

**EVALUATION REPORT OF
MASTER-C ROOF PANELS**

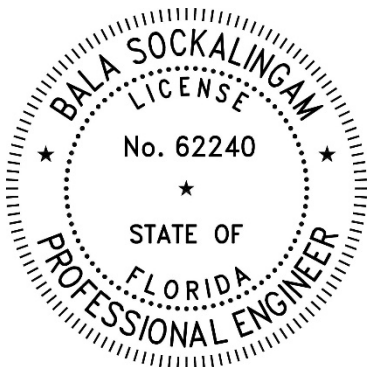
**FLORIDA BUILDING CODE 8TH EDITION (2023)
FLORIDA PRODUCT APPROVAL
FL 21699.1-R3
STRUCTURAL COMPONENTS
STRUCTURAL ROOF**

Prepared For:
Master Panel S.L.
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This report consists of
Evaluation Report (3 Pages including cover)
Installation Details (4 Pages)
Load Span Table (1 Page)

Report No. C2713-1
Date: 8.12.2023



This item has been digitally signed and sealed by Bala Sockalingam, PE, on the date indicated.

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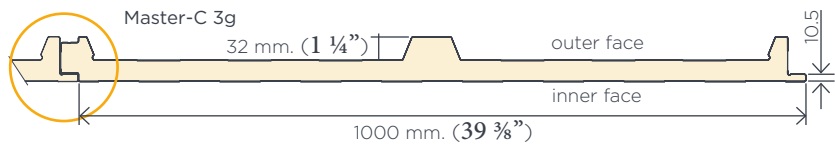
Manufacturer:	Master Panel S.L.
Product Name:	Master-C Roof Panel
Panel Description:	Master-C Panels are factory-assembled, metal faced, sandwich panels with a chemically bonded continuously foamed-in-placed foam plastic core. Maximum 1000 mm (39.4") coverage. Panel thickness: 40 mm (1.6"), 50 mm (2"), 60 mm (2.4"), 80 mm (3.1"), 100 mm (3.9") and 120 mm (4.72").
Panel Core:	Polyiso foam insulation designated as "Master-PIR". Nominal core density is 2.3 pcf with flame spread index of 20 and smoke-developed index of 300 when tested in accordance with ASTM E84-15B.
Exterior skin:	Min. 26 ga., 33 ksi galvanized coated steel (ASTM A653) or galvalume coated steel (ASTM A792) with three 32 mm (1.3") high rib profiles. Corrosion resistant as per FBC 2023 Section 1507.4.3. Minimum base metal thickness is 0.017".
Interior skin:	Min. 26 ga., 33 ksi galvanized coated steel (ASTM A653) or galvalume coated steel (ASTM A792) with standard or flat finish. Corrosion resistant as per FBC 2023 Section 1507.4.3. Minimum base metal thickness is 0.017".
Support Description:	Min. 16 ga., 50 ksi steel section (Must be designed by others)
Slope:	1/2:12 or greater in accordance with FBC 2023 Section 1507.4.2
Design Pressure:	Allowable inward and uplift loads are shown in the load span table. The allowable loads for panel strength, connection and deflection limit of L/240 were developed from test data. Maximum panel span is 48".
Panel Attachment:	Panels will be fastened along each panel seam with (2) #12-24 HWH fasteners with 1/2" bonded sealing washer installed through 2-3/8" x 1-9/16" x 16 ga. seam plate prior to installing the 24 ga. steel cap. In addition (1) #12-24 HWH fastener with 1/2" bonded sealing washer will be installed through 1-9/16" x 20 ga. bearing plate with sealing rubber along the intermediate rib of each panel at each support. Fastener shall be of sufficient length to penetrate through the support a minimum of 3/4". Bearing plate and fasteners are corrosion resistant as per FBC 2023 Section 1506.7 and 1507.4.4, respectively.
Panel Seam Cap:	24 ga. seam cap installed over panel sidelap with optional sealant. Corrosion resistant as per FBC 2023 Section 1507.4.3. The panel caps

are fastened to the panel sidelap with #12-24 x 1" HWH fasteners with 1/2" bonded sealing washers staggered 2.5-ft o.c on either side of the seam cap.

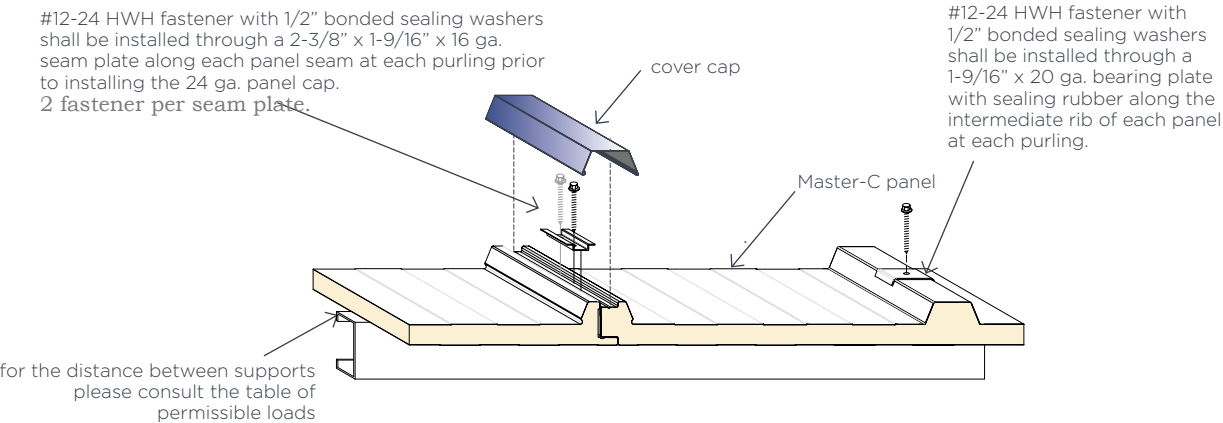
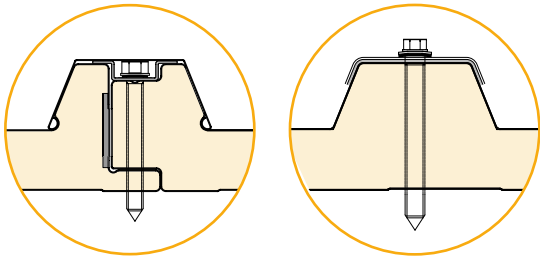
- Test Standards:** Roof assembly tested in accordance with ASTM E1592-05(2012) 'Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference' and FM 4471 Section 4.4 'Foot Traffic Resistance'.
- Test Equivalency:** The test procedures in ASTM E84-15B comply with test procedures prescribed in ASTM E84-18b.
The test procedures in ASTM E1592-05(2012) comply with test procedures prescribed in ASTM E1592-05(2017).
- Code Compliance:** The product described herein has demonstrated compliance with FBC 2023 Section 1507.4 and 2603.3.
- Product Limitations:** Design wind loads shall be determined for each project in accordance with FBC 2023 Section 1609 or ASCE 7-22 using allowable stress design. The maximum support spacing listed herein shall not be exceeded. The design pressure for reduced support spacing may be computed using rational analysis prepared by a Florida Professional Engineer or Master Panel load span table. This evaluation report is not applicable in High Velocity Hurricane Zone.
- Supporting Documents:** ASTM E1592 Test Report
PRI Construction Materials Technologies
MPNL-006-02-01, Reporting Date 2/26/2016
- ASTM E84 Test Report
Intertek Testing Services NA Inc.
102643891SAT-001A-Rev 1, Reporting Date 2/8/2018
- FM 4471 Test Report
PRI Construction Materials Technologies
MPNL-006-02-01, Reporting Date 2/26/2016

Construction details:

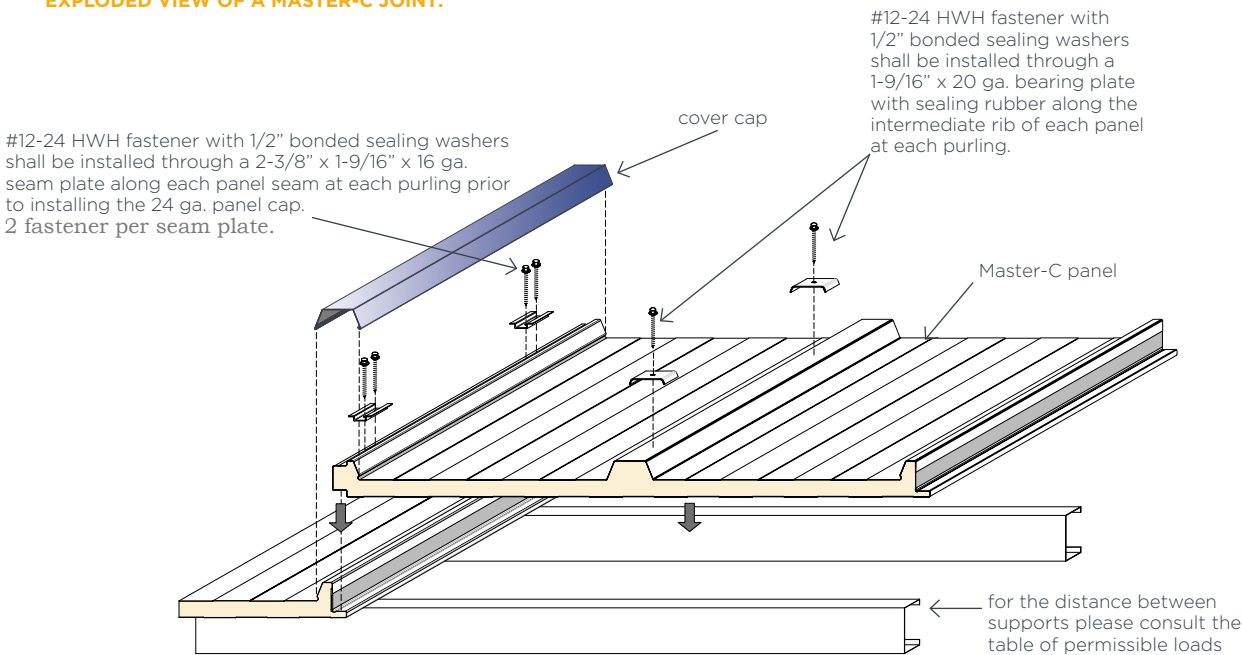
Master-C type profiles and joints:



fixing details:



EXPLODED VIEW OF A MASTER-C JOINT:

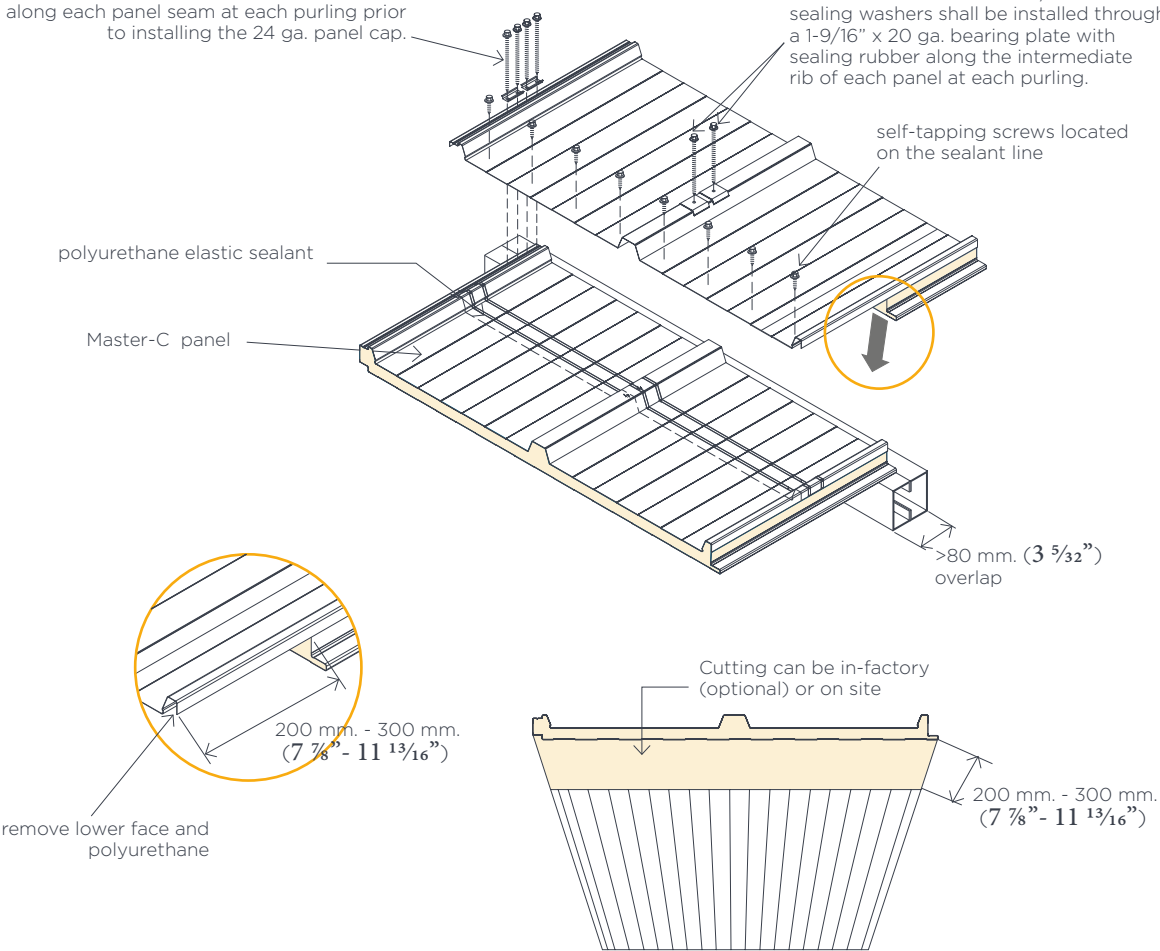


Sheet overlaps:

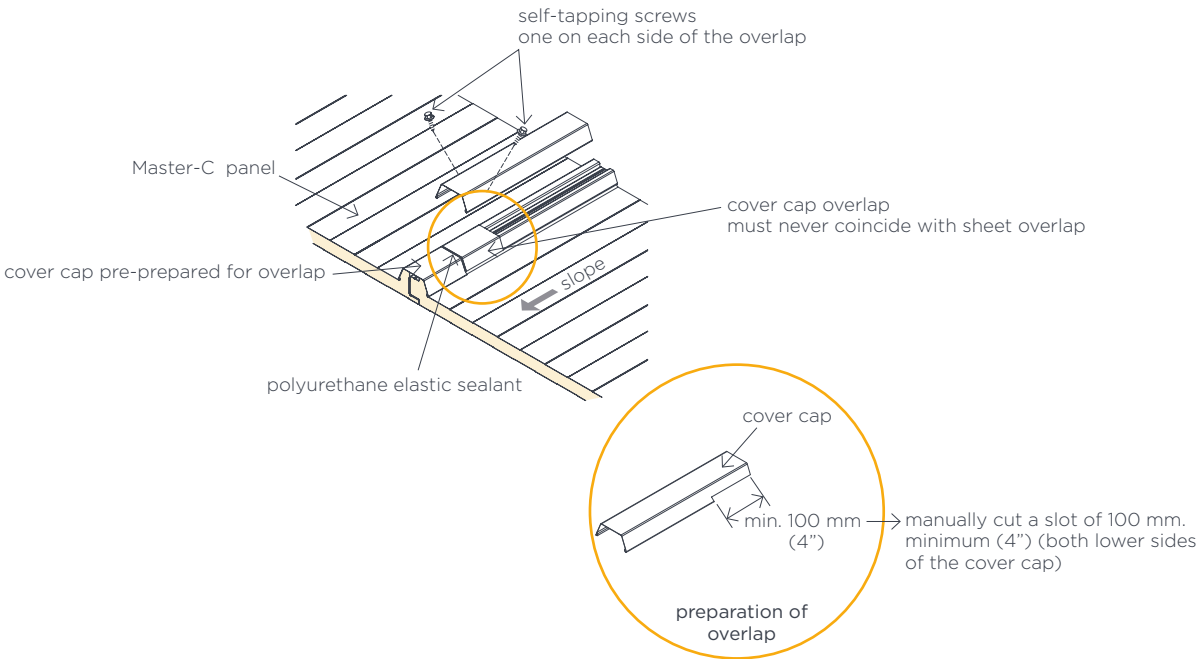
#12-24 HWH fastener with 1/2" bonded sealing washers shall be installed through a 2-3/8" x 1-9/16" x 16 ga. seam plate along each panel seam at each purling prior to installing the 24 ga. panel cap.

a solution to be used when the length of roofing is greater than the maximum transportable: national = 16.00m and export = 39'

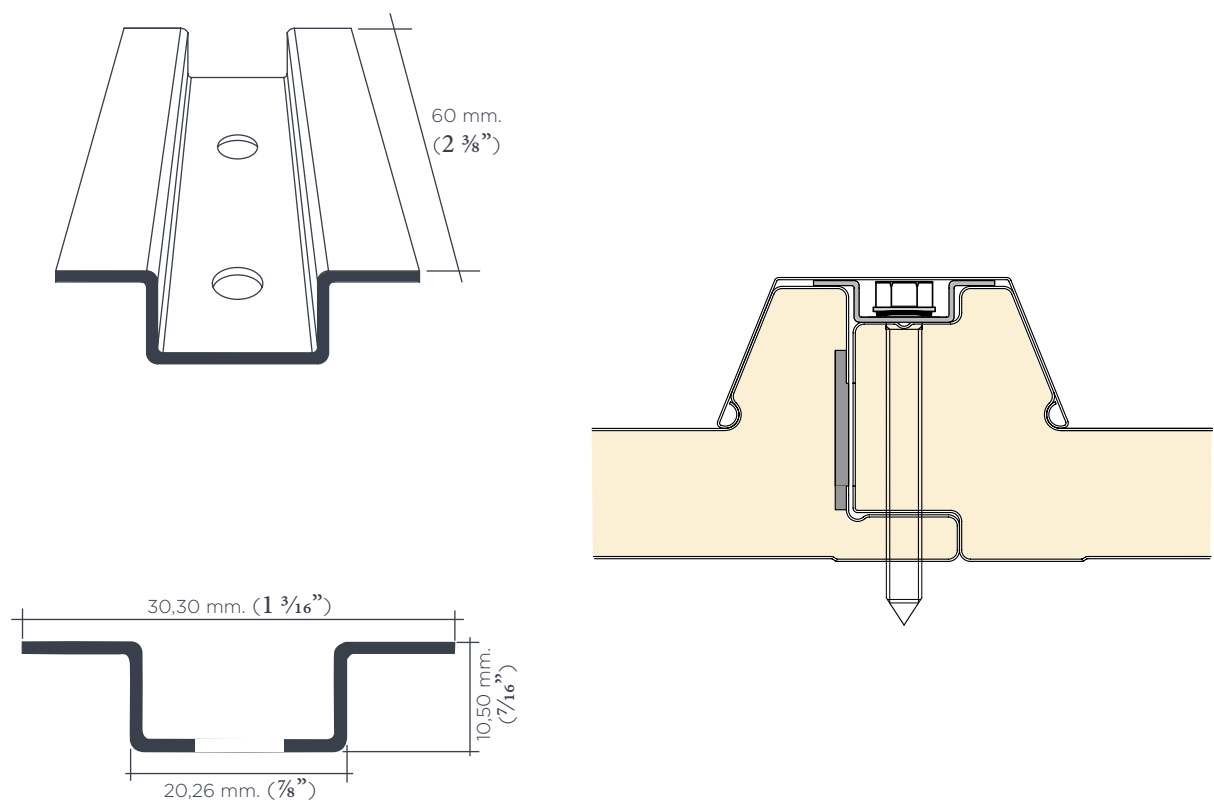
#12-24 HWH fastener with 1/2" bonded sealing washers shall be installed through a 1-9/16" x 20 ga. bearing plate with sealing rubber along the intermediate rib of each panel at each purling.



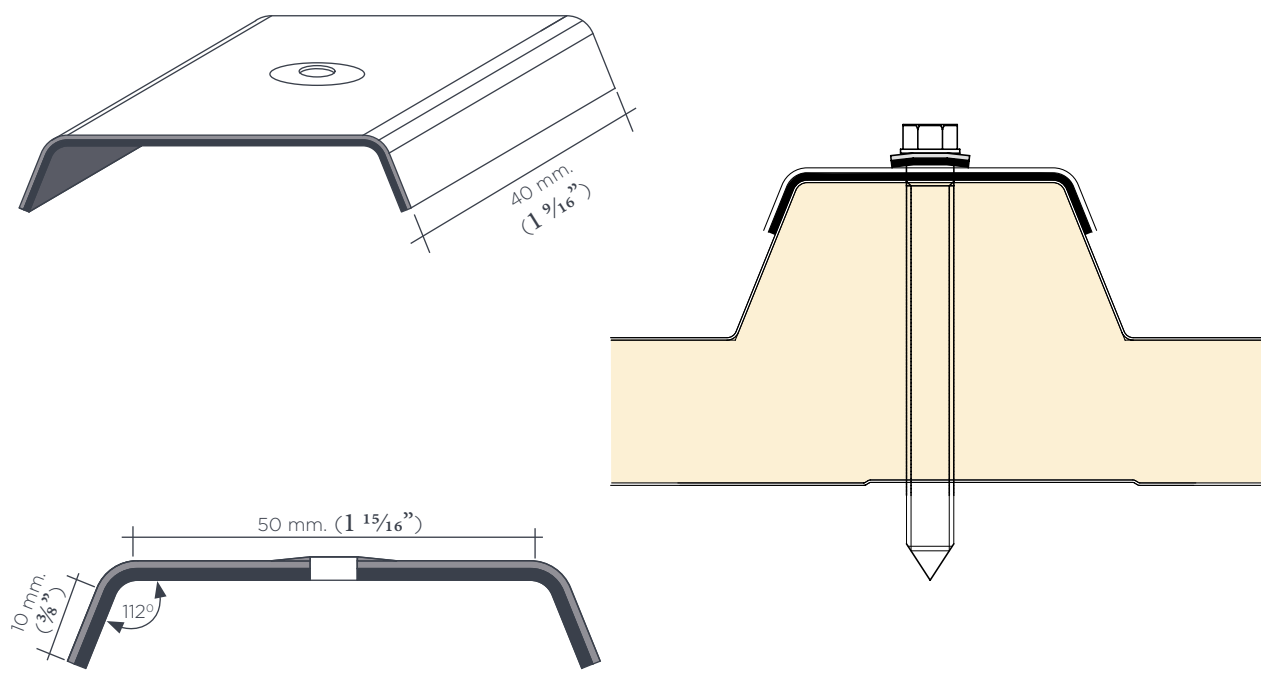
Cover cap overlaps:



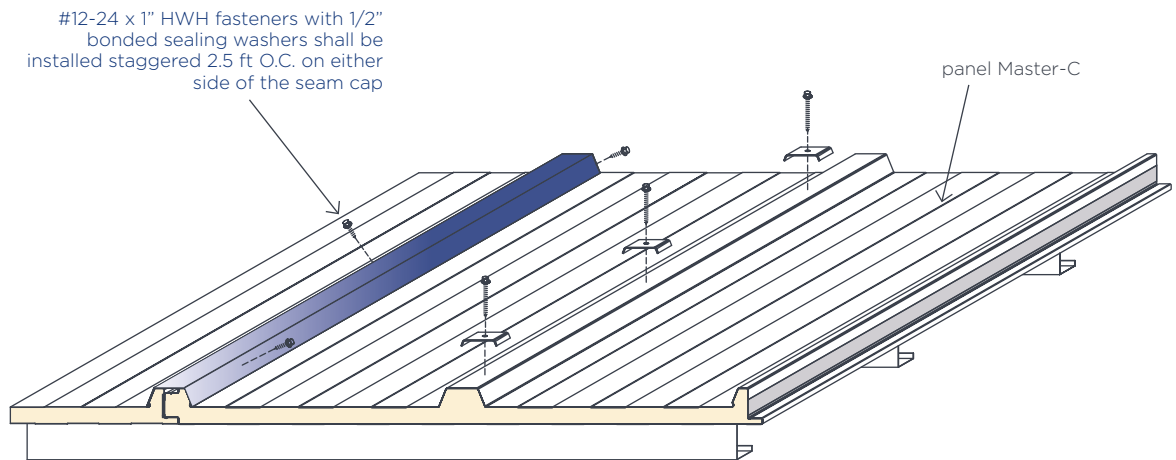
Seam plate:



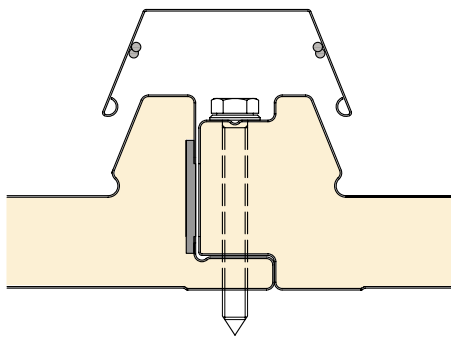
Bearing plate:



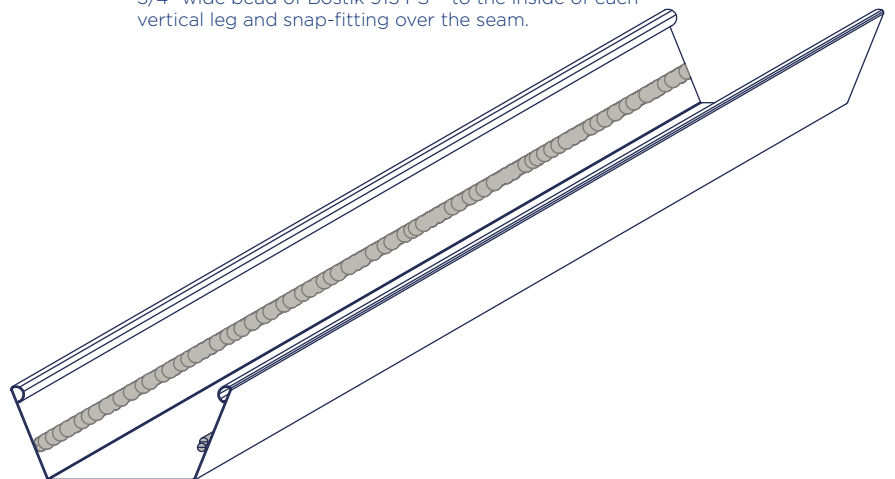
Cover cap fixing details:



ASTM E 2140 test Method for water penetration



two (2) # 12- 24 x 4-1/4" HWH fasteners with 1/2" bonded sealing washer were installed through a 2-3/8" x 1-9/16" x 16 ga. bearing plate along each panel seam at each purlin prior to installing the 24 ga. steel cap. The cap was installed by applying a continuous 3/4" wide bead of Bostik 915 FS™ to the inside of each vertical leg and snap-fitting over the seam.



Master Panel S.L. Master-C Roof Panels
Allowable Inward and Outward Loads (psf)
Minimum 1.6" thick, 26-26 ga., Three Rib Profile

Panel Span (ft)	Span Condition		
	Single Span	Two Spans	3 or More Spans
1	121.8	131.9	137.5
1.5	81.2	88.4	99.7
2	60.9	66.6	74.8
2.5	48.7	53.5	59.9
3	40.6	44.7	49.9
3.5	34.8	38.4	42.8
4	30.5	33.6	37.5

Notes:

1. Allowable inward and outward loads are based on panel and connection strength and deflection limit of L/240.
2. Allowable loads are obtained from ASTM E1592 tests and calculated with a factor of safety of 2.0 for connection.
3. Panels will be fastened along each panel seam with (2) #12-24 HWH fasteners with 1/2" bonded sealing washer installed through 2-3/8" x 1-9/16" x 16 ga. seam plate prior to installing the 24 ga. steel cap.
4. (1) #12-24 HWH fastener with 1/2" bonded sealing washer will be installed through 1-9/16" x 20 ga. bearing plate with sealing rubber along the intermediate rib of each panel at each purlin.
5. #12-24 x 1" HWH fasteners with 1/2" bonded sealing washers will be installed staggered 2.5-ft o.c on either side of the seam cap.
6. Panels must be installed as per Evaluation Report FL 21699.1 and Master Panel current installation procedure.
7. The structural capacity of the panel supports are not considered and must be examined independently.