



NEMO|etc.

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ENGINEER

TEST

CONSULT

P.E. EVALUATION REPORT (PEER)

Henry® A Carlisle Company

336 Cold Stream Rd.
Kimberton, PA 19442
(610) 933-8888

PEER-HNRY-004.B

FL46918 (HVHZ)

Date of Issuance: 08/13/2024

SCOPE:

This P.E. Evaluation Report (henceforth 'PEER') is issued under [Rule 61G20-3](#) and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the **8th Edition (2023) Florida Building Code, High Velocity Hurricane Zone (HVHZ)** [sections noted herein](#).

DESCRIPTION: Henry TPO Single Ply Roof Systems (HVHZ)

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This PEER is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our PEERs by the named client constitutes agreement to notify NEMO ETC, LLC of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC, LLC requires a complete review of its PEER relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words "NEMO P.E. Evaluated" may be displayed in advertising literature. If any portion of the PEER is displayed, then it shall be done in its entirety.

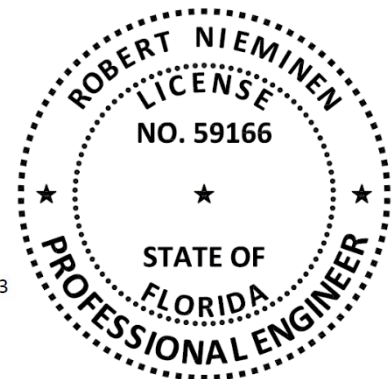
INSPECTION: Upon request, a copy of this entire PEER shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This PEER consists of pages 1 through 3, plus 9-page Appendix.

Prepared by:

Digitally signed by
Robert Nieminen
Date: 2024.08.13
'14:49:44 -04'00

This item has been digitally signed and sealed by Robert Nieminen, P.E.
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.
Robert Nieminen, Florida P.E. 59166, FBC ANE1983
NEMO ETC, LLC, Florida CA #32455



CERTIFICATION OF INDEPENDENCE:

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the PEERs are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this PEER, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

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ROOFING SYSTEMS EVALUATION:
1. SCOPE:

Product Category: Roofing
Sub-Category: Single Ply Roof Systems
Product Approval Method: Method 1, Option D – Codified Material, Evaluation by Engineer
Compliance Statement: Henry TPO Single Ply Roof Systems, as produced by Henry® A Carlisle Company, have demonstrated compliance with the following sections of the **8th Edition (2023) Florida Building Code, High Velocity Hurricane Zone (HVHZ)** through testing in accordance with the following Standards. Compliance is subject to the [Installation Requirements](#) and [Limitations of Use](#) set forth herein.

2. STANDARDS:

SECTION	PROPERTY	STANDARD
TAS 110	Resistance to Foot Traffic	TAS 114, Section 8.9
TAS 110	Wind resistance	TAS 114, Appendix C, D or J
TAS 110	Susceptibility to Hail Damage	TAS 114, Appendix F
TAS 110	Susceptibility to Leakage	TAS 114, Appendix G
TAS 110	Static puncture resistance	ASTM D5602
TAS 110	Dynamic puncture resistance	ASTM D5635
TAS 110	Material standard	ASTM D6878

3. REFERENCES:

ENTITY	EXAMINATION	REFERENCE	DATE
NEMO	PEER	PEER-CRL-003.A.R33	06/25/2024
NEMO	Traceability	FBC PCL	05/08/2024
NEMO (TST6049)	Criticality	4i-HNRY-SSCRT-001.A	07/24/2024
UL, LLC (CER9626)	Fire Classification	TGFU.R12316	Current
UL, LLC (QUA9625)	Quality Control	Service Confirmation (HNRY)	07/30/2024

4. PRODUCT DESCRIPTION:

This PEER covers **Henry TPO Single Ply Roof Systems** installed in accordance with **Henry® A Carlisle Company** published installation instructions and the [Limitations of Use](#) herein.

TABLE 1: EVALUATED MEMBRANES				
TYPE	PRODUCT		MATERIAL STANDARD	PLANT(S)
ROOF COVER	Henry White TPO Membrane	45, 60-mil	ASTM D6878	MS, PA

5. LIMITATIONS:

- 5.1 This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this PEER, or previous versions thereof, is/was used for permitting or design guidance. PEERs are not to be construed as representing any attributes not specifically listed, nor are PEERs to be construed as an endorsement of the subject, or a recommendation for its use. There is no warranty by NEMO ETC, LLC or Robert Nieminen, P.E., express or implied, as to any finding or other matter in this PEER, or as to any product covered by the PEER.
- 5.2 This PEER is exclusively for use in High Velocity Hurricane Zone jurisdictions, as defined in FBC Chapter 2 (Broward and Miami-Dade Counties).
- 5.3 The evaluation herein pertains to above-deck roof components; deck-attachment details pertain to 'as-tested' conditions under [Testing Application Standard TAS 114, Appendix J](#). Roof decks shall be in accordance with **FBC HVHZ** requirements to the satisfaction of the Authority Having Jurisdiction.

- 5.4 This PEER does not include evaluation of fire classification. Refer to **FBC HVHZ 1516** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.
- 5.5 This PEER does not include evaluation of roof edge termination. Refer to [Roofing Application Standard RAS 111](#) for requirements and limitations regarding edge securement for low-slope roofs.
- 5.6 Refer to **FBC HVHZ 1521** for requirements and limitations regarding recover installations.
- 5.6.1 For mechanically attached components over existing roof decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing shall be in accordance with [Testing Application Standard TAS 105](#).
- 5.6.2 For bonded insulation or membrane over existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance with [Testing Application Standard TAS 124](#) shall be conducted on mock-ups of the proposed new roof assembly.
- 5.6.3 For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with [Testing Application Standard TAS 124](#).
- 5.7 Refer to Appendix 1 for system attachment requirements for wind load resistance.
- 5.7.1 "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per [Testing Application Standard TAS 114](#) has already been applied). Refer to **FBC HVHZ 1620** and [Roofing Application Standard RAS 128](#) for determination of design wind loads.
- 5.7.2 For mechanically attached components, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with **FBC HVHZ 1620** or [Roofing Application Standard RAS 128](#). Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Analysis shall be in accordance with [Roofing Application Standard RAS 117](#) or [RAS 137](#). **This extrapolation is not permitted for systems marked with an asterisk*.*
- 5.7.3 For tables and/or assemblies marked with an asterisk*, the maximum design pressure (MDP) limitation shall be applicable to all roof pressure zones. Rational analysis is not permitted.
- 5.8 All components in the roof assembly shall have quality assurance audit in accordance with **F.A.C. Rule 61G20-3**. Refer to the Product Approval of the component manufacturer for components listed in Appendix 1 that are produced by a Product Manufacturer other than the report holder on [Page 1](#) of this PEER.

6. INSTALLATION:

Henry TPO Single Ply Roof Systems shall be installed in accordance with **Henry® A Carlisle Company** published installation instructions, subject to the [Limitations of Use](#) noted herein.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Contact the named QA entity for manufacturing facilities covered by **F.A.C. Rule 61G20-3** QA requirements. Refer to [Section 4](#) herein for products and production locations having met codified material standards.

9. QUALITY ASSURANCE ENTITY:

[UL LLC – QUA9625](#); (360) 817-5512; bsai.inspections@ul.com

- THE 9-PAGES THAT FOLLOW FORM PART OF THIS PEER -

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
1A	Wood	New, Reroof (Tear-Off), Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	5
2A	Steel or structural concrete	New, Reroof (Tear-Off), Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	6
3A	Existing gypsum	Reroof (Tear-Off), Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	9

The following notes apply to the systems outlined herein:

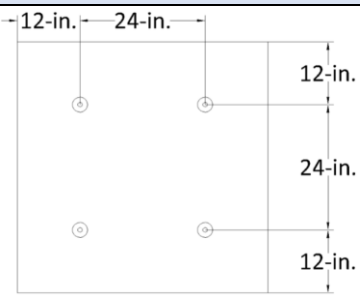
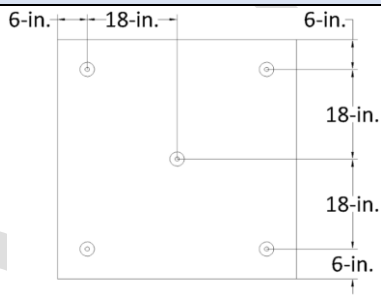
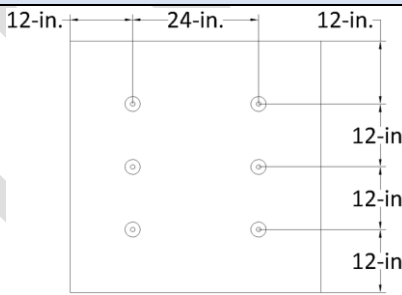
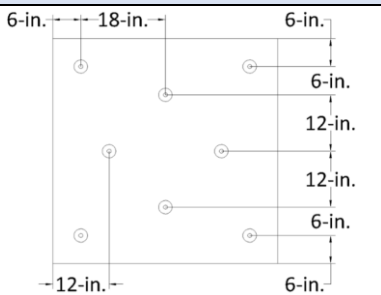
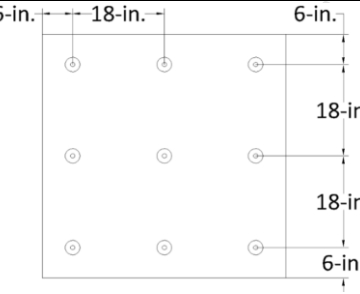
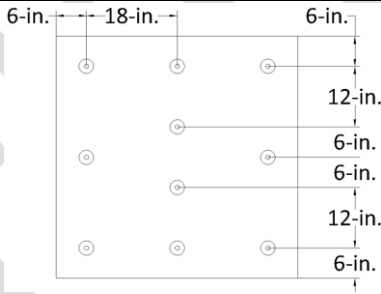
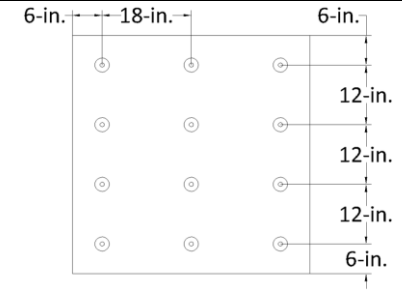
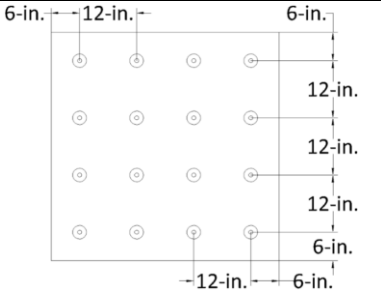
- The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC HVHZ requirements to the satisfaction of the Authority Having Jurisdiction. Deck-attachment details pertain to 'as-tested' conditions under [Testing Application Standard](#) TAS 114, Appendix J.
 - As-tested roof cover performance in accordance with FM 4474 and TAS 114, Appendix J indicates min. 22 ga., Type B, Grade 40 steel deck at max. 6 ft span attached with 5/8-inch diameter puddle welds spaced 6" o.c., with deck side laps secured max. 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screws, may be used for roof assemblies over steel deck up to a maximum design pressure of -60.0 psf. This does not preclude Note 1 above.
- Unless otherwise noted, fasteners and stress plates shall be as follows. Fastener shall be of sufficient length for the following engagements:

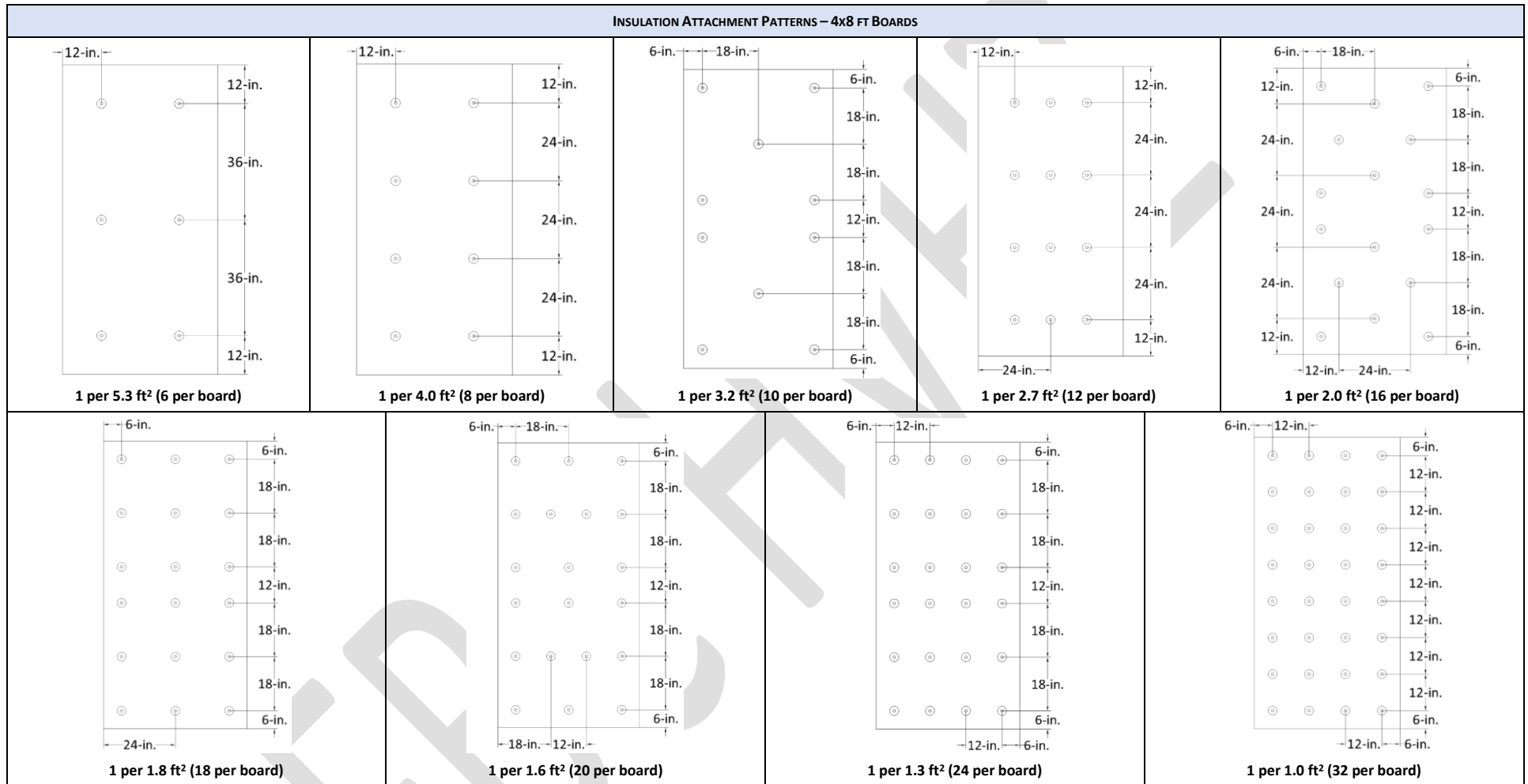
FASTENER/PLATE OPTIONS		
DECK TYPE	PARTS	MINIMUM ENGAGEMENT
WOOD	Carlisle HP Fastener with Carlisle Insulation Fastening Plate	Minimum ¾-inch plywood penetration or minimum 1-inch wood plank embedment
STEEL	Carlisle HP Fastener with Carlisle Insulation Fastening Plate	Minimum ¾-inch steel penetration and engage the top flute of the steel deck
STRUCTURAL CONCRETE	Carlisle HD 14-10 Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with Carlisle Insulation Fastening Plate	Minimum 1.25-inch embedment. Fastener installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions
- Unless otherwise noted, insulation may be any one layer or combination of FBC Approved (Local or Statewide) board(s) that meet FBC HVHZ 1516 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.
- Minimum 200 psi, minimum 2-inch thick FBC HVHZ Approved lightweight insulating concrete may be substituted for, or installed below, rigid insulation board for System Types B-1, C-1, C-2, D-1 or D-2, whereby fasteners are installed through the lightweight insulating concrete to engage the structural deck. The structural deck shall be of equal or greater type, thickness and strength to the steel and structural concrete deck listings. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. This is a wind uplift resistance allowance and does not purport to address non-wind-uplift-related issues, such as deck venting or moisture levels within the LWIC and the potential effect on overlying components. If mechanical attachment to the structural deck through lightweight insulating concrete is proposed, field withdrawal resistance testing shall be performed to confirm equivalent or determine enhanced fastening patterns and density. All testing and fastening design shall be in compliance with [Testing Application Standard](#) TAS 105 and [Roofing Application Standard](#) RAS 117 and/or RAS 137. Calculations shall be prepared, signed and sealed by a qualified design professional.
- RESERVED
- RESERVED
- RESERVED
- RESERVED
- For mechanically attached components, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with FBC HVHZ 1620 or [Roofing Application Standard](#) RAS 128. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria in accordance with [Roofing Application Standard](#) RAS 117 or RAS 137. *This extrapolation is not permitted for systems marked with an asterisk*
- RESERVED
- For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance in accordance with [Testing Application Standard](#) TAS 105. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Should the fastener resistance be less than that required, a revised fastener spacing – prepared, signed and sealed by a qualified design professional in accordance with [Roofing Application Standard](#) RAS 117 or RAS 137 – may be submitted to the Building Official for review and acceptance.

- 12 RESERVED
- 13 For Structural Concrete Deck or Recover Applications using System Type C-1 the base insulation layer is optional and for System Type C-2, D-1 or D-2, the insulation is optional. Alternatively, an FBC HVHZ Approved insulation board or coverboard may be used as a separation layer. Board products shall be preliminarily attached prior to roof cover installation ([Note 5](#)). The separator component shall be documented as meeting FBC HVHZ 1516 and, for foam plastic, FBC Chapter 26, when installed with the roof cover in Recover applications.
- 14 RESERVED
- 15 For bonded membrane applications, unless otherwise noted, refer to the following.

MEMBRANE / ADHESIVE COMBINATIONS			
MEMBRANE	ADHESIVE	APPLICATION	RATE
Henry White TPO Membrane	Henry Low-VOC TPO Bonding Adhesive	Contact (both sides)	0.83 gal/square per surface [(1.66 gal/square (60 ft ² /gal) finish]

- 15A Side laps shall be sealed in accordance with Henry requirements:
- Primed with Henry Low-VOC TPO Primer and adhered with Henry TPO Seam Tape (white).
- 16 **Thermal Barrier and/or Vapor Barrier Options:**
- 16A For System Types B-1, B-2, C-1, C-2, D-1 or D-2, Carlisle “VapAir Seal 725TR” or “VapAir Seal MD” may be installed atop the roof deck prior to installation of the insulation and roof cover. Refer to [FM Loss Prevention Data Sheet](#) 1-29 for design and installation limitations.
- 17 Unless otherwise noted, insulation or coverboard attachment patterns for Type C-1 systems are as outlined below.

INSULATION ATTACHMENT PATTERNS – 4x4 FT BOARDS			
 1 per 4.0 ft² (4 per board)	 1 per 3.2 ft² (5 per board)	 1 per 2.7 ft² (6 per board)	 1 per 2.0 ft² (8 per board)
 1 per 1.8 ft² (9 per board)	 1 per 1.6 ft² (10 per board)	 1 per 1.3 ft² (12 per board)	 1 per 1.0 ft² (16 per board)

INSULATION ATTACHMENT PATTERNS – 4x8 FT BOARDS


- 18 The following products are interchangeable within the scope of this PEER.

ACCEPTABLE ALTERNATES				
SUB-CATEGORY	By	LISTED PRODUCT HEREIN	ALTERNATE	FBC OR NOA
ROOFING INSULATION	Henry	Henry Polyiso Insulation	Carlisle InsulBase, Carlisle InsulBase NH, Hunter H-Shield, Hunter H-Shield NH	NOA 24-0422.09
	Carlisle SynTec	Carlisle SecurShield	Carlisle SecurShield NH, Hunter H-Shield CG, Hunter H-Shield CG NH	
	Henry	Henry High Density CGF ISO Coverboard	Carlisle SecurShield HD, Carlisle SecurShield HD NH, Hunter H-Shield HD, Hunter H-Shield HD NH	
	Carlisle SynTec	Carlisle SecurShield HD Plus	Carlisle SecurShield HD Plus NH, Hunter H-Shield HD90, Hunter H-Shield HD90 NH	
	Carlisle SynTec	Carlisle SecurShield HD Composite	Hunter H-Shield HD Composite	
	Georgia-Pacific Gypsum, LLC	DensDeck Prime	DensDeck StormX Prime Roof Board	NOA 22-1223.04
ROOFING FASTENERS	Carlisle SynTec	Carlisle HD 14-10 Fastener	OMG Heavy Duty Fastener	NOA 23-0718.03
		Carlisle CD-10	OMG CD-10	
		Carlisle Insulation Fastening Plate	OMG 3 in. Ribbed Galvalume Plate	

- 19 “MDP” = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC (HVHZ) 1620 and [Roofing Application Standard](#) RAS 128 for determination of design wind loads. ([Note 9](#) and [Note 10](#))

**TABLE 1A: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER**

System No.	Deck (Note 1)	Base Insulation Layer (Note 3 , Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fastener (Note 2 , Note 11)	Attach (Note 17)		
MEMBRANE APPLIED IN HENRY LOW-VOC TPO BONDING ADHESIVE:							
W-1.	Min. 19/32-inch CDX plywood or wood plank; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Henry Insulation Fastener with Henry Insulation Fastening Plate	1 per 4.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
W-2.	Min. 19/32-inch CDX plywood or wood plank; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Henry Insulation Fastener with Henry Insulation Fastening Plate	1 per 2.7 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0
W-3.	Min. 23/32-inch plywood; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 3.2 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
W-4.	Min. 19/32-inch CDX plywood or wood plank; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min. 2-inch Henry Polyiso Insulation, Carlisle SecurShield or Carlisle SecurShield HD Composite	Henry Insulation Fastener with Henry Insulation Fastening Plate	1 per 2.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-60.0
W-5.	Min. 19/32-inch CDX plywood or wood plank; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Henry Insulation Fastener with Henry Insulation Fastening Plate	1 per 2.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-60.0
W-6.	Min. 19/32-inch CDX plywood or wood plank; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Henry Insulation Fastener with Henry Insulation Fastening Plate	1 per 1.8 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-67.5
W-7.	Min. 19/32-inch CDX plywood or wood plank; 2-ft span; 8d ring shank nails, 6-inch o.c.	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Henry Insulation Fastener with Henry Insulation Fastening Plate	1 per 2.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-75.0

TABLE 2A: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer (Note 3 , Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fastener (Note 2 , Note 11)	Attach (Note 17)		
MEMBRANE APPLIED IN HENRY LOW-VOC TPO BONDING ADHESIVE:							
SC-1	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Steel: Henry Insulation Fastener with SecurFast Insulation Fastening Plate Concrete: HD 14-10, CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 3.2 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-2	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-3	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.375-inch SECUROCK Gypsum-Fiber Roof Board	Steel: Henry Insulation Fastener with SecurFast Insulation Fastening Plate Concrete: HD 14-10, CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 4.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-4	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch DensDeck Prime	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-5	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.50-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 3.2 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-6	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Steel: Henry Insulation Fastener with SecurFast Insulation Fastening Plate Concrete: HD 14-10, CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 5.3 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-7	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 4.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-8	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch Henry Polyiso Insulation, Carlisle SecurShield	Steel: Henry Insulation Fastener with SecurFast Insulation Fastening Plate Concrete: HD 14-10, CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 3.2 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-9	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch Carlisle SecurShield HD Composite	Note 2	1 per 2.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-10	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch Carlisle SecurShield HD Composite	Note 2	1 per 4.0 ft²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*

TABLE 2A: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer (Note 3 , Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fastener (Note 2 , Note 11)	Attach (Note 17)		
SC-11	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch Henry High Density CGF ISO Coverboard, Carlisle SecurShield HD Plus	Note 2	1 per 2.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-12	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch Henry Polyiso Insulation, HP-N or HP-W, Carlisle SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch Carlisle SecurShield HD Plus	Note 2	1 per 4.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
SC-13	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch Henry Polyiso Insulation, Carlisle SecurShield	Min. 0.25-inch DensDeck Prime	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-52.5
SC-14	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or structural concrete	Min. 1.5-inch Henry Polyiso Insulation, HP-N or HP-W, Carlisle SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch Carlisle SecurShield HD Plus	Note 2	1 per 1.8 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-60.0
SC-15	Min. 22 ga., type B, Grade 33 steel, 6 ft span, two (2) #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Steel: Henry Insulation Fastener with SecurFast Insulation Fastening Plate Concrete: HD 14-10, CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-60.0
SC-16	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch Henry Polyiso Insulation, Carlisle SecurShield	Min. 0.5-inch DensDeck Prime	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-67.5
SC-17	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch Carlisle SecurShield HD Composite	Note 2	1 per 1.6 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-75.0
SC-18	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch Henry Polyiso Insulation, Carlisle SecurShield	Min. 0.5-inch DensDeck Prime	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-75.0
SC-19	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.6 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-75.0
SC-20	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or structural concrete	Min. 1.5-inch Henry Polyiso Insulation, HP-N or HP-W, Carlisle SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch Carlisle SecurShield HD Plus	Note 2	1 per 1.3 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-112.5

TABLE 2A: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer (Note 3 , Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fastener (Note 2 , Note 11)	Attach (Note 17)		
SC-21	Min. 22 ga., type B, Grade 80 steel; 6 ft span, two (2) #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	(Optional) Min. 1-inch Henry Polyiso Insulation, Carlisle SecurShield, ENRGY 3, Polyiso HP-N, AC Foam II or Polyiso HP-W	Min. 2-inch Carlisle SecurShield HD Composite	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-112.5
SC-22	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2.0-inch Carlisle SecurShield HD Composite	Note 2	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-112.5
SC-23	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-127.5
SC-24	Min. 22 ga., type B, Grade 33 steel; 6 ft span, two (2) Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch Henry Polyiso Insulation, Carlisle SecurShield	Min 0.5-inch DensDeck Prime	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-127.5
SC-25	Min. 22 ga., type B, Grade 33 steel; 6 ft span, two (2) #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	(Optional) Min. 1-inch Henry Polyiso Insulation, Carlisle SecurShield, ENRGY 3, Polyiso HP-N, AC Foam II or Polyiso HP-W	Min. 2-inch Carlisle SecurShield	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-127.5
SC-26	Min. 22 ga., type B, Grade 33 steel, 6 ft span, #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2.0-inch Carlisle SecurShield	Note 2	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-127.5
SC-27	Min. 22 ga., type B, Grade 80 steel; 6 ft span, two (2) #12 HWH Tek 5, 6" o.c. or min. 2,500 psi structural concrete	(Optional) Min. 1-inch Henry Polyiso Insulation, Carlisle SecurShield, ENRGY 3, Polyiso HP-N, AC Foam II or Polyiso HP-W	Min. 2.5-inch Carlisle SecurShield HD Composite	Steel: Henry Insulation Fastener with Henry Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft ²	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-150.0

**TABLE 3A GYPSUM DECKS - REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER**

System No.	Deck (Note 1)	Base Insulation Layer (Note 13)	Top Insulation Layer				Roof Cover (Note 15)	MDP (psf)
			Type	Fastener (Note 11)	Attach (Note 17)	MCRF (lbf)		
MEMBRANE APPLIED IN HENRY LOW-VOC TPO BONDING ADHESIVE:								
G-1.	Existing gypsum deck	(Optional) One or more layers, any combination	Min. 1.5-inch Henry Polyiso Insulation, Carlisle SecurShield or Carlisle SecurShield HD Composite	Carlisle Gyptec Fastener with Gyptec Plate-3" or Carlisle Lite Deck Fastener with Lite Deck Plate, min. 2-inch embed.	1 per 2.0 ft²	180	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*
G-2.	Existing gypsum deck	(Optional) One or more layers, any combination	Min. 2-inch Henry Polyiso Insulation, Carlisle SecurShield or Carlisle SecurShield HD Composite	Carlisle Gyptec Fastener with Gyptec Plate-3" or Carlisle Lite Deck Fastener with Lite Deck Plate, min. 2-inch embed.	1 per 4.0 ft²	360	Henry White TPO Membrane / Henry Low-VOC TPO Bonding Adhesive	-45.0*