOUS RIDGE TO EAVE.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. FIELD CUT ZEE CLOSURE TO FIT BETWEEN SNAP ON BATTENS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

NOTE: PLACE A SMALL AMOUNT OF CAULK AT CLEAT FASTENER LOCATION, DRIVE FASTENER, THEN CAULK FASTENER HEAD.

DO NOT: RUN A CONTINUOUS BEAD OF CAULK ON CLEAT OR UNDER CLEAT
1. FIELD CUT PANEL RIB AND BEND PANEL AS REQUIRED FOR CHANGE IN SLOPE FROM ROOF TO FASCIA.

2. FIELD MITER SNAP-ON BATTEN TO SLOPE CHANGE.

3. ONLY ONE SLOPE TRANSITION PER PANEL IS RECOMMENDED.

4. SEE SLOPE TRANSITION ISOMETRIC FOR ROOF TO FASCIA FOR CAULK AND SNAP-ON BATTEN MITER DETAIL. (DETAIL B-62)

5. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

6. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
ENSURE LOWER SEAM IS INSIDE UPPER

BATTEN CLIP

CAULK BETWEEN PANELS

BERRIDGE SNAP ON BATTEN

BATTEN CLIP 2 BELOW TRANSITION

SPECIAL CHANNEL CLOSURE

FIELD CUT PANEL RIB

FIELD BEND PANEL TO DESIRED ANGLE

BATTEN CLIP

MITER SNAP ON BATTEN BY "V"
CUTTING SNAP ON BATTEN.
BEND TO SLOPE TRANSITION OF
ROOF TO FASCIA.
1. SOLID SHEATHING (BY OTHERS) TO BE A MINIMUM OF 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
FASTEN THROUGH VALLEY ONLY AT TOP OF FLASHING UNDER LAP, NO FASTENERS ARE TO BE EXPOSED ON TOP (OVERLAPPING) VALLEY

DO NOT RUN CAULK IN OR ON CLEAT OF VALLEY FLASHING

2 CONTINUOUS BEADS OF CAULK AT LAPS

12" LAP

BATTEN SEAM SYSTEM
FIELD CUT PANEL SEAM AND FORM PANEL PAN AROUND CLEAT OF VALLEY FLASHING, DO NOT RUN CAULK IN OR UNDER CLEAT OF VALLEY FLASHING.

FIELD CUT PANEL SEAM AND FORM PANEL PAN AROUND CLEAT OF VALLEY FLASHING, DO NOT RUN CAULK IN OR UNDER CLEAT OF VALLEY FLASHING.

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

BERRIDGE DEEP VEE PANEL

SNAP ON BATTEN BATTEN CLIP; PLACE BEHIND VALLEY FLASHING

CONTINUOUS CAULK BEAD BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

GRACE ICE AND WATER SHIELD SNAP ON BATTEN BATTEN CLIP; PLACE BEHIND VALLEY FLASHING

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BEETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.

BERRIDGE DEEP VEE PANEL

CONTINUOUS CLEAT, WITH FASTENERS 20" O.C. MAX.

CONTINUOUS BEAD OF CAULK BETWEEN VALLEY FLASHING AND FELT UNDERLAYMENT

VALLEY FLASHING BERRIDGE CORRUGATED S-DECK FLAT SHEET VALLEY SUB-FLASHING

9" MIN. GRACE ICE AND WATER SHIELD

* FLASHING PROFILES AND NOTES, SEE DETAIL B-70 AND B-71

GRACE ICE AND WATER SHIELD RUN RIDGE TO EAVE

FLAT SHEET VALLEY SUB-FLASHING RUN RIDGE TO EAVE

BERRIDGE CORRUGATED S-DECK

16 GA. HAT SECTION Sized TO FIT OVER PURLIN AND TO ACCOMMODATE THE DEPTH OF THE BERRIDGE CORRUGATED S-DECK.
PIPE PENETRATION
(PREFERRED METHOD)
IN PAN OF PANEL ONLY 4" DIA. OR LESS
Batten Seam System

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
**CALL BMC BEFORE USING THIS DETAIL**

**SECTION A**
ROOF PENETRATION CENTERED ON SEAM

- RUN SNAP ON BATTEN UP TO STACK AND CAULK
- CONTINUOUS BEAD OF CAULK
- CUT PANEL RIBS AND LAP TOP RIBS IN DIRECTION OF WATER FLOW

**SECTION B**
ROOF PENETRATION OFF CENTER OF SEAM

- RUN SNAP ON BATTEN UP TO STACK AND CAULK
- CONTINUOUS BEAD OF CAULK

**NOTE:** CALL BMC BEFORE USING DETAILS ON THIS PAGE.
USE ONLY IF PENETRATION OCCURS ON SEAM OR WITHIN AREA OF PAN THAT WILL NOT ACCOMMODATE BOOT. USE WITH SOLID SUBSTRATE ONLY.

**CALL BMC BEFORE USING THIS DETAIL**

**NOTE:** IF PIPE IS MADE OF METAL, IT MUST BE PAINTED TO PREVENT RUST RUN-OFF FROM STAINING PANELS.
**SECTION A**

Use this detail when stack is centered on snap on batten.

- Round stack must be of material compatible with 24 ga. galvanized painted metal.
- Cut deep VEE panel and bend up 1" around stack and caulk.
- Mitre ends of snap on batten. Run batten up to stack and caulk.
- #30 felt underlayment.
- Batten clips; 2 req’d at penetration.

**SECTION B**

Use this detail when stack is off center of snap on batten.

- Round stack must be of material compatible with 24 ga. galvanized painted metal.
- Cut deep VEE panel and bend up 1" around stack and caulk.
- Mitre ends of snap on batten. Run batten up to stack and caulk.
- Batten clips; 2 req’d at penetration.
- #30 felt underlayment.

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Batten Seam System

**CALL BMC BEFORE USING THIS DETAIL**
Batten Seam System

CONTINUOUS CLEAT

ANGLE FLASHING

SNAP ON BATTEN

BERRIDGE DEEP VEE PANEL; FIELD BEND TO CURB

CONTINUOUS CLEAT

ZEE CLOSURE

COUNTERFLASHING

SEE DETAIL BELOW

NOTE: DO NOT RUN A CONTINUOUS BEAD OF CAULK ON CLEAT OR UNDER CLEAT.

BERRIDGE SNAP ON BATTEN

UPPER PANEL; FIELD BEND TO CURB

ANGLE FLASHING

LOWER PANEL; FIELD BEND TO CURB

ROOF CURB

ZEE CLOSURE; CUT 2" OFF HORIZONTAL LEGS, BEND VERTICAL LEG AND SLIP BETWEEN DEEP VEE PANELS. CAULK BETWEEN ZEE CLOSURE, COUNTERFLASHING AND PANEL

COUNTERFLASHING; EXTEND 1/4" BEYOND ZEE CLOSURE (FLASHING CUT AWAY FOR CLARITY)

*SNAP-ON SEAM

BERRIDGE MANUFACTURING COMPANY

ROOF PENETRATION
RECTANGULAR/SQUARE

Batten Seam System

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1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS. (METAL CORRUGATED SHEATHING, MIN. 24 GA. MAY BE USED IN LIEU OF PLYWOOD).

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
DO NOT: RUN CONTINUOUS CAULK ON OR UNDER CONTINUOUS CLEAT

CONTINUOUS CLEAT

FLASHING

HEM PANEL PAN UNDER BOTH SIDES OF PENETRATION

BERRIDGE DEEP VEE PANEL; FIELD BEND TO CURB

ANGLED FLASING

CONTINUOUS BEAD OF CAULK BETWEEN ZEE CLOSURE AND PANEL

CONTINUOUS CLEAT

ZEE CLOSURE; CUT AND BEND AT END AND CAULK

SEE DETAIL BELOW

ROOF PENETRATION ISOMETRIC

Batten Seam System

DATE: 04-18-01

PAGE/FILE B-86
16 GA. HAT SECTION SIZE
TO FIT OVER PURLIN AND TO
ACCOMMODATE THE DEPTH OF THE
BERRIDGE CORRUGATED S-DECK.

FOR ROOF PENETRATIONS
LARGER THAN 4" IN DIA.

CARRY UP TO
NEXT PURLIN

SQUARE OR ROUND
PENETRATION

SLOPE

EAVE

SEE SECTION

PURLINS

FLAT SHEET SUB-FLASHING
RUN CONTINUOUS TO EAVE

BERRIDGE CORRUGATED
S-DECK

GRACE ICE AND WATER
SHIELD RUN CONTINUOUS
TO EAVE

FLAT SHEET VALLEY FLASHING
GRACE ICE AND WATER
SHIELD

16 GA. HAT SECTION
PURLIN
BERRIDGE CORRUGATED
S-DECK

SECTION

PENETRATION
LARGER THAN 4";
OPEN FRAMING

Batten Seam System
1. THE INNER RIB EXPANSION CLIP MAY BE USED AS PER THIS DETAIL ON SOLID SHEATHING OR OPEN FRAMING CONDITIONS FOR PANEL LENGTHS UNDER 30'-0" FOR PANELS OVER 30'-0" SEE DETAILS B-93 AND B-94.

2. THE INNER RIB EXPANSION CLIP WHEN USED AS PER THIS DETAIL ALLOWS LARGER FASTENERS TO BE USED, TO RESIST HIGHER UPLIFT LOADS, WITHOUT THE HEAD TELESCOPING THROUGH THE PANEL OR BATTEN. CONSULT BERRIDGE MANUFACTURING FOR FASTENER REQUIREMENTS.

3. THE INNER RIB EXPANSION CLIP CAN ALSO BE USD WITH THE CONTINUOUS INNER RIB. THE CONTINUOUS INNER RIB ACTS AS A BEAM BETWEEN PURLINS TO INCREASE THE ALLOWABLES FOR BOTH POSITIVE AND NEGATIVE LOADING.
1. METAL ROOF DECK PANELS- NO. 24 MSG MIN. GAUGE COATED STEEL PANELS CONTINUOUS OVER 2 OR MORE SPANS WITHOUT END LAPS. PANEL WIDTH TO BE 16" O.C.

   "BERRIDGE MANUFACTURING COMPANY-DEEP VEE PANEL"

2. CONTINUOUS INNER RIB- FABRICATED FROM .024 INCH THICK COATED STEEL TO GENERAL CONFIGURATION OF PANEL. CONTINUOUS INNER RIB LOCATED AT EACH PANEL RIB AND EQUAL TO LENGTH OF PANEL.

   BERRIDGE MANUFACTURING COMPANY- "CONTINUOUS INNER RIB"

3. SNAP ON BATTEN- LOCATED AT EACH PANEL SIDE LAP. FABRICATED FROM .024 INCH THICK COATED STEEL, FORMED TO SNAP OVER BATTEN CLIPS.

4. BATTEN CLIP- LOCATED AT EACH PANEL RIB. SPACED 20" ON CENTER. FABRICATED FROM .024 INCH THICK COATED STEEL, IN LOCK FORMING CONFIGURATION.

5. FASTENERS- FASTENERS FOR ATTACHMENT OF BATTEN CLIP TO DEEP VEE PANEL TO BE #10 X 1" AT 20" ON CENTER.

6. FASTENERS- FASTENERS FOR ATTACHMENT OF DEEP VEE PANEL TO CONTINUOUS INNER RIB TO BE #10 X 1" ALTERNATING 12" ON CENTER FULL LENGTH OF RIB.

7. FASTENERS- FASTENERS FOR ATTACHMENT OF CONTINUOUS INNER RIB TO PURLIN CONNECTION TO BE (2) #10 X 1" PER PURLIN AND RIB CONNECTION.

8. PURLIN- STEEL NO. 16 MSG MIN. THICKNESS (50,000 PSI MIN. YIELD STRENGTH) @ 5'-0" MAX.

9. SEE DETAIL B-92
1. Metal roof deck panels—no. 24 MSG min. gauge coated steel. Panels continuous over 2 or more spans without end laps. Panel width to be 16" O.C.

2. Continuous inner rib—fabricated from .024 inch thick coated steel to general configuration of panel. Continuous inner rib located at each panel rib and equal to length of panel.

3. Snap on batten—located at each panel side lap. Fabricated from .024 inch thick coated steel, formed to snap over batten clips.

4. Purlin—steel no. 16 MSG min. thickness (50,000 psi min. yield strength).

Continuous inner rib to deep vee panel erection procedure

In order to avoid buckling or distortion of the deep vee panel pan when used with the continuous inner rib in the Berridge batten seam roof system, each continuous inner rib must be aligned and installed simultaneously with each deep vee panel. In order to avoid distortion of the deep vee panel pan, the following procedure must be adhered to:

1. With inner rib and deep vee panel in alignment, attach one side of inner rib to purlin.

2. Next, lift the deep vee panel and attach the other side of the inner rib.

3. Lap the next panel over the previous panel and attach to the inner rib with #10 fasteners at the crown of the panel rib to assure panel and inner rib stay in alignment.

Do not lay out inner ribs ahead of panels. Do not overdrive #10 fasteners.

Berridge Manufacturing Company

UL 90 approved-const. no. 262
Deep vee panel
Continuous rib assembly

Batten Seam System
EXPANSION AND CONTRACTION OF METAL PANELS WHICH EXCEED THIRTY FEET IN LENGTH CAN BE A FACTOR IN THE DESIGN AND INSTALLATION OF FLASHINGS. PLEASE REFER TO THE CHART ON PAGE BI-9 TO DETERMINE ANTICIPATED THERMAL MOVEMENT OF PANELS.

INNER RIB EXPANSION CLIP AT EACH PURLIN

2 1/2" X 8" PURLIN AT 5'-0" O.C. MAX.

1. ATTACH INNER RIB AND INNER RIB EXPANSION CLIP WITH EACH PANEL. ATTACH SCREWS ON ONE SIDE OF CLIP, LIFT PANEL AND ATTACH SCREWS ON OTHER SIDE OF CLIP.

2. DO NOT SCREW PANEL OR BATTEN CLIP TO INNER RIB EXPANSION CLIP.

NOTES: FOR PROPER SPACING

BERRIDGE PORTABLE ROLL FORMERS HAVE BEEN WIDELY ACCEPTED AND USED. STRUCTURAL PANELS ARE NO LONGER LIMITED IN LENGTH BECAUSE OF SHIPPING RESTRICTIONS. PANELS CAN NOW BE RUN OVER ONE HUNDRED FEET LONG. BUT THE PANEL SYSTEM MUST BE DESIGNED TO MOVE FROM EXPANSION AND CONTRACTION.

BERRIDGE MANUFACTURING COMPANY IS NOW INTRODUCING THE "INNER RIB EXPANSION CLIP" WHICH ALLOWS THE BERRIDGE BATTEN SYSTEM TO FLOAT AND MOVE ON THE INNER RIB. THE PANELS ARE ATTACHED TO THE INNER RIB WHICH MOVES WITHIN THE INNER RIB EXPANSION CLIP.

EXPANSION AND CONTRACTION OF METAL PANELS WHICH EXCEED THIRTY FEET IN LENGTH CAN BE A FACTOR IN THE DESIGN AND INSTALLATION OF FLASHINGS. PLEASE REFER TO THE CHART ON PAGE BI-9 TO DETERMINE ANTICIPATED THERMAL MOVEMENT OF PANELS.

SEE ALSO EAVE EXPANSION DETAIL B-95
EXPANSION AND CONTRACTION OF METAL PANELS WHICH EXCEED THIRTY FEET IN LENGTH CAN BE A FACTOR IN THE DESIGN AND INSTALLATION OF FLASHINGS. PLEASE REFER TO THE CHART ON PAGE B1-9 TO DETERMINE ANTICIPATED THERMAL MOVEMENT OF PANELS.

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SOLID SHEATHING TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

SEE ALSO EAVE EXPANSION DETAIL B-95

NOTES: FOR PROPER SPACING

1. ATTACH INNER RIB AND INNER RIB EXPANSION CLIP WITH EACH PANEL. ATTACH SCREWS ON ONE SIDE OF CLIP, LIFT PANEL AND ATTACH SCREWS ON OTHER SIDE OF CLIP.

2. DO NOT SCREW PANEL OR BATTEN CLIP TO INNER RIB EXPANSION CLIP.

12" MIN.

BERRIDGE PORTABLE ROLL FORMERS HAVE BEEN WIDELY ACCEPTED AND USED. STRUCTURAL PANELS ARE NO LONGER LIMITED IN LENGTH BECAUSE OF SHIPPING RESTRICTIONS. PANELS CAN NOW BE RUN OVER ONE HUNDRED FEET LONG. BUT THE PANEL SYSTEM MUST BE DESIGNED TO MOVE FROM EXPANSION AND CONTRACTION.

BERRIDGE DEEP VEE PANEL

INNER RIB EXPANSION CLIP AT 5'-0" O.C. MAX.

SOLID SHEATHING

30# FELT UNDERLAYMENT (SEE FELTING INSTRUCTIONS)
1. This detail is recommended for areas with heavy snow loads or where expansion and contraction of panels is a design factor.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulking and fasteners are items to be furnished and installed by the roofing installer at the discretion of the architect.

4. The "gap between eave flashing and panel (see detail above) can be increased to allow for linear expansion and contraction of panels. Note 1/2" of panel pan must be engaged with eave flashing when panel has expanded to its maximum length. Refer to detail Bi-9.

5. Gap between eave flashing and panel must be adjusted to suit temperature during installation.
1. IN ORDER TO QUALIFY FOR A FIRE-RESISTANT RATING, THE ROOF SYSTEM CANNOT MAKE A PENETRATION IN THE INSULATION SYSTEM, OTHER THAN THOSE MADE BY FASTENERS. THE BATTEN SEAM SYSTEM, A STRUCTURAL PANEL, IS TO SPAN OVER HAT SECTIONS (IF THE INSULATION SYSTEM HAS NO NAILABLE SURFACE). THE HAT SECTIONS ARE TO BE MOUNTED DIRECTLY TO THE INSULATION SYSTEM WITH FASTENERS FASTENED THROUGH INTO THE STRUCTURAL STEEL DECK.

2. THIS ASSEMBLY QUALIFIES FOR THE FOLLOWING UL FIRE-RESISTANT ROOF ASSEMBLIES:
   UL DESIGN NO. P224, P225, P230, P237, P508, P510, AND P227 USING CELLULAR GLASS BLOCK IN LIEU OF MINERAL INSULATION BOARD.

3. ADDITIONAL INFORMATION REGARDING THIS ASSEMBLY IS AVAILABLE IN THE UL FIRE RESISTANCE DIRECTORY.
1. IN ORDER TO QUALIFY FOR A FIRE-RESISTANT RATING, THE ROOF SYSTEM CANNOT MAKE A PENETRATION IN THE INSULATION SYSTEM, OTHER THAN THOSE MADE BY FASTENERS. THE BATTEN SEAM SYSTEM, A STRUCTURAL PANEL, IS TO SPAN OVER HAT SECTIONS (IF THE INSULATION SYSTEM HAS NO NAILABLE SURFACE). THE HAT SECTIONS ARE TO BE MOUNTED DIRECTLY TO THE INSULATION SYSTEM WITH FASTENERS FASTENED THROUGH INTO THE STRUCTURAL STEEL DECK.

2. THIS ASSEMBLY QUALIFIES FOR THE FOLLOWING UL FIRE-RESISTANT ROOF ASSEMBLIES: UL DESIGN NO. P512.

3. ADDITIONAL INFORMATION REGARDING THIS ASSEMBLY IS AVAILABLE IN THE UL FIRE RESISTANCE DIRECTORY.
1. IN ORDER TO QUALIFY FOR A FIRE-RESISTANT RATING, THE ROOF SYSTEM CANNOT MAKE A PENETRATION IN THE INSULATION SYSTEM, OTHER THAN THOSE MADE BY FASTENERS. THE BATTEN SEAM SYSTEM, A STRUCTURAL PANEL, IS TO SPAN OVER HAT SECTIONS (IF THE INSULATION SYSTEM HAS NO NAILABLE SURFACE). THE HAT SECTIONS ARE TO BE MOUNTED DIRECTLY TO THE INSULATION SYSTEM WITH FASTENERS FASTENED THROUGH INTO THE STRUCTURAL STEEL DECK.

2. THIS ASSEMBLY QUALIFIES FOR THE FOLLOWING UL FIRE-RESISTANT ROOF ASSEMBLIES: UL DESIGN NO. P701, P711, AND P803, USING SPRAYED ON FIBER IN LIEU OF CEMENTITIOUS MIXTURE.

3. ADDITIONAL INFORMATION REGARDING THIS ASSEMBLY IS AVAILABLE IN THE UL FIRE RESISTANCE DIRECTORY.