

C-BUCK Engineering

Specialty Structural Engineering

C-Buck, Inc. Florida Certificate of Authorization # 8064

Evaluation Report

of

Rare Manufacturing, Inc.

“Ironwood Shake”

Metal Roof Assembly

for

Florida Product Approval

FL 7807.1

Florida Building Code 2004

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing (Non-Structural)

Product: *Ironwood Shake (Shingle Panel)*

Material: *Steel*

Panel Dimensions: *48” x 12” (Net Coverage)*

Support Type: *Wood Deck*

Prepared for:

Rare Manufacturing, Inc.

19154 – 95 A. Avenue

Surrey, British Columbia

Canada V4N 4P2

Prepared by:

James L. Buckner, P.E.

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

Project Manager: Diana Galloway

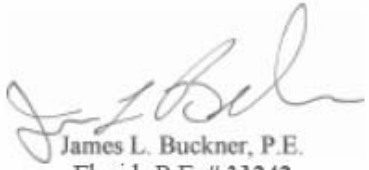
Report No. 06-329-Ironwood-48-SW

Date: 10 / 25 / 06

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James L. Buckner, P.E.
Florida P.E. # 31242
11/10/06



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Manufacturer:	Rare Manufacturing, Inc.
Product Name:	Ironwood Shake
Product Category:	Roofing
Product Sub-Category	Metal Roofing (Non-Structural)
Compliance Method:	1-D per Rule 9B-72
Panel Type:	Interlocked, Shingle Panels
Panel Material / Standards:	Steel (in compliance with ASTM A653 or ASTM A792) Material shall comply with Table 1507.4.3 of the Florida Building Code (FBC), 2004
Panel Dimensions:	Thickness: Nominal 28 Gauge (0.015" Base Metal Minimum) Length: 48" Net Coverage Length (51") Width: 12" Net Coverage Width (13 ½") Height: ½"
Support Type:	Wood Deck (Design of support system is not included in this evaluation)
Support Description:	<ul style="list-style-type: none">• 15/32" or greater plywood,• or Wood plank
Slope Range:	3 : 12 or Greater
Design Uplift Pressure:	72.5 PSF (Safety Factor of 2:1)
Underlayment:	Minimum underlayment shall be per FBC 2004, Section 1507.4.5
Fire Classification:	Fire Classification is outside the scope of Rule 9B-72, and is therefore not included in this evaluation. Additional approved substrates may be added for Fire Classification purposes.



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- Fastener Description:** “Ironwood Shake” shingle panels shall be through-fastened to the plywood deck with #8-14 low profile, pan-head, corrosion resistant, woodgrip screws of sufficient length to **penetrate through the deck a minimum of 3/16” per ANSI/ASME B18.6.4**
- Installation:** Install the “Ironwood Shake” shingle panel to plywood deck with fasteners as described in this evaluation report, minimum fastener penetration through deck, 3/16”. Shingle panels shall be through-fastened to the plywood deck spaced **maximum 12” o.c between fasteners.**
- Quality Assurance:** The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 9B-72.070 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through **Intertek Testing Services-ETL/Warnock Hersey (QUA 1673).**
- Performance Standards:** The roof assembly described herein has been tested in accordance with:
- **UL 1897-98, Uplift Tests for Roof Covering Systems – with Revisions through December 1999**
- Code Compliance:** The product described herein has demonstrated compliance with the **Florida Building Code 2004, (with 2006 Supplements) Section 1504.3.1.**
- Evaluation Report Scope:** This product evaluation is limited to compliance with the structural wind load requirements of the Florida Building Code, as related to Rule 9B-72.
- System Limitations:** The required design wind loads shall be determined for each project per FBC, 2004, Section 1603.1.4. Any rational analysis computations shall be prepared by a qualified design professional, as required by FBC, 2004, Section 105 or 106. The maximum fastener spacing listed herein shall not be exceeded. This product is not approved for use in the High Velocity Hurricane Zone.



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Referenced Data:

1. UL 1897 Uplift Test
By Intertek Testing Services - ETL / Warnick Hersey (TST 1509)
 - Report # 3056606, Report Date: 10/11/05
2. Quality Assurance
By Intertek Testing Services – ETL / Warnick Hersey (QUA 1673)
3. Certification of Independence
By James L. Buckner, P.E. @ C-Buck Engineering (ANE 1916)
4. Engineering Calculations
By C-Buck Engineering
 - Report #C06-329-IS-48-SW-P, Dated: 10/25/06

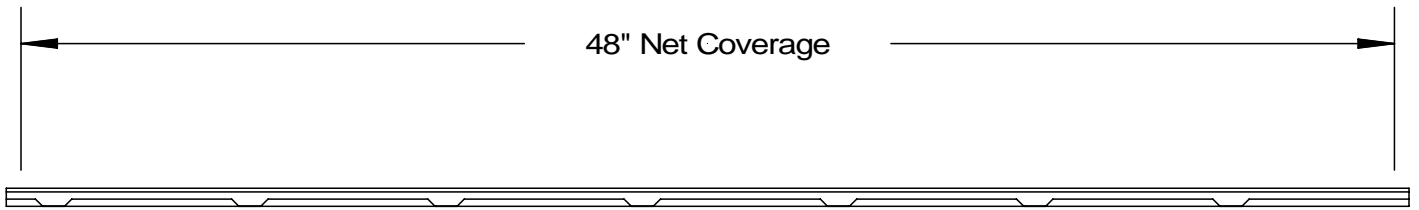
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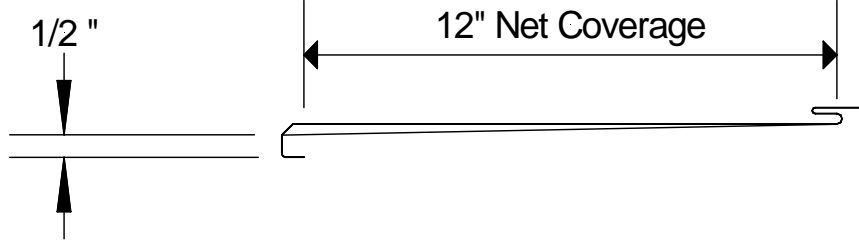
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Installation Method Rare Manufacturing, Inc. “Ironwood Shake”(Steel Shingle Panel) Attached to Plywood Deck

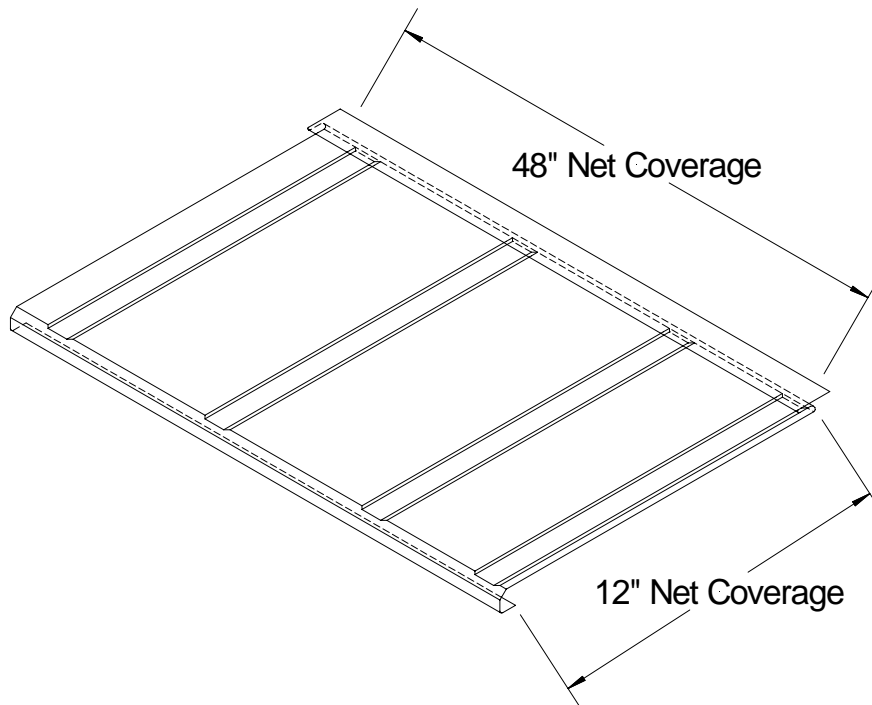
Profile Drawings



“Ironwood Shake” Shingle Panel Profile View - Length



“Ironwood Shake” Shingle Panel Profile View – Width



“Ironwood Shake” Shingle Panel Isometric View

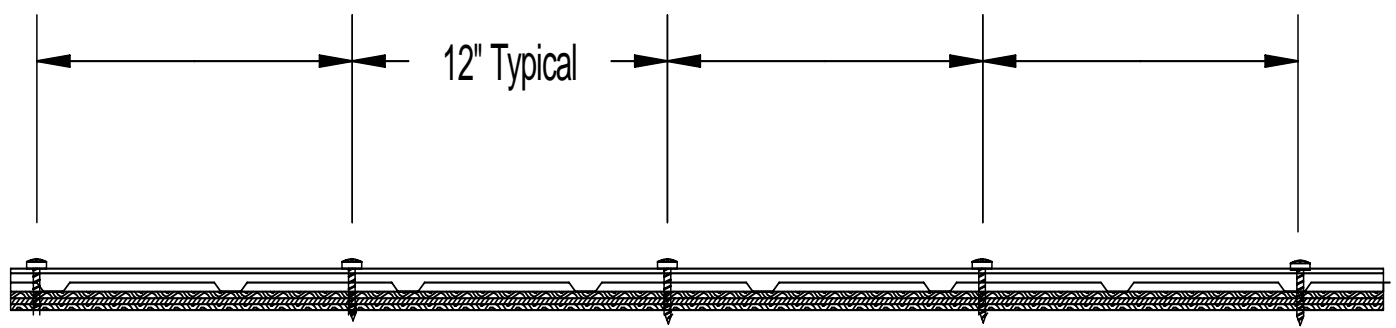
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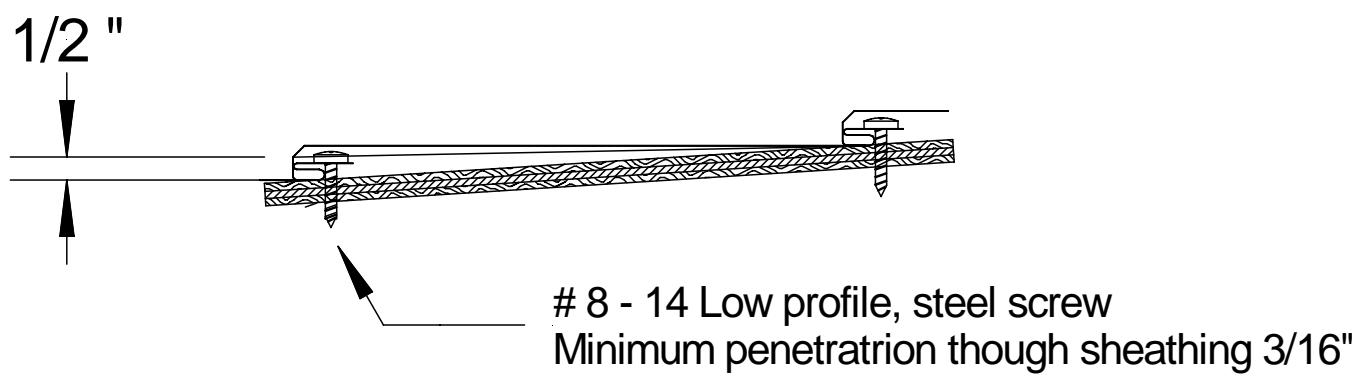
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Installation Method (Continued) Rare Manufacturing, Inc. “Ironwood Shake”(Steel Shingle Panel) Attached to Plywood Deck

Assembly Profile Drawings



Assembly Profile View
(Typical Fastening Pattern Along Row – Interior)



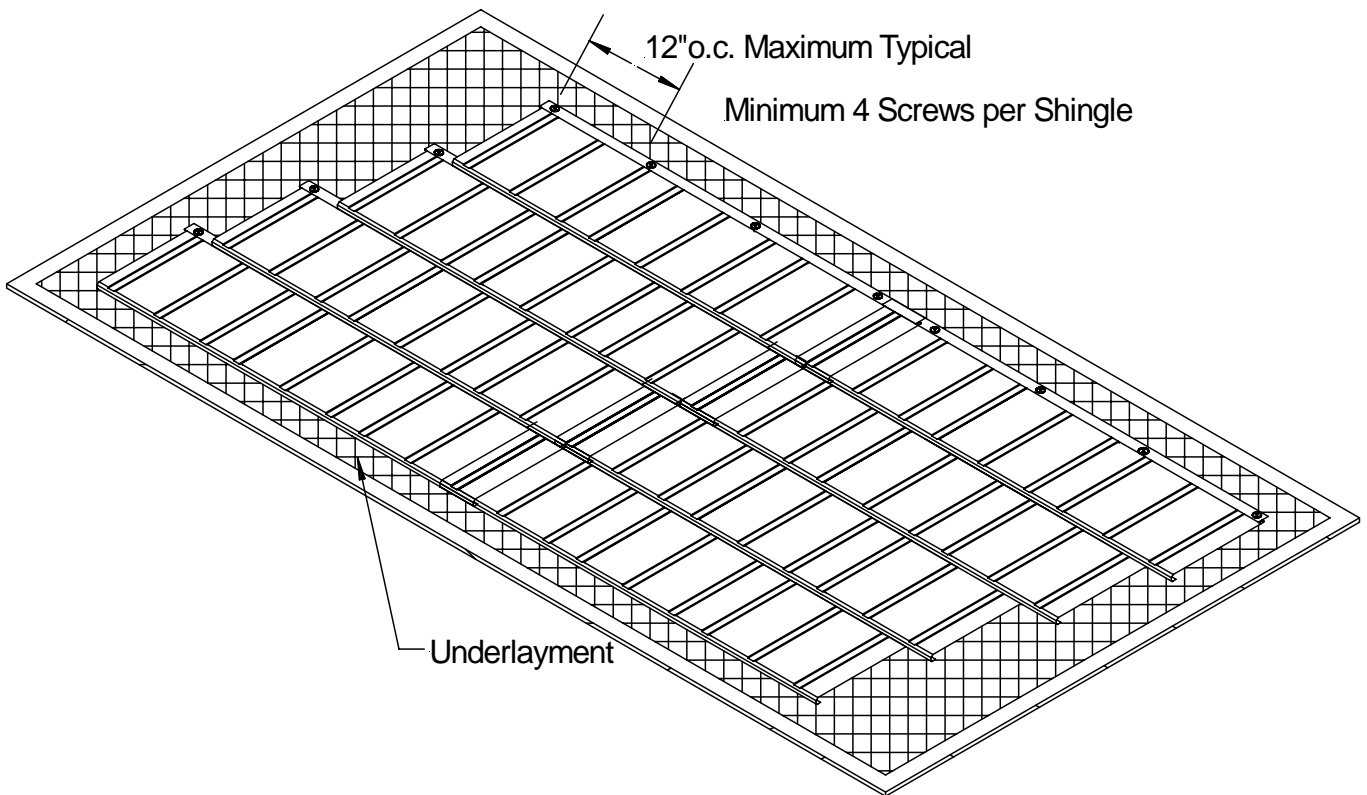
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Installation Method (Continued) Rare Manufacturing, Inc. “Ironwood Shake”(Steel Shingle Panel) Attached to Plywood Deck

Assembly Isometric Drawing



Typical Assembly Isometric View