Florida Product Approvals

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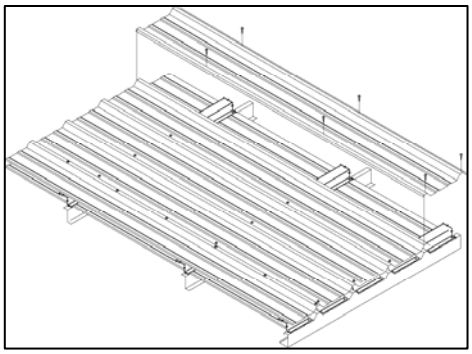
ROOF HUGGER is the leading manufacturer of structural pre-notched patented sub-purlins for existing sloped metal roofs. As an innovator in "Metal-over-Sloped" reroofing systems, Roof Hugger has made numerous product and technological contributions to the industry and continues to offer the latest technology for retrofitting over existing sloped metal roofs.

Roof Hugger's Florida Product Approvals represent years of research and testing in order to provide the Florida market with quality high performance retrofit sub-framing system assemblies. These systems are market proven by evidence of millions of square feet installed over existing metal building roofs that have withstood the hurricane force wind loads of the Florida and Gulf Coast areas. Each project is custom designed based it's locale to ensure that the roof's corner and edge zones are sub-framed to satisfy the code's specific design wind uplift loads.

The following are the current approvals using many recognized national metal roof manufacturer panel systems. Roof Hugger is continually testing additional assemblies with additional metal roof manufacturers. For up-to-date information, please contact us or visit our website.

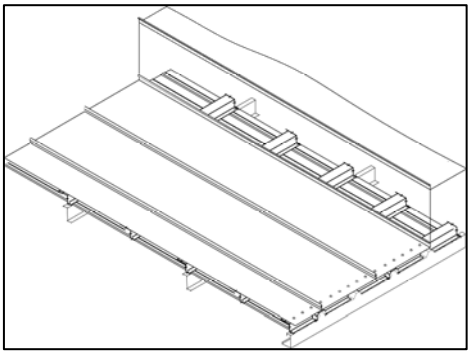
APPROVALS WITH NEW THRU-FASTENED SCREW DOWN METAL ROOFING



Product Approval - FL 9561
Reference: 9B-72.070(4), F.A.C.
System 1: New 24 Ga. PBR Panel with 12"-12"-12" Fastener pattern over Roof Huggers @ 5'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
System 2: New 24 Ga. PBR Panel with 7"-5"-7"-5"-7" Fastener pattern over Roof Huggers @ 5'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
System 3: New 24 Ga. PBR Panel with 7"-5"-7"-5"-7" Fastener pattern over Roof Huggers @ 2'-6" O.C. over 16 Ga. hats @ 24" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
System 4: New 24 Ga. PBR Panel with 7"-5"-7"-5"-7" Fastener pattern over Roof Huggers @ 2'-6" O.C. over 16 Ga. hats @ 12" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.

Product Approval – FL 10141
Reference: 9B-72.070(4), F.A.C.
System 1: New 26 Ga. PBR Panel with 12"-12"-12" fastener pattern over Roof Huggers @ 5'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
System 2: New 26 Ga. PBR Panel with 7"-5"-7"-5"-7" fastener pattern over Roof Huggers @ 5'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
System 3: 26 Ga. PBR Panel, 36" wide with 1¼" tall rib, 7"-5"-7"-5"-7" fastener pattern over Roof Huggers @ 2'-6" O.C. over 16 Ga. hats @ 24" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
System 4: 26 Ga. PBR Panel, 36" wide with 1¼" tall rib, 7"-5"-7"-5"-7" fastener pattern over Roof Huggers @ 2'-6" O.C. over 16 Ga. hats @ 12" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.

APPROVALS WITH NEW STANDING SEAM METAL ROOFING



Product Approval - FL 9352.1
Reference: 9B-72.070(4), F.A.C.
SYSTEM 5: JSM 200 DL 16" Wide 24 Ga. with Slider clips over Roof Huggers @ 5'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
SYSTEM 6: JSM 200 DL 16" Wide 24 Ga. with Slider clips over Roof Huggers @ 2'-6" O.C. over hats @ 2'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
SYSTEM 7: JSM 200 DL 16" Wide 24 Ga. with Slider clips over Roof Huggers @ 1'-3" O.C. over 16 Ga. hats @ 1'-0"" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.

Product Approval – FL 9352.2
Reference: 9B-72.070(4), F.A.C.
SYSTEM 8: MBCI Super Lok 16" Wide 24 Ga. with Slider clips over Roof Huggers @ 5'-0" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
SYSTEM 9: MBCI Super Lok 16" Wide 24 Ga. with Slider clips over Roof Huggers @ 2'-6" O.C. over 16 Ga. hats @ 24" O.C. over Existing 26 Ga. PBR Panel and 16 Ga. Purlins.
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NOTES FOR LISTED APPROVALS:
All Existing Purlin Spacing = 5'-0" O.C. max
All New PBR Panel is 36" wide with 1¼" tall rib
- 26 GA = 80 KSI
- 24 GA = 50 KSI

Hats = Special Hugger Sub-rafters

ROOF HUGGER COMPOSITION & MATERIALS
Roof Hugger Sub-purlin System's base materials is G-90 galvanized finished steel sheet per ASTM A-446 or A-570 with 50 ksi minimum yield strength. Material thickness is available to meet design loads in 16 and 14 gauges.

PROFILES AND CHARACTERISTICS
The profile used for Florida Product Approval is the Roof Hugger standard roll-formed Type "C" model, manufactured to accommodate existing ribbed metal roofing with maximum 1½" high major ribs spaced at 12" on center. In addition, other standard types include Hugger profiles manufactured to accommodate the following popular panel types:

- 12" to 24" O.C. Trapezoidal Rib SSR
- 12" to 20" O.C. Vertical Rib SSR
- 6"-10" O.C. Ribbed Panel
- 2.5", 2.67", 2.75" and 4.2" Corrugated
- 7.2" Industrial Rib

All Roof Hugger Sub-purlins are zee shaped steel members with 1.06" minimum bottom flange and 2.0" minimum top flange plus a .25" minimum lip. The web depth varies based on the existing panel profile dimension or desired insulation thickness. The die-stamped web window that allows nesting over the existing roof system ribs also may vary per job application and requirements. All are shipped in 10'-0" lengths plus or minus to fit existing panel rib or seam modules.

Roof Hugger Sub-purlins are intended to attach directly above and to the existing building secondary support members. These members are most commonly zee shaped purlins, steel bar joist or other types of framing. When these members exceed the maximum spacing as dictated by the new roof panel system, the Roof Hugger Sub-purlins must employ "sub-rafter" hats and/or "struts that span over the existing purlins. By doing this, the Roof Hugger Sub-purlins can be installed at mid-span conditions (between existing purlins).

OTHER ROOF HUGGER TESTING

Many other metal roof panel manufacturer's have tested their systems in accordance with ASTM E-1592 Standard Test Method for Structural Performance of Metal Roof and Siding Systems by Uniform Static Air Pressure Difference. Please refer to our website for the most current reports on these tests.

BUILDING CODES

Current data on building code requirements and product compliance may be obtained from ROOF HUGGER technical support specialists. Installation must comply with the requirements of Chapters 15, 16 and 22 of the FBC 2004 Code.

FLORIDA PRODUCT APPROVAL LIMITATIONS AND CONDITIONS OF USE FOR NON-HIGH VELOCITY HURRICANE ZONES (NON-HVHZ)

DESIGN PROCEDURE: Based on the dimensions of the structure, appropriate loads are determined using Chapter 16 of the Florida Building Code (FBC) for roof cladding wind loads. These component wind loads for roof cladding are compared to the allowable negative/positive pressures listed in the load table. The design professional shall select the appropriate erection details to reference in his/her drawings for proper fastener attachment to the structure and analyze the panel fasteners for pullout and pullover. Support framing must be in compliance with FBC Chapter 22 for steel and Chapter 16 for structural loading.

OTHER CONDITIONS:

- Minimum Roof Slope Limitation: ½:12
- Existing Purlin Spacing: Maximum 5'-0" O.C. designed by a Florida P.E.
- Existing Roof Panel: Based on 26 GA R-Panel or PBR , 80 KSI with 12" O.C. x 1¼" tall ribs and 36" coverage
- Substrate Attachment: Designed by a Florida P.E.
- Fire Barrier: Class B fire exposure rating in accordance with FBC Section 1505.3
- Underlayment: Vinyl or reflective foil faced fiberglass batt insulations that have a flame spread rating of no more than 25 and a smoke development rating of not more than 450
- Shear Diaphragm: Shear diaphragm values were outside the scope of the Approval reports

MAXIMUM ROOF COMPONENT UPLIFT PRESSURES:

Product Approval - FL 9561

SYSTEM NO.	MAXIMUM ALLOWABLE PRESSURES (PSF)			
	ALLOWABLE TEST VALUE	CONTROLLED BY PANEL DEFLECTIONS		
		L/120	L/180	L/240
1	35.0	35.0	31.44	26.42
2	60.0	60.0	60.00	58.14
3	116.0	116.0	111.77	85.14
4	145.0	145.0	120.41	92.24

Product Approval – FL 10141

SYSTEM NO.	MAXIMUM ALLOWABLE PRESSURES (PSF)			
	ALLOWABLE TEST VALUE	CONTROLLED BY PANEL DEFLECTIONS		
		L/120	L/180	L/240
1	40.0	40.0	40.0	38.8
2	65.0	65.0	45.7	33.8
3	110.0	110.0	110.0	110.0
4	140.0	140.0	140.0	116.7

Product Approval – FL 9352.1

NEGATIVE DESIGN LOADS (PSF)		
ROOF HUGGER SPACING	E-1592 LOAD	ALLOWABLE DESIGN LOAD
1.25 FT	180.0	90.0
2.50 FT	160.0	80.0
5.00 FT	80.0	40.0

Product Approval – FL 9352.2

NEGATIVE DESIGN LOADS (PSF)		
ROOF HUGGER SPACING	E-1592 LOAD	ALLOWABLE DESIGN LOAD
2.50 FT	160.0	80.0
5.00 FT	95.0	47.5

INSTALLATION REQUIREMENTS:

Please contact Roof Hugger to obtain specific FL Product Approval erection details for Systems 1 through 9.

ROOF HUGGER®

Patented Retrofit Sub-framing Systems