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APPROVAL REPORT

Project No: PR454879
Class: 4451
Product Name: Type 1.5B, Type 1.5BA, Type 1.5BI, Type 1.5BIA, Type 1.5BP, Type 1.5BPA, Type 1.5PLBA, Type 1.5PLB, Type 1.5PLBP and Type 1.5PLBPA
Name of Listing Company: Nucor Vulcraft Group
Address of Listing Company: 1601 W Omaha Ave
PO Box 59
Norfolk, NE 68702-0729
United States
Customer ID: 1000000591-1
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1/31/2022

Date of Approval

INTRODUCTION

- 1.1. Nucor Vulcraft Group requested Approvals of their Type 1.5B, Type 1.5BA, Type 1.5BI, Type 1.5BIA with an increased yield strength of the steel to 50 ksi (345 MPa) and the tensile strength of 65 ksi (448 MPa) and they requested Approval for their Type 1.5BP, Type 1.5BPA, Type 1.5PLBA, Type 1.5PLB, Type 1.5PLBP and Type 1.5PLBPA Steel Roof Decks to determine if they meet the Approval requirements of the standard listed in Section 1.3.
- 1.2. This report may be freely reproduced only in its entirety and without modification.
- 1.3. **Standard**

Title	Number	Issue Date
Approval Standard for Profiled Steel Panels for Use as Decking in Class 1 Insulated Roof Construction	4451	06/2012

- 1.4. **Listing**

The products will be listed in RoofNav with an increased yield strength and the new steel deck products will be added to RoofNav, an on-line resource of FM Approvals. Drawings and specifications are on file at FM Approvals.

2. DESCRIPTION

Trade Name:	Type 1.5BP 22 ga (0.75 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0295 in (0.75 mm)
Span:	85 in (1651 mm)

Trade Name:	Type 1.5BP 20 ga (0.91 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0358 in (0.91 mm)
Span:	93 in (2362 mm)

Trade Name:	Type 1.5BP 18 ga (1.20 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0474 in (1.2 mm)
Span:	106 in (2692 mm)

Trade Name:	Type 1.5BP 16 ga (1.52 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0598 in (1.52 mm)
Span:	119 in (3022 mm)

Trade Name:	Type 1.5BPA 22 ga (0.75 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0295 in (0.75 mm)
Span:	82 in (2082 mm)

Trade Name:	Type 1.5BPA 20 ga (0.91 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0358 in (0.91 mm)
Span:	91 in (2311 mm)

Trade Name:	Type 1.5BPA 18 ga (1.20 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0474 in (1.2 mm)
Span:	103 (2616 mm)

Trade Name:	Type 1.5BPA 16 ga (1.52 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0598 in (1.52 mm)
Span:	116 in (2946 mm)

Trade Name:	Type 1.5PLBA 22 ga (0.75 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0295 in (0.75 mm)
Span:	82 in (2082 mm)

Trade Name:	Type 1.5PLBA 20 ga (0.91 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)

Width:	36 in (914 mm)
Thickness:	0.0358 in (0.91 mm)
Span:	91 in (2311 mm)

Trade Name:	Type 1.5PLBA 18 ga (1.20 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0474 in (1.2 mm)
Span:	103 (2616 mm)

Trade Name:	Type 1.5PLBA 16 ga (1.52 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0598 in (1.52 mm)
Span:	116 (2946 mm)

Trade Name:	Type 1.5PLB 22 ga (0.75 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0295 in (0.75 mm)
Span:	85 in (2159 mm)

Trade Name:	Type 1.5PLB 20 ga (0.91 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0358 in (0.91 mm)
Span:	93 in (2362 mm)

Trade Name:	Type 1.5PLB 18 ga (1.20 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0474 in (1.2 mm)
Span:	106 in (2692 mm)

Trade Name:	Type 1.5PLB 16 ga (1.52 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0598 in (1.52 mm)
Span:	119 in (3022 mm)

Trade Name:	Type 1.5PLBP 22 ga (0.75 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0295 in (0.75 mm)
Span:	85 in (2159 mm)

Trade Name:	Type 1.5PLBP 20 ga (0.91 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0358 in (0.91 mm)
Span:	93 in (2362 mm)

Trade Name:	Type 1.5PLBP 18 ga (1.20 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0474 in (1.2 mm)
Span:	106 in (2692 mm)

Trade Name:	Type 1.5PLBP 16 ga (1.52 mm)
Acoustical:	No
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0598 in (1.52 mm)
Span:	119 in (3022 mm)

Trade Name:	Type 1.5PLBPA 22 ga (0.75 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0295 in (0.75 mm)
Span:	82 in (2082 mm)

Trade Name:	Type 1.5PLBPA 20 ga (0.91 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0358 in (0.91 mm)
Span:	91 in (2311 mm)

Trade Name:	Type 1.5PLBPA 18 ga (1.20 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)

Width:	36 in (914 mm)
Thickness:	0.0474 in (1.2 mm)
Span:	103 (2616 mm)

Trade Name:	Type 1.5PLBPA 16 ga (1.52 mm)
Acoustical:	Yes
Rib Type:	Type WR
Depth:	1.5 in (38 mm)
Width:	36 in (914 mm)
Thickness:	0.0598 in (1.52 mm)
Span:	116 (2946 mm)

All other products are Approved as described in RoofNav.

3. EXAMINATIONS AND TESTS

- 3.1. All components were produced under the FM Approvals Surveillance Audit program as indicated by FM Approvals labels. All samples were considered to be representative of standard production and were examined and tested as indicated below. Test samples were prepared by, or under the supervision of, FM Approvals personnel. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.
- 3.2. Several performance requirements and tests required by the Standard have been waived due to previous successful testing. See Table 1 below for details.

Table 1

FM Standard 4451 Performance Requirement	FM Standard 4451 Section	Submissions Required / Waivers
Allowable Live Load Deflection	4.1	Calculations included
Combustibility From Below the Roof Deck	4.2	Waived, see Project ID 3035661
Combination pull out / pull over resistance of fasteners (Testing)	4.3.1.1	Waived, steel deck installed in combination with FM Approved steel deck fasteners
Pull over resistance of fasteners (Calculation)	4.3.1.2	Waived, steel deck installed in combination with FM Approved steel deck fasteners
Combination pull off / pull over resistance of arc spot welds	4.3.1.3	Calculations included
Side lap fastener and side lap crimping and interlocking resistance	4.3.1.4	Waived, see Project ID 0C8A7.AM, 0G1A4.AM, 0M4A1.AM, 3029260 and 3057375
Fastener pull out resistance for above deck components	4.3.1.5	Not Required, no stiffening rib
Steel Deck Bending Stresses Under Service Wind Loads	4.3.1.6	Calculations included
Wind Uplift Ratings Greater Than Class1-90 and all assemblies that	4.3.2	Waived, Maximum Class of 1-90 requested

utilize steel deck with a design thickness less than 0.0295 in (0.75mm)		
Foot Traffic Resistance of Insulation	4.4	Waived, see Project ID 3049081
Bearing Capacity of Insulation	4.5	Waived, top flange width is greater than 2 in. (50mm)
Corrosion Resistance Test (Optional Test)	4.6	Not Requested
Drivability Evaluation of Fasteners	4.7	Waived, FM Approved fasteners will be used

4. MARKING

- 4.1. Marking on the product or, if not possible due to size, on its packaging or label accompanying the product, shall include the following information:
- name and address of the manufacturer or marking traceable to the manufacturer;
 - date of manufacture or code traceable to date of manufacture or lot identification;
 - trade name or model numbers.
 - FM Approval Mark
- 4.2 The product trade name, model number or model type identification shall correspond with RoofNav, the manufacturer's catalog designation and shall uniquely identify the product as FM Approved. The manufacturer shall not place this trade name or model number identification on any other product unless covered by a separate agreement with FM Approvals.
- 4.3 Markings denoting Approval by FM Approvals shall be applied by the manufacturer only within and on the premises of manufacturing locations that are under the FM Approvals Surveillance Audit program.
- 4.4 The manufacturer agrees that use of the FM Approvals name or Approval Mark is subject to the conditions and limitations of the Approval by FM Approvals. Such conditions and limitations must be included in all references to Approval by FM Approvals.

5. SURVEILLANCE AUDIT

The manufacturing facilities at the following locations shall be visited on a routine basis. The facility processes and quality control procedures in place have been determined to be satisfactory to manufacture products identical to that tested and Approved. An FM Approved Products/Specification-Tested Revision Request Form shall be submitted to FM Approvals for requesting to manufacture products at any additional or alternate manufacturing facilities which are not listed below.

Audit Locations

1601 W Omaha Ave
 PO Box 59
 Norfolk, NE 68702-0729
 United States

6610 County Road 60,
 St. Joe, IN 46785
 United States

175 CR 2345,
Grapeland, TX 75844
United States

1501 W. Darlington Street,
Florence, SC 29501
United States

7205 Gault Avenue North,
Ft. Payne, AL 35968
United States

5362 Railroad Street,
Chemung, NY 14825
United States

6. MANUFACTURER'S RESPONSIBILITIES

- 6.1. The manufacturer shall notify FM Approvals of any planned change in the Approved products, prior to general sale or distribution, using the FM Approved Products/Specification-Tested Revision Request Form. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals.
- 6.2. To ensure compliance with his procedures in the field, the manufacturer shall supply to the installer such necessary instruction or assistance required to produce the desired performance achieved in the tests.
- 6.3. In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

7. DOCUMENTATION

The following document describes the steel decks and is on file at FM Approvals.

Document Title	Issue Date
Surveillance Audit Manual	December 2021

8. CONCLUSIONS

- 8.1. Evaluation and testing from this and previous test programs indicate that Nucor Vulcraft Group Type 1.5B, Type 1.5BA, Type 1.5BI, Type 1.5BIA, Type 1.5BP, Type 1.5BPA, Type 1.5PLBA, Type 1.5PLB, Type 1.5PLBP and Type 1.5PLBPA steel roof decks with the yield strength of 50 ksi (345 MPa) and a tensile strength of 65 ksi (448 MPa) continue to meet the Approval requirements.
- 8.2. The following steel roof decks are secured to the structural supports spaced at the maximum center to center spans as shown in the tables below for Class 1-60, Class 1-75 and Class 1-90.
- 8.2.1. Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB, Type 1.5PLBP, Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel roof decks are secured to the building structural supports using FM Approved fasteners spaced at the maximum center to center spans shown in the tables as follows.

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778
20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	

MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

8.3. Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel roof decks are secured to the building structural with puddle welds spaced at the maximum center to center span shown in the tables as follows.

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.5 in. (13 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	-	-	-	-
20 (0.0358 [0.91])	79	2007	-	-	-	-
18 (0.0474 [1.2])	90	2286	-	-	-	-
16 (0.0598 [1.52])	101	2565	-	-	-	-
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2108	-	-	-	-
20 (0.0358 [0.91])	93	2362	-	-	-	-
18 (0.0474 [1.2])	106	2692	-	-	-	-
16 (0.0598 [1.52])	119	2388	-	-	-	-
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	-	-	-	-
20 (0.0358 [0.91])	93	2362	-	-	-	-
18 (0.0474 [1.2])	106	2692	-	-	-	-
16 (0.0598 [1.52])	119	2972	-	-	-	-

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.625in (16 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565

Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2108	85	1727
20 (0.0358 [0.91])	93	2362	93	2362	93	2083
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.75in (19 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565

Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.875 in. (22 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					

	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565
Deck Design Thickness						
	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023
Deck Design Thickness						
	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.5 in. (13 mm) diameter welds spaced 6 in. (152.4 mm)						
	Wind Rating - One Span					
	1-60		1-75		1-90	
Deck Design Thickness	in.	mm	in.	mm	in.	mm
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	-	-	-	-
20 (0.0358 [0.91])	79	2007	-	-	-	-
18 (0.0474 [1.2])	90	2286	-	-	-	-
16 (0.0598 [1.52])	101	2565	-	-	-	-
Deck Design Thickness						
	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	-	-	-	-
20 (0.0358 [0.91])	93	2362	-	-	-	-
18 (0.0474 [1.2])	106	2692	-	-	-	-
16 (0.0598 [1.52])	119	3023	-	-	-	-
Deck Design Thickness						
	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	-	-	-	-
20 (0.0358 [0.91])	93	2362	-	-	-	-
18 (0.0474 [1.2])	106	2692	-	-	-	-

16 (0.0598 [1.52])	119	3023	-	-	-	-
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Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.625 in. (16 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.75 in. (19 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Nucor Vulcraft Group Type 1.5B, Type 1.5BI, Type 1.5BP, Type 1.5PLB and Type 1.5PLBP steel decks						
Secured with 0.875 in. (22 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	72	1829	72	1829	72	1829
20 (0.0358 [0.91])	79	2007	79	2007	79	2007
18 (0.0474 [1.2])	90	2286	90	2286	90	2286
16 (0.0598 [1.52])	101	2565	101	2565	101	2565

Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	85	2159	85	2159	85	2159
20 (0.0358 [0.91])	93	2362	93	2362	93	2362
18 (0.0474 [1.2])	106	2692	106	2692	106	2692
16 (0.0598 [1.52])	119	3023	119	3023	119	3023

8.4. Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel roof deck is secured to the building structural with puddle welds spaced at the maximum center to center span shown in the tables as follows.

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.5 in. (13 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	-	-	-	-
20 (0.0358 [0.91])	77	1956	-	-	-	-

18 (0.0474 [1.2])	88	2235	-	-	-	-
16 (0.0598 [1.52])	98	2489	-	-	-	-
Deck Design Thickness						
Wind Rating - Two Spans						
		1-60		1-75		1-90
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	-	-	-	-
20 (0.0358 [0.91])	91	2311	-	-	-	-
18 (0.0474 [1.2])	103	2616	-	-	-	-
16 (0.0598 [1.52])	94	2388	-	-	-	-
Deck Design Thickness						
Wind Rating - Three or More Spans						
		1-60		1-75		1-90
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	-	-	-	-
20 (0.0358 [0.91])	91	2311	-	-	-	-
18 (0.0474 [1.2])	103	2616	-	-	-	-
16 (0.0598 [1.52])	116	2946	-	-	-	-

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.625 in. (16 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness						
Wind Rating - One Span						
		1-60		1-75		1-90
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778
20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness						
Wind Rating - Two Spans						
		1-60		1-75		1-90
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness						
Wind Rating - Three or More Spans						
		1-60		1-75		1-90
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.75 in. (19 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778
20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.875 in. (22 mm) diameter welds spaced 12 in. (304.8 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778
20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	

MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.5 in. (13 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	-	-	-	-
20 (0.0358 [0.91])	77	1956	-	-	-	-
18 (0.0474 [1.2])	88	2235	-	-	-	-
16 (0.0598 [1.52])	98	2489	-	-	-	-
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	-	-	-	-
20 (0.0358 [0.91])	90	2286	-	-	-	-
18 (0.0474 [1.2])	103	2616	-	-	-	-
16 (0.0598 [1.52])	115	2921	-	-	-	-
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	-	-	-	-
20 (0.0358 [0.91])	90	2286	-	-	-	-
18 (0.0474 [1.2])	103	2616	-	-	-	-
16 (0.0598 [1.52])	115	2921	-	-	-	-

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.625 in. (16 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778
20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm

22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness						
	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.75 in. (19 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness						
	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778
20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness						
	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness						
	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

Nucor Vulcraft Group Type 1.5BA, Type 1.5BIA, Type 1.5BPA, Type 1.5PLBA and Type 1.5PLBPA steel deck						
Secured with 0.875 in. (22 mm) diameter welds spaced 6 in. (152.4 mm)						
Deck Design Thickness						
	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	70	1778	70	1778	70	1778

20 (0.0358 [0.91])	77	1956	77	1956	77	1956
18 (0.0474 [1.2])	88	2235	88	2235	88	2235
16 (0.0598 [1.52])	98	2489	98	2489	98	2489
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
22 (0.0295 [0.75])	82	2083	82	2083	82	2083
20 (0.0358 [0.91])	91	2311	91	2311	91	2311
18 (0.0474 [1.2])	103	2616	103	2616	103	2616
16 (0.0598 [1.52])	116	2946	116	2946	116	2946

- 8.5.** Tests show that the tested roof constructions in and of themselves would not create a need for automatic sprinklers.
- 8.6.** Since a duly signed Master Agreement is on file for this customer, Approval is effective as of the date of this report.
- 8.7.** Continued Approval will depend upon satisfactory field experience and periodic Surveillance Audits

PROJECT DATA RECORD: PR454879

ORIGINAL TEST DATA See Table 1