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Product Approval

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FL #	FL5293-R71
Application Type	Revision
Code Version	2023
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	GAF
Address/Phone/Email	1 Campus Drive Parisppany, NJ 07054 (800) 766-3411 mstieh@gaf.com
Authorized Signature	Michael Stieh michael.stieh@gaf.com
Technical Representative	William Broussard
Address/Phone/Email	1 Campus Drive Parsippany, NJ 07054 (800) 766-3411 TechnicalQuestionsGAF@gaf.com
Quality Assurance Representative	
Address/Phone/Email	

Category	Roofing	
Subcategory	Single Ply Roof Systems	
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received	
Florida Engineer or Architect Name who developed the Evaluation Report	Robert Nieminen	
Florida License	PE-59166	
Quality Assurance Entity	UL LLC	
Quality Assurance Contract Expiration Date	08/18/2028	
Validated By	John W. Knezevich, PE ☒ Validation Checklist - Hardcopy Received	
Certificate of Independence	FL5293_R71_COI_2024_07_COI_NIEMINEN.pdf	
Referenced Standard and Year (of Standard)	<u>Standard</u>	<u>Year</u>
	ASTM D2178	2015
	ASTM D4601	2012
	ASTM D4897	2016
	ASTM D6163	2016
	ASTM D6164	2016
	ASTM D6222	2016
	ASTM D6878	2021
	ASTM G155	2013
	FM 4470	2016
	FM 4474	2011
	TAS 114	2011
Equivalence of Product Standards Certified By		
Sections from the Code		

Product Approval Method

Method 1 Option D

Date Submitted	02/10/2026
Date Validated	02/12/2026
Date Pending FBC Approval	02/13/2026
Date Approved	04/14/2026
Date Revised	04/15/2026

Summary of Products

FL #	Model, Number or Name	Description
5293.1	EverGuard TPO Roof Systems (HVHZ)	Thermoplastic polyolefin roofing systems for use in FBC HVHZ jurisdictions.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: No Impact Resistant: N/A Design Pressure: +N/A/-502.5 Other: 1.) The design pressure noted in this application relates to on particular assembly. Refer to the PEER Appendix for all assemblies and associated design pressures. 2.) Refer to the PEER, Section 5 for Limits of Use.		Installation Instructions FL5293 R71 II 2026 02 04 FINAL A1 PEER-GAF-009.B HVHZ FL5293-R71.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes Evaluation Reports FL5293 R71 AE 2026 02 04 FINAL PEER-GAF-009.B HVHZ FL5293-R71.pdf Created by Independent Third Party: Yes
5293.2	EverGuard TPO Roof Systems (NON-HVHZ)	Thermoplastic polyolefin roofing systems for use in FBC non-HVHZ jurisdictions.
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: +N/A/-502.5 Other: 1.) The design pressure noted in this application relates to on particular assembly. Refer to the PEER Appendix for all assemblies and associated design pressures. 2.) Refer to the PEER, Section 5 for Limits of Use.		Installation Instructions FL5293 R71 II 2026 02 04 FINAL A1 PEER-GAF-009.A NON-HVHZ FL5293-R71.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes Evaluation Reports FL5293 R71 AE 2026 02 04 FINAL PEER-GAF-009.A NON-HVHZ FL5293-R71.pdf Created by Independent Third Party: Yes

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Product Approval Accepts:





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)

GAF

1 Campus Drive
Parsippany, NJ 07054
(800) 766-3411

PEER-GAF-009.B.R59

FL5293-R71 (HVHZ)

Date of Issuance: 12/17/2013

Revision 59: 02/04/2026

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 compliance with the **8th Edition (2023) Florida Building Code, High Velocity Hurricane Zone (HVHZ)** [sections noted herein](#).

DESCRIPTION: EverGuard® TPO 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. Reference is made to the NEMO|etc. [Directory of P.E. Evaluations](#) to ascertain the status and/or current version of this PEER. If the PEER is not listed at the Nemo Directory, then it is no longer valid.

ADVERTISEMNT: "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.

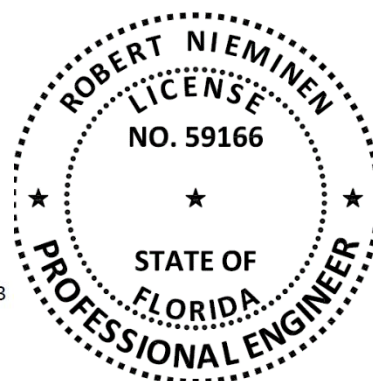
INSPECTION: Upon request, a copy of this entire PEER shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This PEER consists of pages 1 through 7, plus 217-pages of Appendix.

Prepared by:

Digitally signed by
Robert Nieminen
Date: 2026.02.04
'16:18:17 -05'00

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: EverGuard® TPO Roof Systems, as produced by GAF, 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	Material standard (asphaltic)	ASTM D2178, ASTM D4601, ASTM D4897
TAS 110	Material standard (modified bitumen)	ASTM D6163, ASTM D6164, ASTM D6222
TAS 110	Static & dynamic puncture resistance	ASTM D5602, ASTM D5635
TAS 110	Material standard (TPO)	ASTM D6878

3. REFERENCES:

ENTITY	EXAM	REFERENCE	DATE	ENTITY	EXAM	REFERENCE	DATE
NEMO (TST6049)	Physicals (IN)	4j-GAF-SSUDL-004.A	11/19/24	FM (TST1867)	FM 4474	3055904	10/25/18
NEMO (TST6049)	ASTM D6878	4r-GAF-SSHP-006.A	01/09/26	FM (TST1867)	FM 4474	RR215191-267	11/07/18
NEMO	PEER	PEER-GAF-007.A&B	08/22/25	FM (TST1867)	FM 4474	RR215193-267	11/08/18
PRI (TST5878)	ASTM D6878 (TX)	GAF-584-02-01	11/20/15	FM (TST1867)	FM 4474	RR217564-267	02/05/19
PRI (TST5878)	ASTM D6878 (TX)	GAF-585-02-01	11/20/15	FM (TST1867)	FM 4474	PR450261	10/22/19
PRI (TST5878)	ASTM D6878 (UT)	GAF-586-02-01	11/20/15	FM (TST1867)	FM 4474	PR453601-R1	11/15/19
PRI (TST5878)	ASTM D6878 (UT)	GAF-700-02-01	03/10/17	FM (TST1867)	FM 4474	PR453353	01/31/20
PRI (TST5878)	ASTM D6878 (PA)	GAF-870-02-01	02/15/19	FM (TST1867)	Criticality	PR452423	02/06/20
PRI (TST5878)	ASTM D6878 (PA)	GAF-904-02-01	10/09/19	FM (TST1867)	FM 4474	RR221253-267	02/07/20
PRI (TST5878)	ASTM D6878 (UT)	GAF-889-02-01	11/01/19	FM (TST1867)	Criticality	PR452971	02/19/20
PRI (TST5878)	ASTM D6878 (PA)	376T0114	09/09/21	FM (TST1867)	FM 4474	RR222755-267	03/10/20
PRI (TST5878)	ASTM D6878 (IN)	376T0128	09/30/21	FM (TST1867)	FM 4474	PR455417	09/30/20
PRI (TST5878)	ASTM D6878	EXTENSION LTR	09/27/22	FM (TST1867)	FM 4474	PR455417 R2	12/23/20
PRI (TST5878)	ASTM D6878 (IN)	376T0390	11/13/23	FM (TST1867)	FM 4474	RR227079	03/10/21
PRI (TST5878)	ASTM D6878 (IN)	376T0391	11/13/23	FM (TST1867)	Traceability	PR459034	03/24/21
PRI (TST5878)	ASTM D6878 (IN)	376T0456	06/06/24	FM (TST1867)	FM 4474	RR226788	03/25/21
PRI (TST5878)	ASTM D6878 (IN)	376T0457	06/06/24	FM (TST1867)	FM 4474	PR458073	04/08/21
PRI (TST5878)	ASTM D6878 (GA-V)	376T0549	02/11/25	FM (TST1867)	FM 4474	RR227768	04/09/21
ACRC (TST4671)	TAS 114	06-035	10/18/06	FM (TST1867)	FM 4474	PR457312	04/20/21
ACRC (TST4671)	TAS 114	07-005	01/17/07	FM (TST1867)	FM 4470	PR459831	04/21/21
ACRC (TST4671)	TAS 114	07-024	03/01/07	FM (TST1867)	FM 4474	PR459436	07/20/22
ACRC (TST4671)	TAS 114	07-016	04/19/07	FM (TST1867)	FM 4474	RR227915	05/06/21
ACRC (TST4671)	TAS 114	07-017	04/19/07	FM (TST1867)	FM 4474	PR456101	06/24/21
ACRC (TST4671)	TAS 114	07-025	05/02/07	FM (TST1867)	FM 4474	PR461047	10/25/21
ACRC (TST4671)	TAS 114	07-026	05/03/07	FM (TST1867)	FM 4474	PR456300	11/18/21
ACRC (TST4671)	TAS 114	07-027	05/04/07	FM (TST1867)	FM 4474	PR458360	11/22/21
ACRC (TST4671)	TAS 114	07-042	08/31/07	FM (TST1867)	FM 4474	RR232145-267	03/21/22
ACRC (TST4671)	TAS 114	07-043	09/05/07	FM (TST1867)	FM 4474	PR450629	04/13/22
ACRC (TST4671)	TAS 114	07-045	09/06/07	FM (TST1867)	FM 4474	RR232513-267	04/22/22
ACRC (TST4671)	TAS 114	07-046	09/06/07	FM (TST1867)	FM 4474	PR460889	08/01/22
ACRC (TST4671)	TAS 114	07-048	09/07/07	FM (TST1867)	FM 4474	PR460126	09/20/22
ACRC (TST4671)	TAS 114	07-049	09/10/07	FM (TST1867)	FM 4474	PR461460	11/15/22
ACRC (TST4671)	TAS 114	07-080	01/03/08	FM (TST1867)	FM 4474	RR235368-267	12/19/22
ACRC (TST4671)	TAS 114	08-030	04/05/08	FM (TST1867)	FM 4474	PR464081	02/20/23
ACRC (TST4671)	TAS 114	08-022	04/17/08	FM (TST1867)	FM 4474	RR236465-267	03/15/23
ACRC (TST4671)	TAS 114	08-023	04/17/08	FM (TST1867)	FM 4470/4474	PR458321	03/29/23
ACRC (TST4671)	TAS 114	08-033	04/19/08	FM (TST1867)	FM 4474	RR237233-267	05/30/23
ACRC (TST4671)	TAS 114	08-032	04/19/08	FM (TST1867)	FM 4474	RR238073	08/07/23
ACRC (TST4671)	TAS 114	11-004	03/21/11	FM (TST1867)	FM 4474	RR237727	08/17/23
ACRC (TST4671)	TAS 114	11-011	03/24/11	FM (TST1867)	FM 4474	RR237767	08/30/23
ACRC (TST4671)	TAS 114	11-012	04/06/11	FM (TST1867)	FM 4474	RR237937	09/13/23
ACRC (TST4671)	TAS 114	11-013	04/06/11	FM (TST1867)	FM 4474	RR238291	09/21/23
ACRC (TST4671)	TAS 114	11-019	04/08/11	FM (TST1867)	FM 4474	RR238672	10/12/23
ACRC (TST4671)	TAS 114	11-020	04/08/11	FM (TST1867)	FM 4474	PR466037	10/20/23
ACRC (TST4671)	TAS 114	11-021	04/11/11	FM (TST1867)	FM 4474	PR465619	12/05/23
ACRC (TST4671)	TAS 114	11-040	08/05/11	FM (TST1867)	FM 4470/4474	PR465710	12/18/23
ACRC (TST4671)	TAS 114	11-041	08/05/11	FM (TST1867)	FM 4474	PR466798	12/20/23
ACRC (TST4671)	TAS 114	11-056	09/30/11	FM (TST1867)	FM 4474	PR466096	01/22/24
ACRC (TST4671)	TAS 114	11-042-R1	01/27/12	FM (TST1867)	FM 4474	PR467712	03/01/24
ACRC (TST4671)	TAS 114	12-008	04/10/12	FM (TST1867)	FM 4474	PR467721	03/01/24
ACRC (TST4671)	TAS 114	12-012	04/23/12	FM (TST1867)	FM 4474	PR468487-1 (data)	03/13/24
ACRC (TST4671)	TAS 114	12-013	04/23/12	FM (TST1867)	FM 4474	PR468487-2 (data)	03/13/24
ACRC (TST4671)	TAS 114	12-014	04/23/12	FM (TST1867)	FM 4474	PR466980	04/10/24
ACRC (TST4671)	TAS 114	12-016	04/24/12	FM (TST1867)	FM 4474	PR468487-3 (data)	05/08/24

ENTITY	EXAM	REFERENCE	DATE	ENTITY	EXAM	REFERENCE	DATE
ACRC (TST4671)	TAS 114	12-019	04/25/12	FM (TST1867)	FM 4474	PR468487-4 (data)	05/08/24
ACRC (TST4671)	TAS 114	12-024	05/09/12	FM (TST1867)	FM 4474	RR241598	05/30/24
ACRC (TST4671)	TAS 114	12-025	05/09/12	FM (TST1867)	FM 4474	RR241361	05/07/24
ACRC (TST4671)	TAS 114	12-029	05/23/12	FM (TST1867)	FM 4474	RR240890	05/09/24
ACRC (TST4671)	TAS 114	12-030	05/23/12	FM (TST1867)	FM 4474	RR241387	05/10/24
ACRC (TST4671)	TAS 114	12-033	08/10/12	FM (TST1867)	FM 4474	RR241586	05/29/24
ACRC (TST4671)	TAS 114	12-036	08/13/12	FM (TST1867)	Criticality	PR468487 (data)	06/05/24
ACRC (TST4671)	TAS 114	12-018-R1	01/30/13	FM (TST1867)	FM 4470	RR242295	07/10/24
ACRC (TST4671)	TAS 114	08-022-R1	01/15/15	FM (TST1867)	FM 4474	RR242812	09/06/24
ACRC (TST4671)	TAS 114	11-056-R2	01/23/15	FM (TST1867)	FM 4474	RR243128	09/24/24
ACRC (TST4671)	TAS 114	16-002	03/04/16	FM (TST1867)	FM 4474	PR468153	11/04/24
ACRC (TST4671)	TAS 114(D)	20-016	11/11/20	FM (TST1867)	FM 4474	PR470505	01/24/25
ACRC (TST4671)	TAS 114(D)	20-017	11/11/20	FM (TST1867)	FM 4470	PR469851	01/30/25
ACRC (TST4671)	TAS 114(D)	20-019	11/13/20	FM (TST1867)	FM 4474	PR471562	02/12/25
ACRC (TST4671)	TAS 114(D)	20-021	11/13/20	FM (TST1867)	FM 4474	RR244840	03/18/25
ACRC (TST4671)	TAS 114(D)	20-022	11/16/20	FM (TST1867)	FM 4474	PR463218	03/17/25
ACRC (TST4671)	TAS 114(D)	20-023	11/16/20	FM (TST1867)	FM 4474	PR466462	04/03/25
ACRC (TST4671)	TAS 114(J)	21-006	03/16/21	FM (TST1867)	FM 4470	RR244920	04/03/25
ACRC (TST4671)	TAS 114	25-017	06/12/25	FM (TST1867)	FM 4474	PR471563	04/10/25
ACRC (TST4671)	TAS 114	25-019	06/12/25	FM (TST1867)	FM 4470	PR464801	04/11/25
ACRC (TST4671)	TAS 114	25-020	06/13/25	FM (TST1867)	FM 4474	RR245727	04/14/25
ATI/ITS (TST1558)	Criticality	G9819.02-106-31	05/10/17	FM (TST1867)	FM 4470	RR245882	04/23/25
ATI/ITS (TST1558)	TAS 114	G9819.03-109-44	08/01/17	FM (TST1867)	FM 4474	RR245205	05/05/25
ATI/ITS (TST1558)	TAS 114	H-3320.01-109-44	08/10/17	FM (TST1867)	FM 4470	PR469015	05/13/25
ATI/ITS (TST1558)	TAS 114	H-3314.01-109-44	08/14/17	FM (TST1867)	FM 4470	PR469209	06/03/25
ATI/ITS (TST1558)	TAS 114	H-3315.01-109-44	08/14/17	FM (TST1867)	FM 4470	PR471565	10/28/25
ATI/ITS (TST1558)	TAS 114	H-3317.01-109-44	08/14/17	F-TEC (TST7393)	TAS 114	08-050183	06/26/08
ATI/ITS (TST1558)	TAS 114	H-3318.01-109-44	08/14/17	F-TEC (TST7393)	TAS 114	08-050184	06/26/08
ATI/ITS (TST1558)	TAS 114	G9819.01-109-44.R1	08/15/17	F-TEC (TST7393)	TAS 114	08-070133	08/04/08
ATI/ITS (TST1558)	TAS 114	H-0730.01-109-44	08/16/17	F-TEC (TST7393)	TAS 114	08-050185	10/14/08
ACRC (TST4671)	TAS 114(D)	23-012	06/16/23	F-TEC (TST7393)	TAS 114	08-072805	02/16/09
ACRC (TST4671)	TAS 114(D)	23-013	06/16/23	IRT (TST7408)	TAS 114	02-008	01/18/02
ACRC (TST4671)	TAS 114(D)	23-014	06/16/23	IRT (TST7408)	TAS 114	03-0728	02/17/04
ERD (TST6049)	TAS 114	SC8580.11.15-4	11/09/15	IRT (TST7408)	TAS 114	04-012	02/18/04
ERD (TST6049)	TAS 114	SC8580.11.15-2	11/18/15	IRT (TST7408)	TAS 114	04-019	04/26/04
ERD (TST6049)	Criticality	SC16505.17	09/22/17	NEMO (TST6049)	FM 4474	SC16825.12.17-3A	01/01/18
ERD (TST6049)	TAS 114	SC16825.12.17-1	12/31/17	NEMO (TST6049)	Physicals	4q-GAF-19-SSMBB-03.A	05/13/19
ERD (TST6049)	TAS 114	SC16825.12.17-3B	12/31/17	NEMO (TST6049)	TAS 114	4L-CEL-18-001.12.18.2	07/10/19
FM (TST1867)	FM 4470	3003617	12/20/99	PRI (TST5878)	TAS 114	GAF-043-02-03	09/16/13
FM (TST1867)	FM 4470	3009026	06/18/02	PRI (TST5878)	TAS 114	GAF-043-02-04	09/16/13
FM (TST1867)	FM 4470	3013861	03/28/03	PRI (TST5878)	Criticality	GAF-462-02-02	11/18/13
FM (TST1867)	FM 4470	3014692	08/05/03	PRI (TST5878)	TAS 114	GAF-457-02-02	01/20/14
FM (TST1867)	FM 4470	3014955	01/22/04	PRI (TST5878)	TAS 114	GAF-457-02-04	01/24/14
FM (TST1867)	FM 4470	3012721	02/11/04	PRI (TST5878)	TAS 114	GAF-457-02-06	01/24/14
FM (TST1867)	FM 4470	3015029	02/19/04	PRI (TST5878)	TAS 114	GAF-457-02-07	01/24/14
FM (TST1867)	FM 4470	3015578	03/12/04	PRI (TST5878)	TAS 114	GAF-457-02-08	01/24/14
FM (TST1867)	FM 4470	3019881	03/20/04	PRI (TST5878)	TAS 114	GAF-435-02-07	01/29/14
FM (TST1867)	FM 4470	3020588	03/24/04	PRI (TST5878)	TAS 114	GAF-435-02-08	01/29/14
FM (TST1867)	FM 4470	3016068	04/02/04	PRI (TST5878)	TAS 114	GAF-435-02-09	01/29/14
FM (TST1867)	FM 4470	3105578	05/12/04	PRI (TST5878)	TAS 114	GAF-435-02-10	01/29/14
FM (TST1867)	FM 4470	3013861	05/21/04	PRI (TST5878)	TAS 114	GAF-435-02-11	01/29/14
FM (TST1867)	FM 4470	3014955	01/28/05	PRI (TST5878)	Rupture	GAF-435-02-01	01/29/14
FM (TST1867)	FM 4470	3022136	03/17/05	PRI (TST5878)	TAS 114	GAF-506-02-06	03/06/14
FM (TST1867)	FM 4470	3020681	09/01/05	PRI (TST5878)	TAS 114	GAF-506-02-08	03/06/14
FM (TST1867)	FM 4470	3024051	03/28/06	PRI (TST5878)	TAS 114	GAF-506-02-10	03/06/14
FM (TST1867)	FM 4470	797-02093-267	04/26/06	PRI (TST5878)	TAS 114	GAF-510-02-02	04/08/14
FM (TST1867)	FM 4470	3023458	07/18/06	PRI (TST5878)	TAS 114	GAF-510-02-04	04/08/14
FM (TST1867)	FM 4470	3028039	09/11/06	PRI (TST5878)	TAS 114	GAF-510-02-05	04/08/14
FM (TST1867)	FM 4470	3027159	10/03/06	PRI (TST5878)	TAS 114	GAF-511-02-02	04/08/14
FM (TST1867)	FM 4470	3026149	02/05/07	PRI (TST5878)	TAS 114	GAF-506-02-11	04/14/14
FM (TST1867)	FM 4470	3026964	07/25/07	PRI (TST5878)	TAS 114	GAF-506-02-12	04/14/14
FM (TST1867)	FM 4470	3028857	11/02/07	PRI (TST5878)	TAS 114	GAF-506-02-13	04/14/14
FM (TST1867)	FM 4470	3030199	11/05/07	PRI (TST5878)	TAS 114	GAF-506-02-14	04/14/14
FM (TST1867)	FM 4470	3030813	11/05/07	PRI (TST5878)	TAS 114	GAF-506-02-01	04/22/14
FM (TST1867)	FM 4470	3031262	11/30/07	PRI (TST5878)	TAS 114	GAF-514-02-01	05/12/14
FM (TST1867)	FM 4470	3030292	02/25/08	PRI (TST5878)	TAS 114	GAF-514-02-03	05/12/14
FM (TST1867)	FM 4470	797-03825-267	07/21/08	PRI (TST5878)	TAS 114	GAF-514-02-04	05/12/14
FM (TST1867)	FM 4470	3033314	08/26/08	PRI (TST5878)	TAS 114	GAF-514-02-05	05/12/14
FM (TST1867)	FM 4470	3034749	10/16/08	PRI (TST5878)	TAS 114	GAF-514-02-07	05/12/14
FM (TST1867)	FM 4470	3032856	11/24/08	PRI (TST5878)	TAS 114	GAF-514-02-08	05/12/14
FM (TST1867)	FM 4470	3033135	11/24/08	PRI (TST5878)	TAS 114	GAF-516-02-01	05/13/14
FM (TST1867)	FM 4470	3032811	12/11/08	PRI (TST5878)	TAS 114	GAF-516-02-03	05/13/14
FM (TST1867)	FM 4470	3033862	12/24/08	PRI (TST5878)	TAS 114	GAF-516-02-02	06/06/14
FM (TST1867)	FM 4470	3034394	02/27/09	PRI (TST5878)	TAS 114	GAF-525-02-02	06/23/14
FM (TST1867)	FM 4470	3033121	04/13/09	PRI (TST5878)	TAS 114	GAF-525-02-03	06/23/14
FM (TST1867)	FM 4470	3035300	05/06/09	PRI (TST5878)	TAS 114	GAF-462-02-09	07/01/14
FM (TST1867)	FM 4470	3036614	06/09/09	PRI (TST5878)	TAS 114	GAF-462-02-10	07/01/14
FM (TST1867)	FM 4470	3034310	06/15/09	PRI (TST5878)	TAS 114	GAF-462-02-11	07/01/14
FM (TST1867)	FM 4470	3036141	08/10/09	PRI (TST5878)	TAS 114	GAF-524-02-02	07/01/14
FM (TST1867)	FM 4470	3037820	04/30/10	PRI (TST5878)	TAS 114	GAF-524-02-03	07/01/14
FM (TST1867)	FM 4470	797-059797-267	08/18/10	PRI (TST5878)	TAS 114	GAF-524-02-05	07/01/14
FM (TST1867)	FM 4470	3038215	09/02/10	PRI (TST5878)	TAS 114	GAF-540-02-02	08/06/14
FM (TST1867)	FM 4470	797-05901-267	10/01/10	PRI (TST5878)	TAS 114	GAF-540-02-03	08/06/14
FM (TST1867)	FM 4470	797-06003-267	11/11/10	PRI (TST5878)	TAS 114	GAF-540-02-04	08/06/14
FM (TST1867)	FM 4470	3038318	12/10/10	PRI (TST5878)	TAS 114	GAF-549-02-01	08/08/14
FM (TST1867)	FM 4470	797-06178-267	02/07/11	PRI (TST5878)	TAS 114	GAF-538-02-02	08/13/14
FM (TST1867)	FM 4470	3040234	02/23/11	PRI (TST5878)	TAS 114	GAF-538-02-03	08/13/14
FM (TST1867)	FM 4470	3040377	03/08/11	PRI (TST5878)	TAS 114	GAF-532-02-01	08/22/14
FM (TST1867)	FM 4470	3041685	03/24/11	PRI (TST5878)	TAS 114	GAF-524-02-05	08/27/14
FM (TST1867)	FM 4470	797-06254-267	03/24/11	PRI (TST5878)	TAS 114	GAF-538-02-04	09/02/14
FM (TST1867)	FM 4470	3041535	06/08/11	PRI (TST5878)	TAS 114	GAF-559-02-11	10/16/14



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ENTITY	EXAM	REFERENCE	DATE	ENTITY	EXAM	REFERENCE	DATE
FM (TST1867)	FM 4470	797-06537-267	06/13/11	PRI (TST5878)	TAS 114	GAF-559-02-12	10/16/14
FM (TST1867)	FM 4470	797-06538-267	06/13/11	PRI (TST5878)	TAS 114	GAF-559-02-13	10/16/14
FM (TST1867)	FM 4470	3041746	08/17/11	PRI (TST5878)	TAS 114	GAF-559-02-14	10/16/14
FM (TST1867)	FM 4470	797-06894-267	11/02/11	PRI (TST5878)	TAS 114	GAF-559-02-15	10/16/14
FM (TST1867)	FM 4470	3042887	11/14/11	PRI (TST5878)	TAS 114	GAF-559-02-16	10/16/14
FM (TST1867)	FM 4470	3038278	11/18/11	PRI (TST5878)	TAS 114	GAF-559-02-18	10/16/14
FM (TST1867)	FM 4470	3042905	01/10/12	PRI (TST5878)	TAS 114	GAF-558-02-05	12/03/14
FM (TST1867)	FM 4470	797-07041-267	02/27/12	PRI (TST5878)	TAS 114	GAF-453-02-05	05/06/16
FM (TST1867)	FM 4470	797-07183-267	03/01/12	PRI (TST5878)	Criticality	GAF-653-02-01	10/20/16
FM (TST1867)	FM 4470	3044506	03/28/12	PRI (TST5878)	TAS 114	GAF-653-02-04	10/20/16
FM (TST1867)	FM 4470	797-07331-267	04/13/12	PRI (TST5878)	TAS 114	GAF-746-02-01	12/14/16
FM (TST1867)	FM 4470	3044862	05/11/12	PRI (TST5878)	TAS 114	GAF-746-02-02	12/14/16
FM (TST1867)	FM 4470	797-07455-267	05/31/12	PRI (TST5878)	TAS 114	GAF-746-02-05	12/14/16
FM (TST1867)	FM 4470	797-07474-267	06/11/12	PRI (TST5878)	TAS 114	GAF-746-02-06	12/15/16
FM (TST1867)	FM 4470	797-07476-267	06/21/12	PRI (TST5878)	TAS 114	GAF-755-02-01	02/02/17
FM (TST1867)	FM 4470	3045789	07/12/12	PRI (TST5878)	TAS 114	GAF-755-02-02	02/02/17
FM (TST1867)	FM 4470	3045166	07/24/12	PRI (TST5878)	TAS 114	GAF-755-02-03	02/02/17
FM (TST1867)	FM 4470	3045863	08/16/12	PRI (TST5878)	TAS 114	GAF-755-02-04	02/02/17
FM (TST1867)	FM 4470	3041749	08/23/12	PRI (TST5878)	TAS 114	GAF-782-02-01	08/24/17
FM (TST1867)	FM 4470	3046328	09/13/12	PRI (TST5878)	TAS 114	GAF-782-02-02	08/30/17
FM (TST1867)	FM 4470	3046388	09/24/12	PRI (TST5878)	TAS 114	GAF-776-02-02	10/04/17
FM (TST1867)	FM 4470	3041769	09/27/12	PRI (TST5878)	Criticality	GAF-793-02-01	12/08/17
FM (TST1867)	FM 4470	797-07744-267	10/17/12	PRI (TST5878)	TAS 114	GAF-793-02-02	12/08/17
FM (TST1867)	FM 4470	797-07885-267	11/21/12	PRI (TST5878)	TAS 114	GAF-793-02-04	12/08/17
FM (TST1867)	FM 4470	3046054	12/21/12	PRI (TST5878)	TAS 114	GAF-835-02-02	02/19/18
FM (TST1867)	FM 4470	797-08216-267	04/11/13	PRI (TST5878)	TAS 114	GAF-834-02-01	02/28/18
FM (TST1867)	FM 4470	3048122	04/29/13	PRI (TST5878)	TAS 114	GAF-835-02-03	02/28/18
FM (TST1867)	FM 4470	797-08217-267	05/01/13	PRI (TST5878)	TAS 114	GAF-835-02-04	02/28/18
FM (TST1867)	FM 4470	797-08264-267	05/23/13	PRI (TST5878)	TAS 114	GAF-833-02-01	03/02/18
FM (TST1867)	FM 4470	3047237	07/15/13	PRI (TST5878)	TAS 114	GAF-833-02-02	03/02/18
FM (TST1867)	FM 4470	3047636	08/08/13	PRI (TST5878)	TAS 114	GAF-836-02-01	03/02/18
FM (TST1867)	FM 4474	797-08873-267	11/26/13	PRI (TST5878)	TAS 114	GAF-836-02-02	03/02/18
FM (TST1867)	FM 4474	3048066	12/13/13	PRI (TST5878)	TAS 114	GAF-836-02-03	03/02/18
FM (TST1867)	FM 4474	3041749	12/30/13	PRI (TST5878)	TAS 114	GAF-836-02-04	03/02/18
FM (TST1867)	FM 4474	797-09116-267	01/24/14	PRI (TST5878)	TAS 114	GAF-858-02-05	04/27/18
FM (TST1867)	FM 4474	797-09234-267	03/11/14	PRI (TST5878)	TAS 114	GAF-858-02-01	05/01/18
FM (TST1867)	FM 4474	797-09317-267	04/18/14	PRI (TST5878)	TAS 114	GAF-858-02-02	05/01/18
FM (TST1867)	FM 4474	797-09493-267	05/27/14	PRI (TST5878)	TAS 114	GAF-858-02-03	05/01/18
FM (TST1867)	FM 4474	797-09495-267	05/27/14	PRI (TST5878)	TAS 114	GAF-858-02-04	05/01/18
FM (TST1867)	FM 4474	797-09573-267	06/13/14	PRI (TST5878)	TAS 114	GAF-858-02-06	05/01/18
FM (TST1867)	FM 4474	797-09497-267	06/23/14	PRI (TST5878)	TAS 114	GAF-834-02-03	05/11/18
FM (TST1867)	FM 4474	797-09594-267	06/24/14	PRI (TST5878)	TAS 114	GAF-902-02-02	02/27/19
FM (TST1867)	FM 4474	797-09635-267	07/16/14	PRI (TST5878)	TAS 114	GAF-926-02-02	07/17/19
FM (TST1867)	FM 4470	3051408	08/13/14	PRI (TST5878)	TAS 114	376T0014	08/09/19
FM (TST1867)	FM 4474	797-09892-267	10/30/14	PRI (TST5878)	TAS 114	376T0016	08/09/19
FM (TST1867)	FM 4474	797-10123-283	12/17/14	PRI (TST5878)	TAS 114	376T0017	08/09/19
FM (TST1867)	FM 4474	797-10153-267	12/19/14	PRI (TST5878)	Criticality	376T0006-3	09/06/19
FM (TST1867)	FM 4474	797-10210-267	02/05/15	PRI (TST5878)	TAS 114	376T0025	09/06/19
FM (TST1867)	FM 4474	797-10211-267	02/05/15	PRI (TST5878)	TAS 114	376T0026	09/06/19
FM (TST1867)	FM 4474	797-10212-267	02/05/15	PRI (TST5878)	TAS 114	376T0027	09/19/19
FM (TST1867)	FM 4474	797-RR20018	02/23/15	PRI (TST5878)	TAS 114	376T0097	10/26/20
FM (TST1867)	FM 4474	RR200320	04/07/15	PRI (TST5878)	Criticality	376T0006-1	01/18/21
FM (TST1867)	FM 4474	RR200321	04/07/15	PRI (TST5878)	TAS 114	376T0093	01/26/21
FM (TST1867)	FM 4474	3055411	04/15/15	PRI (TST5878)	TAS 114	376T0098	01/26/21
FM (TST1867)	FM 4474	3047636 - LTR	06/24/15	PRI (TST5878)	TAS 114	376T0099	01/26/21
FM (TST1867)	FM 4474	RR202913	11/19/15	PRI (TST5878)	TAS 114	376T0165	06/04/21
FM (TST1867)	FM 4474	3054498	11/30/15	PRI (TST5878)	TAS 114	376T0166	06/07/21
FM (TST1867)	FM 4474	3053501	01/14/16	PRI (TST5878)	Criticality	376T0168	06/07/21
FM (TST1867)	FM 4474	3056207	02/09/16	PRI (TST5878)	TAS 114	376T0182	09/13/21
FM (TST1867)	FM 4474	3055167	02/10/16	PRI (TST5878)	TAS 114	376T0184	09/13/21
FM (TST1867)	FM 4474	RR204005	04/13/16	PRI (TST5878)	TAS 114	376T0185	09/13/21
FM (TST1867)	FM 4474	RR205159	05/05/16	PRI (TST5878)	TAS 114	410T0026	12/15/21
FM (TST1867)	FM 4474	RR205192	05/09/16	PRI (TST5878)	TAS 114	376T0311	07/19/22
FM (TST1867)	FM 4474	RR205233	06/15/16	PRI (TST5878)	TAS 114	376T0312	07/19/22
FM (TST1867)	FM 4474	RR205846	07/21/16	PRI (TST5878)	TAS 114	376T0404.3	05/11/23
FM (TST1867)	FM 4474	RR205474	08/31/16	PRI (TST5878)	TAS 114	376T0461	10/09/23
FM (TST1867)	FM 4474	RR206198	09/01/16	PRI (TST5878)	TAS 114	376T0490	12/14/23
FM (TST1867)	FM 4474	RR206353	09/07/16	PRI (TST5878)	TAS 114	376T0491.2	01/16/24
FM (TST1867)	FM 4474	RR206620	09/12/16	PRI (TST5878)	TAS 114	376T0470	02/13/24
FM (TST1867)	Criticality	3040377 (LTR)	09/21/16	PRI (TST5878)	TAS 114	376T0488.1	02/13/24
FM (TST1867)	FM 4470	3058882	10/13/16	PRI (TST5878)	TAS 114	376T0513	03/19/24
FM (TST1867)	FM 4474	RR206351	10/21/16	PRI (TST5878)	FM 4474	376T0532.1	05/09/24
FM (TST1867)	FM 4474	3055491	12/05/16	PRI (TST5878)	FM 4474	376T0532.2	05/09/24
FM (TST1867)	FM 4474	3058483	12/09/16	PRI (TST5878)	Criticality	376T0489	05/13/24
FM (TST1867)	FM 4474	3056728 LTR	12/23/16	PRI (TST5878)	Criticality	376T0536	07/24/24
FM (TST1867)	FM 4470	3056822 LTR	01/04/17	PRI (TST5878)	FM 4474	376T0565.1	10/16/24
FM (TST1867)	FM 4470	3058967	01/10/17	PRI (TST5878)	FM 4474	376T0565.2	10/16/24
FM (TST1867)	FM 4474	RR208456	02/13/17	PRI (TST5878)	Criticality	376T0590	11/18/24
FM (TST1867)	FM 4474	3061218	05/10/17	PRI (TST5878)	FM 4474	376T0570.2	12/16/24
FM (TST1867)	FM 4474	3061218 LTR	05/16/17	PRI (TST5878)	FM 4474, TAS 114	376T0588.1	12/16/24
FM (TST1867)	FM 4474	RR209927	06/23/17	PRI (TST5878)	FM 4474, TAS 114	376T0588.2	12/16/24
FM (TST1867)	FM 4474	RR210305	07/13/17	PRI (TST5878)	FM 4474, TAS 114	376T0588.3	12/16/24
FM (TST1867)	FM 4474	OMG LTR	12/14/17	PRI (TST5878)	Criticality	376T0591	12/16/24
FM (TST1867)	FM 4474	RR213506	03/28/18	PRI (TST5878)	TAS 114	376T0589	01/14/25
FM (TST1867)	FM 4474	RR212730	04/05/18	PRI (TST5878)	FM 4474	376T0597.1	01/15/25
FM (TST1867)	FM 4474	PR449797	04/24/18	PRI (TST5878)	Criticality	376T0606	04/09/25
FM (TST1867)	FM 4474	RR213333	04/25/18	PRI (TST5878)	FM 4474	376T0604.1	04/28/25
FM (TST1867)	FM 4474	3056933	07/19/18	PRI (TST5878)	FM 4474	376T0669	09/16/25
FM (TST1867)	FM 4474	PR449764	07/25/18	UL (QUA9625)	QA	Service confirm	08/18/25
FM (TST1867)	FM 4474	3061784	07/25/18	UL (QUA9625)	QA	Service confirm (GA)	03/01/24
FM (TST1867)	FM 4474	RR215107-267	09/27/18	UL (QUA9625)	QA	Florida BCI5	Current

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P.E. EVALUATION REPORT: 8TH EDITION (2023) FBC HVHZ

GAF EverGuard TPO Roof Systems

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PEER-GAF-009.B.R59

FL5293-R71 (HVHZ)

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4. PRODUCT DESCRIPTION:

This PEER covers **EverGuard® TPO Roof Systems** installed in accordance with **GAF** published installation instructions and the [Limitations of Use](#) herein.

TABLE 1: EVALUATED MEMBRANES							
TYPE	PRODUCT		MATERIAL STANDARD			PLANT(s)	
			REFERENCE	TYPE	GRADE		
ROOF COVER OR CAP PLY	EverGuard® TPO	45, 60, 80-mil	ASTM D6878	N/A	N/A	GA-V, IN, PA, TX, UT	
	EverGuard Extreme® TPO	50, 60, 70, 80-mil				IN, TX, UT	
	EverGuard Extreme® TPO	50, 60, 70-mil				PA	
	EverGuard® TPO Fleece-Back Membrane	45, 60, 80-mil				GA-V, IN, PA, UT	
	EverGuard® TPO Fleece-Back Membrane 100, 115 and 135	45, 60, 80-mil				IN, PA, UT	
	EverGuard Extreme® TPO Fleece-Back Membrane	50, 60, 70, 80-mil				IN	
	EverGuard® SA TPO	45, 60, 80-mil				IN	
BASE SHEETS	GAFGLAS® #75 Base Sheet		ASTM D4601	II	N/A	AL, CA-F, GA-S	
	Tri-Ply® #75 Base Sheet					AL, CA-F, GA-S	
	GAFGLAS® #80 Ultima™ Base Sheet		ASTM D4897	II	N/A	AL, GA-S	
	GAFGLAS® Stratavent® Nailable Venting Base Sheet					AL, GA-S	
BASE PLYS:	Ruberoid® 20 Smooth		ASTM D6163	I	S	AR	
	Ruberoid® HW 20 Smooth			I	S	AR	
	Ruberoid® HW 25 Smooth		ASTM D6164	I	S	GA-S	
	Ruberoid® HW Smooth			I	S	GA-S	
	Ruberoid® Mop Smooth			I	S	GA-S	
	Ruberoid® Mop Smooth 1.5			I	S	GA-S	
VAPOR BARRIER MEMBRANES:	GAFGLAS® #75 Base Sheet		ASTM D4601	II	N/A	AL, CA-F, GA-S	
	Tri-Ply® #75 Base Sheet			II	N/A	AL, CA-F, GA-S	
	GAFGLAS #80 Ultima Base Sheet			II	N/A	AL, GA-S	
	GAFGLAS® Ply 4		ASTM D2178	IV	N/A	AL, CA-F, GA-S	
	Tri-Ply Ply 4 Ply Sheet			IV	N/A	AL, CA-F, GA-S	
	GAFGLAS® Ply 4 M			IV	N/A	AL	
	GAFGLAS® FlexPly™ 6			VI	N/A	AL, GA-S	
	GAFGLAS® FlexPly™ 6 M		ASTM D6163	VI	N/A	AL	
	Ruberoid® 20 Smooth			I	S	AR	
	Ruberoid® HW 20 Smooth			I	S	AR	
	Ruberoid® HW 25 Smooth			I	S	GA-S	
	Ruberoid® HW 30 Smooth			I	S	AR	
	Ruberoid® HW Smooth			ASTM D6164	I	S	GA-S
	Ruberoid® Mop Smooth				I	S	GA-S
	Ruberoid® Mop Smooth 1.5				I	S	GA-S
	Ruberoid® Mop Plus Smooth		I		S	GA-S	
	Liberty™ SBS Self-Adhering Cap Sheet		I		G	AR, GA-S	
	Ruberoid® HW Granule		I		G	GA-S	
	Ruberoid® Mop Granule		I		G	CA-S, GA-S	
	Ruberoid® HW Plus Granule		II		G	GA-S	
	Ruberoid® Torch Smooth		ASTM D6222	I	S	CA-S, GA-S, IN	
	Ruberoid® Torch Granule			I	G	CA-S, GA-S, IN	
	GAF SA Vapor Retarder XL and XL40		N/A	N/A	N/A	IN	

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:

EverGuard® TPO Roof Systems shall be installed in accordance with **GAF** 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 \(QUA9625\)](#): (360) 817-5512; bsai.inspections@ul.com

- THE 217-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) or Recover	B-1	Mechanically Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	12
1B	Wood	New or Reroof (Tear-Off)	B-3	Mechanically Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	13
1C	Wood	New, Reroof (Tear-Off) or Recover	B-3	Mechanically Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	16
1D	Wood	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	18
1E	Wood	New, Reroof (Tear-Off) or Recover	C-2	Induction Welded Roof Cover	25
1F	Wood	New, Reroof (Tear-Off) or Recover	D-1	Insulated, Mechanically Attached Roof Cover	27
1G	Wood	New, Reroof (Tear-Off) or Recover	E-1	Non-Insulated, Mechanically Attached Roof Cover	28
1H	Wood	New, Reroof (Tear-Off) or Recover	E-2	Non-Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	28
2A	Steel	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	30
2B	Steel	New or Reroof (Tear-Off)	A-2	Bonded Vapor Barrier, Bonded Insulation, Bonded Roof Cover	31
2C	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B-1	Mechanically Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	34
2D	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B-1	Mechanically Attached Base Insulation, Bonded Top Insulation, Bonded Base and Cap Ply	58
2E	Steel	New or Reroof (Tear-Off)	B-2	Mechanically Attached Thermal Barrier, Bonded Vapor Barrier, Bonded Insulation, Bonded Roof Cover	63
2F	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	67
2G	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Base and Cap Ply	112
2H	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1A	Thermal Barrier with Vapor Barrier, Mechanically Attached Insulation, Bonded Roof Cover	116
2I	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-2	Induction Welded Roof Cover	120
2J	Steel	New, Reroof (Tear-Off) or Recover	D-1	Insulated, Mechanically Attached Roof Cover	122
3A	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	127
3B	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Base and Cap Ply	148
3C	Structural concrete	New, Reroof (Tear-Off) or Recover	C-2	Induction-Welded Roof Cover	150
3D	Structural concrete	New, Reroof (Tear-Off) or Recover	F	Non-Insulated, Bonded Roof Cover	150
4A	Deck with Lightweight Concrete	New or Reroof (Tear-Off)	A-1	LWC to Deck, Bonded Insulation, Bonded Roof Cover	151
4B	Deck with Lightweight Concrete	New or Reroof (Tear-Off)	B-3	LWC to Deck, Mechanically Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	154
4C	Deck with Lightweight Concrete	New or Reroof (Tear-Off)	B-3	LWC to Deck, Mechanically Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	155
4D	Deck with Lightweight Concrete	New, Reroof (Tear-Off) or Recover	C-2	LWC to Deck, Optional Insulation, Through-attached Induction Welded Roof Cover	156
4E	Deck with Lightweight Concrete	New, Reroof (Tear-Off) or Recover	D-1	LWC to Deck, Through-attached Mechanically Attached Roof Cover	156
4F	Deck with Lightweight Concrete	New, Reroof (Tear-Off) or Recover	D-1	LWC to Deck, Through-attached Mechanically Attached Roof Cover	158
4G	Deck with Lightweight Concrete	New or Reroof (Tear Off)	E-2	LWC to Deck, Mechanically Attached Base Sheet, Bonded Roof Cover	159
4H	Deck with Lightweight Concrete	New or Reroof (Tear Off)	F	LWC to Deck, Bonded Roof Cover	161
4I	Deck with Lightweight Concrete	New or Reroof (Tear Off)	F	LWC to Deck, Bonded Roof Cover	162
4J	Deck with Lightweight Concrete	New or Reroof (Tear Off)	F	LWC to Deck, Bonded Base and Cap Ply	164
4K	Deck with Lightweight Concrete	New or Reroof (Tear Off)	F	Vapor Barrier to Deck, LWC to Vapor Barrier, Bonded Roof Cover	164
5A	Cementitious wood fiber	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	165
5B	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	166
5C	Cementitious wood fiber	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	166
6A	Existing gypsum	Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	167
6B	Existing gypsum	Reroof (Tear-Off)	B-1	Mechanically Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	169
6C	Existing gypsum	Reroof (Tear-Off)	B-3	Mechanically Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	172
6D	Existing gypsum	Reroof (Tear-Off)	C-1	Mechanically Attached Insulation, Bonded Roof Cover	173
6E	Existing gypsum	Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	173
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover	174
7B	Wood or Steel	Recover	C-2	Induction Welded Roof Cover	213
7C	Steel	Recover	D-1	Insulated, Mechanically Attached Roof Cover	215
7D	Various	Recover	F	Non-Insulated, Bonded Roof Cover	216
8A/8B	Guidance / Limitations for use of Hilti fasteners in Type B steel deck securement beneath GAF roof systems				217

6 Unless otherwise noted, insulation adhesive application rates are as follows.

- ✓ Ribbon or bead width is at the time of application; the ribbons/beads shall expand as noted in the manufacturer's published instructions.
- ✓ If applying hot asphalt to concrete deck, deck shall be primed with ASTM D41 primer.
- ✓ When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, board joints shall be staggered.
- ✓ The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing.

INSULATION ADHESIVE REFERENCES				
By	ADHESIVE	REFERENCE	FBC FILE OR NOA	MINIMUM RATE
GAF	GAF LRF Adhesive M	'LRF-M'	23-0802.14	Continuous 0.75 to 1-inch ribbons, 12-inch o.c.
GAF	GAF LRF Adhesive M Canister	'LRF-M Canister'	N/A	Continuous 1 to 1.5-inch ribbons, 12-inch o.c.
GAF	GAF LRF Adhesive XF	'LRF-XF'	N/A	Continuous 0.75 to 1-inch ribbons, 12-inch o.c.
OMG, Inc.	OlyBond 500 Adhesive Fastener	'OB500'	24-0422.18	Continuous 0.75-inch wide ribbons, 12-inch o.c. (PaceCart, SpotShot or Canister)
Generic, ASTM D312, Type IV	hot asphalt	N/A	N/A	Full coverage at 25-30 lbs/square

7 Unless otherwise noted, all insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables; rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table.

MDP LIMITATIONS FOR TAPERED POLYISOCYANURATE INSULATIONS				
ADHESIVE	INSULATION		MIN. TAPERED THICKNESS (IN)	MDP (psf)
	LISTED PRODUCT	FBC FILE OR NOA		
LRF-M	EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation	FL16311 or 24-1114.02	0.5	-232.5
LRF-XF	EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation	FL16311 or 24-1114.02	0.5	-292.5
LRF-XF	EnergyGuard RA	25-0123.02	0.5	-487.5
OB500	EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation	24-1114.02	0.5	-292.5
OB500	EnergyGuard RA	25-0123.02	0.5	-487.5
Hot asphalt	Any EnergyGuard polyisocyanurate listed with adhesive herein	Various	0.5	-240.0

8 Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.

9 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*

10 For assemblies marked with an asterisk*, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16. No rational analysis is permitted for these systems.

11 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.

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. [Tables 8A and 8B](#) provide guidance / limitations associated with use of fasteners from Hilti, Inc. to secure steel decking to structural members.
- Unless otherwise noted, fasteners and stress plates shall be as follows. Recessed plates are not for use with cement-based or gypsum-based hardboard coverboards. Fasteners shall be of sufficient length for the following engagements:

FASTENER/PLATE OPTIONS				
DECK TYPE	BY	PARTS		MINIMUM ENGAGEMENT
		LOOSE PARTS	PRE-ASSEMBLED PARTS	
Wood	GAF	Drill-Tec #12 Fastener, Drill-Tec #12 DP Fastener, Drill-Tec #12 DPH Fastener, Drill-Tec #14 Fastener or Drill-Tec #14 HD Fastener with Drill-Tec 3" Standard Steel Plate, Drill-Tec 3" Steel Plate, Drill-Tec AccuTrac Flat Plate, Drill-Tec AccuTrac Recessed Plate (insulation only), Drill-Tec 3" Flat Steel Plate or Drill-Tec 3" Recessed Steel Plate	Drill-Tec 3" ASAP Flat, Drill-Tec 3" ASAP Recessed, Drill-Tec ASAP 3S or Drill-Tec Heavy Duty ASAP Roofing Fastener Assembled with a 3" Metal Plate	Minimum ¾-inch plywood penetration or minimum 1-inch wood plank embedment
Steel	GAF	Drill-Tec #12 Fastener, Drill-Tec #12 DP Fastener, Drill-Tec #12 DPH Fastener, Drill-Tec #14 Fastener, Drill-Tec #14 HD Fastener, Drill-Tec XHD Fastener or Drill-Tec #15 EHD Fastener with Drill-Tec 3" Standard Steel Plate, Drill-Tec 3" Steel Plate, Drill-Tec AccuTrac Flat Plate, Drill-Tec AccuTrac Recessed Plate (insulation only), Drill-Tec 3" Flat Steel Plate or Drill-Tec 3" Recessed Steel Plate	Drill-Tec 3" ASAP Flat, Drill-Tec 3" ASAP Recessed, Drill-Tec ASAP 3S, Drill-Tec Heavy Duty ASAP Roofing Fastener Assembled with a 3" Metal Plate or Drill-Tec Extra Heavy Duty ASAP Roofing Fastener – Insulation	Minimum ¾-inch steel penetration and engage the top flute of the steel deck
	Note:	Unless otherwise noted, Drill Tec #12 DF Fastener or Drill Tec #14 DF Fastener with Drill Tec 3" DF Steel Insulation Plate may be used in place of Drill-Tec #12 Fastener or Drill-Tec #14 Fastener with Drill-Tec 3" Standard Steel Plate when used to secure min. 0.5-inch thick Structodek Prime, SECUROCK Gypsum-Fiber Roof Board or SECUROCK Ultralight Coated Glass-Mat Roof Board to steel deck, up to a maximum allowable design pressure (MDP) of -120.0 psf.		
	Note:	Unless otherwise noted, Drill Tec #12 DF Fastener or Drill Tec #14 DF Fastener with Drill Tec 3" DF Steel Insulation Plate may be used in place of Drill-Tec #12 Fastener or Drill-Tec #14 Fastener with Drill-Tec 3" Standard Steel Plate when used to secure min. 0.5-inch thick Structodek High Density Fiberboard Roof Insulation, EnergyGuard HD Polyiso Cover Board or EnergyGuard HD Plus Polyiso Cover Board or min. 1.5-inch EnergyGuard POLYISO INSULATION or EnergyGuard Ultra Polyiso Insulation to steel deck.		
Structural Concrete	GAF	Drill-Tec #14 Fastener, Drill-Tec #14 HD Fastener or Drill-Tec CD-10 with Drill-Tec 3" Standard Steel Plate, Drill-Tec 3" Steel Plate, Drill-Tec AccuTrac Flat Plate, Drill-Tec AccuTrac Recessed Plate (insulation only), Drill-Tec 3" Flat Steel Plate or Drill-Tec 3" Recessed Steel Plate	Drill-Tec 3" ASAP Flat (#14 only) or Drill-Tec Heavy Duty ASAP Roofing Fastener Assembled with a 3" Metal Plate	Minimum 1.25-inch embedment. Fasteners installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions
	Note:	Unless otherwise noted, Drill Tec #14 DF Fastener with Drill Tec 3" DF Steel Insulation Plate may be used in place of Drill-Tec #14 Fastener with Drill-Tec 3" Standard Steel Plate when used to secure min. DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board or SECUROCK Ultralight Coated Glass-Mat Roof Board to structural concrete deck, up to a maximum allowable design pressure (MDP) of -120.0 psf.		
	Note:	Unless otherwise noted, Drill Tec #14 DF Fastener with Drill Tec 3" DF Steel Insulation Plate may be used in place of Drill-Tec #14 Fastener with Drill-Tec 3" Standard Steel Plate when used to secure min. 0.5-inch thick Structodek High Density Fiberboard Roof Insulation, EnergyGuard HD Polyiso Cover Board or EnergyGuard HD Plus Polyiso Cover Board or min. 1.5-inch EnergyGuard POLYISO INSULATION or EnergyGuard Ultra Polyiso Insulation to structural concrete deck.		

- 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.
- Preliminary insulation attachment: Unless otherwise noted, use FBC HVHZ Approved roofing fasteners and plates; minimum four per 4 x 8 ft board or minimum two per 4 x 4 ft board.

15 For bonded membrane applications, unless otherwise noted, refer to the following.

MEMBRANE / ADHESIVE COMBINATIONS				
ROOF COVERS				
REFERENCE	MEMBRANE	ADHESIVE	APPLICATION	RATE
TPO-SA	EverGuard SA TPO	self-adhering	self-adhering	self-adhering
TPO-1121	EverGuard TPO	EverGuard TPO 1121 Bonding Adhesive	Contact (both sides)	0.8 to 1.0 gal/square/surface. For use over SECURROCK Gypsum-Fiber Roof Board, the application rate changes to 1.2 to 1.67 gal/sq/surface
TPO-3SQ	EverGuard TPO	EverGuard TPO 3 Square Low VOC Bonding Adhesive	Contact (both sides)	0.84 gal/square/surface
TPO-6SQ	EverGuard TPO	EverGuard TPO 6 Square Low VOC Bonding Adhesive	Contact (both sides)	0.46 gal/square/surface
TPO-QSA	EverGuard TPO	EverGuard TPO Quick Spray Adhesive	Contact (both sides)	Total application rate: ~0.71 lbs/sq (dry rate).
TPO-QSALV50	EverGuard TPO	EverGuard TPO Quick Spray Adhesive LV 50	Contact (both sides)	Total application rate: ~0.84 lbs/sq (dry-rate).
TPO-WB	EverGuard TPO	EverGuard WB181 Bonding Adhesive	Contact (both sides)	To polyisocyanurate or Structodek High Density Fiberboard Roof Insulation at 0.63 gal/square and roof cover underside at 0.21 gal/square. To DensDeck Prime, DEXcell FA Glass Mat Roof Board or SECURROCK Gypsum-Fiber Roof Board at 0.63 to 0.75 gal/square and roof cover underside at 0.21 to 0.25 gal/square
TPOFB-HA1	EverGuard TPO Fleece-Back Membrane	hot asphalt	Wet lay (substrate)	25 lbs/square
TPOFB-HA2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135			
TPOFB-LM1	EverGuard TPO Fleece-Back Membrane	GAF LRF Adhesive M	Wet lay (substrate)	1-inch wide ribbons spaced as noted in tables herein. Note: The adhesive ribbons are located directly over the adhesive ribbons used to secure the insulation when the cover is bonded to insulation less than 1.5-inch thick or "spatter pattern" at 0.55 to 0.75 gal/square.
TPOFB-LM2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135			
TPOFB-LMC1	EverGuard TPO Fleece-Back Membrane	GAF LRF Adhesive M Canister	Wet lay (substrate)	"Spatter pattern" at 0.3 gal/square. Notes: TPOFB-LMC1 (spatter) is an acceptable alternate to TPOFB-LM1 (ribbons). Limited to MDP -90.0 psf over air permeable decks (wood, steel and CWF).
TPOFB-LMC2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135	GAF LRF Adhesive M Canister	Wet lay (substrate)	"Spatter pattern" at 0.3 gal/square. Notes: TPOFB-LMC2 (spatter) is an acceptable alternate to TPOFB-LM2 (ribbons). Limited to MDP -90.0 psf over air permeable decks (wood, steel and CWF).
TPOFB-LO1	EverGuard TPO Fleece-Back Membrane	GAF LRF Adhesive O	Wet lay (substrate)	1-inch wide ribbons spaced as noted in tables herein. Note: The adhesive ribbons are located directly over the adhesive ribbons used to secure the insulation when the cover is bonded to insulation less than 1.5-inch thick.
TPOFB-LO2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135			
TPOFB-OB1	EverGuard TPO Fleece-Back Membrane	OlyBond 500 Canister	Wet lay (substrate)	"Spatter pattern" at 0.32 gal/square (to insulation, coverboard or Tectum) "Spatter pattern" at 0.83 gal/square (to asphaltic base ply membrane). Note: TPOFB-OB1 (spatter) is an acceptable alternate to TPOFB-LO1 (ribbons).
TPOFB-OB2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135	OlyBond 500 Canister	Wet lay (substrate)	"Spatter pattern" at 0.32 gal/square (to insulation, coverboard or Tectum) "Spatter pattern" at 0.83 gal/square (to asphaltic base ply membrane). Note: TPOFB-OB2 (spatter) is an acceptable alternate to TPOFB-LO2 (ribbons).
TPOFB-XF1	EverGuard TPO Fleece-Back Membrane	GAF LRF Adhesive XF	Wet lay (substrate)	"Spatter pattern" at 3.0 lbs/sq.
TPOFB-XF2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135			
TPOFB-WB1	EverGuard TPO Fleece-Back Membrane	EverGuard WB181 Bonding Adhesive	Wet lay (substrate)	0.83 to 1.0 gal/square
TPOFB-WB2	EverGuard TPO Fleece-Back Membrane 100, 115 or 135	EverGuard WB181 Bonding Adhesive	Wet lay (substrate)	0.83 to 1.0 gal/square
SBS-CA	Ruberoid 20 Smooth, Ruberoid Mop Smooth 1.5, Ruberoid Mop Smooth or Ruberoid Mop Plus Smooth	Matrix 102 SBS Membrane Adhesive		1.5 gal/square

TABLE 3A: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER*

 REFER TO [NOTE 16](#) FOR VAPOR BARRIER OPTIONS

System No.	Deck (Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover (Note 15)	MDP (psf)*
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
C-44.	Structural concrete (ASTM D41 primed)	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Hot Asphalt	None	N/A	TPO-1121 or TPO-3SQ	-127.5
C-45.	Structural concrete	One or more layer(s), min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard RA or EnergyGuard Ultra	LRF-M	Min. 0.5-inch Structodek High Density Fiberboard Roof Insulation	LRF-M	TPO-1121 or TPO-3SQ	-82.5
C-46.	Structural concrete	One or more layer(s), min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard RA or EnergyGuard Ultra Polyiso Insulation	LRF-M	Min. 0.5-inch EnergyGuard HD Polyiso Cover Board or EnergyGuard HD Plus Polyiso Cover Board or min. 1.5-inch EnergyGuard Polyiso-HD Composite Insulation or Ultra HD Composite Insulation	LRF-M	TPO-1121 or TPO-3SQ	-97.5
C-47.	Structural concrete	One or more layer(s), any combination, min. 1-inch EnergyGuard Polyiso Insulation and/or min. 0.5-inch, min. 1.8 pcf (Type IX), unfaced Cellofoam EPS Roof Insulation	LMF-M	Min. 0.25-inch DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, SECUROCK Ultralight Coated Glass Mat Roof Board or DEXcell FA Glass Mat Roof Board	LMF-M	TPO-1121 or TPO-3SQ	-120.0
C-48.	Structural concrete	(Optional) One or more layer(s), min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard RA or EnergyGuard Ultra	LRF-M	Min. 1.5-inch EnergyGuard Polyiso-HD Composite Insulation	LRF-M	TPO-1121 or TPO-3SQ	-165.0
C-49.	Structural concrete	One or more layer(s), min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard RA or EnergyGuard Ultra Polyiso Insulation	LRF-M	(Optional) Min. 1.5-inch Ultra HD Composite Insulation or min. 0.25-inch DensDeck Prime, DEXcell FA Glass Mat Roof Board or SECUROCK Gypsum-Fiber Roof Board	LRF-M	TPO-1121 or TPO-3SQ	-180.0
C-50.	Structural concrete	(Optional) Min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	LRF-M	Min. 1.5-inch Ultra HD Composite Insulation	LRF-M	TPO-1121 or TPO-3SQ	-187.5
C-51.	Structural concrete	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	LRF-M	None	N/A	TPO-1121 or TPO-3SQ	-195.0
C-52.	Structural concrete	One or more layer(s), min. 1.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	LRF-M	Min. 0.25-inch DensDeck Prime, DEXcell FA Glass Mat Roof Board or SECUROCK Gypsum-Fiber Roof Board	LRF-M	TPO-1121 or TPO-3SQ	-232.5
C-53.	Structural concrete	Min. 1.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	LRF-M	(Optional) Additional layers of base insulation	LRF-M	TPO-1121 or TPO-3SQ	-239.5
C-54.	Structural concrete	(Optional) One or more layer(s), min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard RA or EnergyGuard Ultra Polyiso Insulation	LRF-M Canister	Min. 0.5-inch EnergyGuard HD Polyiso Cover Board or EnergyGuard HD Plus Polyiso Cover Board or min. 1.5-inch EnergyGuard Polyiso-HD Composite Insulation	LRF-M Canister	TPO-1121 or TPO-3SQ	-97.5
C-55.	Structural concrete	One or more layer(s), any combination, min. 1-inch EnergyGuard Polyiso Insulation and/or min. 0.5-inch, min. 1.8 pcf (Type IX), unfaced Cellofoam EPS Roof Insulation	LRF-M Canister	Min. 0.25-inch DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, SECUROCK Ultralight Coated Glass Mat Roof Board or DEXcell FA Glass Mat Roof Board	LRF-M Canister	TPO-1121 or TPO-3SQ	-120.0
C-56.	Structural concrete	(Optional) One or more layer(s), min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard RA or EnergyGuard Ultra Polyiso Insulation	LRF-M Canister	Min. 1.5-inch EnergyGuard Polyiso-HD Composite Insulation	LRF-M Canister	TPO-1121 or TPO-3SQ	-165.0