Evaluation Report

2.0DF-30 DOVETAIL

Roof Deck Panels

Manufacturer:

NUCOR® VULCRAFT (ALABAMA)

7205 Gault Ave N.

Fort Payne, AL 35967

for

Florida Product Approval

FL 48285.1

Florida Building Code FBC 8th Edition (2023)

Method: **2-B**

Category: **Structural Components**

Sub - Category: **Roof Deck**

Product: "2.0DF-30 DOVETAIL"

Product Description: Dovetail (Flat) Roof Deck

Material: Steel

This item has been digitally signed and sealed by James L. Buckner, P.E., on this date below. Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

Prepared by:
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Florida Evaluation ANE ID: 1916
Project Manager: Diana Galloway
Report No. 26-810-2.0DF-30-SRD-ER
(New)
Date: 06/16/2026

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Contents:

Evaluation Report Pages 1 – 9

Manufacturer:

NUCOR® VULCRAFT (ALABAMA)
7205 Gault Ave N.
Fort Payne, AL 35967
(256) 845-2460
http://vulcraft.com

Product Name: **"2.0DF-30 DOVETAIL"**

Product Category: Structural Components

Product Sub-Category Roof Deck

Compliance Method: State Product Approval Rule 61G20-3.005 (2) (b)

Product Description: Dovetail (Flat) Single-fluted, Structural Steel Roof Deck:
"2.0DF-30 DOVETAIL"

Support: **Type:**
Steel Supports
(Design of steel support system is outside the scope of this evaluation.)

Performance: Wind Resistance:

- Design Uplift Pressure: **- 45 PSF (Max.)**
  (Refer to details herein)

Performance Standards: The product described herein has demonstrated compliance with:
ANSI/SDI RD—2017 Standard for Steel Roof Deck

Code Compliance: The product(s) described herein have demonstrated compliance with the intent and principles of the standards adopted by the:
Florida Building Code 8th Edition (2023), Section 1708.2

Evaluation Report Scope: This product evaluation is limited to compliance with the structural requirements of the Florida Building Code, as related to the scope section to Florida Product Approval Rule 61G20-3.001.

Limitations and Conditions of Use:

- Scope of "Limitations and Conditions of Use" for this evaluation:
  This evaluation report for "Optional Statewide Approval" contains technical documentation, specifications and installation method(s) which include "Limitations and Conditions of Use" throughout the report in accordance with Rule 61G20-3.005. Per Rule 61G20-3.004, the Florida Building Commission is the authority to approve products under "Optional Statewide Approval".
- Option for application outside "Limitations and Conditions of Use"
  Rule 61G20-3.005(1)(e) allows engineering analysis for "project specific approval by the local authorities having jurisdiction in accordance with the alternate methods and materials authorized in the Code". Any modification of the product as evaluated in this report and approved by the Florida Building Commission is outside the scope of this evaluation and will be the responsibility of others.
- This report is a building code product evaluation per FLPE rule (FAC) 61G15-36 to comply with Florida product approval rule (FAC) 61G20-3. This evaluation report is part of the Florida Building Commission approval for the listed code related criteria. This report by James Buckner, P.E. and CBUCK Engineering is not a design certification of code compliance construction submittal documentation, per FBC section 107, for any individual structure, site specific or permit design.
- All metal components and fasteners shall be corrosion resistant in accordance with applicable sections of FBC, including but limited to Sections 1504.3.2, 1506.6 and 1507.4.4.
- Design of support system is outside the scope of this report. Support shall be designed by others and shall comply with the FBC Chapters 22 for steel and Chapter 16 for structural loading.
- Fire Classification is outside the scope of Rule 61G20-3 and is therefore not included in this evaluation.
- This evaluation report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)

Quality Assurance: The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 61G20-3.0005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity **FM Approvals, Norwood, MA** (FBC Organization Number: QUA1860).

Components/Materials (by Manufacturer):

Roof Deck Panel: **2.0DF-30 DOVETAIL**

Material:	Steel
Thicknesses:	16, 18 and 20 gauge per Tables
Panel Width:	30" Max. Coverage
Rib Height:	2"
Yield Strength:	50 ksi min.
Corrosion Resistance:	ASTM A 653 In compliance with FBC 2203.2
Material Standard:	AISI S100 in compliance with FBC 2210

Fastener/Attachment Options:

Roof Deck to Supports:

OPTION 1:

Type:	Self-tapping sheet metal screws
Size :	Site specific design by Design Professional
Corrosion Resistance:	Per FBC Section 1506.6 and 1507.4.4
Standard:	Factory Mutual approved

OPTION 2:

Type:	Power-driven fastener
Size :	Site specific design by Design Professional
Corrosion Resistance:	Per FBC Section 1506.6 and 1507.4.4
Standard:	Factory Mutual approved

OPTION 3:

Type:	Quality welding procedure
Size :	Site specific design by Design Professional
Corrosion Resistance:	Per FBC Section 1506.6 and 1507.4.4
Standard:	American National Standards Institute/American Welding Society Standard (ANSI/AWS), "Specification for Welding of Sheet Metal" or applicable standard in FBC Section 2214.3(4)

Panel to Panel, Side Lap Stitching:

Type:	FM approved side lap fasteners
Corrosion Resistance:	Per FBC Section 1506.6 and 1507.4.4
Standard:	Factory Mutual approved

Installation:

Installation Method:
(Refer to tables and drawings at the end of this report.)

Roof Deck to Supports:
Fastener Attachment to Steel Supports May Be Designed By A Qualified Design Professional As Required By The Florida Building Code For Site Specific Projects.

OPTION 1 or 2: FM Approved Fasteners

- Attachment Spacing: As specified in Roofnav assembly, not to exceed max. span for proprietary fastener or spans listed in tables herein.
- Support Spacing: Refer to Table 2.0

OPTION 3: FM Approved Puddle Weld

- Puddle Weld Diameter: Refer to Tables 3.0 – 3.2
- Puddle Weld Pattern: Refer to Tables 3.0 – 3.2
  (at support across the width of the panel)
- Support Spacing: Refer to Tables 3.0 – 3.2

Panel to Panel, Side Lap Stitching:

- Side laps fastened along the panel laps at support intersections, midspans and supports with approved fasteners
- Spacing: As specified per FM approved sidelap fastener

When fasteners are used, min. penetration thru bottom of supports, 3/4".

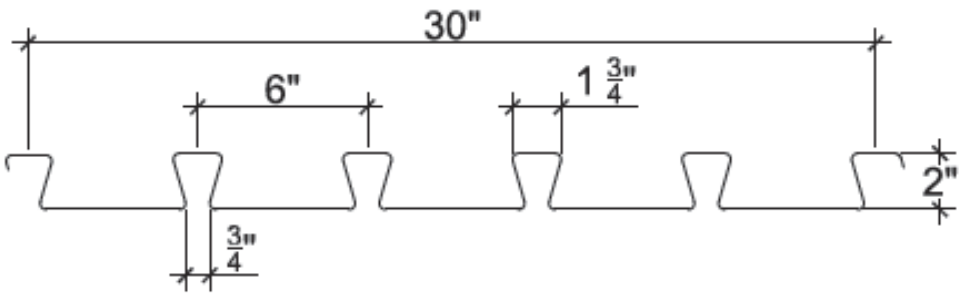
Install the NUCOR® VULCRAFT "2.0DF-30 DOVETAIL" roof deck in compliance with the installation method listed in this report and applicable code sections of FBC 8th Edition (2023). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

1. FM Certification By FM Approvals (FBC Organization #CER ID: 1840)
   FM Approval Link: https://roofnav.fmglobal.com/
   - 2.0DF-30 09-03-24-as.doc
2. FM 4451 Steel Roof Deck Test (PL)
   By Factory Mutual Research Corp. (FBC Organization #TST ID: 1867)
   Report No. PAR469609, Report Date: 12/17/24
3. Quality Assurance
   By FM Approvals, (FBC Organization #QUA ID:1860)
4. Certification of Independence
   By James L. Buckner, P.E. @ CBUCK Engineering
   (FBC Organization # ANE 1916)

Engineering Properties
NUCOR® VULCRAFT
"2.0DF-30 DOVETAIL" Steel Roof Deck Panel

NUCOR® VULCRAFT



Typical Panel Profile

"2.0DF-30 DOVETAIL" Steel Roof Deck Panel
SECTION PROPERTIES

Deck Gage	Deck Weight w_{dd} (psf)	Base Metal Thickness t (in.)	Yield Strength F_y (ksi)	Effective Moment of Inertia at Service Load $I_d = (2I_e+I_g)/3$ I_d+ (in^4/ft)	I_d- (in^4/ft)	Effective Section Modulus at F_y = 50 ksi S_e+ (in^3/ft)	S_e- (in^3/ft)	Allowable Moment M_n+/Ω (lb-ft/ft)	M_n-/Ω (lb-ft/ft)	Vertical Web Shear V_n/Ω (lb/ft)
20	2.7	0.0359	50	0.524	0.468	0.380	0.344	947	859	3978
18	3.6	0.0478	50	0.699	0.660	0.530	0.491	1322	1225	5229
16	4.5	0.0598	50	0.877	0.857	0.670	0.632	1673	1576	6455

Table 1.0

Notes:
- ASTM A653 SS GR 50 Min. with G90
- Standard lengths – 6'-0" to 40'-0"
- Tables conform to ANSI/SDI RD-2017

Installation Method
NUCOR® VULCRAFT
"2.0DF-30 DOVETAIL" Steel Roof Deck Panel

ALLOWABLE LOAD (PSF) FOR NOMINAL SUPPORT SPACING [1,2,3]				
ATTACHED WITH FM APPROVED FASTENERS @ 6" O.C.				
GAUGE	**SPAN CONDITION**	**SUPPORT SPACING (IN.)**	**LOAD CONDITION**	**PSF**
16	SINGLE	156	NEGATIVE	45
	DOUBLE	184	NEGATIVE	45
	3 OR MORE	184	NEGATIVE	45
18	SINGLE	139	NEGATIVE	45
	DOUBLE	164	NEGATIVE	45
	3 OR MORE	164	NEGATIVE	45
20	SINGLE	120	NEGATIVE	45
	DOUBLE	142	NEGATIVE	45
	3 OR MORE	142	NEGATIVE	45

Table 2.0

ALLOWABLE LOAD (PSF) FOR NOMINAL SUPPORT SPACING [1,2,3.4]				
ATTACHED WITH PUDDLE WELDS @ 6" O.C.				
WELD DIAMETER (IN.)	0.625	**WELD PATTERN**		30/5, 30/10
GAUGE	**SPAN CONDITION**	**SUPPORT SPACING (IN.)**	**LOAD CONDITION**	**PSF**
16	SINGLE	156	NEGATIVE	45
	DOUBLE	184	NEGATIVE	45
	3 OR MORE	184	NEGATIVE	45
18	SINGLE	139	NEGATIVE	45
	DOUBLE	164	NEGATIVE	45
	3 OR MORE	164	NEGATIVE	45
20	SINGLE	120	NEGATIVE	45
	DOUBLE	142	NEGATIVE	45
	3 OR MORE	142	NEGATIVE	45

Table 3.0

Installation Method
NUCOR® VULCRAFT
"2.0DF-30 DOVETAIL" Steel Roof Deck Panel

ALLOWABLE LOAD (PSF) FOR NOMINAL SUPPORT SPACING [1,2,3.4]				
ATTACHED WITH PUDDLE WELDS @ 6" O.C.				
WELD DIAMETER (IN.)	0.750	WELD PATTERN		30/5, 30/10
GAUGE	SPAN CONDITION	SUPPORT SPACING (IN.)	LOAD CONDITION	PSF
16	SINGLE	156	NEGATIVE	45
	DOUBLE	184	NEGATIVE	45
	3 OR MORE	184	NEGATIVE	45
18	SINGLE	139	NEGATIVE	45
	DOUBLE	164	NEGATIVE	45
	3 OR MORE	164	NEGATIVE	45
20	SINGLE	120	NEGATIVE	45
	DOUBLE	142	NEGATIVE	45
	3 OR MORE	142	NEGATIVE	45

Table 3.1

ALLOWABLE LOAD (PSF) FOR NOMINAL SUPPORT SPACING [1,2,3.4]				
ATTACHED WITH PUDDLE WELDS @ 6" O.C.				
WELD DIAMETER (IN.)	0.875	WELD PATTERN		30/5, 30/10
GAUGE	SPAN CONDITION	SUPPORT SPACING (IN.)	LOAD CONDITION	PSF
16	SINGLE	156	NEGATIVE	45
	DOUBLE	184	NEGATIVE	45
	3 OR MORE	184	NEGATIVE	45
18	SINGLE	139	NEGATIVE	45
	DOUBLE	164	NEGATIVE	45
	3 OR MORE	164	NEGATIVE	45
20	SINGLE	120	NEGATIVE	45
	DOUBLE	142	NEGATIVE	45
	3 OR MORE	142	NEGATIVE	45

Table 3.2

Notes for Tables 2.0 – 3.2:

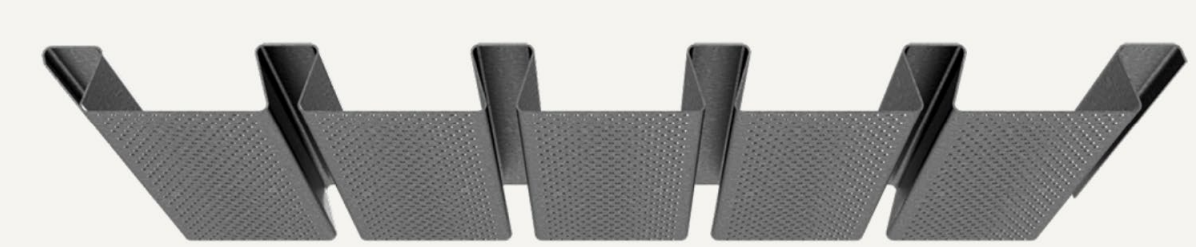
[1]Allowable negative load based on FM Class 1-90

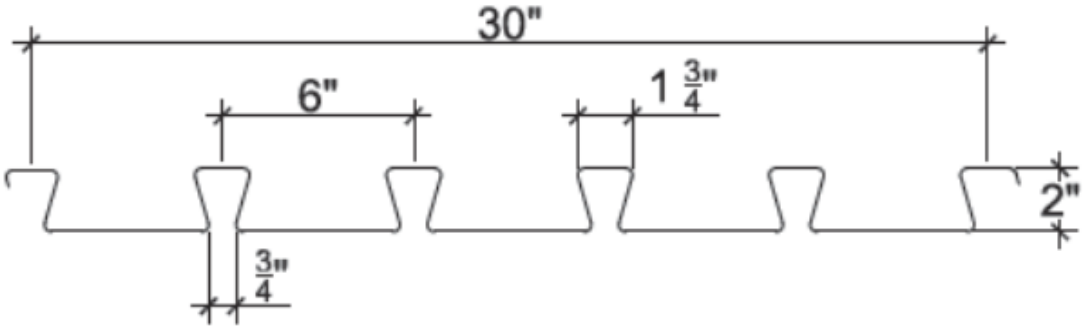
[2]Values do not include a 1/3 stress increase

[3]Diaphragm and axial load capacity is outside the scope of this evaluation.

[4]Weld Electrode, MPa 414, 60,000 psi

Installation Method
NUCOR® VULCRAFT
"2.0DF-30 DOVETAIL" Steel Roof Deck Panel





Typical Panel Profile

Sidelap Detail