

APPROVAL REPORT

Project No: PR475405
Class: 4451
Product Name: 3NP-32, 3PLNP-32, 3NPA-32, and 3PLNPA-32
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

Prepared by

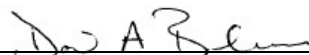


Alfonsina Simo
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Reviewed by



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08 June 2026

Date of Approval

1 INTRODUCTION

1.1 Nucor Vulcraft Group requested Approval of their 3NP-32, 3PLNP-32, 3NPA-32, and 3PLNPA-32 to determine if it meets the Approval requirements of the standard(s) listed in Section 1.3.

1.2 This report may be freely reproduced only in its entirety and without modification.

1.3 Standard(s)

Title	Number	Issue Date
Examination Standard for Profiled Steel Panels for Use as Decking in Class 1 Insulated Roof Construction	4451	05/2024

1.4 Listing

The products and assemblies will be listed in RoofNav, an on-line resource of FM Approvals as shown in Section 9. Formulations, drawings and specifications are on file at FM Approvals.

2 DESCRIPTION

The 3NP-32, 3PLNP-32, 3NPA-32, and 3PLNPA-32 are cellular steel roof decks described as follows:

2.1 3NP-32, 3NPA-32

Trade Name:	3NP-32, 3NPA-32
Acoustical:	Both acoustical and non-acoustical versions available
Rib Type:	Type Deep Rib
Depth:	3.00 in (76.2 mm)
Width:	32.00 in (812.8 mm)
Design Thickness:	20 ga /20ga (0.0358 in/0.0358 in [0.91 mm /0.91 mm]) 20 ga/18ga (0.0358 in/0.0474 in [0.91 mm /1.20 mm]) 18ga /20ga (0.0474 in/0.0358 in [1.20 mm/0.91 mm]) 18 ga /18ga (0.0474 in/0.0474 in [1.20 mm/1.20 mm]) 18ga/16ga (0.0474 in/0.0598 in [1.20 mm/1.52 mm]) 16ga/18ga (0.0598 in/0.0474 in [1.52 mm/1.20 mm]) 16ga/16ga (0.0598 in/ 0.0598 in [1.52 mm/1.52 mm])
Yield Strength:	50 ksi (345 MPa)
Structural Attachment:	FM Approved fasteners or puddle welds
Side Lap Attachment:	Button Punch

2.2 3PLNP-32, 3PLNPA-32

Trade Name:	3PLNP-32, 3PLNPA-32
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Acoustical:	Both acoustical and non-acoustical versions available
Rib Type:	Type Deep Rib
Depth:	3.00 in (76.2 mm)
Width:	32.00 in (812.8 mm)
Design Thickness:	20 ga /20ga (0.0358 in/0.0358 in [0.91 mm /0.91 mm]) 20 ga/18ga (0.0358 in/0.0474 in [0.91 mm /1.20 mm]) 18ga /20ga (0.0474 in/0.0358 in [1.20 mm/0.91 mm]) 18 ga /18ga (0.0474 in/0.0474 in [1.20 mm/1.20 mm]) 18ga/16ga (0.0474 in/0.0598 in [1.20 mm/1.52 mm]) 16ga/18ga (0.0598 in/0.0474 in [1.52 mm/1.20 mm]) 16ga/16ga (0.0598 in/ 0.0598 in [1.52 mm/1.52 mm])
Yield Strength:	50 ksi (345 MPa)
Structural Attachment:	FM Approved fasteners or puddle welds
Side Lap Attachment:	PunchLok II (VSC2)

- 2.3** All other products are as described in RoofNav. Formulations, drawings and specifications are on file at FM Approvals

3 EXAMINATIONS AND TESTS

- 3.1** All components, except those in Section(s) 2.1 – 2.2, 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. Components incorporated into test samples were selected by FM Approvals personnel. 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

Examination Standard 4451 (dated May 2024)		
Section	Test Name	Justification/Comments
4.1	Allowable Live Load Deflection	Calculations included
4.2	Combustibility From Below the Roof Deck	Waived per 3035661
4.3.1.1	Combination pull out / pull over resistance of fasteners (Testing)	Waived, installed with FM Approved fasteners
4.3.1.2	Pull over resistance of fasteners (Calculation)	Waived, installed with FM Approved fasteners
4.3.1.3	Combination pull off / pull over resistance of arc spot welds	Calculations included
4.3.1.4	Side lap fastener pull out testing	Waived, not installed with side lap fastening

Examination Standard 4451 (dated May 2024)		
Section	Test Name	Justification/Comments
4.3.1.5	Side lap crimping and interlocking resistance	Waived - see PR451493 for the Button Punch & PunchLok II (VSC2)
4.3.1.6	Fastener pull out resistance for above deck components	Waived, profile does not contain a stiffening rib
4.3.1.7	Steel Deck Bending Stresses Under Service Wind Loads	Calculations included
4.3.2	Wind Uplift Ratings Greater Than Class 1- 90 and all assemblies that utilize steel deck with a design thickness less than 0.0295 in. (0.75 mm)	Not requested (Optional test)
4.4	Foot Traffic Resistance of Insulation	Waived, see PR451493
4.5	Bearing Capacity of Insulation	Waived, top flange width is greater than 2 in. (50 mm)
4.6	Corrosion Resistance Test (Optional Test)	Not requested (Optional test)
4.7	Drivability Evaluation of Fasteners	Waived, installed with FM Approved fasteners

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;
- model number, model type and/or product trade name as appropriate.

When hazard warnings are needed, the markings shall be universally recognizable.

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 The Approval Mark shall be displayed visibly and permanently on the product and/or packaging as appropriate. The manufacturer shall not use this Mark on any other product unless such product is covered by a separate FM Approvals Approval Report.

4.4 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.

- 4.5** 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 REMARKS

- 5.1** The roof cover must be installed using a roof perimeter flashing system Approved by FM Approvals. See RoofNav.

6 SURVEILLANCE AUDIT

The manufacturing facilities at the following location(s) 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 Location(s)

Site 1: Nucor Vulcraft Group, 1601 W. Omaha Avenue, Norfolk, NE 68702

Site 2: Nucor Vulcraft Group, 5362 Railroad Street, Chemung, NY 14825

7 MANUFACTURER'S RESPONSIBILITIES

- 7.1** 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.
- 7.2** 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.
- 7.3** 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.

8 DOCUMENTATION

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

Document Title	Issue Date
Surveillance Audit Manual	May 2026

9 CONCLUSIONS

9.1 Evaluation from this and prior projects indicates that the 3NP-32, 3PLNP-32, 3NPA-32, and 3PLNPA-32 steel roof decks meet the Approval requirements of FM Approval Standard 4451 for use as components in Class 1-60, Class 1-75, and Class 1-90 wind uplift rated insulated steel deck roof constructions as described below and when installed as described in RoofNav, an on-line resource of FM Approvals.

9.2 The Nucor Vulcraft Group steel roof decks discussed in this report are secured to building structural supports with FM Approved steel deck fasteners spaced at the maximum center to center span as determined by the lesser of the values shown in the tables below, the maximum span for the selected proprietary fastener used to secure the deck or the maximum span shown in a specified RoofNav assembly. The side laps of the decks may be secured using either button punch or PunchLok II (VSC2) at a maximum spacing of 36 in (0.91 m). An FM Approved fully or partially adhered roof covering or mechanically attached roof covering with row spacing equal to or lesser than one-half the deck span is applied per proprietary listings. Additional requirements, if applicable, are as stated in the following sections.

9.3 3NP-32, 3PLNP-32

Nucor Vulcraft Group's 3NP-32, 3PLNP-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	196	4978	196	4978	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	203	5156	203	5156	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	216	5486	216	5486	211	5359
18/18 (0.0474/0.0474 [1.20/1.20])	223	5664	223	5664	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	230	5842	230	5842	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	242	6147	242	6147	242	6147
16/16 (0.0598/0.0598 [1.50/1.50])	249	6325	249	6325	249	6325
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	248	6299	224	5690

18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	266	6756
Deck Design Thickness	Wind Rating – Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	231	5867	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	239	6071	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	254	6452	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	263	6680	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	271	6883	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	286	7264
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	294	7468

9.4 3NPA-32, and 3PLNPA-32

Requirements for Above Deck Construction:

Nominal 0.6 pcf (9.6 kg/m³) fiberglass insulation, 2.5 in. (64 mm) wide by 1.5 in. (38 mm) thick is placed within each lower flute. A minimum 0.5 in. (13 mm) Georgia-Pacific Gypsum Dens Deck thermal barrier board** is required for asphaltic roofs.

**overlaid directly on the steel deck with edges along the centerline of the top flange of the steel deck

Nucor Vulcraft Group's 3NPA-32, 3PLNPA-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	191	4851	191	4851	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	197	5004	197	5004	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	210	5334	210	5334	210	5334
18/18 (0.0474/0.0474 [1.20/1.20])	218	5537	218	5537	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	224	5690	224	5690	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	236	5994	236	5994	236	5994
16/16 (0.0598/0.0598 [1.50/1.50])	243	6172	243	6172	243	6172
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	264	6706	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	278	7061	278	7061	262	6655

16/16 (0.0598/0.0598 [1.50/1.50])	287	7290	287	7290	266	6756
Deck Design Thickness	Wind Rating – Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	225	5715	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	233	5918	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	248	6299	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	257	6528	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	264	6706	264	6706	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	278	7061	278	7061	278	7061
16/16 (0.0598/0.0598 [1.50/1.50])	287	7290	287	7290	287	7290

- 9.5** In lieu of fasteners, the decks can be secured to the building structural supports with puddle welds of either 0.75 in (19.05 mm), 0.875 in (22.23 mm) or 1.00 in (25.4 mm) diameter. Puddle welds using a minimum weld electrode of 60 ksi (414 Mpa) shall be used. The steel roof decks utilize a 32/4 weld pattern, with 4 welds per 32 in. (812.8 mm) wide panels that are spaced an average of 8 in. (203.2 mm) on center. The side laps of the decks may be secured using either button punch or PunchLok II (VSC2) at a maximum spacing of 36 in (0.91 m). An FM Approved fully or partially adhered roof covering or mechanically attached roof covering with row spacing equal to or lesser than one-half the deck span is applied per proprietary listings. Additional requirements, if applicable, are as stated in the following sections

9.5.1 3NP-32, 3PLNP-32

Table A								
Deck Yield		Weld Diameter		Weld Spacing		Weld Electrode		Weld Pattern
psi	MPa	in.	mm	in.	mm	psi	MPa	32/4
50000	345	0.750	19.05	8	203.2	60000	414	

Nucor Vulcraft Group's 3NP-32, 3PLNP-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	196	4978	196	4978	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	203	5156	203	5156	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	216	5486	216	5486	211	5359
18/18 (0.0474/0.0474 [1.20/1.20])	223	5664	223	5664	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	230	5842	230	5842	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	242	6147	242	6147	242	6147
16/16 (0.0598/0.0598 [1.50/1.50])	249	6325	249	6325	249	6325
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	266	6756
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	231	5867	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	239	6071	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	254	6452	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	263	6680	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	271	6883	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	286	7264
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	294	7468

Table B								
Deck Yield		Weld Diameter		Weld Spacing		Weld Electrode		Weld Pattern
psi	MPa	in.	mm	in.	mm	psi	MPa	32/4
50000	345	0.875	22.23	8	203.2	60000	414	

Nucor Vulcraft Group's 3NP-32, 3PLNP-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	196	4978	196	4978	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	203	5156	203	5156	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	216	5486	216	5486	211	5359
18/18 (0.0474/0.0474 [1.20/1.20])	223	5664	223	5664	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	230	5842	230	5842	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	242	6147	242	6147	242	6147
16/16 (0.0598/0.0598 [1.50/1.50])	249	6325	249	6325	249	6325
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	266	6756
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	231	5867	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	239	6071	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	254	6452	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	263	6680	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	271	6883	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	286	7264
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	294	7468

Table C								
Deck Yield		Weld Diameter		Weld Spacing		Weld Electrode		Weld Pattern
psi	MPa	in.	mm	in.	mm	psi	MPa	32/4
50000	345	1.00	25.40	8	203.2	60000	414	

Nucor Vulcraft Group's 3NP-32, 3PLNP-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	196	4978	196	4978	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	203	5156	203	5156	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	216	5486	216	5486	211	5359
18/18 (0.0474/0.0474 [1.20/1.20])	223	5664	223	5664	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	230	5842	230	5842	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	242	6147	242	6147	242	6147
16/16 (0.0598/0.0598 [1.50/1.50])	249	6325	249	6325	249	6325
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	266	6756
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	231	5867	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	239	6071	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	254	6452	254	6452	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	263	6680	263	6680	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	271	6883	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	286	7264
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	294	7468

9.5.2 3NPA-32, 3PLNPA-32

Table A								
Deck Yield		Weld Diameter		Weld Spacing		Weld Electrode		Weld Pattern
psi	MPa	in.	mm	in.	mm	psi	MPa	32/4
50000	345	0.750	19.05	8	203.2	60000	414	

Nucor Vulcraft Group's 3NPA-32, 3PLNPA-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	191	4851	191	4851	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	197	5004	197	5004	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	210	5334	210	5334	210	5334
18/18 (0.0474/0.0474 [1.20/1.20])	218	5537	218	5537	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	224	5690	224	5690	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	236	5994	236	5994	236	5994
16/16 (0.0598/0.0598 [1.50/1.50])	243	6172	243	6172	243	6172
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	264	6706	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	278	7061	278	7061	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	287	7290	287	7290	266	6756
Deck Design Thickness	Wind Rating – Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	225	5715	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	233	5918	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	248	6299	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	257	6528	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	264	6706	264	6706	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	278	7061	278	7061	278	7061
16/16 (0.0598/0.0598 [1.50/1.50])	287	7290	287	7290	287	7290

Table B								
Deck Yield		Weld Diameter		Weld Spacing		Weld Electrode		Weld Pattern
psi	MPa	in.	mm	in.	mm	psi	MPa	32/4
50000	345	0.875	22.23	8	203.2	60000	414	

Nucor Vulcraft Group's 3NPA-32, 3PLNPA-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	191	4851	191	4851	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	197	5004	197	5004	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	210	5334	210	5334	210	5334
18/18 (0.0474/0.0474 [1.20/1.20])	218	5537	218	5537	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	224	5690	224	5690	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	236	5994	236	5994	236	5994
16/16 (0.0598/0.0598 [1.50/1.50])	243	6172	243	6172	243	6172
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	266	6756
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	225	5715	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	233	5918	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	248	6299	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	257	6528	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	271	6883	271	6883	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	286	7264	286	7264	286	7264
16/16 (0.0598/0.0598 [1.50/1.50])	294	7468	294	7468	294	7468

Table C								
Deck Yield		Weld Diameter		Weld Spacing		Weld Electrode		Weld Pattern
psi	MPa	in.	mm	in.	mm	psi	MPa	32/4
50000	345	1.00	25.40	8	203.2	60000	414	

Nucor Vulcraft Group's 3NPA-32, 3PLNPA-32 Steel Deck						
Deck Design Thickness	Wind Rating - One Span					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	191	4851	191	4851	182	4623
20/18 (0.0358/0.0474 [0.91/1.20])	197	5004	197	5004	189	4801
18/20 (0.0474/0.0358 [1.20/0.91])	210	5334	210	5334	210	5334
18/18 (0.0474/0.0474 [1.20/1.20])	218	5537	218	5537	217	5512
18/16 (0.0474/0.0598 [1.20/1.50])	224	5690	224	5690	224	5690
16/18 (0.0598/0.0474 [1.50/1.20])	236	5994	236	5994	236	5994
16/16 (0.0598/0.0598 [1.50/1.50])	243	6172	243	6172	243	6172
Deck Design Thickness	Wind Rating - Two Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	221	5613	195	4953	176	4470
20/18 (0.0358/0.0474 [0.91/1.20])	232	5893	205	5207	185	4699
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	244	6198	220	5588
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	248	6299	224	5690
18/16 (0.0474/0.0598 [1.20/1.50])	264	6706	251	6375	226	5740
16/18 (0.0598/0.0474 [1.50/1.20])	278	7061	278	7061	262	6655
16/16 (0.0598/0.0598 [1.50/1.50])	287	7290	287	7290	266	6756
Deck Design Thickness	Wind Rating - Three or More Spans					
	1-60		1-75		1-90	
MSG (in. [mm])	in.	mm	in.	mm	in.	mm
20/20 (0.0358/0.0358 [0.91/0.91])	225	5715	218	5537	197	5004
20/18 (0.0358/0.0474 [0.91/1.20])	233	5918	229	5817	207	5258
18/20 (0.0474/0.0358 [1.20/0.91])	248	6299	248	6299	246	6248
18/18 (0.0474/0.0474 [1.20/1.20])	257	6528	257	6528	250	6350
18/16 (0.0474/0.0598 [1.20/1.50])	264	6706	264	6706	253	6426
16/18 (0.0598/0.0474 [1.50/1.20])	278	7061	278	7061	278	7061
16/16 (0.0598/0.0598 [1.50/1.50])	287	7290	287	7290	287	7290

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

PROJECT DATA RECORD: PR475405

ORIGINAL TEST DATA: See PDR Table 1