

Nucor Insulated Panel Group, Metl-Span's 7.2 Insul-Rib (PIR) Panel Assembly Project ENG-2411-323
December 20, 2024

Mr. Mark J. Klos and Mr. Andrew J. Feikls
Nucor Insulated Panel Group
1720 Lakepoint Dr, Ste 101
Lewisville, TX 75067-6425

Re: Insul-Rib Panel Assembly Evaluation Letter and FPA^{1,2,3,4}

Dear Mr. Klos and Mr. Feikls:

DrJ Engineering, LLC (DrJ) has been asked to provide a Florida professional engineering accepted engineering practice review with respect to Nucor Insulated Panel Group (NIPG): Metl-Span 7.2 Insul-Rib Wall Panels. This work has been performed pursuant to our areas of expertise.

The purpose of the DrJ review is to provide an engineering assessment of the conformance of the 7.2 Insul-Rib Wall Panels with the 2023 Florida Building Code (FBC), specifically for High Velocity Hurricane Zones (HVHZ).

Background

Insul-Rib panels are factory-assembled, metal-faced sandwich panels consisting of a polyisocyanurate foam plastic core, (minimum density of 2.3 pcf) and two metal facers. Panel facing material is steel conforming to ASTM A653 SS (Structural Steel) Grade 33 ($F_{\text{yield}} = 33 \text{ ksi}$), with Class G90 zinc coating (galvanized), or steel conforming to ASTM A792 SS Grade 33 with a Class AZ50 Galvalume coating. Available thicknesses of panel facing material are 26-gauge, 24-gauge, and 22-gauge. The profile of the Insul-Rib panels are shown in **Figure 1**.



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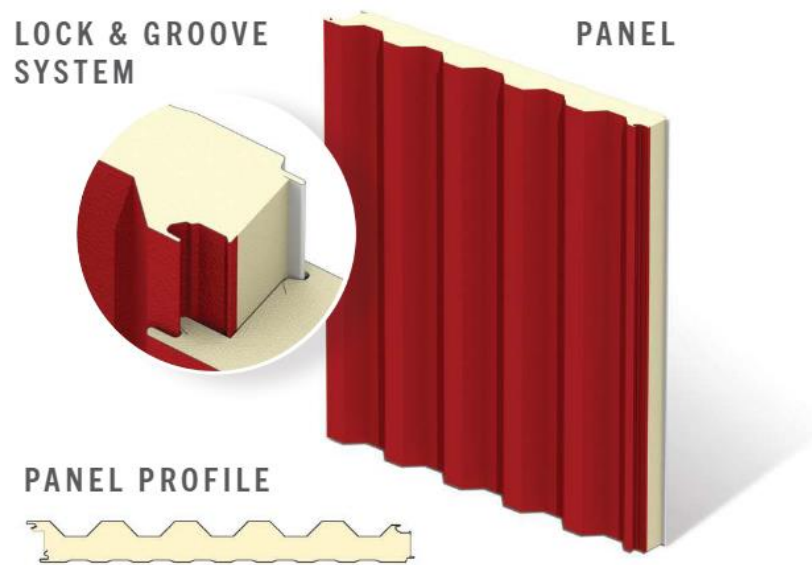


Figure 1. NIPG: Metl-Span 7.2 Insul-Rib Wall Panel

Insul-Rib Wall panels include a double tongue-and-groove edge profile and may be installed horizontally or vertically. The available thicknesses of the Insul-Rib panels are 3", 4", and 5". The panels have a maximum coverage width of 36".

Review, Evaluation and Certification of for FBC: HVHZ Code Compliance

As legally adopted by the State of Florida, a wall assembly must comply with the 2023 Florida Building Code (FBC), specifically FBC Chapter 14 for exterior wall requirements, FBC Section 2603 for the foam plastic insulation core, and FBC Chapter 16 for structural design.

Insul-Rib Wall Panels conform to Section 1403, Section 1404, Section 1405, Section 2603, and Section 2615 of the 2023 FBC.

Minimum base metal thickness (both exterior and interior) is 0.017", and this thickness meets the weather protection requirements in Section 1405.2 and Section 1406.2.1.1 in the FBC.

Panels shall be attached to supports that are a minimum of 14-gauge steel (minimum $F_y = 50$ ksi).

All fasteners used shall be corrosion-resistant per FBC Section 1405.17. Panel end-joints shall be located at supports that are a minimum of 5" wide to ensure that each panel end is independently fastened, flashed, and sealed properly.

Insul-Rib Wall Panels shall not be used for shear transfer or diaphragm action for adding stability to the primary building frame.

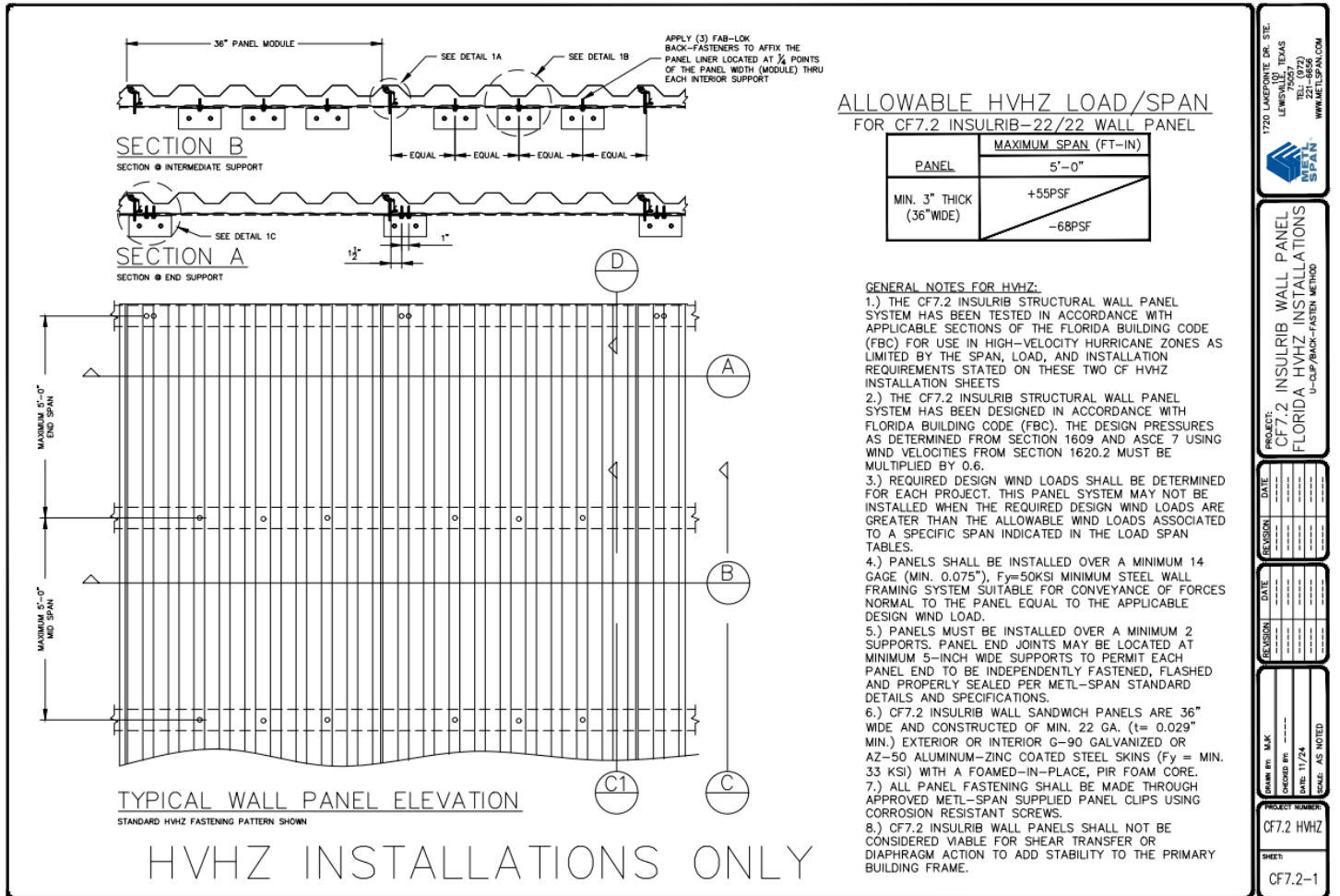


Figure 2. NIPG: Metl-Span 7.2 Insul-Rib Wall Panel – HVHZ Assembly Overview

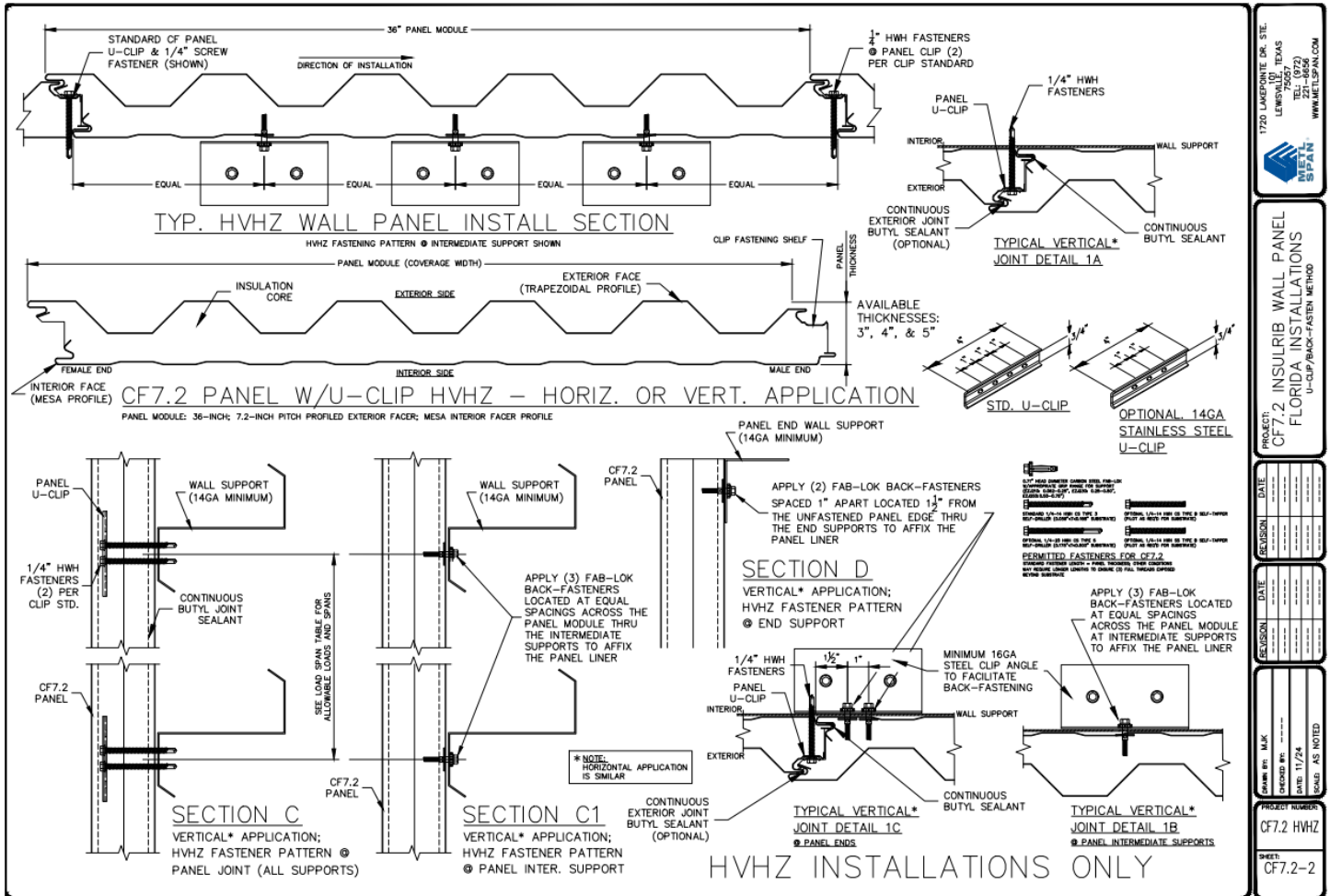


Figure 1. NIPG: Metl-Span 7.2 Insul-Rib Wall Panel – HVHZ Assembly Connections

As specified in FBC Section 1626.2 per FBC Section 1626.1, Insul-Rib Wall Panels were evaluated in accordance with TAS 201 and TAS 203. Furthermore, Insul-Rib Wall Panels were also evaluated in accordance with TAS 202 per TAS 201 Section 12.4.

The Insul-Rib Wall Panel assembly detailed in this letter comply with the requirements specified in FBC Section 1626.2.8, and achieved at design pressure of +55 psf / -68 psf when panels are supported at 5' o.c.

Conclusion

The Insul-Rib Wall Panel assembly detailed in this letter may be permitted for use in High-Velocity Hurricane Zones (HVHZ). Maximum span for the Insul-Rib Wall Panels is 5'.



General Regulatory Compliance and Approval

DrJ's procedures are fully compliant with 17065 certification procedures and DrJ's scope of expertise.

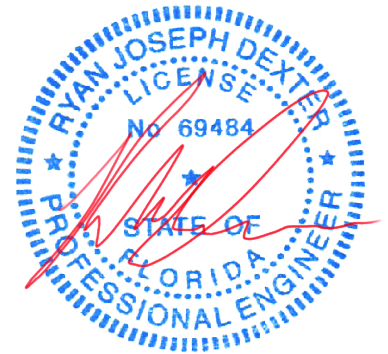
If there are any questions or concerns, we will gladly provide a Florida professional engineering⁵ and ANAB 17065 accredited approved agency⁶ response. Pursuant to FBC Section 1707.1 and FBC Section 104.11, we would sincerely appreciate knowing the specific building regulations and/or professional engineering law that this 17065 Research Report does not comply with, so that we can cure any non-conformance.⁷ From specifics, we can then delineate a path forward that will serve everyone's free and fair market⁸ competition's best interests.

Our goal with this 17065 evaluation and certification is to provide both the accepted engineering analysis and regulatory compliance substance that supports efficient approval. Please contact us if we can help further in any way. If your request is time-sensitive, please contact Jill Zimmerman at (920) 988-7165. Thank you very much.

Respectfully yours,

Chris Scoville
Vice President Product Certification
608-310-6720

Ryan Dexter, P.E.
Florida P.E. Seal No. 69484
Vice President
608-310-6744



December 20, 2024

Ryan Dexter

Digitally signed by Ryan Dexter
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Date: 2024.12.20
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Notes

- ¹ The scope of work contained herein is limited to the specific engineering and/or regulatory compliance analysis undertaken in this duly authenticated report which is also known as a technical evaluation, evaluation report, research report, accepted evaluation to a reasonable degree of engineering certainty and so forth. This work has been prepared by an Approved Source, who is a Registered Design Professional (RDP). No representation or warranty is expressed or implied by this duly authenticated report beyond the scope of work performed. Information, data, and/or analysis that becomes available in the future may justify modifications to this professional evaluation report.
- ² Approved source. An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses, which is a professional engineer. An approved source is "approved" when a professional engineer (i.e., Registered Design Professional [RDP]) is properly licensed to transact engineering commerce. To find licensed professional engineers please see this website: <https://www.nspe.org/resources/licensure/licensing-boards> The regulatory authority governing approved sources is the state legislature via its professional engineering regulations. Commercial and professional engineering laws affirm that the RDP has the ability to undertake commerce applying engineering principles in their area of expertise without restraint or discrimination. Florida has set legal precedent.
- ³ Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, and Appendix A: Definitions/Commentary. Otherwise, terms not defined shall have ordinarily accepted meanings as the context implies.
- ⁴ The links referenced herein use un-amended versions of the 2021 International Code Council (ICC) model codes as foundation references. Colorado, Illinois or Wyoming versions of the IBC 2021 and the Colorado versions of the IRC 2021 are un-amended. DrJ staff has reviewed and evaluated all state and local amendments to confirm compliance.
- ⁵ Approved source. An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses, which is a professional engineer. To find licensed professional engineers please see this website: <https://www.nspe.org/resources/licensure/licensing-boards> An approved source is "approved" when a professional engineer (i.e., Registered Design Professional [RDP]) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations. Commercial and professional engineering laws affirm that the RDP has the ability to undertake commerce applying engineering principles in their area of expertise without restraint or discrimination. Ohio has set legal precedent.
- ⁶ ANAB accredited approved agencies. An approved agency shall be objective, competent and independent. An approved agency is "approved" when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is listed in the ANAB directory. Language is found in Section 1703.1.1.
- ⁷ Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved; Language is found in Section 104.11.
- ⁸ Competition provides businesses the opportunity to compete on price, quality, innovation, and wages, in an open market and on a level playing field, unhampered by anticompetitive restraints. <https://www.justice.gov/atr/mission>. State statutes by topic can be found here: https://www.law.cornell.edu/wex/unfair_competition. Finally, given that government employees have monopoly approval power they are held to a high standards as it relates to bias in commerce (i.e. discrimination) as found here: <https://www.justice.gov/crt/deprivation-rights-under-color-law>