



ENGINEER

EVALUATE

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EVALUATION REPORT

Tarco Roofing

One Information Way, Suite 225
Little Rock, AR 72202
(254) 913-7750

Evaluation Report 10880.07.08-R15

FL10450-R15

Date of Issuance: 07/11/2008

Revision 15: 10/01/2021

SCOPE:

This Evaluation Report 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 products described herein have been evaluated for compliance with the **7th Edition (2020) Florida Building Code** sections noted herein.

DESCRIPTION: Tarco Roof Underlayments for use in FBC non-HVHZ jurisdictions

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 Evaluation Report 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 Evaluation Reports 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 Evaluation Report relative to updated Code requirements with each Code Cycle.

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

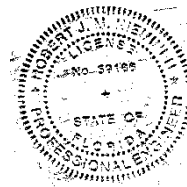
INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 11.

Prepared by:

Robert J.M. Nieminen, P.E.

Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 10/01/2021. This does not serve as an electronically signed document.

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 evaluation reports 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 Evaluation Report, 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

Compliance Statement: Tarco Roof Underlayments, as produced by Tarco Roofing, have demonstrated compliance with the following sections of the 7th Edition (2020) Florida Building Code through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Property	Standard	Year
1504.3.1	Wind resistance	FM 4474	2011
1507.1.1 / R905.1.1	Material standard	ASTM D226	2009
1507.1.1, 1507.2.4, 1507.2.9.2 / R905.1.1, R905.2.8.2	Material standard	ASTM D1970	2015
1507.2.9.2, 1507.6.5 / R905.2.8.2, R905.5.4	Material standard	ASTM D3909	2014
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tear strength	ASTM D4533	2015
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tensile strength	ASTM D5035	2011
1507.1.1.1(5) / R905.1.1.1(5)	Liquid water transmission	ASTM D4869	2016
1507.2.9.2, 1507.6.5 / R905.2.8.2, R905.5.4	Material standard	ASTM D6380	2013
1507.3.3 / R905.3.3	Material standard	FRSA/TRI, Sixth Edition	2018
1507.11.2 / R905.11.2	Material standard	ASTM D6164	2011
TAS 110	Accelerated Weathering	ASTM D4798	2011

3. REFERENCES:

Entity	Examination	Reference	Date	Entity	Examination	Reference	Date
ERD (TST6049)	FRSA/TRI	T33190.08.10	08/06/10	NEMO	FBC Cross-List 2	Listing Agreement 2	03/22/21
ERD (TST6049)	FM 4474	T37610.07.11	06/29/11	NEMO (TST6049)	FRSA/TRI	TAR-SC8020.06.18	06/05/18
ERD (TST6049)	D6380	T40790.04.12	04/06/12	NEMO (TST6049)	Tensile adhesion	4S-TAR-18-002.07.18-1	07/20/18
ERD (TST6049)	D6164	T35410.04.12	04/18/12	NEMO (TST6049)	Tensile adhesion	4S-TAR-18-002.07.18-2	07/20/18
ERD (TST6049)	D1970 (adhsn)	T45250.04.13-R2	04/18/13	NEMO (TST6049)	D4798	4j-TAR-19-SSUDL.01.A	08/27/19
ERD (TST6049)	FRSA/TRI	T43930.09.13-R2	09/05/13	NEMO (TST6049)	D1970	4j-TAR-20-SSUDL-02.A	03/29/21
ERD (TST6049)	D226 & D4869	SC4950.02.14-R2	02/27/14	NEMO (TST6049)	D5035/D4798	4j-TAR-20-SSUDL-01.A	02/22/21
ERD (TST6049)	FM 4474	TAR-SC5670.03.16	03/21/16	NEMO (TST6049)	D1623/D4798	4j-TAR-20-SSUDL-03.A	05/04/21
ERD (TST6049)	FM 4474	T6460.06.07-R2	06/26/07	NEMO (TST6049)	D226, Type II	4j-TAR-21-SSUDL-01.A	10/01/21
ERD (TST6049)	D226	TAR-SC13965.02.17-R1	02/27/17	NEMO (TST6049)	D3909	4j-TAR-21-SSUDL-01.B	10/01/21
ERD (TST6049)	D4533/D4798	TAR-SC16115.10.17-1	10/25/17	NEMO (TST6049)	FRSA/TRI	4j-TAR-21-SSUDL-01.D	10/01/21
ERD (TST6049)	FRSA/TRI	TAR-SC16115.10.17-2	10/25/17	Tarco Roofing	Adhesive comp	Affidavit	12/15/15
MD (CER1592)	FBC HVHZ	18-1105.05	09/26/19	UL (QUA9625)	QA	Service Cnfrm (INDIA)	11/22/16
MD (CER1592)	FBC HVHZ	21-0209.05	06/17/21	UL (QUA9625)	QA	Service Confirm (PA)	06/28/17
NEMO	FBC Cross-List	Listing Agreement	01/20/20	UL (QUA9625)	QA	Service Confirm (TX)	08/13/18
				UL (QUA9625)	QA	Florida BCIS	Current

4. PRODUCT DESCRIPTION:				
	Product	Material Standard	Plant(s)	Description
4.1	LeakBarrier® MS300 Ice and Water Armor	ASTM D1970	Belton, TX Greencastle, PA	self-adhering, glass mat reinforced, mineral surfaced, SBS modified roof underlayment
4.2	SRS Distribution TopShield Ice & Water G300	ASTM D1970	Belton, TX Greencastle, PA	self-adhering, glass mat reinforced, mineral surfaced, SBS modified roof underlayment
4.3	LeakBarrier® PS200 ^{HT} Ice and Water Armor	ASTM D1970 and FRSA/TRI 09-18	Greencastle, PA	self-adhering, glass mat reinforced, fabric surfaced, SBS modified roof underlayment
4.4	LeakBarrier® PS200 ^{MU} Ice and Water Armor	ASTM D1970	Greencastle, PA	self-adhering, glass mat reinforced, smooth poly film surfaced, SBS modified roof underlayment
4.5	LeakBarrier® NR600 Ultra Ice and Water Armor	ASTM D1970 and FRSA/TRI 09-18	Greencastle, PA	self-adhering, polyester-fabric surfaced, SBS modified roof underlayment
4.6	LeakBarrier® SS400 Ice and Water Armor	ASTM D1970	Greencastle, PA	self-adhering, fiberglass reinforced, smooth surfaced modified underlayment
4.7	#30 ASTM Specification Felt	ASTM D226, Type II	Greencastle, PA	asphalt-saturated organic felt
4.8	LeakBarrier® EasyLay®	ASTM D226, Type II	Belton, TX	asphalt-coated polyester fabric roof underlayment
4.9	Fiberglass Mineral Surfaced Roll Roofing	ASTM D3909	Greencastle, PA	glass-fiber-reinforced, asphalt-coated, granule surfaced underlayment used as a valley liner
4.10	ASTM Organic Mineral Surface Tile Underlayment	ASTM D6380, Class M	Greencastle, PA	asphalt-saturated organic roll roofing sheet
4.11	LeakBarrier® EasyMop™ SBS	FRSA/TRI April 09-18	Greencastle, PA	polyester reinforced, SBS modified bitumen roofing underlayment
4.12	LeakBarrier® EasyLay® UDL 15	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Gujarat, India	woven-polymeric scrim with a textured fabric on the top surface
4.13	SRS Distribution TopShield® EL30	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Gujarat, India	woven-polymeric scrim with a textured fabric on the top surface
4.14	LeakBarrier® EasyLay® UDL 30	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Gujarat, India	woven-polymeric scrim with a textured fabric on the top surface

- 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 Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
 - 5.2 This Evaluation Report is not for use in FBC High Velocity Hurricane Zone jurisdictions (i.e., Broward and Miami-Dade Counties).
 - 5.3 This Evaluation Report 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 Evaluation Report 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 **Tarco 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 1: ROOF COVER OPTIONS								
Underlayment	Asphalt Shingles (1507.2)	Clay and Concrete Tile (1507.3)		Metal		Slate or Slate-Type Shingles (1507.7)	Wood	
		Mechanical Attach	Adhesive- or Mortar-Set	Panels (1507.4)	Shingles (1507.5)		Shingles (1507.8)	Shakes (1507.9)
LeakBarrier MS300	Yes	No	No	No	No	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
TopShield Ice & Water G300	Yes	No	No	No	No	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
LeakBarrier PS200 ^{HT}	Yes	Yes	Yes See 5.6.1	Yes (No copper or zinc)	Yes (No copper or zinc)	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
LeakBarrier PS200 ^{MU}	Yes	No	No	Yes (No copper or zinc)	Yes (No copper or zinc)	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
LeakBarrier NR600 Ultra	Yes	Yes	Yes See 5.6.1	Yes (No copper or zinc)	Yes (No copper or zinc)	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
LeakBarrier SS400	Yes	No	No	No	No	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
LeakBarrier EasyLay	Yes	Yes See 5.6.2	Yes See 5.6.2	No	No	Yes	No	No
LeakBarrier EasyLay UDL 15 or LeakBarrier EasyLay UDL 30	Yes	Yes See 5.6.2	Yes See 5.6.2	Yes	Yes	Yes	No	No
TopShield EL30	Yes	Yes See 5.6.2	Yes See 5.6.2	Yes	Yes	Yes	No	No
#30 ASTM Specification Felt	Yes	Yes See 5.6.2	Yes See 5.6.2	Yes	Yes	Yes	Yes	Yes
Fiberglass Mineral Surfaced Roll Roofing	Yes (Valley Liner)	No	No	No	No	No	No	No
ASTM Organic Mineral Surface Tile Underlayment	Yes (Valley Liner)	Yes (Cap Sheet in 2-ply system)	Yes (Cap Sheet in 2-ply system) See 5.6.1	No	No	No	No	No
LeakBarrier EasyMop SBS	No	Yes (Cap Sheet in 2-ply system)	Yes (Cap Sheet in 2-ply system) See 5.6.1	No	No	No	No	No

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

TABLE 1A: ALLOWABLE UNDERLAYMENT / TILE-ADHESIVE COMBINATIONS ¹		
Underlayment	Adhesive / Mortar	Florida Product Approval
LeakBarrier PS200 ^{HT}	Dupont "Tile Bond™ Roof Tile Adhesive"	FL22525
LeakBarrier PS200 ^{HT} , LeakBarrier NR600 Ultra, ASTM Organic Mineral Surface Tile Underlayment or LeakBarrier EasyMop SBS	ICP Adhesives and Sealants "Polyset® AH-160"	FL6332
LeakBarrier PS200 ^{HT}	ICP Adhesives and Sealants "Polyset® RTA-1"	FL6276
ASTM Organic Mineral Surface Tile Underlayment or LeakBarrier EasyMop SBS	Mortar meeting FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual , Sixth Edition requirements and holding current Florida Local or Statewide Product Approval.	

5.6.2 #30 ASTM Specification Felt, EasyLay, LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30 may be used as a mechanically attached anchor sheet followed by an asphalt-applied ASTM Organic Mineral Surface Tile Underlayment or LeakBarrier EasyMop SBS.

5.7 **Allowable Substrates:**

TABLE 2: SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS			
Underlayment	Application	Primer	Substrates
LeakBarrier MS300	self-adhering	(Optional) ASTM D41	plywood; OSB or structural concrete
TopShield Ice & Water G300			
LeakBarrier PS200 ^{HT}			
LeakBarrier PS200 ^{MU}			
LeakBarrier NR600 Ultra			
LeakBarrier SS400			
LeakBarrier MS300	self-adhering	none	ASTM D226 Type II felt; ASTM D4869 Type III or IV felt; LeakBarrier EasyLay, LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30
TopShield Ice & Water G300			
LeakBarrier PS200 ^{HT}			
LeakBarrier PS200 ^{MU}			
LeakBarrier NR600 Ultra			
LeakBarrier SS400			
LeakBarrier MS300	self-adhering	ASTM D41	metal (flashing metal, valley metal, etc.)
TopShield Ice & Water G300			
LeakBarrier PS200 ^{HT}			
LeakBarrier PS200 ^{MU}			
LeakBarrier NR600 Ultra			
LeakBarrier SS400			
ASTM Organic Mineral Surface Tile Underlayment	hot asphalt	ASTM D41	structural concrete
LeakBarrier EasyMop SBS			
ASTM Organic Mineral Surface Tile Underlayment	hot asphalt	None	ASTM D226 Type II felt, ASTM D4601 base sheet
LeakBarrier EasyMop SBS			

¹ Refer to Tile Manufacturer's or Adhesive Manufacturer's Florida Product Approval for Overturning Moment Resistance Performance.

5.8 **Attachment Limitations:**

5.8.1 For use under mechanically attached NON-TILE prepared roof coverings, attachment shall be in accordance with the manufacturer’s installation instructions, but – for mechanically attached underlayments or base sheets - not less than **FBC 1507.1.1** or **R905.1.1**.

5.8.2 For use under tile roof systems, attachment shall be in accordance with the manufacturer’s installation instructions, but – for mechanically attached base sheets - not less than:

- **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, Appendix A, Table 1 (for Two-Ply Asphalt Applied Hot Mop Underlayment)
- or
- Section 5.8.3 herein (for other underlayment systems).

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

The following wind uplift limitations apply to underlayment systems that are not prescriptive in the **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition. The 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 **FBC 1504.9** has already been applied).

5.8.3.1 **Direct-to-Deck:**

The maximum design pressure for the selected assembly shall meet or exceed that required under **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, Appendix A, Table 1A or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**.

#1 **Maximum Design Pressure = -75.0 psf:**

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction
- Primer: (Optional) ASTM D41
- Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered.
- Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#2 **Maximum Design Pressure = -120.0 psf:**

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction
- Primer: (Optional) ASTM D41
- Joint Treatment: Plywood joints are covered with 4-inch wide strips of LeakBarrier PS200^{MU} or LeakBarrier EasyBase, rolled into place to create continuous bond
- Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered
- Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#3 **Maximum Design Pressure = -217.5 psf:**

- Deck: Structural concrete to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Primer: (Optional) ASTM D41
- Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered
- Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#4 All other direct-deck, adhered underlayment systems beneath tile roof systems carry a Maximum Design Pressure of -45 psf.

5.8.3.2 Mechanically-Attached Base Sheet:

The maximum design pressure for the selected assembly shall meet or exceed that required under **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, Appendix A, Table 1A 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, Roofing Application Standard RAS 117 and Roofing Application Standard 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 (February 2020) for enhancements.

#5 Maximum Design Pressure = -45.0 psf*:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30 (48" wide rolls).

Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps

Spacing: 6" o.c. at the 4-inch wide side laps and 8" o.c. at three (3) equally spaced, staggered center rows.

Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered

Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#6 Maximum Design Pressure = -45.0 psf*:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30 (48" wide rolls).

Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps

Spacing: 6" o.c. at the 4-inch wide side laps and 8" o.c. at three (3) equally spaced, staggered center rows.

Primer: ASTM D41 primer at tin-caps.

Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered

Underlayment: LeakBarrier NR600 Ultra, self-adhered.

#7 Maximum Design Pressure = -60.0 psf:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: LeakBarrier EasyLay

Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps

Spacing: 7" o.c. at the 4-inch wide side laps and 7" o.c. at three (3) equally spaced, staggered center rows.

Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered

Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#8 Maximum Design Pressure = -60.0 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30 (48" wide rolls).

Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps

Spacing: 6" o.c. at the 4-inch wide side laps and 6" o.c. at four (4) equally spaced, staggered center rows.

Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered

Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#9 **Maximum Design Pressure = -60.0 psf:**

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30 (48" wide rolls).
- Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps
- Spacing: 6" o.c. at the 4-inch wide side laps and 6" o.c. at four (4) equally spaced, staggered center rows.
- Primer: ASTM D41 primer at tin-caps.
- Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered
- Underlayment: LeakBarrier NR600 Ultra, self-adhered and back nailed using 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps spaced 12" o.c. within the self-adhering side laps.

#10 **Maximum Design Pressure = -82.5 psf:**

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: LeakBarrier EasyLay
- Fasteners: Simplex MAXX Cap Fasteners
- Spacing: 8" o.c. at the 4-inch wide side laps and 8" o.c. at four (4) equally spaced, staggered center rows.
- Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered
- Underlayment: LeakBarrier PS200^{HT}, self-adhered.

#11 **Maximum Design Pressure = -120.0 psf:**

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: LeakBarrier EasyLay
- Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails and 1-5/8-inch diameter tin caps
- Spacing: 4" o.c. at the 4-inch wide side laps and 4" o.c. at four (4) equally spaced, staggered center rows.
- Base Ply: (Optional) LeakBarrier PS200^{MU}, self-adhered
- Underlayment: LeakBarrier PS200^{HT}, self-adhered.

5.9 **Exposure Limitations:**

TABLE 3: EXPOSURE LIMITATIONS		
Underlayment	Prepared Roof Cover Installation Type	Maximum Exposure (days)
LeakBarrier PS200 ^{HT}	Adhesive-set tile roof system or mechanically attached	180
ASTM Organic Mineral Surface Tile Underlayment	Adhesive- or mortar-set tile roof system or mechanically attached	180
LeakBarrier NR600 Ultra or LeakBarrier EasyMop SBS	Mechanically attached	180
LeakBarrier EasyLay	Mechanically attached	180
LeakBarrier EasyLay UDL 30	Mechanically attached	180
LeakBarrier NR600 Ultra	Adhesive-set tile roof system	30
LeakBarrier EasyMop SBS	Adhesive- or mortar-set tile roof system	30
LeakBarrier MS300, PS200 ^{MU} , SS400 or TopShield Ice & Water G300	Mechanically attached	30
LeakBarrier EasyLay UDL 15 or TopShield EL30	Mechanically attached	30
#30 ASTM Specification Felt	Mechanically attached	1

5.10 Tile Slippage Limitations: When loading roof tiles on the underlayment in direct-deck tile roof assemblies, the maximum roof slope shall be as follows. These slope limitations can only be exceeded by using battens during loading of the roof tiles.

TABLE 4: TILE SLIPPAGE LIMITATIONS FOR DIRECT-DECK TILE INSTALLATIONS			
Underlayment*	Tile Profile	Staging Method	Maximum Slope
LeakBarrier PS200 ^{HT}	Flat or Lugged	6-tile stack (4 over 2)	6:12
LeakBarrier NR600 Ultra	Flat or Lugged	6-tile stack (4 over 2)	6:12
ASTM Organic Mineral Surface Tile Underlayment or LeakBarrier EasyMop SBS	Flat	6-tile stack (4 over 2)	5:12
	Lugged	6-tile stack (4 over 2)	6:12

Notes: *Tarco Roofing specifies a minimum 48 cure-time after the installation of self-adhering membranes and before loading of roofing tiles.

5.11 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 mentioned herein that are produced by a Product Manufacturer other than the report holder on Page 1 of this Evaluation Report.

6. INSTALLATION:

6.1 **Tarco Roof Underlayments** shall be installed in accordance with **Tarco Roofing** installation instructions subject to the Limitations set forth in Section 5 herein and the specifics noted below.

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 prime the substrate (if applicable).

6.3 #30 ASTM Specification Felt:

6.3.1 Non-Tile Applications:

Shall be installed in compliance with requirements for an approved mechanically attached underlayment (ASTM D226, Type II) in **FBC Table 1507.1.1.1** or **FBC Residential Table R905.1.1.1** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.3.2 Tile Applications:

#30 ASTM Specification Felt is limited to use as a mechanically attached base sheet in the “TWO-PLY SYSTEM” from **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, followed by ASTM Organic Mineral Surface Tile Underlayment or LeakBarrier EasyMop SBS applied in hot asphalt, or other FBC Approved hot-asphalt applied cap sheet. Refer to **FRSA/TRI**, Sixth Edition, Appendix A, Table 1 for attachment requirements.

6.4 LeakBarrier EasyLay:

6.4.1 Non-Tile Applications:

Shall be installed in compliance with requirements for an approved mechanically attached underlayment (ASTM D226, Type II) in **FBC Table 1507.1.1.1** or **FBC Residential Table R905.1.1.1** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.4.2 Tile Applications:

LeakBarrier EasyLay is limited to use as a mechanically attached base sheet in the “TWO-PLY SYSTEM” from **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition

- When LeakBarrier EasyLay is followed by ASTM Organic Mineral Surface Tile Underlayment or LeakBarrier EasyMop SBS applied in hot asphalt, or other FBC Approved hot-asphalt applied cap sheet, refer to **FRSA/TRI**, Sixth Edition, Appendix A, Table 1 for attachment requirements.
- When LeakBarrier EasyLay is followed by LeakBarrier PS200^{HT}, refer to Section 5.8.3.2 herein for attachment requirements.

6.5 LeakBarrier EasyLay UDL 15, TopShield EL30 or LeakBarrier EasyLay UDL 30:

6.5.1 Non-Tile Applications:

Shall be installed in compliance with requirements for a synthetic underlayment in **FBC 1507.1.1.1(2, Exception), 1507.1.1.1(3, Exception) or 1507.1.1.1(5)** or **FBC Residential R905.1.1.1(2, Exception), R905.1.1.1(3, Exception) or R905.1.1.1(5)** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.5.2 Tile Applications:

LeakBarrier EasyLay UDL 15, TopShield EL30 and LeakBarrier EasyLay UDL 30 are limited to use as a mechanically attached base sheet in the “TWO-PLY SYSTEM” from **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, followed by LeakBarrier PS200^{HT}, self-adhered. Refer to Section 5.8.3.2 herein for attachment requirements.

6.6 LeakBarrier® MS300, LeakBarrier® PS200^{MU}, LeakBarrier® SS400 Ice and Water Armor or TopShield Ice & Water G300:

6.6.1 Shall be installed in compliance with requirements for an approved self-adhering underlayment (ASTM D1970) in **FBC 1507.1.1.1 or 1507.1.1.3** or **FBC Residential R905.1.1.1 or R905.1.1.3** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions.

When installed over a mechanically attached, FBC Approved ASTM D226 Type II felt or ASTM D4869, Type III or IV felt, the felt shall be fastened in accordance with **FBC 1507.1.1 or R905.1.1**.

6.6.2 Multi-Ply Underlayment Systems:

LeakBarrier® SS400 Ice and Water Armor followed by LeakBarrier® SS400 Ice and Water Armor is allowable for use under mechanically attached prepared roof systems. Limits of use are those associated with the top-layer material. This is not a requirement, but is allowable if a multi-ply underlayment system is desired.

6.7 LeakBarrier® PS200^{HT} or LeakBarrier® NR600 Ultra:

6.7.1 Non-Tile Applications:

Shall be installed in compliance with requirements for an approved self-adhering underlayment (ASTM D1970) in **FBC 1507.1.1.1 or 1507.1.1.3** or **FBC Residential R905.1.1.1 or R905.1.1.3** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions.

When installed over a mechanically attached, FBC Approved ASTM D226 Type II felt or ASTM D4869, Type III or IV felt, the felt shall be fastened in accordance with **FBC 1507.1.1 or R905.1.1**.

6.7.2 Tile Applications:

Shall be installed in compliance with requirements for a Self-Adhered Membrane in the **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, and the manufacturer’s installation instructions.

Refer to Section 5.8.2 for attachment limitations.

Refer to Table 4 for tile staging limitations.

6.8 ASTM Organic Mineral Surface Tile Underlayment and LeakBarrier™ EasyMop SBS:**6.8.1 Tile Applications:**

ASTM Organic Mineral Surface Tile Underlayment and LeakBarrier™ EasyMop SBS are limited to use as the Hot Asphalt applied “Cap Sheet” in the “TWO-PLY SYSTEM” from **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition.

Refer to Section 5.8.2 for attachment limitations.

Refer to Table 4 for tile staging limitations.

6.9 Fiberglass Mineral Surface Roll Roofing and ASTM Organic Mineral Surface Tile Underlayment:

6.9.1 Fiberglass Mineral Surface Roll Roofing and ASTM Organic Mineral Surface Tile Underlayment are limited to use as a valley liner in accordance with **FBC 1507.2.9.2** or **FBC Residential R905.2.8.2**. Installation shall be in accordance with the manufacturer’s instructions before applying shingles.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction in order 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; Vinycia.Seman@ul.com

- END OF EVALUATION REPORT -