

## APPROVAL REPORT

**Project No:** PR470113 – Reissue 1  
**Class:** 4470, 4471  
**Product Name:** TerraVue Panel with PIR  
**Name of Listing Company:** Metl-Span, A Nucor Company  
**Address of Listing Company:** 700 State Hwy. 121 Suite 200  
Lewisville TX 75067  
United States  
**Customer ID:** 1000000005-2  
**Customer website:** <http://www.metlspan.com>

**Prepared by**



---

Sean Gillis  
Senior Engineer

**Reviewed by**



---

R Scott Holmes  
Operations VP, Group Manager, Materials



---

Phillip J. Smith  
VP, Manager of Materials

**26 September 2025**

---

**Date of Approval**

**11 November 2025**

---

**Date of Reissue**

## **1 INTRODUCTION**

**1.1** Mett-Span, A Nucor Company requested Approval of their TerraVue Panel with PIR to determine if it meets the Approval requirements of the standards listed in Section 1.3.

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

### **1.3 Standards**

| <b>Title</b>                                                                                                                                                    | <b>Number</b> | <b>Issue Date</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction | 4470          | 04/2022           |
| Examination Standard for Class I Panel Roofs                                                                                                                    | 4471          | 03/2025           |

### **1.4 Listing**

The products and assemblies will be listed in RoofNav, an on-line resource of FM Approvals. Formulations, drawings and specifications are on file at FM Approvals. Approved assemblies are listed in Section 9.1.1 – 9.1.10.

## **2 DESCRIPTION**

The TerraVue Panel with PIR is described as follows:

**2.1** TerraVue Panel with PIR is an inert-faced insulated roof sandwich panel manufactured with a rigid polyisocyanurate foam core and is FM Approved in thicknesses of 2 in. – 8 in. (50.8 mm – 203.2 mm) and 44 in. (1117.6 mm) wide. The panel is available with minimum 0.017 in. (0.43 mm) thick painted (optional) galvanized or galvalume steel facers.

**2.2** All other products are as described in RoofNav.

## **3 EXAMINATIONS AND TESTS**

**3.1** Examination included Combustibility from Above the Roof Deck, Wind Uplift Resistance, Hail Damage Resistance, Foot Traffic Resistance and Membrane Delamination Tests for Roofing Membranes and Substrates Using Tensile Loading.

**3.2** 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. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

**3.3** Several performance requirements and tests required by the Standard have been waived due to previous successful testing. See Table 1 and Table 2 below for details.

Table 1

| <b>FM Approval Standard 4470 Performance Requirements</b>                                                                           | <b>Section</b> | <b>Required/Waived</b>                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------|
| Combustibility From Above the Roof Deck                                                                                             | 4.1            | Conducted successfully. See also 3024518 and 3053693                            |
| Combustibility From Below the Roof Deck                                                                                             | 4.2            | Waived <sup>1</sup> – see also project ID PR463362, PR464670, PR464952          |
| Wind Uplift Resistance                                                                                                              | 4.3            | Conducted successfully                                                          |
| Hail Damage Resistance                                                                                                              | 4.4            | Conducted successfully                                                          |
| Water Leakage Resistance Test                                                                                                       | 4.5            | Waived <sup>1</sup>                                                             |
| Foot Traffic Resistance Tests                                                                                                       | 4.6            | Conducted successfully                                                          |
| Corrosion Resistance Test                                                                                                           | 4.7            | Waived <sup>2</sup>                                                             |
| Susceptibility to Heat Damage Test                                                                                                  | 4.8            | Waived <sup>1</sup>                                                             |
| NCC (Noncombustible Core) Rated Roof Insulation (optional rating)                                                                   | 4.9            | Waived – optional test                                                          |
| Dynamic Puncture Resistance Rating of Roof Covers (optional rating)                                                                 | 4.10           | Waived – optional test                                                          |
| Solar Reflectance of Roof Surfaces (optional)                                                                                       | 4.11           | Waived – optional test                                                          |
| Identification Tests - Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis, ASTM E1252 | 4.12           | Waived – test is not required, performed at the sole discretion of FM Approvals |
| Identification Test – FM Approvals Thermal Desorption Gas Chromatography Mass Spectrometry (TD/GC/MS)                               | 4.13           | Waived – test is not required, performed at the sole discretion of FM Approvals |
| Membrane Delamination Tests for Roofing Membranes and Substrates Using Tensile Loading                                              | Appendix B.4   | Conducted successfully                                                          |

<sup>1</sup>The roof covers are FM Approved for the OEM, no new roof covers included. The combinations tested in this program are judged not to affect these performance characteristics.

<sup>2</sup>The fasteners and plates are FM Approved for the OEM, no new fasteners and plates included. The combinations tested in this program are judged not to affect these performance characteristics.

Table 2

| <b>FM Approval Standard 4471 Performance Requirements</b> | <b>Section</b> | <b>Required/Waived</b>                                                                                                                       |
|-----------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Combustibility – From Below Roof Assembly                 | 4.1            | Waived – Per Section 4.1.1 – Not Required for panels that have met the requirements of FM 4880 – see project ID PR463362, PR464670, PR464952 |
| Combustibility – From Above Roof Assembly                 | 4.2            | Conducted successfully                                                                                                                       |
| Wind Uplift Resistance                                    | 4.3            | Conducted successfully                                                                                                                       |
| Foot Traffic Resistance                                   | 4.4            | Conducted successfully                                                                                                                       |
| Hail Damage Resistance                                    | 4.5            | Conducted successfully                                                                                                                       |

### 3.4 Membrane Delamination Tests for Roofing Membranes and Substrates Using Tensile Loading

#### 3.4.1 Two assemblies were tested. The average results of the delamination tests were as follows:

| Membrane                                 | Adhesive                                                                                            | Insulation                            | Average [lbf (N)] |
|------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------|-------------------|
| 60 mil thick<br>FM Approved<br>CSP TPO   | FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate | TerraVue Panel with PIR (4 in. thick) | 23.8 (106)        |
| 60 mil thick<br>FM Approved<br>C-3 PLUS* | FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate | TerraVue Panel with PIR (4 in. thick) | 16.2 (71.9)       |

\*determined to be the most critical roof cover/adhesive combination for wind uplift resistance testing

### 3.5 Combustibility from Above the Roof Deck

#### 3.5.1 Two test samples were constructed and tested as noted below:

##### Sample #1 & #2

|                              |                                                                                                                              |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>            | 60 mil thick FM Approved C-3 Plus                                                                                            |
| <b>Roof Cover Securement</b> | Fully adhered adhesive – FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate |
| <b>Insulation</b>            | TerraVue Panel with PIR (4 in. thick), bottom facer 26 ga. steel, top facer 26 ga. steel                                     |
| <b>Deck</b>                  | Plywood                                                                                                                      |

| Sample # | Slope Tested    | Flame Spread       | Results |
|----------|-----------------|--------------------|---------|
| 1        | 2 in 12 (9.46°) | 54.5 in. (1384 mm) | Class A |
| 2        | 2 in 12 (9.46°) | 57 in. (1448 mm)   | Class A |

### 3.6 FM Approvals 12 x 24 ft (3.7 x 7.3 m) Simulated Wind Uplift Pressure Test

#### 3.6.1 Six test samples were constructed and tested as noted below:

##### Sample #1

|                                        |                                                                                                                                                                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                      | 60 mil thick FM Approved C-3 PLUS (maximum 78 in. wide)                                                                                                                                                                                         |
| <b>Roof Cover to Panel Securement</b>  | Three (3) FM Approved 1.25 in. long Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation. |
| <b>Insulated Panel</b>                 | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                             |
| <b>Structure</b>                       | 14 ga. (2.0 mm) steel, spaced 5 ft. on center                                                                                                                                                                                                   |
| <b>Securement – Panels to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each                                                            |

|                                      |                                                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------|
|                                      | panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| <b>Securement – Panels Stitching</b> | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                  |

**Result:** The test sample maintained its integrity through an uplift force equivalent to an uplift pressure of 105 psf (5.0 kPa). The test sample construction failed after maintaining a load equivalent to a pressure of 120 psf (5.7 kPa) for 30 seconds due to the roof tearing at the weld location. Meets Class 1-105.

#### Sample #2

|                                        |                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                      | 60 mil thick FM Approved C-3 PLUS (maximum 78 in. wide)                                                                                                                                                                                                                                          |
| <b>Roof Cover to Panel Securement</b>  | Three (3) FM Approved 1.25 in. long Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| <b>Insulated Panel</b>                 | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                              |
| <b>Structure</b>                       | 12 ga. (2.75 mm) steel, spaced 8 ft. on center                                                                                                                                                                                                                                                   |
| <b>Securement – Panels to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| <b>Securement – Panels Stitching</b>   | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                       |

**Result:** The test sample maintained its integrity through an uplift force equivalent to an uplift pressure of 135 psf (6.5 kPa). The test sample construction failed while increasing the uplift force to 150 psf (7.2 kPa) due to the top panel facer delaminating from the insulating core. Meets Class 1-135.

#### Sample #3

|                                        |                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                      | 60 mil thick FM Approved CSP TPO (maximum 78 in. wide)                                                                                                                                                                                                                                           |
| <b>Roof Cover to Panel Securement</b>  | Three (3) FM Approved 1.25 in. long Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| <b>Insulated Panel</b>                 | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                              |
| <b>Structure</b>                       | 12 ga. (2.75 mm) steel, spaced 8 ft. on center                                                                                                                                                                                                                                                   |
| <b>Securement – Panels to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |

|                                          |                                                                                            |
|------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Securement – Panels<br/>Stitching</b> | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center |
|------------------------------------------|--------------------------------------------------------------------------------------------|

**Result:** The test sample maintained its integrity through an uplift force equivalent to an uplift pressure of 120 psf (5.7 kPa). The test sample construction failed after maintaining a load equivalent to a pressure of 135 psf (6.5 kPa) for 30 seconds due to the top panel facer delaminating from the insulating core. Meets Class 1-120.

#### Sample #4

|                                            |                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                          | 60 mil thick FM Approved CSP TPO (maximum 78 in. wide)                                                                                                                                                                                                                                           |
| <b>Roof Cover to Panel<br/>Securement</b>  | Three (3) FM Approved 1.25 in. long Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| <b>Insulated Panel</b>                     | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                              |
| <b>Structure</b>                           | 14 ga. (2.0 mm) steel, spaced 5 ft. on center                                                                                                                                                                                                                                                    |
| <b>Securement – Panels<br/>to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| <b>Securement – Panels<br/>Stitching</b>   | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                       |

**Result:** The test sample maintained its integrity through an uplift force equivalent to an uplift pressure of 135 psf (6.5 kPa). The test sample construction failed after maintaining a load equivalent to a pressure of 150 psf (7.2 kPa) for 30 seconds due to the top panel facer delaminating from the insulating core. Meets Class 1-135.

#### Sample #5

|                                            |                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                          | 60 mil thick FM Approved C-3 PLUS (maximum 120 in. wide)*                                                                                                                                                                                                                                        |
| <b>Roof Cover to Panel<br/>Securement</b>  | Fully adhered adhesive – FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate (28 day cure time)                                                                                                                                                  |
| <b>Insulated Panel</b>                     | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                              |
| <b>Structure</b>                           | 12 ga. (2.75 mm) steel, spaced 8 ft. on center                                                                                                                                                                                                                                                   |
| <b>Securement – Panels<br/>to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |

|                                          |                                                                                            |
|------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Securement – Panels<br/>Stitching</b> | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center |
|------------------------------------------|--------------------------------------------------------------------------------------------|

\*results will be applied to CSP TPO

**Result:** The test sample maintained its integrity through an uplift force equivalent to an uplift pressure of 135 psf (6.5 kPa). The test sample construction failed after maintaining a load equivalent to a pressure of 150 psf (7.2 kPa) for 15 seconds due to the insulated panel buckling. Meets Class 1-135.

#### Sample #6

|                                            |                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                          | 60 mil thick FM Approved C-3 PLUS (maximum 120 in. wide)*                                                                                                                                                                                                                                        |
| <b>Roof Cover to Panel<br/>Securement</b>  | Fully adhered adhesive – FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate (28 day cure time)                                                                                                                                                  |
| <b>Insulated Panel</b>                     | FM Approved CF Wall Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                                            |
| <b>Structure</b>                           | 14 ga. (2.0 mm) steel, spaced 5 ft. on center                                                                                                                                                                                                                                                    |
| <b>Securement – Panels<br/>to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| <b>Securement – Panels<br/>Stitching</b>   | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                       |

\*results will be applied to CSP TPO

**Result:** The test sample maintained its integrity through an uplift force equivalent to an uplift pressure of 135 psf (6.5 kPa). The test sample construction failed after maintaining a load equivalent to a pressure of 150 psf (7.2 kPa) for 45 seconds due to the roof cover delaminating from the insulated panel. Meets Class 1-135.

### **3.7** Hail Damage Resistance

**3.7.1** Two test samples were constructed and tested as noted below:

| <b>Membrane</b>                         | <b>Adhesive</b>                                                                                     | <b>Insulation</b>                     | <b>Result</b>      |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------|--------------------|
| 60 mil thick<br>FM Approved<br>CSP TPO  | FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate | TerraVue Panel with PIR (4 in. thick) | Pass – Severe Hail |
| 60 mil thick<br>FM Approved<br>C-3 PLUS | FM Approved Pliobond 9752 at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate | TerraVue Panel with PIR (4 in. thick) | Pass – Severe Hail |

### **3.8** Foot Traffic Resistance

**3.8.1** Two test samples were constructed and tested as noted below:

Sample #1

|                                        |                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                      | 60 mil thick FM Approved C-3 PLUS                                                                                                                                                                                                                                                                |
| <b>Roof Cover to Panel Securement</b>  | Three (3) FM Approved 1.25 in. long Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| <b>Insulated Panel</b>                 | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                              |
| <b>Structure</b>                       | 12 ga. (2.75 mm) steel, spaced 8 ft. on center                                                                                                                                                                                                                                                   |
| <b>Securement – Panels to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| <b>Securement – Panels Stitching</b>   | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                       |

Result: Pass

Sample #2

|                                        |                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roof Cover</b>                      | 60 mil thick FM Approved CSP TPO                                                                                                                                                                                                                                                                 |
| <b>Roof Cover to Panel Securement</b>  | Three (3) FM Approved 1.25 in. long Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| <b>Insulated Panel</b>                 | 44 in. wide, 4 in. thick TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                              |
| <b>Structure</b>                       | 12 ga. (2.75 mm) steel, spaced 8 ft. on center                                                                                                                                                                                                                                                   |
| <b>Securement – Panels to Supports</b> | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| <b>Securement – Panels Stitching</b>   | 1.25 in. long FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                       |

Result: Pass

**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 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**

6001 Quality Way  
Prince George, VA 23875

801 Hunter Industrial Park Road  
Laurens, SC 29360

250 Industrial Parkway  
Waterloo, IN 46793

430 Sherman Ave N  
Hamilton, ON L8L 8J6 Canada

1107 Watery Lane,  
Brigham City, UT 84302

## 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 TerraVue Panel with PIR and is on file at FM Approvals.

| Document Title                                                              | Issue Date |
|-----------------------------------------------------------------------------|------------|
| Surveillance Audit Manual, Utah, Virginia, Indiana, South Carolina, Ontario | 09/2025    |

## 9 CONCLUSIONS

- 9.1** Test results from this program indicate that the submitted products as evaluated, meet the requirements FM Approvals Standards listed in section 1.3 when installed as follows:

### 9.1.1

|                                |                                                                                                                                                                                                                                   |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                  | Maximum Class 1-120                                                                                                                                                                                                               |
| E-108 Slope                    | Class A at 1 in 12                                                                                                                                                                                                                |
| Hail Rating                    | SH                                                                                                                                                                                                                                |
| Roof Cover                     | FM Approved CSP TPO (maximum 60 mil and 78 in. wide)                                                                                                                                                                              |
| Roof Cover to Panel Securement | Three (3) FM Approved Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation. |

|                                 |                                                                                                                                                                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insulated Panel                 | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                             |
| Structure                       | 12 ga. (2.75 mm) thick, 37 ksi (255 Mpa) steel, spaced 8 ft. on center                                                                                                                                                                                                             |
| Securement – Panels to Supports | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2" Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement – Panels Stitching   | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                               |

**9.1.2**

|                                 |                                                                                                                                                                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                   | Maximum Class 1-120                                                                                                                                                                                                                                                                |
| E-108 Slope                     | Class A at ½ in 12                                                                                                                                                                                                                                                                 |
| Hail Rating                     | SH                                                                                                                                                                                                                                                                                 |
| Roof Cover                      | FM Approved CSP TPO (80 mil) (maximum 78 in. wide)                                                                                                                                                                                                                                 |
| Roof Cover to Panel Securement  | Three (3) FM Approved Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                             |
| Structure                       | 12 ga. (2.75 mm) thick, 37 ksi (255 Mpa) steel, spaced 8 ft. on center                                                                                                                                                                                                             |
| Securement – Panels to Supports | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2" Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement – Panels Stitching   | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                               |

**9.1.3**

|                                 |                                                                                                                                                                                                                                                                                                  |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                   | Maximum Class 1-135                                                                                                                                                                                                                                                                              |
| E-108 Slope                     | Class A at 1 in 12                                                                                                                                                                                                                                                                               |
| Hail Rating                     | SH                                                                                                                                                                                                                                                                                               |
| Roof Cover                      | FM Approved CSP TPO (maximum 60 mil and 78 in. wide)                                                                                                                                                                                                                                             |
| Roof Cover to Panel Securement  | Three (3) FM Approved Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                                |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                                           |
| Structure                       | 14 ga. (2.0 mm) thick, 37 ksi (255 Mpa) steel, spaced 5 ft. on center                                                                                                                                                                                                                            |
| Securement – Panels to Supports | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2" Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |

FM APPROVALS PROJECT NO: PR470113

|                                     |                                                                                      |
|-------------------------------------|--------------------------------------------------------------------------------------|
| Securement<br>– Panels<br>Stitching | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center |
|-------------------------------------|--------------------------------------------------------------------------------------|

9.1.4

|                                     |                                                                                                                                                                                                                                                                                    |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                       | Maximum Class 1-135                                                                                                                                                                                                                                                                |
| E-108 Slope                         | Class A at ½ in 12                                                                                                                                                                                                                                                                 |
| Hail Rating                         | SH                                                                                                                                                                                                                                                                                 |
| Roof Cover                          | FM Approved CSP TPO (80 mil) (maximum 78 in. wide)                                                                                                                                                                                                                                 |
| Roof Cover to Panel Securement      | Three (3) FM Approved Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| Insulated Panel                     | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                             |
| Structure                           | 14 ga. (2.0 mm) thick, 37 ksi (255 Mpa) steel, spaced 5 ft. on center                                                                                                                                                                                                              |
| Securement<br>– Panels to Supports  | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement<br>– Panels<br>Stitching | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                               |

9.1.5

|                                     |                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                       | Maximum Class 1-135                                                                                                                                                                                                                                                                              |
| E-108 Slope                         | Class A at 2 in 12                                                                                                                                                                                                                                                                               |
| Hail Rating                         | SH                                                                                                                                                                                                                                                                                               |
| Roof Cover                          | FM Approved C-3 plus (maximum 60 mil and 78 in. wide)                                                                                                                                                                                                                                            |
| Roof Cover to Panel Securement      | Three (3) FM Approved Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                                |
| Insulated Panel                     | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                                           |
| Structure                           | 12 ga. (2.75 mm) thick, 37 ksi (255 Mpa) steel, spaced 8 ft. on center                                                                                                                                                                                                                           |
| Securement<br>– Panels to Supports  | One (1) 5.75 in. long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement<br>– Panels<br>Stitching | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                             |

9.1.6

|                                 |                                                                                                                                                                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                   | Maximum Class 1-105                                                                                                                                                                                                                                                                |
| E-108 Slope                     | Class A at 2 in 12                                                                                                                                                                                                                                                                 |
| Hail Rating                     | SH                                                                                                                                                                                                                                                                                 |
| Roof Cover                      | FM Approved C-3 plus (maximum 60 mil and 78 in. wide)                                                                                                                                                                                                                              |
| Roof Cover to Panel Securement  | Three (3) FM Approved Trufast #15 EHD Fastener EHD-1250 and one (1) FM Approved Trufast VERSA-FAST Metal Plate MPVF-3000, spaced 6 in. on center along the roof cover lap. A 6 in. lap is heat welded to finish the installation.                                                  |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                             |
| Structure                       | 14 ga. (2.0 mm) thick, 37 ksi (255 Mpa) steel, spaced 5 ft. on center                                                                                                                                                                                                              |
| Securement – Panels to Supports | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement – Panels Stitching   | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                               |

**9.1.7**

|                                 |                                                                                                                                                                                                                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                   | Maximum Class 1-135                                                                                                                                                                                                                                                                     |
| E-108 Slope                     | Class A at ½ in 12                                                                                                                                                                                                                                                                      |
| Hail Rating                     | SH                                                                                                                                                                                                                                                                                      |
| Roof Cover                      | FM Approved CSP TPO (maximum 60 mil and 120 in. wide)                                                                                                                                                                                                                                   |
| Roof Cover to Panel Securement  | Fully adhered adhesive – FM Approved Pliobond 9752 or FM Approved Cooley Bonding Adhesive at 1.0 gal/square (1.05 square/gal) – applied on roof cover and substrate                                                                                                                     |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                                  |
| Structure                       | 12 ga. (2.75 mm) thick, 37 ksi (255 Mpa) steel, spaced 8 ft. on center                                                                                                                                                                                                                  |
| Securement – Panels to Supports | One (1) long FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement – Panels Stitching   | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                                    |

**9.1.8**

|               |                                                       |
|---------------|-------------------------------------------------------|
| Uplift Rating | Maximum Class 1-135                                   |
| E-108 Slope   | Class A at ½ in 12                                    |
| Hail Rating   | SH                                                    |
| Roof Cover    | FM Approved CSP TPO (maximum 60 mil and 120 in. wide) |

|                                 |                                                                                                                                                                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roof Cover to Panel Securement  | Fully adhered adhesive – FM Approved Pliobond 9752 or FM Approved Cooley Bonding Adhesive at <u>1.0 gal/square (1.05 square/gal)</u> – applied on roof cover and substrate                                                                                                         |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR, bottom facer 26 ga. steel, top facer 26 ga. steel                                                                                                                                                                                             |
| Structure                       | 14 ga. (2.0 mm) thick, 37 ksi (255 Mpa) steel, spaced 5 ft. on center                                                                                                                                                                                                              |
| Securement – Panels to Supports | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement – Panels Stitching   | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                               |

**9.1.9**

|                                 |                                                                                                                                                                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                   | Maximum Class 1-135                                                                                                                                                                                                                                                                |
| E-108 Slope                     | Class A at 2 in 12                                                                                                                                                                                                                                                                 |
| Hail Rating                     | SH                                                                                                                                                                                                                                                                                 |
| Roof Cover                      | FM Approved C-3 plus (maximum 60 mil and 120 in. wide)                                                                                                                                                                                                                             |
| Roof Cover to Panel Securement  | Fully adhered adhesive – FM Approved Pliobond 9752 or FM Approved Cooley Bonding Adhesive at <u>1.0 gal/square (1.05 square/gal)</u> – applied on roof cover and substrate                                                                                                         |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR                                                                                                                                                                                                                                                |
| Structure                       | 12 ga. (2.75 mm) thick, 37 ksi (255 Mpa) steel, spaced 8 ft. on center                                                                                                                                                                                                             |
| Securement – Panels to Supports | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement – Panels Stitching   | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                                                                                                                                                               |

**9.1.10**

|                                 |                                                                                                                                                                            |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uplift Rating                   | Maximum Class 1-135                                                                                                                                                        |
| E-108 Slope                     | Class A at 2 in 12                                                                                                                                                         |
| Hail Rating                     | SH                                                                                                                                                                         |
| Roof Cover                      | FM Approved C-3 plus (maximum 60 mil and 120 in. wide)                                                                                                                     |
| Roof Cover to Panel Securement  | Fully adhered adhesive – FM Approved Pliobond 9752 or FM Approved Cooley Bonding Adhesive at <u>1.0 gal/square (1.05 square/gal)</u> – applied on roof cover and substrate |
| Insulated Panel                 | FM Approved TerraVue Panel with PIR                                                                                                                                        |
| Structure                       | 14 ga. (2.0 mm) thick, 37 ksi (255 Mpa) steel, spaced 5 ft. on center                                                                                                      |
| Securement – Panels to Supports | One (1) FM Approved Trufast #12 Purlin Fastener PF-5750 and one (1) FM Approved Trufast 2” Metal Seam Plate MP-2000. One (1) fastener/plate is                             |

FM APPROVALS PROJECT NO: PR470113

|                                     |                                                                                                                                     |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                     | secured 4 in. from each panel edge, and then 12 in. on center in between, for a total of four (4) fasteners/plates per panel width. |
| Securement<br>– Panels<br>Stitching | One (1) FM Approved Trufast #14 HD Fastener HD-1250 – spaced every 2.5 ft. on center                                                |

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

**PROJECT DATA RECORD:** PR470113

**ORIGINAL TEST DATA** See Table 1 and Table 2

| Rev | Change Description                                    | Date       | Originator  | Approver |
|-----|-------------------------------------------------------|------------|-------------|----------|
| 1   | Report was updated into the Miami-Dade county format. | 11/10/2025 | Sean Gillis |          |