



NEMO|etc.

Certificate of Authorization #32455
353 Christian Street, Unit #13
Oxford, CT 06478
(203) 262-9245

ENGINEER

TEST

CONSULT

P.E. EVALUATION REPORT (PEER)

Beacon Sales Acquisition, Inc.

505 Huntmar Park Drive, Suite 300
Herndon, VA 20170
(610) 893-5400

PEER-CTRBSA-002.A.R6

FL30541-R6 (NON-HVHZ)

Date of Issuance: 10/11/2019

Revision 6: 04/17/2025

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** [sections noted herein](#).

DESCRIPTION: TRI-BUILT Roof Underlayments (NON-HVHZ)

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and FBC 1507.1.1.

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: "NEMO P.E. Evaluated" may be displayed in advertising literature. If any portion of the PEER is displayed, then it shall be 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 11.

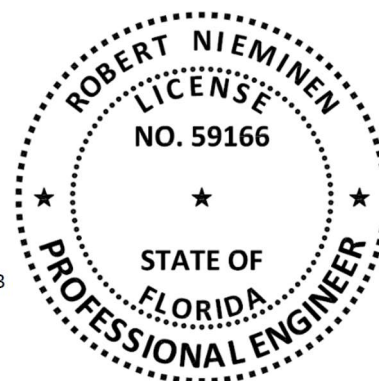
Prepared by:

Digitally signed by
Robert Nieminen
Date: 2025.04.17
'15:45:03 -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.

ROOFING COMPONENT EVALUATION:
1. SCOPE:

Product Category: Roofing
Sub-Category: Underlayment
Product Approval Method: Method 1, Option D – Codified Material, Evaluation by Engineer
Compliance Statement: TRI-BUILT Roof Underlayments, as produced by Beacon Sales Acquisition, Inc., have demonstrated compliance with the following sections of the 8th Edition (2023) Florida Building Code 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
1504.2.1.4	Wind resistance	UL 1897
1507.1.1, 1507.2.9.2, 1507.2.9.3 / R905.1.1, R905.2.8.2, R905.2.8.5	Material standard	ASTM D1970
1507.3.3 / R905.3.3	Material standard	FRSA/TRI, Seventh Edition
1507.10.2 / R905.9.2	Material standard	ASTM D4601
1507.11.2 / R905.11.2	Material standard	ASTM D6164, ASTM D6222
TAS 110	Accelerated Weathering	ASTM D4798

3. REFERENCES:

ENTITY	EXAMINATION	REFERENCE	DATE
NEMO (TST6049)	TAS 103	4j-CTR-23-SSUDL-01.A	03/07/2025
NEMO (TST6049)	ASTM D1970	4q-CTR-SSMBB-002.A	01/06/2025
NEMO CERT (EVL13843)	NER	NER-CTR-002.R1	05/29/2024
NEMO	Traceability	FBC Product Cross Listing 1	09/27/2023
NEMO	Traceability	FBC Product Cross Listing 2	09/27/2023
UL, LLC. (QUA9625)	Quality Control	Service Confirmation	11/13/2019
UL, LLC. (QUA9625)	Quality Control	Florida BCIS	current

4. PRODUCT DESCRIPTION:

TABLE 1: EVALUATED UNDERLAYMENTS			
PRODUCT	MATERIAL STANDARD	PLANT(S)	DESCRIPTION
TRI-BUILT Fiberglass Base Sheet 3SQ	ASTM D4601	Pryor, OK Shafter, CA	mechanically attached, glass-mat reinforced, asphaltic base sheet for use in multi-ply underlayment systems
TRI-BUILT SA NailBase	ASTM D4601	Little Rock, AR	Mechanically attached, glass-mat reinforced, film-surfaced, SBS modified bitumen base sheet for use in multi-ply underlayment systems
TRI-BUILT SAT Base	ASTM D1970	Pryor, OK Shakopee, MN	self-adhering, glass mat reinforced, fine-mineral surfaced, SBS modified membrane
TRI-BUILT SA Plybase	ASTM D1970	Little Rock, AR	Self-adhering, glass-mat reinforced, film-surfaced, SBS modified bitumen base ply membrane for use in multi-ply underlayment systems
TRI-BUILT SA Cap	ASTM D1970, ASTM D6164, TAS 103	Little Rock, AR	self-adhering, polyester reinforced, granule-mineral surfaced, SBS modified membrane
TRI-BUILT SBS Cap	ASTM D6164	Little Rock, AR	asphalt-applied, polyester reinforced, granule-surfaced, SBS modified membrane
TRI-BUILT Granulated Torch	ASTM D6222	Little Rock, AR	torch-applied, polyester reinforced, granule-surfaced, APP modified membrane

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 not for use in FBC High Velocity Hurricane Zone jurisdictions, as defined in FBC Chapter 2 (Broward and Miami-Dade Counties).
- 5.3 This PEER pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- 5.4 This PEER does not include evaluation of fire classification. Refer to **FBC 1505** 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 **TRI-BUILT Roof Underlayments** may be used with any prepared roof cover where the product is specifically referenced within FBC approval documents. If not listed, a request may be made to the Authority Having Jurisdiction for approval based on this evaluation combined with supporting data for the prepared roof covering.
- 5.6 **Allowable Roof Covers:**

TABLE 2: ROOF COVER OPTIONS							
FBC NON-HVHZ:	1507.2	1507.3		1507.4 & 1507.5	1507.7	1507.8 & 1507.9	1507.17
UNDERLAYMENT	ASPHALT SHINGLES	CLAY AND CONCRETE TILE		METAL	SLATE OR SLATE-TYPE SHINGLES	WOOD	PHOTOVOLTAIC SHINGLES
		MECHANICAL ATTACH	ADHESIVE- OR MORTAR-SET				
TRI-BUILT SAT Base	Yes	No	No	No	Yes	Yes ¹	No
TRI-BUILT SA Cap	Yes	Yes	Yes (Table 2A)	No	Yes	No	No
TRI-BUILT Granulated Torch	No	Yes	Yes (Table 2A)	No	No	No	No
TRI-BUILT SBS Cap	No	Yes	Yes (Table 2A)	No	No	No	No

- 5.6.1 Adhesive- or mortar-set tile is limited to use of the following underlayment / adhesive combinations.

TABLE 2A: ALLOWABLE UNDERLAYMENT / TILE-ADHESIVE OR MORTAR COMBINATIONS ²		
UNDERLAYMENT	ADHESIVE / MORTAR	FLORIDA PRODUCT APPROVAL
TRI-BUILT SA Cap or TRI-BUILT SBS Cap	Dupont de Nemours "Tile Bond™ Roof Tile Adhesive"	FL22525
TRI-BUILT SA Cap, TRI-BUILT Granulated Torch or TRI-BUILT SBS Cap	ICP Construction "APOC® Polyset® AH-160"	FL6332
TRI-BUILT SA Cap	ICP Construction "APOC® Polyset® RTA-1"	FL6276
TRI-BUILT SA Cap, TRI-BUILT Granulated Torch or TRI-BUILT SBS Cap	Mortar meeting FRSA/TRI Manual 7th Edition requirements and holding current Florida Local or Statewide Product Approval.	

¹ For wood shakes or wood shingles, limited to use as joint-strips per FBC 1507.1.1.1(2), 1518.2.1(2) or R905.1.1.1(2) or as cap sheet atop mechanically attached, FBC Approved ASTM D226 Type II or ASTM D4869 Type III or IV base sheet.

² Refer to Tile Manufacturer's or Adhesive Manufacturer's compliance documentation for Overturning Moment Resistance Performance

5.7 **Allowable Substrates:**

TABLE 3: SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS				
UNDERLAYMENT	APPLICATION	SUBSTRATES (DESIGNED TO MEET WIND LOADS FOR PROJECT)		
		TYPE	PRIMER	MATERIAL(S)
TRI-BUILT SAT Base	Self-adhering	Deck / sheathing	(Optional) ASTM D41	plywood
			ASTM D41	structural concrete
		Base Sheet	None	TRI-BUILT Fiberglass Base Sheet 3SQ or Approved, ASTM D226 Type II or ASTM D4869 Type III or IV
TRI-BUILT SA Cap	Self-adhering	Deck / sheathing	(Optional) ASTM D41	plywood
			ASTM D41	structural concrete
		Base Sheet	None	TRI-BUILT Fiberglass Base Sheet 3SQ, TRI-BUILT SA NailBase or Approved, ASTM D226 Type II or ASTM D4869 Type III or IV
		Base Ply	None	TRI-BUILT SA PlyBase
TRI-BUILT SBS Cap	Hot asphalt	Deck	ASTM D41	structural concrete
		Base Sheet	None	TRI-BUILT Fiberglass Base Sheet 3SQ or Approved, ASTM D226 Type II
		Base Ply	None	TRI-BUILT SAT Base
TRI-BUILT Granulated Torch	Torch-applied	Deck	ASTM D41	structural concrete
		Base Ply	None	TRI-BUILT SAT Base, TRI-BUILT SA Plybase

5.8 **Attachment Limitations:**

5.8.1 For use in NON-TILE applications, refer to [Section 6](#) herein and the applicable Code requirements.

5.8.2 **Wind Resistance for Underlayment Systems in Tile Roof Applications:**

The following wind uplift limitations apply to tile underlayment systems per **FBC 1504.2.1.4**. The Maximum Design Pressure ('MDP') 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 **FBC 1504.9** has already been applied).

5.8.2.1 Unless otherwise noted, referenced back-nailing shall utilize corrosion resistant metal cap nails meeting specifications set forth in [FBC Table 1507.1.1.1](#) or "nail and tin caps" meeting the specifications set forth in [FBC HVHZ 1517.5](#).

5.8.2.2 Adhered, Direct-to-Deck Underlayment Systems:

The maximum design pressure for the selected assembly shall meet or exceed that required under **FRSA/TRI Manual, 7th Edition**, Appendix A or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**.

TABLE 4A: ALLOWABLE DESIGN PRESSURES, ADHERED, DIRECT-TO-DECK UNDERLAYMENT SYSTEMS IN TILE ROOF APPLICATIONS						
Unless otherwise noted, referenced back-nailing shall utilize corrosion resistant metal cap nails meeting specifications set forth in FBC Table 1507.1.1.1 or “nails and tin caps” meeting the specifications set forth in FBC HVHZ 1517.5 .						
SYSTEM NO.	DECK	PRIMER	JOINT TREATMENT	BASE PLY	CAP PLY	MDP (psf)
UDL-1.	Plywood, APA rated sheathing, 32/16, Exposure 1, PS1, 15/32 category	(Optional) ASTM D41	None	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed max. 12-inch o.c.	-105.0
UDL-2.	Plywood, APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	ASTM D41	TRI-BUILT SA Plybase	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed max. 12-inch o.c.	-127.5
UDL-3.	Plywood, APA rated sheathing, 32/16, Exposure 1, PS1, 15/32 category	(Optional) ASTM D41	None	TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed max. 12-inch o.c.	-127.5
UDL-4.	Plywood, APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	None	None	None	TRI-BUILT SA Cap, self-adhered and back-nailed using 12 ga. annular ring shank nails through 32 ga., 1-5/8-inch diameter tin caps, max 12-inch o.c.	-217.5
UDL-5.	Structural concrete	ASTM D41	N/A	TRI-BUILT SAT Base, self-adhered and back-nailed using Approved fasteners and plates, max. 12-inch o.c.	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed using Approved fasteners and plates, max. 12-inch o.c.	-240.0
UDL-6.	Structural concrete	ASTM D41	N/A	TRI-BUILT SAT Base or TRI-BUILT SA Plybase, self-adhered and back-nailed using Approved fasteners and plates, max. 12-inch o.c.	TRI-BUILT Granulated Torch, torch-applied and back-nailed using Approved fasteners and plates, max. 12-inch o.c.	-240.0
UDL-7.	Structural concrete	ASTM D41	N/A	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed using Approved fasteners and plates, max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed using Approved fasteners and plates, max. 12-inch o.c.	-240.0

5.8.2.2 Mechanically-Attached, Multi-Ply Underlayment Systems:

The maximum design pressure for the selected assembly shall meet or exceed that required under **FRSA/TRI Manual, 7th Edition**, Appendix A or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**. Alternatively, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**. Elevated pressure zones shall employ an attachment density by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are [ANSI/SPRI WD1](#), [FM Loss Prevention Data Sheet 1-29](#) or [Roofing Application Standard RAS 117](#) or [RAS 137](#). Assemblies marked with an asterisk* carry the limitations set forth in Section 2.2.10.1 of [FM Loss Prevention Data Sheet 1-29](#) for enhancements.

**TABLE 4B: ALLOWABLE DESIGN PRESSURES,
MECHANICALLY ATTACHED, MULTI-PLY UNDERLAYMENT SYSTEMS IN TILE ROOF APPLICATIONS**

*Nails shall be corrosion resistant and be of sufficient length to penetrate through the sheathing by min. 3/16-inch

Unless otherwise noted, referenced back-nailing shall utilize corrosion resistant metal cap nails meeting specifications set forth in [FBC Table 1507.1.1.1](#) or “nails and tin caps” meeting the specifications set forth in [FBC HVHZ 1517.5](#).

SYSTEM No.	DECK	BASE SHEET			BASE PLY	CAP PLY	MDP (PSF)
		TYPE	FASTENERS	ATTACH			
UDL-8.	Plywood , APA rated sheathing, 32/16, Exposure 1, PS1, 15/32 category	TRI-BUILT SA NailBase	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	6-inch o.c. at the 4-inch laps and 12-inch o.c. at two (2) equally spaced, staggered center rows	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed* max. 12-inch o.c.	-37.5
UDL-9.	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	TRI-BUILT Fiberglass Base Sheet 3SQ	12 ga. annular ring shank nails* through 32ga., 1-5/8-inch diameter tin caps	6-inch o.c. at the min. 4-inch laps and 9-inch o.c. at three (3) equally spaced center rows	None	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed using 12 ga. annular ring shank nails* through 32 ga., 1-5/8-inch diameter tin caps, max 12-inch o.c.	-45.0
UDL-10.	Plywood , APA rated sheathing, 32/16, Exposure 1, PS1, 15/32 category	TRI-BUILT SA NailBase	12 ga. Simplex Metal Cap Nails*	6-inch o.c. at the min. 2-inch laps and 6-inch o.c. at four (4) equally spaced, staggered center rows	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed* max. 12-inch o.c.	-52.5
UDL-11.	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	One (1) layer, FBC Approved ASTM D226 Type II	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	6-inch o.c. at the min. 4-inch laps and 9-inch o.c. at three (3) equally spaced, staggered center rows	None	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed using 12 ga. annular ring shank nails* through 32 ga., 1-5/8-inch diameter tin caps, max. 12-inch o.c.	-52.5
UDL-12.	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	TRI-BUILT SA NailBase	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	8-inch o.c. at the min. 2-inch laps and 8-inch o.c. at three (3) equally spaced, staggered center rows	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed* max. 12-inch o.c.	-60.0
UDL-13.	Plywood , APA rated sheathing, 32/16, Exposure 1, PS1, 15/32 category	TRI-BUILT Fiberglass Base Sheet 3SQ	Cap nails: 1-inch diameter, 0.032-inch thick metal cap with 0.120-inch shank diameter, annular ring shank nails*	6-inch o.c. at 4-inch lap and 6-inch o.c. at five (5) equally spaced, staggered center rows in the field of the sheet	None	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed* max. 12-inch o.c.	-67.5
UDL-14.	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	TRI-BUILT SA NailBase	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	6-inch o.c. at the min. 2-inch laps and 6-inch o.c. at four (4) equally spaced, staggered center rows	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed* max. 12-inch o.c.	-75.0

**TABLE 4B: ALLOWABLE DESIGN PRESSURES,
MECHANICALLY ATTACHED, MULTI-PLY UNDERLAYMENT SYSTEMS IN TILE ROOF APPLICATIONS**

*Nails shall be corrosion resistant and be of sufficient length to penetrate through the sheathing by min. 3/16-inch

Unless otherwise noted, referenced back-nailing shall utilize corrosion resistant metal cap nails meeting specifications set forth in [FBC Table 1507.1.1.1](#) or “nails and tin caps” meeting the specifications set forth in [FBC HVHZ 1517.5](#).

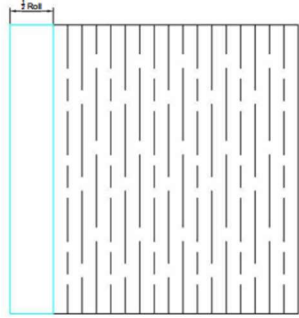
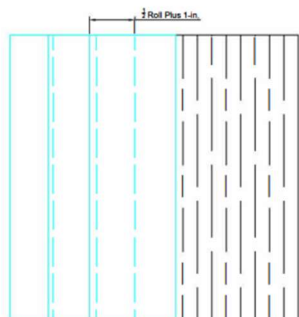
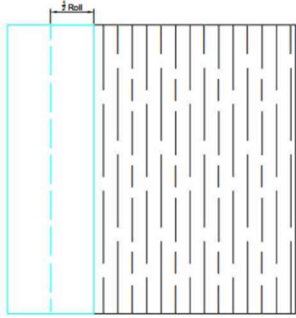
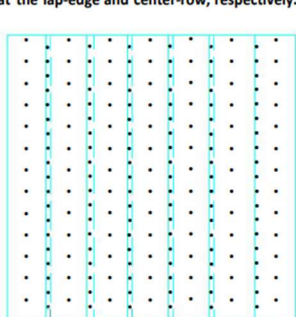
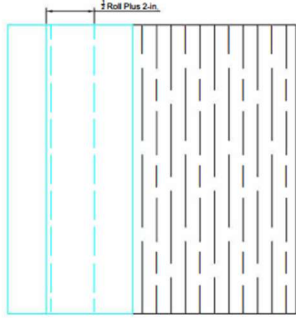
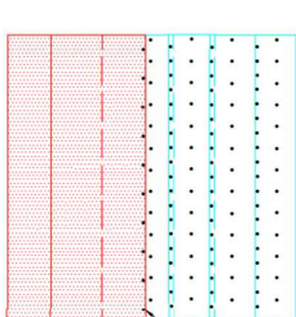
SYSTEM No.	DECK	BASE SHEET			BASE PLY	CAP PLY	MDP (PSF)
		TYPE	FASTENERS	ATTACH			
	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	Double-layer application, Approved ASTM D226 Type II**	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	start 6-inch o.c. with centerline 1-inch from the start-edge, followed by one (1) row in the centerline of the half-width, 9-inch o.c. Repeat this pattern of 6, 9, at the lap-edge and center-row, respectively.	None	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed using 12 ga. annular ring shank nails* through 32 ga., 1-5/8-inch diameter tin caps, max. 12-inch o.c.	-82.5
UDL-15.	** Base sheet applied in double-layer application: Apply a strip of base sheet for the first course that is half the width of a full sheet, fastened sufficiently to hold in place.  Overlap all successive courses half the width of a full sheet plus 1 inch.  Apply a full sheet of base sheet for the second course, fully overlapping the first half-width course.  Fastening: 12 ga. annular ring shank nails with 32 ga., 1-5/8-inch diameter tin caps; start 6-inch o.c. with centerline 1-inch from the start-edge, followed by one (1) row in the centerline of the half-width, 9-inch o.c. Repeat this pattern of 6, 9 at the lap-edge and center-row, respectively.  Apply the third course of base sheet overlapping the second course half the width of a full sheet plus 2 inches.  TRI-BUILT SBS Cap, applied in ASTM D312, Type IV hot asphalt and back-nailed using 12 ga. annular ring shank nails with 32 ga., 1-5/8-inch diameter tin caps, max. 12-inch o.c. 						
	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	TRI-BUILT SA NailBase	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	4-inch o.c. at the min. 2-inch laps and 4-inch o.c. at four (4) equally spaced, staggered center rows	(Optional) TRI-BUILT SA Plybase, self-adhered and back-nailed max. 12-inch o.c.	TRI-BUILT SA Cap, self-adhered and back-nailed* max. 12-inch o.c.	-105.0

**TABLE 4B: ALLOWABLE DESIGN PRESSURES,
MECHANICALLY ATTACHED, MULTI-PLY UNDERLAYMENT SYSTEMS IN TILE ROOF APPLICATIONS**

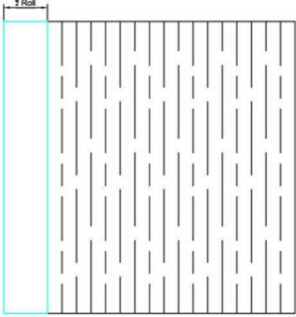
*Nails shall be corrosion resistant and be of sufficient length to penetrate through the sheathing by min. 3/16-inch

Unless otherwise noted, referenced back-nailing shall utilize corrosion resistant metal cap nails meeting specifications set forth in [FBC Table 1507.1.1.1](#) or “nails and tin caps” meeting the specifications set forth in [FBC HVHZ 1517.5](#).

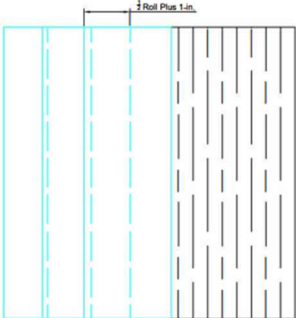
SYSTEM No.	DECK	BASE SHEET			BASE PLY	CAP PLY	MDP (PSF)
		TYPE	FASTENERS	ATTACH			
UDL-17.	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	One (1) layer, FBC Approved ASTM D226 Type II	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	4-inch o.c. at the min. 4-inch laps and 4-inch o.c. at four (4) equally spaced, staggered center rows	None	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed using 12 ga. annular ring shank nails* through 32 ga., 1-5/8-inch diameter tin caps, max. 12-inch o.c.	-157.5
UDL-18.	Plywood , APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	Double-layer application, FBC Approved ASTM D226 Type II**	12 ga. annular ring shank nails* through 32 ga., 1 5/8-inch diameter tin caps	start 4-inch o.c. with centerline 1-inch from the start-edge, followed by rows spaced 8-inch o.c. with fasteners spaced 4-inch o.c.	None	TRI-BUILT SBS Cap, applied in hot asphalt and back-nailed using 12 ga. annular ring shank nails* through 32 ga., 1-5/8-inch diameter tin caps, max. 12-inch o.c.	-195.0

**** Base sheet applied in double-layer application:**

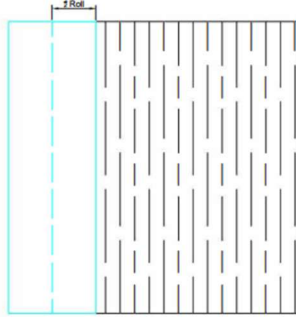
Apply a strip of base sheet for the first course that is half the width of a full sheet, fastened sufficiently to hold in place.



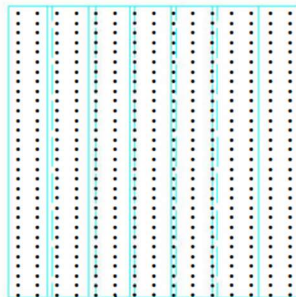
Overlap all successive courses half the width of a full sheet plus 1 inch.



Apply a full sheet of base sheet for the second course, fully overlapping the first half-width course.

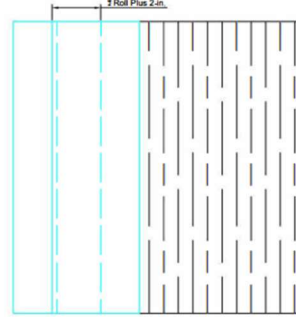


Fastening: 12 ga. annular ring shank nails with 32 ga., 1-5/8-inch diameter tin caps; start 4-inch o.c. with centerline 1-inch from the start-edge, followed by rows spaced 8-inch o.c. with fasteners spaced 4-inch o.c.

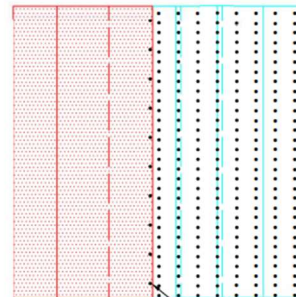


Fasteners Spaced @ 4-in. O.C.
In rows Spaced @ 8-in. O.C.

Apply the third course of base sheet overlapping the second course half the width of a full sheet plus 2 inches.



TRI-BUILT SBS Cap, applied in ASTM D312, Type IV hot asphalt and back-nailed using 12 ga. annular ring shank nails with 32 ga., 1-5/8-inch diameter tin caps, max. 12-inch o.c.



Back-Nailed @ 12-in. O.C.

5.9 Exposure Limitations:

TABLE 5: EXPOSURE LIMITATIONS		
UNDERLAYMENT	PREPARED ROOF COVER INSTALLATION TYPE	MAXIMUM EXPOSURE (DAYS)
TRI-BUILT SAT Base	Mechanically attached	30
TRI-BUILT SA Cap, TRI-BUILT Granulated Torch or TRI-BUILT SBS Cap	Adhesive- or mortar-set tile	180
TRI-BUILT SA Cap, TRI-BUILT Granulated Torch or TRI-BUILT SBS Cap	Mechanically attached	UNLIMITED

5.10 Tile Slippage Limitations:

When loading roof tiles on the underlayment, the maximum roof pitch shall be as follows. These pitch limitations can only be exceeded by using battens or loading boards during loading of the roof tiles.

TABLE 6: TILE SLIPPAGE LIMITATIONS			
UNDERLAYMENT	TILE PROFILE	STAGING METHOD	MAXIMUM PITCH
TRI-BUILT SBS Cap or TRI-BUILT SA Cap	All	Max. 6-tile stack (4 over 2)	4:12
TRI-BUILT Granulated Torch	Flat	Max. 10-tile stack	4:12
	Lugged	Prohibited without battens or loading boards	N/A

6. INSTALLATION:

6.1 **TRI-BUILT Roof Underlayments** shall be installed in accordance with **Beacon Sales Acquisition, Inc.** published installation instructions subject to the [Limitations of Use](#) herein and the specifics noted below.

6.1.1 Consult Beacon Sales Acquisition, Inc. requirements for back-nailing at pitch of 2:12 or greater.

6.2 Re-fasten any loose decking panels, and check for protruding nail heads. Sweep the substrate thoroughly to remove any dust and debris prior to application, and primed the substrate (if applicable).

6.3 Refer to [Section 6.4](#) for underlayments having prescriptive codified minimum attachment or Tables [4A](#) and [4B](#) for underlayment systems having maximum design pressures established in accordance with **FBC 1504.2.1.4**.

6.4 Underlayment Assemblies with Prescriptive Minimum Attachment for use in NON-TILE applications:

6.4.1	CODE REFERENCE: 1507.1.1.1 or R905.1.1.1, Option 1: Underlayment adhered to deck
DECK DESCRIPTION:	Code-minimum deck to the satisfaction of the Authority Having Jurisdiction (refer to Table 3 for specific underlayment/substrate combinations)
UNDERLAYMENT:	TRI-BUILT SAT Base or TRI-BUILT SA Cap self-adhered in accordance with FBC Section 1507.1.1.1(1) or R905.1.1.1(1) and back-nailed in accordance with the manufacturer's requirements.
SURFACING:	FBC Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles, subject to the allowable roof covers in Table 2 herein .

6.4.2

CODE REFERENCE: **1507.1.1.1 or R905.1.1.1, Option 1 combined with Option 2 or 3:** Optional self-adhering strips to deck-joints followed by base sheet mechanically fastened to deck followed by underlayment adhered to base sheet

DECK DESCRIPTION: Code-minimum wood deck to the satisfaction of the Authority Having Jurisdiction

SECONDARY WATER BARRIER: (Optional) Min. 3 ¾-inch wide strips of **TRI-BUILT SAT Base** or **TRI-BUILT SA Plybase** self-adhered over joints of the roof deck prior to installation of subsequent layer(s) in accordance with FBC Section 1507.1.1.1(2) or R905.1.1.1(2). Do not overlap end-joints or T-joints. All end-joints and T-joints shall be butted firmly side by side, flush with each other but not overlapped.

BASE SHEET: One (1) layer of **TRI-BUILT Fiberglass Base Sheet 3SQ** or FBC Approved ASTM D226 Type II or ASTM D4689 Type III or IV in accordance with FBC Section 1507.1.1.1 or R905.1.1.1, with a minimum 4-inch side lap and 6-inch end lap or two (2) layers of **TRI-BUILT Fiberglass Base Sheet 3SQ** or FBC Approved, ASTM D226 Type II or ASTM D4689 Type III or IV in accordance with FBC Section 1507.1.1.1(3) or R905.1.1.1(3), mechanically fastened to deck.

FASTENERS: Min. 0.083-inch diameter annular ring or deformed shank nails with metal or plastic caps* with a nominal cap diameter of not less than 1-inch and minimum thickness as follows.
The nail shall be of sufficient length to penetrate through the roof sheathing, or not less than 0.75-inch into the roof sheathing.
*Metal caps are required where the ultimate design wind speed, V_{ult} , equals or exceeds 170 mph.

Cap Type	Minimum thickness
Metal cap	32 ga. sheet metal
Power-driven metal cap	0.010-inch
Plastic cap	0.035-inch (outside edge thickness)

FASTENING: Grid pattern of 12-inches between the overlaps and 6-inch spacing at the overlaps, in accordance with FBC Section 1507.1.1.1 or R905.1.1.1

UNDERLAYMENT: **TRI-BUILT SAT Base** or **TRI-BUILT SA Cap** self-adhered in accordance with FBC Section 1507.1.1.1(1) or R905.1.1.1(1) and back-nailed in accordance with the manufacturer's requirements.

SURFACING: FBC Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles, subject to the allowable roof covers in [Table 2 herein](#).

6.4.3

CODE REFERENCE: **1507.1.1.1 or R905.1.1.1, Option 1 combined with Option 2:** Optional self-adhering strips to deck-joints followed by base sheet mechanically fastened to deck followed by underlayment adhered to base sheet

DECK DESCRIPTION: Code-minimum wood deck to the satisfaction of the Authority Having Jurisdiction

SECONDARY WATER BARRIER: (Optional) Min. 3 ¾-inch wide strips of **TRI-BUILT SAT Base** or **TRI-BUILT SA Plybase** self-adhered over joints of the roof deck prior to installation of subsequent layer(s) in accordance with FBC Section 1507.1.1.1(2) or R905.1.1.1(2). Do not overlap end-joints or T-joints. All end-joints and T-joints shall be butted firmly side by side, flush with each other but not overlapped.

THERMAL BARRIER: (Optional) One (1) or two (2) layers of **TRI-BUILT Fiberglass Base Sheet 3SQ** or FBC Approved, ASTM D4601 Type II with a minimum 4-inch side lap and 6-inch end lap, preliminarily attached to hold in place.

BASE SHEET: One (1) layer of **TRI-BUILT SA NailBase** in accordance with FBC Section 1507.1.1.1 or R905.1.1.1, with a minimum 4-inch side lap and 6-inch end lap, mechanically fastened to deck.

FASTENERS: Min. 0.083-inch diameter annular ring or deformed shank nails with metal or plastic caps* with a nominal cap diameter of not less than 1-inch and minimum thickness as follows.
The nail shall be of sufficient length to penetrate through the roof sheathing, or not less than 0.75-inch into the roof sheathing.
*Metal caps are required where the ultimate design wind speed, V_{ult} , equals or exceeds 170 mph.

Cap Type	Minimum thickness
Metal cap	32 ga. sheet metal
Power-driven metal cap	0.010-inch
Plastic cap	0.035-inch (outside edge thickness)

FASTENING: Grid pattern of 12-inches between the overlaps and 6-inch spacing at the overlaps, in accordance with FBC Section 1507.1.1.1 or R905.1.1.1

UNDERLAYMENT:

BASE PLY: (Optional) **TRI-BUILT SA Plybase** self-adhered in accordance with FBC Section 1507.1.1.1(1) or R905.1.1.1(1) and back-nailed in accordance with the manufacturer's requirements.

CAP PLY: **TRI-BUILT SA Cap** self-adhered in accordance with FBC Section 1507.1.1.1(1) or R905.1.1.1(1) and back-nailed in accordance with the manufacturer's requirements.

SURFACING: FBC Approved asphalt shingles, slate or slate type shingles, subject to the allowable roof covers in [Table 2 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

- END OF PEER -