



Code Approval Guide

September 2011

Table of Contents

	Page
Introduction	2
General Guidelines for UL and FM Code Compliance	3
UL and FM Code Approvals:	
VersiGard (Black and White) Design "A" Fully Adhered Roofing Systems:	
UL Approvals	4
FM Approvals.....	6
1-165 Wind Uplift Equivalency Ratings (Over OSB).....	15
VersiGard Design "B" Loose Laid Ballasted Roofing Systems:	
UL Approvals	16
FM Criteria	16
VersiGard Design "C" Loose Laid Protected Roofing Systems:	
UL Approvals	17
VersiGard Mechanically Attached Roofing Systems:	
UL Approvals	18
FM Approvals.....	21
1-120 Wind Uplift Equivalency Ratings	24
VersiGard Metal Retrofit Roofing Systems:	
UL and FM Approvals	25
National Building Code Approvals	26
Dade County Florida Approvals.....	26

VERSICO ROOFING SYSTEMS

CODE APPROVAL GUIDE

September 2011

INTRODUCTION

This Code Approval Guide addresses both general information pertaining to Underwriters Laboratories (UL) and FM Approvals test criteria as well as specific UL and FM code approvals achieved with Versico's Design "A" Fully Adhered, Design "B" Ballasted and Mechanically Attached EPDM Roofing Systems. Various independent test laboratory results along with national building code approvals are also identified in this guide. Code approvals available with Versico's VersiFleece®, Hot Mopped, VersiFlex™ and VersiWeld® Roofing Systems are identified in separately published Code Approval Guides.

Code ratings are categorized by roof system type (Adhered, Ballasted, Mechanically Attached) and are separated into 2 sections; UL Approvals and FM Approvals. Underwriters Laboratories rated roof assemblies are grouped according to deck type (non-combustible or combustible) and are further categorized by the severity of fire exposure (Class A, B or C). FM Approvals assemblies are categorized according to deck type and the specific type of construction (new, tear-off or retrofit). These ratings can also be found at the FM Approvals web site using RoofNAV (free subscription) at <http://roofnav.fmglobal.com/roofnav/login.aspx>.

The listed assemblies contained in this guide are grouped generically based on deck classification. Specific substrate requirements for each Versico Roofing System can be identified in the respective Versico Specifications.

In the UL and FM Approvals throughout this guide, when multiple layers of insulation are referenced, the product listed first identifies the insulation directly below the membrane. For example; a listing of Versico Recovery Board/Polyisocyanurate indicates the Versico Recovery Board is installed directly under the membrane. A listing of Gypsum Board/Polystyrene indicates the Gypsum Board is installed directly under the membrane.

General Guidelines for Underwriters Laboratories and FM Approvals Code Compliance

These guidelines are intended to focus on the essential criteria to be followed when an Underwriters Laboratories (UL) and/or FM Approvals (FM) approved assembly is specified. Generally, the Versico published specifications reflect the minimum requirements necessary to obtain the applicable Versico warranty. **Code requirements are not specifically covered in the Versico specifications and are considered to be above and beyond the provisions of the Versico warranty.**

Individuals specifying an approved assembly or selecting various products to achieve a specific UL/FM rating must recognize the importance of ensuring proper component selection to fully comply with the most current listings published. **All materials used in the roofing system must be UL and/or FM approved and must have been tested together as part of a complete roofing assembly.**

In addition to the code approval listings in this guide, information pertaining to approved assemblies can also be referenced in the following directories:

1. *Underwriters Laboratories On-Line Certifications Directory (ul.com)*
2. *FM Approvals RoofNav website (roofnav.com)*. FM RoofNav assembly numbers can be obtained from this website.

Underwriters Laboratories, FM Approvals and ANSI/SPRI WD-1 Clarifications/Enhancements:

A. Underwriters Laboratories

1. The criteria required to obtain **UL external fire ratings** (Class A, B or C) can be identified in this guide or can be searched for on the UL website using the UL category code TGFU. UL ratings approved for use on combustible decks are also acceptable on non-combustible decks.
2. For **UL internal fire ratings** (hourly constructions - P Numbers), search the UL website using the UL category code BXUV.

B. FM Approvals

Uplift ratings listed in this guide are for the field of the roof. Additional requirements/enhancements are required by FM in the perimeter and corner areas, for deck securement and for perimeter nailer/edge attachment. Refer to FM Property Loss Prevention Data Sheets 1-28, 1-29 and 1-49 for specific requirements. On FM insured projects, the local FM insuring agent **MUST** review and approve the proposed roofing assembly prior to installation. When FM is not the insuring entity for the building, use the **Approved American National Standard ANSI/SPRI WD-1** for design purposes.

C. APPROVED AMERICAN NATIONAL STANDARD ANSI/SPRI WD-1

The ANSI/SPRI Wind Design Standard Practice for Roofing Assemblies should be referenced when a project is not FM insured. This document was developed as a consensus National Standard and provides a methodology for designing for wind uplift resistances of roofing system assemblies. Insulation fastening patterns are included in this document. The fastening patterns are approved for use by Versico.

SUMMARY

Due to complexity of the code documents and the variety of information that must be reviewed, it is important to consult with Versico and other respective manufacturers concerning the most current available approvals.

- **Prior to project bid** - Products specified by the architect must be thoroughly investigated to determine if the specified rating can be achieved and local building codes must be consulted regarding any additional requirements.
- **Prior to installation** - Project managers should review the code requirements with field construction personnel to ensure compliance with project requirements.

Upon completion of the roofing installation, each project is inspected by a Versico Technical Representative to ensure compliance with Versico's current specification requirements for the issuance of the applicable warranty. However, this inspection is not for the purpose of verifying code compliance.

Underwriters Laboratories Approvals Design "A" Fully Adhered Roofing Systems

UL Class "A"							
Deck Type	Insulation (3)(4) (UL Classified)	Insulation Thickness	Bonding Adhesive	Maximum Slope/Membrane Type (1)(2)			
				FR .045", .060" or .090"	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060"
Non-Combustible and Combustible (For combustible decks, gypsum board must be installed beneath insulation listed) (5)	Versico Recovery Board over: Polyiso Polystyrene (6)	1/2" Min./ Any	G200 SA / Low VOC	1"	1"	2-1/2"	1-1/2"
			Aqua Base 120				
	Versico SecurShield HD Plus over: Polyiso Polystyrene (6)	1/2" Min./ Any	G200 SA / Low VOC	1"	1"	2-1/2"	1-1/2"
			Aqua Base 120				
	OSB or OSB/Polyiso	7/16"/ Any	G200 SA / Low VOC	1"	1"	2-1/2"	2-1/2"
	OSB/Polystyrene	7/16"/ Any	G200 SA / Low VOC			2"	1"
Versico Polyiso MP-H, SecurShield	Any	G200 SA / Low VOC	1/2"	1/2"	3/4"	1/2"	
		Aqua Base 120					
Non-Combustible Existing Roof to remain (7)	None	N/A	G200 SA / Low VOC	1/2"	1/2"	1/2"	1/2"
New Construction: Approved Cellular Concrete, Poured Structural Concrete Pre-Cast Concrete with Grouted Joints	None	N/A	G200 SA / Low VOC	Any	1"	4"	1-1/2"
			Aqua Base 120	1"	1"	2-1/2"	1/2"
Combustible (8)(9)	Versico SecurShield	3" Min	G200 SA / Low VOC	1/2"	1/2"	3/4"	1/2"
			Aqua Base 120				
	Polyiso listed above over 2-layers Versico FR Base Sheet 1S	Any/ 2-layers	G200 SA / Low VOC	1/2"	1/2"	3/4"	1/2"
			Aqua Base 120				
	Versico Dens-Deck Prime	1/4" Min.	G200 SA / Low VOC	Any	3"	4"	1-1/2"
			Aqua Base 120	2"		3"	1"
	Versico Dens-Deck Prime or Securock / Polyiso	1/4" Min./ Any	G200 SA / Low VOC	Any*	3"	4**	1-1/2"
			Aqua Base 120	2"		3"	1"
	Versico Dens-Deck Prime or Securock / Polystyrene	1/4" Min./ Any	G200 SA / Low VOC	Any*	3"	4**	1"
			Aqua Base 120	2"		3"	

* - Maximum slope with Securock is 3" per foot on combustible deck. When used on non-combustible deck, the slope is unlimited.

Notes:

- (1) The specified membrane may be coated with EM-8 Hypalon Coating in accordance with Versico's Specifications. The deck slope is limited to a 3-1/2" maximum or the maximum slope specified for construction without coating, whichever is less.
- (2) The specified membrane may be coated with a maximum of two coats of Versico Acrylic Coating applied at the rate of 1-1/2 gal/sq/coat and maintain the slope of the uncoated assembly.
- (3) Insulation may be Mechanically Attached, attached with DASH or FAST Adhesive, Type III or IV hot asphalt or UL approved cold adhesive.
- (4) 7/16" thick non-veneer, APA rated oriented strand board (OSB) may be substituted for Versico Recovery Board in all listed assemblies. The fastening pattern for the OSB must conform with Versico Detail A-27-D.
- (5) Minimum 1/2" thick gypsum board can be a classified or unclassified material with a minimum weight of 1.84 pounds per square foot. 1/4" thick Georgia Pacific Dens-Deck, Sound Deadening Board (minimum weight of 1.09 pounds per sq. ft.) or 2-layers of Versico FR Base Sheet 1S(max. slope can not exceed 1/2") may be substituted for 1/2" thick gypsum board **beneath** the insulation. On **Retrofit/No Tearoff projects, where the existing roof is Class A rated, the gypsum board can be eliminated.** Existing roofs that are Class B or C rated require use of gypsum board to achieve a Class A rating, otherwise, the roofing system will retain the existing UL rating.
- (6) Assembly only permitted on non-combustible decks.
- (7) Min. Class C rated type III or IV Smooth Asphalt BUR, Modified Bitumen or Mineral Surfaced Cap Sheet to remain.
- (8) Insulation joints (bottom layer) must be staggered a minimum of 6 inches from joints in wood deck.
- (9) Combustible Deck ratings can be used on non-combustible decks.

Underwriters Laboratories Approvals Design "A" Fully Adhered Roofing Systems

UL Class "B"							
Deck Type	Insulation (3)(4)(5)	Insulation Thickness	Bonding Adhesive	Maximum Slope/Membrane Type (1)(2)			
				FR .045", .060" or .090"	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060"
Combustible	Polyiso listed on previous page/Versico FR Base Sheet 1S	Any/Base Sheet	G200 SA / Low VOC	1/2"	1/2"	1/2"	1/2"
	Versico Recovery Board / Polyiso / Versico FR Base Sheet 1S	1/2" Min./ 1" Min./ Base Sheet					
	Versico Recovery Board / Versico FR Base Sheet 1S	1" Min./ Base Sheet					
	Versico SecurShield HD Plus / Polyiso / Versico FR Base Sheet 1S	1/2" Min./ 1" Min./ Base Sheet					
	Versico SecurShield	1.9" Min.					
UL Class "C"							
Deck Type	Insulation (3)(4)(5)	Insulation Thickness	Bonding Adhesive	Maximum Slope/Membrane Type (1)(2)			
				FR .045", .060" or .090"	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060"
Combustible	Versico Recovery Board	1/2" Min.	G200 SA / Low VOC	Unlimited	Unlimited	Unlimited	Unlimited
	Versico Recovery Board / Polyiso	1/2" Min. / Any					
	Versico SecurShield HD Plus	1/2" Min.					
	Versico SecurShield HD Plus / Polyiso	1/2" Min. / Any					
	Versico Polyiso MP-H, SecurShield	Any					

Notes:

- (1) The specified membrane may be coated with EM-8 Hypalon® Coating in accordance with Versico's Specifications.
- (2) The specified membrane may be coated with a maximum of two coats of VersiGard Acrylic Coating applied at the rate of 1-1/2 gal/sq/coat and maintain the slope of the uncoated assembly
- (3) Insulation may be Mechanically Attached, attached with DASH or FAST Adhesive, Type III or IV hot asphalt or UL approved cold adhesive.
- (4) 7/16" thick non-veneer, APA rated oriented strand board (OSB) may be substituted for Versico Recovery Board in all listed assemblies. The fastening pattern for the OSB must conform to Versico Detail A-27-D.
- (5) Insulation joints (bottom layer) are to be staggered a minimum of 6" from joints in the wood deck.

Existing UL Rating To Remain				
Deck Type	Insulation	Insulation Thickness	Bonding Adhesive	Maximum Slope FR .045", .060" or .090" and VersiGard (White) Membrane
Combustible - Minimum Class "C" rated Type III or IV Smooth Asphalt BUR, Mineral Cap or Modified Bitumen to remain	None	N/A	G200 SA / Low VOC	1/2"

FM Approvals
Design “A” Fully Adhered Roofing Systems
FM Class 1A-90 Insulation Mechanically Attached

Deck Type	Insulation		Bonding Adhesive	Maximum Slope/Membrane Type			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction or Tearoff: Steel (Min. 22 ga.) Struct. Concrete Wood (1) Tectum (2) Gypsum (Tearoff only) (3) Retrofit-No Tearoff (4): Struct. Concrete Gypsum (3)	Versico Polyiso MP-H SecurShield	Insulation Thickness: 1.5”-12” Insulation Fastening Requirements for Steel and Struct. Conc. Decks: Minimum Top Layer Thickness 2” 8 fasteners and plates per 4’x8’ board Minimum Top Layer Thickness 1.5” 11 fasteners and plates per 4’x8’ board	G200 SA / Low VOC	1/2” (4089-0-0)	1/2” (4089-0-0)	1/2” (4089-0-0)	1/2” (3619-0-0)
			Aqua Base 120	3/4” (191866-0-0)		1-1/2” with Secur Shield (191865-0-0)	

(RoofNAV Number) – for selected systems using 2” thick minimum top layer Polyiso MP-H

FM Class 1A-150
Insulation Mechanically Attached (5)

Deck Type	Insulation	Thickness (6)	Bonding Adhesive	Maximum Slope/Membrane Type			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction or Tearoff Steel (Min. 22 ga.)	Versico Polyiso MP-H SecurShield	2” - 12”	G200 SA / Low VOC	1/2” (131096-0-0)	1/2” (131096-0-0)	1/2” (131096-0-0)	1/2” (131118-0-0)
	Versico Securock/ Polyiso	1/2” Min./See Above	G200 SA / Low VOC	1-1/2” (224151-0-0)	3/4” (225287-0-0)	3-1/2” (225291-0-0)	1-1/2” (225294-0-0)

(RoofNAV Number)

FM Class 1A-225
Insulation Mechanically Attached (8)

Deck Type (7)	Insulation	Thickness (6)	Bonding Adhesive	Maximum Slope/Membrane Type			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction or Tearoff Steel (Min. 22 ga.)	Versico SecurShield	2” - 12”	G200 SA / Low VOC	1-1/2” (245502-0-0)	1/2” (245201-0-0)	1-1/2” (245502-0-0)	1/2” (245503-0-0)
	Versico Securock/ Polyiso	1/2” Min./See Above	Low VOC	1-1/2”	3/4”	3-1/2”	1-1/2”

Notes:

- (1) On FM approved wood decks, minimum 1/4” thick gypsum board must be installed beneath the insulations listed. 16 fasteners per board required for all membranes.
- (2) FM approved Tectum decks must be minimum 2” thick. Fasteners must penetrate the deck a minimum of 1-1/2” for Class 1-60 and 2” for Class 1-90. 16 fasteners per board required for all membranes.
- (3) Existing gypsum decks must be FM approved. Fasteners must penetrate the deck a minimum of 1-1/2” for Class 1-60 and 1-90. 16 fasteners per board required for all membranes.
- (4) Existing roof must be FM Class 1 rated.
- (5) Insulation fastened with 20 fasteners and plates per 4’ x 8’ insulation board.
- (6) Top layer must be 2” thick.
- (7) Testing was conducted on FM approved 22 gauge Grade C steel roof deck attached per 1-29 Loss Prevention Data Bulletin corner requirements.

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Class 1A-90 Insulation Mechanically Attached

Deck Type	Insulation	FM Class 1A-90 Thickness	Insul. Fasteners per board (6)	Maximum Slope/Membrane Type			
				FR .045", .060" or .090"	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060"
New Construction or Tearoff: Steel (Min. 22 ga.) Struct. Concrete Wood (3) Retrofit- No Tearoff (4): Struct. Concrete	Versico SecurShield HD Plus or Versico Recovery Board (1) Over: FM Approved Insulation (2)	1/2" Min. See FM RoofNAV	16				
	Versico Deck Prime (5)(7)(8) Min. 1/4" Dens-Deck Prime (5)(7)(8) Over: FM Approved Insulation (2)	1/4" Min. See FM RoofNAV	1/4" – 12 1/2" – 12 5/8" - 8	G200 SA / Low VOC Bonding Adhesive 1-1/2"	G200 SA / Low VOC Bonding Adhesive 3/4"	G200 SA / Low VOC Bonding Adhesive 3-1/2"	G200 SA / Low VOC Bonding Adhesive 1-1/2"
	Versico Securock Min. 1/4" Securock Over: FM Approved Insulation (2)	1/4" Min. See FM RoofNAV	1/4" – 12 (1-75) 1/4" – 16 (1-90) 1/2" – 10 5/8" - 8	Aqua Base 120 1-3/4"	Aqua Base 120 1"	Aqua Base 120 2-1/2"	Aqua Base 120 1-3/4"
	Versico Recovery Board (No additional insulation permitted)	1/2" – 1"	16				
Retrofit- No Tearoff (4): Steel (Min. 22 ga.) Wood (3)	Versico Polyiso MP-H	1" max	20	G200 SA / Low VOC Bonding Adhesive 1/2"	G200 SA / Low VOC Bonding Adhesive or Aqua Base 120 1/2"	G200 SA / Low VOC Bonding Adhesive 1/2"	G200 SA / Low VOC Bonding Adhesive or Aqua Base 120 1/2"
				Aqua Base 120 3/4"		Aqua Base 120 1"	

Notes:

- (1) 7/16" thick non-veneer, APA rated oriented strand board (OSB) may be substituted for Versico Recovery Board in all assemblies. For applications directly over steel decks, a thermal barrier of 3/4" thick perlite or 5/8" thick Type "X" gypsum board is required beneath OSB.
- (2) On steel decks, a thermal barrier of FM approved perlite or gypsum board (Type "X" or Type "C") is required under expanded or extruded polystyrene insulations. For specific thermal barrier requirements, consult the respective insulation manufacturer or refer to the current published FM Approval Guide.
- (3) On FM approved wood decks, minimum 1/4" thick gypsum board must be installed beneath the insulations listed. Polystyrene insulations must incorporate 1/4" gypsum board in addition to standard thermal barrier requirements.
- (4) Existing roof must be FM Class 1 rated.
- (5) Direct application is acceptable only over Wood Decks. Application over wood deck does not require 2 layers of gypsum board
- (6) Steel and Structural Concrete decks only.
- (7) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM
- (8) OMG 3" Galvalume Plates and OMG #12 Standard fasteners must be used to utilize the reduced fastening patterns for Dens-Deck Prime. These products can be purchased through Versico to be included in the warranty.

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Ratings - Insulation Attachment to Structural Concrete with DASH or FAST Adhesive (Full Coverage)

Deck Type	Insulation	Uplift Rating	Insulation Thickness	Maximum Slope			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1-465	1.5”-12”	1/2”	1/2”	1-1/2”	1/2”
	Versico Recovery Board		1/2” Min.	1-1/2” (160628-0-0)	3/4” (160610-0-0)	3-1/2”	1-1/2”
	Versico Recovery Board over Polyiso		1/2” Min/ See above				
	Versico Recovery Board over Extruded Polystyrene(1)		1/2” Min./ (See FM Approval Guide)				
	Versico Dens-Deck Prime (3) or Securock over Polyiso or Extruded Polystyrene (1) EPS (2)	1/4” Min./See Above	1/4” Min / FM Approved				
Versico Recovery Board /EPS (2)		1/2”/FM Approved					
	Versico Polyiso MP-H/ OSB Composite	1-375	1.9” – 4”				

(RoofNAV Number) – for selected systems using Dens-Deck Prime

Notes:

- (1) Extruded Polystyrene must be Owens Corning Foamular, Dow Styrofoam or Pactiv GreenGuard (unfaced).
- (2) EPS must be FM approved and manufactured from BASF, Huntsman or Nova Beads.
- (3) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Class 1A-465 Rating – Utilizing Versico 725 TR Vapor Retarder/ 702 LV or Cav-Grip Primer
Insulation Attachment to Structural Concrete with **DASH or FAST Adhesive Full Coverage**

Deck Type	Insulation	Maximum Slope			
		FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction/ Tearoff: Structural Concrete	Polyisocyanurate set in DASH or FAST Adhesive over Versico 725 TR Vapor Retarder	1/2”	1/2”	1/2”	1/2”
	1/2” Versico Recovery Board over Polyisocyanurate set in DASH or FAST Adhesive over Versico 725 TR Vapor Retarder	1-1/2”	3/4”	3-1/2”	1-1/2”

FM Class 1A-150 Rating
Insulation Attachment to Tectum with **DASH or FAST Adhesive Full Coverage**

Deck Type (1)	Insulation	Insulation Thickness	Maximum Slope			
			FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR.	VersiGard (White) .060”
New Construction/ Tearoff: Tectum (2” min. deck thickness)	Versico Polyiso MP-H	1.5” - 12”	1/2”	1/2”	1/2”	1/2”

FM Class 1A-90 Ratings
Base Layer Insulation Mechanically Attached;
Top Layer of Insulation Attached w/ DASH or FAST Adhesive Full Coverage or Extruded 12” o.c.

Deck Type	Insulation	Maximum Slope			
		FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction or Tearoff: Steel (Min. 22 gauge) Wood (2) Tectum (3) Gypsum (4) (Tearoff Only)	Base layer of 1/2” thick Dens-Deck/Dens-Deck Prime/Securock (5) or FM approved Polyisocyanurate insulation Mechanically Attached to the deck per standard FM Class 1-90 requirements (including enhancements at perimeters and corners).	1-1/2” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	3/4” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	3-1/2” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	1-1/2” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime
	Top Layer of minimum 1/2” thick Versico Recovery Board, 1/4” thick Securock or 1/4” thick Dens-Deck Prime(6) or FM Approved Polyisocyanurate secured over base layer with DASH or FAST Adhesive	1/2” with top layer of Polyiso	1/2” with top layer of Polyiso	1/2” with top layer of Polyiso	1/2” with top layer of Polyiso

Notes:

- (1) FM approved minimum 2” thick by 31” wide Tectum deck secured to minimum 1/4” thick steel supports spaced a maximum of 3’ on center with two Construction Fasteners, Inc. 2” diameter metal plates and #14 Dekfast Fasteners per panel per support. Screws are driven into 7/32” diameter pilot holes and are spaced 7-1/2” from panel edges. Additional deck fastening required at perimeters and corners per FM Loss Prevention Data Sheet 1-28.
- (2) On FM approved wood decks, minimum 1/4” thick gypsum board must be installed beneath the insulation listed.
- (3) FM approved Tectum decks must be minimum 2” thick. Insulation fasteners must penetrate the deck a minimum 1-1/2” for FM 1-60 ratings.
- (4) Existing gypsum decks must be FM approved. Insulation fasteners must penetrate the deck a minimum of 1-1/2”.
- (5) 1/2” Dens-Deck/Dens-Deck Prime/Securock must be fastened to the deck at 1 per 2 square feet. Not approved over gypsum or Tectum decks.
- (6) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Uplift Ratings - “Extruded” DASH or FAST Adhesive for Insulation Attachment

Deck Type	Insulation Type	Thickness	FM Rating (1)
Structural Concrete (new or tear-off)	Min. 1/4" Securock/Dens-Deck Prime(2) or Min. 7/16" OSB over: Dow, Owens Corning or Pactive Extruded Polystyrene FM approved EPS	FM approved	1-480 (XPS) 1-315 (EPS)
	Versico Polyiso MP-H Min. 1/4" Securock/Dens-Deck Prime(2) or Min. 7/16" OSB over: Polyiso insulation listed above	For Polyiso, Min. 1.5" (all individual layers); Max. 12" (all layers combined)	1-480
	1/2" Versico Recovery Board over: Polyiso insulation listed above Dow, Owens Corning or Pactive Extruded Polystyrene FM approved EPS	See above FM approved FM approved	1-315
	Optional: Versico 725 TR Vapor Barrier (with 702 LV or Cav-Grip Primer) adhered to Dens-Deck Prime	FM approved	1-90
	Base layer of 1/2" Dens-Deck Prime Mechanically Attached to the deck at the minimum rate of 1 per 2 square feet in the field of the roof (added fasteners at perimeter/corner areas per FM) Optional: Versico 725 TR Vapor Barrier (with 702 LV or Cav-Grip Primer) adhered to Dens-Deck Prime Top layer of minimum 1.5" Versico Polyiso set in DASH or FAST Adhesive	For Polyiso, Min. 1.5" (all individual layers); Max. 12" (all layers combined)	1-105

Notes:

- (1) DASH or FAST Adhesive extruded spacing shall not exceed 12" on center in the field of the roof.
- (2) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Class 1A-300 Rating - Insulation Attachment with Hot Asphalt (1)

Deck Type	Insulation	Insulation Thickness	Maximum Slope			
			FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1.5”-12”	1/2” (240000-0-0)	1/2” (240000-0-0)	1/2” (240000-0-0)	1/2” (241715-0-0)
	Versico HP Recovery Board	1/2” Min.	1-1/2”	3/4”	3-1/2”	1-1/2”
	Versico HP Recovery Board / Polyiso	1/2” Min/ See above				
Versico Dens-Deck Prime(6) or Securock / Polyiso	1/2” Min/ See Above					

(RoofNAV Number)

FM Class 1A-90 Ratings Base Layer Insulation Mechanically Attached; Top Layer of Insulation Attached with Hot Asphalt (1)

Deck Type	Insulation	Maximum Slope			
		FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction or Tearoff: Steel (Min. 22 gauge) Wood (2) Tectum (3) Gypsum (4) (Tearoff Only)	Base layer of 1/2” thick Dens-Deck/Dens-Deck Prime/Securock (5) or FM approved Polyisocyanurate insulation (minimum thickness listed above) Mechanically Attached to the deck per standard FM Class 1-90 requirements (including enhancements at perimeters and corners).	1-1/2” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	3/4” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	3-1/2” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	1-1/2” with top layer of Versico Recovery Board, Securock or Dens-Deck Prime
	Top Layer of minimum 1/2” thick Versico Recovery Board, Dens-Deck Prime(6), Securock or FM Approved Polyisocyanurate (listed above) secured over base layer with hot asphalt	1/2” with top layer of Polyiso	1/2” with top layer of Polyiso	1/2” with top layer of Polyiso	1/2” with top layer of Polyiso

Notes:

- (1) Hot asphalt must be Type III or IV applied at a temperature within 25° F of EVT at the rate of 20-25 pounds per square.
- (2) On FM approved wood decks, minimum 1/4” thick gypsum board must be installed beneath the insulations listed.
- (3) FM approved Tectum decks must be minimum 2” thick. Fasteners must penetrate the deck a minimum 2”.
- (4) Existing gypsum decks must be FM approved. Insulation fasteners must penetrate the deck a minimum of 1-1/2”.
- (5) 1/2” thick Dens-Deck/Dens-Deck Prime/Securock must be fastened to the deck at 1 per 2 square feet. Not approved on gypsum or Tectum decks.
- (6) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

FM Approvals Design “A” Fully Adhered Roofing Systems

FM Ratings - Insulation Attachment to Structural Concrete with One Step Insulation Adhesive (1)

Deck Type	Insulation	Uplift Rating	Insulation Thickness	Maximum Slope			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1-465	1.5”-12”	1/2” (83581-0-0)	1/2” (83581-0-0)	1/2” (83581-0-0)	1/2”
	Versico Dens-Deck Prime(3) or Securock / Polyiso		Min. 1/4”/See above				
	Versico Recovery Board Versico Recovery Board/Polyiso	1-255	1/2” 1/2”/See above	1-1/2” (86769-0-0)	3/4” (83587-0-0)	3-1/2” (134414-0-0)	1-1/2” (98207-0-0)

FM Ratings - Insulation Attachment to Poured Gypsum with One Step Insulation Adhesive (1)

Deck Type	Insulation	Uplift Rating	Insulation Thickness	Maximum Slope			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
Retrofit / Tearoff: Gypsum (2)	Versico Polyiso MP-H	1-90	1.5”-12”	1/2” (83278-0-0)	1/2” (83278-0-0)	1/2” (83278-0-0)	1/2” (97896-0-0)
	Versico Dens-Deck Prime(3) or Securock / Polyiso		Min. 1/4”/See above				
	Versico Recovery Board Versico Recovery Board/Polyiso		1/2” 1/2”/See above	1-1/2” (85902-0-0)	3/4” (83272-0-0)	3-1/2” (134289-0-0)	1-1/2” (97820-0-0)

(RoofNAV Number) – for selected systems

Notes:

- 1) One Step Insulation Adhesive is applied in continuous 1/2”-3/4” wide beads spaced a maximum of 12” on center to the substrate in the field of the roof. Insulation is placed over adhesive and walked into place.
- 2) Existing gypsum decks must be FM approved.
- 3) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Ratings

Insulation Attachment to Structural Concrete with OlyBond 500 BA Insulation Adhesive (1)

Deck Type	Insulation	Uplift Rating	Insulation Thickness	Maximum Slope			
				FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1-240	1.5”-12”	1/2”	1/2”	1/2”	1/2”
	Versico Recovery Board		1/2”	1-1/2” (84771-0-0) w/ XPS	3/4”	3-1/2”	1-1/2”
	Min. 1/2” Versico Recovery Board over: Polyiso Extruded Polystyrene (2) EPS (4)		See Above FM Approved FM Approved				
	Versico Dens-Deck Prime(6) or Securock / EPS (4)	Min. 1/4”/FM Approved					
	Versico Dens-Deck Prime(6) or Securock / Polyiso	1-300	Min. 1/4”/ See Above	(84622-0-0) w/ EPS			
	Versico Dens-Deck Prime(6) or Securock / Extruded Polystyrene (2)	1-465	Min. 1/4”/FM Approved				

FM Class 1A-90 Rating - Insulation Attachment to Tectum with OlyBond 500 BA Insulation Adhesive (1)

Deck Type (2)	Insulation	Insulation Thickness	Maximum Slope			
			FR .045”, .060” or .090”	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060”
New Construction/ Tearoff: Tectum (2” min. deck thickness)	Versico Polyiso MP-H	1.5” - 12”	1/2”	1/2”	1/2”	1/2”
	Versico Recovery Board Min. 1/2” Versico Recovery Board or Min. 1/4” Versico Dens-Deck Prime(6) Over: Polyisocyanurate Extruded Polystyrene(3) Expanded Polystyrene(4)	1/2” Min. See Above FM Approved FM Approved	1-1/2” (84581-0-0)	3/4” (83894-0-0)	3-1/2” (134240-0-0)	1-1/2” (97327-0-0)

(RoofNAV Number) – for select systems

Notes:

- 1) OlyBond 500 BA Insulation Adhesive is applied in continuous 3/4” wide beads spaced a maximum of 12” on center to the substrate in the field of the roof. Insulation is placed into adhesive after it is allowed to rise and string prior to walking and rolling the board into place. Reference Versico’s Technical Data Bulletin (TDB) for installation requirements.
- 2) FM approved minimum 2” thick by 31” wide Tectum deck secured to minimum 1/4” thick steel supports spaced a maximum of 3’ on center and secured using with two Construction Fasteners, Inc. 2” diameter metal plates and #14 Dekfast Fasteners per panel per support.
- 3) EPS must be FM approved and manufactured from Western Insulfoam or Western EPS (Min. 2” thick).
- 4) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

FM Approvals

Design “A” Fully Adhered Roofing Systems

FM Class 1A-90 Ratings Base Layer Insulation Mechanically Attached; Top Layer of Insulation Attached with OlyBond 500 BA Insulation Adhesive (1)

Deck Type	Insulation	Maximum Slope			
		FR .045", .060" or .090"	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060"
New Construction or Tearoff: Steel (Min. 22 gauge) Wood (2) Tectum (3) Gypsum (4) (Tearoff Only)	Base layer of 1/2" thick Dens-Deck/Dens-Deck Prime/Securock (5) or FM approved Polyisocyanurate insulation Mechanically Attached to the deck per standard FM Class 1-90 requirements (including enhancements at perimeters and corners). Top Layer of minimum 1/2" thick Versico Recovery Board, 1/4" thick Securock or 1/4" thick Dens-Deck Prime(7) FM Approved Polyisocyanurate secured over base layer with OlyBond 500 BA Adhesive	1-1/2" with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	3/4" with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	3-1/2" with top layer of Versico Recovery Board, Securock or Dens-Deck Prime	1-1/2" with top layer of Versico Recovery Board, Securock or Dens-Deck Prime
		1/2" with top layer of Polyiso	1/2" with top layer of Polyiso	1/2" with top layer of Polyiso	1/2" with top layer of Polyiso

FM Ratings Direct Application Over Lightweight Insulating Concrete

Deck Type	Insulation	Uplift Rating	Maximum Slope			
			FR .045", .060" or .090"	VersiGard Reinforced	VersiGard Reinforced FR	VersiGard (White) .060"
New FM Approved Celcore Lightweight Insulating Concrete poured over Steel Decking (6)	None – Direct Application	1-135	1-1/2" (173454-0-50936)	3/4" (173568-0-50936)	3-1/2" (173566-0-50936)	1-1/2" (192446-0-50936)
New FM Approved Elastizell Lightweight Insulating Concrete poured over Steel Decking		1-90				
New FM Approved Celcore Lightweight Insulating Concrete poured over Struc. Conc. Decking		1-270				
New FM Approved Elastizell Lightweight Insulating Concrete poured over Struc. Conc. Decking		1-180				

(RoofNAV numbers for Elastizell over structural concrete)

Notes:

- (1) OlyBond 500 BA Adhesive shall be applied in accordance with Versico Specifications.
- (2) On FM approved wood decks, minimum 1/4" thick gypsum board must be installed beneath the insulations listed.
- (3) FM approved Tectum decks must be minimum 2" thick. Fasteners must penetrate the deck a minimum 2".
- (4) Existing gypsum decks must be FM approved. Insulation fasteners must penetrate the deck a minimum of 1-1/2".
- (5) 1/2" thick Dens-Deck/Dens-Deck Prime/Securock must be fastened to the deck at 1 per 2 square feet (enhancements required at perimeters and corners). Not approved with gypsum or Tectum decks.
- (6) Testing conducted on minimum 22 gauge FM approved Grade C steel decking fastened to purlins spaced 5' o.c.. For decks secured to purlins spaced 6' o.c., the maximum uplift rating is 1-120.
- (7) Low VOC Bonding Adhesive and Dens-Deck Prime are not approved at FM

VersiGard (Black and White) Fully Adhered Roofing Systems 1-165 (165 psf) Wind Uplift Equivalency Ratings

Membrane Type: **VersiGard (Black) /VersiGard (White) .060" Non-Reinforced EPDM Membrane**
VersiGard (Black) .045", .060" or .075" Reinforced EPDM Membrane

Wind uplift testing has been completed in accordance with the FM Approvals 4470 Test Procedure which was witnessed and certified by Architectural Testing, Incorporated, an industry recognized Independent Testing Laboratory. Over a 22 gauge steel roof deck, the following results were obtained. Performance Test Reports are on file and available from Versico.

165 psf Uplift Resistance (1-165 Approval Equivalency on 12' X 24' Table) (1)(2)	
Insulation	Insulation Fastening Density
Polyisocyanurate insulation overlaid with minimum 7/16" thick APA grade non-veneer oriented strand board (OSB).	17 fasteners per 4' X 8' board per Versico Detail A-27-D

Notes:

1. Testing conducted on 22 gauge steel roof deck secured to the structural steel supports having a maximum span of 6' on center. The deck is fastened to the minimum 1/4" thick steel supports with ITW Buildex Traxx/5 fasteners spaced a maximum of 6" on center. Deck side laps are secured with Traxx/1 Fasteners spaced a maximum of 30" on center.
2. Failure occurred upon pressurization at 180 psf. System passed 165 psf resistance cycle.

Underwriters Laboratories Approvals Design "B" Loose Laid Ballasted Roofing System (1)(2)

**Membrane Type: .045" or .060" thick Non-Reinforced EPDM Membrane
.060" or .075" thick VersiGard Reinforced EPDM Membrane**

UL Class "A"			
Deck Type	Insulation (UL Classified)	Insulation Thickness	Maximum Slope
Non-Combustible and Combustible	Any UL Classified Insulation	Any	2"
New Construction: Approved Lightweight Insulating Concrete	None or HP Protective Mat (Refer to Versico Specifications for requirements)	N/A	2"

Notes:

- (1) Ballast to be nominal 1-1/2" diameter river washed stone at a minimum 10 pounds per square foot. Individual concrete pavers (minimum 18 pounds per square foot) or approved lightweight interlocking pavers (minimum 10 pounds per square foot) may also be used. 1/8" maximum spacing between pavers is permitted.
- (7) Versico HP Protective Mat may be used between the ballast and the membrane without altering the rating.

FM Approvals Research Calorimeter Tests for the Design "B" Ballasted Roofing System

All constructions listed in the FM Approvals (FM) Approval Guide are Class 1 A, B or C fire rated and minimum Class 60 uplift rated.

Because of the nature of the uplift testing (pressurizing the underside of the deck to minimum 60 pounds per square foot), ballasted systems cannot be tested. If the ballasted system was tested, it would only require approximately 10-15 pounds per square foot of uplift pressure before movement of the stone and membrane would occur. In reality, ballasted systems are capable of resisting much higher wind forces.

Although ballasted systems are not formally FM approved, FM Approvals conducted research fire tests on Versico's VersiGard Design "B" Ballasted Roofing System. Two (2) test panels were constructed which consisted of a 22 gauge steel deck, 5/8" thick Type X core gypsum board, 0.0015" aluminum vapor retarder and 4-1/4" VersiGard EPS insulation. The following results were obtained.

Maximum Average Rate of Fuel Contribution (Btu/Square Feet/Minutes) for various intervals of time

	3 Minutes	5 Minutes	10 Minutes	Average
FM Class 1 Standard	385	365	340	270
Allowable Deviation	+25	+25	20	+15
Test Panel No. 2 *	124	103	88	31

* The fuel contribution rates developed for Test Panel No. 2 were equivalent to Test Panel No. 1

The conclusion of the research report was that the Ballasted System panels had met the fire hazard requirement for Class 1 insulated steel deck roof construction.

Additionally, FM Approvals has published Loss Prevention Data Sheet 1-29, Above Deck Roof components that outlines general guidelines for ballast criteria depending on project conditions (building height, parapet height, location, etc.). According to this bulletin, FM Approvals's loss experience has been very favorable for single-ply Ballasted Roofing Systems when designed in accordance with this published criteria.

Although FM does not formally approve Ballasted Systems, job-by-job acceptance can be obtained when FM Approvals is the insurance underwriter by contacting the local FM office for requirements.

Underwriters Laboratories Approvals
Design "C" Loose Laid Protected Roofing System (1)(2)

Membrane Type: .045" or .060" thick Non-Reinforced EPDM Membrane
.060" or .075" thick VersiGard Reinforced EPDM Membrane

UL Class "A"			
Deck Type	Insulation (3)	Insulation Thickness	Maximum Slope
Non-Combustible and Combustible	Foamular 404	8" Max.	2"
	Dow Styrofoam Roofmate or Plazamate	4" Max.	2"

Notes:

- (1) Ballast to be nominal 1-1/2" diameter river washed stone at a minimum 10 pounds per square foot. Individual concrete pavers (minimum 18 pounds per square foot) or approved lightweight interlocking pavers (minimum 10 pounds per square foot) may also be used. 1/8" maximum spacing between pavers is permitted.
- (2) Versico HP Protective Mat must be used between the ballast and the extruded polystyrene insulation.
- (3) Insulation products listed are for use above the EPDM membrane. One layer of any UL classified insulation may be added below the membrane without altering the rating.

Underwriters Laboratories Approvals

VersiGard Reinforced Mechanically Attached Roofing System

Membrane Type: .045, .060 or .075" inch thick VersiGard Reinforced or VersiGard Reinforced FR EPDM Membrane (1)(2)

UL Class "A"				
Deck Type	Insulation (UL Classified)	Insulation Thickness	Maximum Slope	
			VersiGard Reinforced	VersiGard Reinforced FR
Non-Combustible And Combustible (For combustible decks, gypsum board must be installed beneath the insulations listed) (3)	Versico Recovery Board	1/2"-3"	1"	2-1/2"
	Versico Recovery Board/Polyisocyanurate	1/2" Min./Any	1"	2-1/2"
	Versico Recovery Board/Polystyrene(4)	1/2" Min./Any	1"	1"
	Versico Polyiso MP-H, SecurShield	Any	1/2"	3/4"
	Tenneco PB-6 over min. Class C Type III or IV Asphalt BUR or Cap Sheet	Min. 3/8"	N/A	1"
New Construction: Lightweight Insulating Concrete or Gypsum (Grouted Joints)	None	N/A	3/4"	4"
Combustible (6)	Versico SecurShield (5)	3" Min.	1/2"	2"
	Two layers of Versico FR Base Sheet 1S	2 layers	1/2"	3/4"
	Polyisocyanurate listed above over 2-layers FR Base Sheet 1S	Any/2-layers	1/2"	3/4"
	Gypsum Board (3)	1/2" Min.	3"	4"
	Gypsum Board/Polyisocyanurate (3)	1/2" Min./Any	3"	4"
Gypsum Board/Polystyrene (3)	1/2" Min./Any	3"	4"	

Notes:

- (1) The specified membrane may be coated with EM-8 Hypalon Coating in accordance with Versico's Specifications.
- (2) The specified membrane may be coated with a maximum of two coats of Versico Acrylic Coating applied at the rate of 1-1/2 gal/sq/coat and maintain the slope of the uncoated assembly
- (3) Minimum 1/2" thick gypsum board can be a classified or unclassified material with a minimum weight of 1.84 pounds per square foot. 1/4" thick Georgia Pacific Dens-Deck, Sound Deadening Board with a minimum weight of 1.09 pounds per square foot may be substituted for 1/2" thick gypsum board (not for use directly over existing roofing membrane). **On Reroof/No Tearoff projects**, where the existing roof is UL Class A rated, the gypsum board may be eliminated. Existing roofs that are Class B or C rated will require the use of gypsum board to achieve a Class A rating, otherwise, the new roofing system will retain the existing UL rating.
- (4) Assembly not permitted on combustible decks, even with gypsum board underneath.
- (5) Insulation joints (bottom layer) must be staggered a minimum of 6 inches from joints in wood deck.
- (6) Combustible deck ratings may be used on non-combustible decks.

Underwriters Laboratories Approvals

VersiGard Reinforced Mechanically Attached Roofing System

Membrane Type: .045", .060" or .075" thick VersiGard Reinforced or VersiGard Reinforced FR EPDM Membrane (1)(2)

UL Class "B"				
Deck Type	Insulation (UL Classified)	Insulation Thickness	Maximum Slope	
			VersiGard Reinforced	VersiGard Reinforced FR
Combustible	Polyisocyanurate listed on previous page/Versico FR Base Sheet 1S	Any/Base Sheet	1/2"	1/2"
	Versico Recovery Board/Polyisocyanurate/FR Base Sheet 1S	1/2" Min./1" Min/ Base Sheet	3/4"	1"
	Versico Recovery Board/FR Base Sheet 1S	1" / Base Sheet	3/4"	1"
	Versico SecurShield (4)	1.9" Min.	1/2"	1/2"
	Inverted G3 Cap Sheet	Base Sheet		
Non-Combustible and Combustible New wood deck construction or over minimum Class "B" smooth surfaced BUR	Versico SecurShield	1.9" Min.	1/2"	1/2"

UL Class "B"				
Deck Type	Insulation (UL Classified)	Insulation Thickness	Maximum Slope	
			VersiGard Reinforced	VersiGard Reinforced FR
Non-Combustible and Combustible (For combustible decks, gypsum board must be installed beneath the insulations listed) (3)	Versico Recovery Board	1/2"-3"	N/A	4"
	Versico Recovery Board/Polyisocyanurate	1/2" Min./Any	N/A	4"
New Construction: Lightweight Insulating Concrete and Gypsum (grouted joints)	None	N/A	N/A	4"
Combustible	Gypsum Board	1/2"	N/A	4"
	Gypsum Board/Polyisocyanurate	1/2"/Any	N/A	4"

Notes:

- (1) The specified membrane may be coated with EM-8 Hypalon Coating in accordance with Versico's Specifications.
- (2) The specified membrane may be coated with a maximum of two coats of VersiGard Acrylic Coating applied at the rate of 1-1/2 gal/sq/coat and maintain the slope of the uncoated assembly.
- (3) Minimum 1/2" thick gypsum wallboard can be a classified or unclassified material with a minimum weight of 1.84 pounds per square foot. 1/4" thick Georgia Pacific Dens-Deck or Sound Deadening Board with a minimum weight of 1.09 pounds per square foot may be substituted for 1/2" thick gypsum wallboard (not for use directly over existing roofing membrane). On **Retrofit/No Tearoff projects**, where the existing roof is Class B or C rated, the gypsum board may be eliminated and the new roofing system will retain the existing UL rating or achieve the new system rating, **whichever is less** (i.e., existing Class B roof is overlaid with new Class B system -resultant rating will be Class B without the requirement for gypsum board; existing Class C roof is overlaid with new Class B system - resultant rating will be Class C without the requirement for gypsum board).
- (4) Insulation joints (bottom layer) must be staggered a minimum of 6 inches from joints in wood deck.

Underwriters Laboratories Approvals

VersiGard Reinforced Mechanically Attached Roofing System

Membrane Type: .045", .060" or .075" Thick VersiGard Reinforced or VersiGard Reinforced FR EPDM Membrane (1)(2)

UL Class "C"				
Deck Type	Insulation (UL Classified)	Insulation Thickness	Maximum Slope	
			VersiGard Reinforced	VersiGard Reinforced FR
Combustible	Versico Recovery Board/Polyisocyanurate	1/2" Min./ Any	Unlimited	Unlimited
	Versico DuraPink (3)	1" Max.	1"	1"

Notes:

- (1) The specified membrane may be coated with EM-8 Hypalon Coating in accordance with Versico's Specifications.
- (2) The specified membrane may be coated with a maximum of two coats of Versico Acrylic Coating applied at the rate of 1-1/2 gal/sq/coat and maintain the slope of the uncoated assembly.
- (3) Durapink™ insulation can only be used on recovery projects as a single layer directly over the existing membrane. Not for use on combustible decks, even with gypsum board underneath. Refer to Versico Specifications for additional requirements.

Existing UL Rating to Remain				
Deck Type	Insulation (UL Classified)	Insulation Thickness	Maximum Slope	
			VersiGard Reinforced	VersiGard Reinforced FR
Non-Combustible and Combustible (Minimum Class "C" rated Type III or IV Smooth Asphalt BUR, Mineral Cap or Modified Bitumen to remain)	FR Base Sheet 1S	Slip Sheet	1/2"	1/2"
	None	N/A		
Non-Combustible and Combustible (Min. Class "C" rated adhered or Mechanically Attached single-ply system (excluding PVC))	FR Base Sheet 1S	Slip Sheet	1/2"	1/2"

FM Approvals

VersiGard Reinforced Mechanically Attached Roofing System

Membrane Type: .045", .060" or .075" Thick VersiGard Reinforced or VersiGard Reinforced FR EPDM Membrane

FM Approved Deck Type	Field Sheet Width	Max. Fastener Spacing	RoofNAV Number	Required Fastening Plates	Versico Fastener	FM Uplift Rating (1)
Wood or Structural Concrete	10'	6" o.c.	5459-0-0	Seam Fastening Plates	HPV Fasteners (wood); CD-10 or MP 14-10 (concrete)	1-60
Grade E Steel (2) or Structural Concrete	8'	12" o.c.	182024-0-0	Polymer	HPV Fasteners (wood); CD-10 or MP 14-10 (concrete)	
Steel (min. 22 gauge), Wood or Structural Concrete	10'	6" o.c.	5460-0-0	Polymer	HPV Fasteners (steel/wood); CD-10 or MP 14-10 (concrete)	1-90
Grade E Steel (2) or Structural Concrete	10'	6" o.c.	5466-0-0	Polymer	HPV Fasteners (steel); CD-10 or MP 14-10 (concrete)	1-105
Steel (min. 22 gauge)	10' VersiGard Reinforced .075" only	6" o.c.	18623-0-0	Polymer	HPV Fastener	1-105
Steel (min. 22 gauge) or Structural Concrete	8'	6" o.c.	179770-0-0	Polymer	HPV Fasteners (steel/wood); CD-10 or MP 14-10 (concrete)	1-105
Grade E Steel (2) or Structural Concrete	10' VersiGard Reinforced .075" only	6" o.c.		Polymer	HPV Fasteners (steel); CD-10 or MP 14-10 (concrete)	1-120
		12" o.c.				1-60
Steel (min. 22 gauge)	10'	12" o.c.	222331-0-0	2-3/8" HPV-XL Polymer Seam Plate	HPV-XL Fastener	1-75
Grade E Steel (2)	10' VersiGard Reinforced .060" or .075" only	12" o.c.	222334-0-0	2-3/8" HPV-XL Polymer Seam Plate	HPV-XL Fastener	1-90

Notes:

- (1) Refer to the following pages for insulation requirements, maximum roof slopes and acceptable roof construction types (new, tearoff or retrofit).
- (2) Testing conducted on FM approved 22-gauge Grade E steel decking meeting ASTM A653 or A446 Grade 80.

FM Approvals

VersiGard Reinforced Mechanically Attached Roofing System

Membrane Type: .045", .060" or .075" Thick VersiGard Reinforced or VersiGard Reinforced FR EPDM Membrane

FM Approved Deck Type	Field Sheet Width	Max. Fastener Spacing	FM Uplift Rating (5)		Versico Fastener With ST Fastening Bars
			Grade E Steel Decks (1)(4) or Structural Concrete	Steel (Min.22 gauge) Decks (2)(4)	
Steel (4) (type noted) or Structural Concrete	10'	12" o.c.	1-90	1-60 (18598-0-0)	Sure-Tite Fasteners (steel decks); CD-10 or MP 14-10 (Concrete Decks)
	10'	6" o.c.	1-120 (10627-0-0)	1-105 (18615-0-0)	
	8'	12" o.c.	1-105 (211460-0-0)	1-90	
	8'	6" o.c.	1-120	1-120	
Steel (18 gauge) (3) (4) or Structural Concrete	10'	12"	1-90		Sure-Tite Fasteners (Steel Decks) CD-10 or MP 14-10 (Concrete Decks)

(RoofNAV Number)

FM Approved Deck Type	Field Sheet Width	Max. Fastener Spacing	FM Uplift Rating (5)		Versico HPVX Fastener With Polymer Batten or Metal Fastening Bars
			Grade E Steel Decks (1)(4) or Structural Concrete	Steel (Min.22 gauge) Decks (2)(4)	
Steel (4) (type noted) or Structural Concrete	10'	6" o.c.	1-90	1-90	HPVX Fasteners (steel decks); CD-10 or MP 14-10 (Concrete Decks)
	8'	6" o.c.	1-120 (181911-0-0)	1-120 (181911-0-0)	
	8'	12" o.c.	1-60 (181530-0-0)	1-60 (181530-0-0)	

(RoofNAV Number)

Notes:

- (1) Steel decking shall be FM approved, minimum 22 gauge meeting ASTM designation A611 Grade E or A653 Grade 80.
- (2) Testing conducted on standard FM approved 22 gauge steel decking secured as outlined in the FM Approval Guide and FM Loss Prevention Data Sheet 1-29.
- (3) Testing conducted on standard FM approved 18 gauge steel decking secured as outlined in the FM Approval Guide and FM Loss Prevention Data Sheet 1-29.
- (4) For FM 1-90 ratings, deck securement requirements are outlined in the FM Approval Guide under the respective deck manufacturer approval listing.
- (5) Refer to the following pages for insulation requirements, maximum roof slopes, approved insulation and acceptable roof construction types (new, tearoff or retrofit).

FM Approvals

VersiGard Reinforced Mechanically Attached Roofing System

Membrane Type: .045", .060" or .075" Thick VersiGard Reinforced or VersiGard Reinforced FR EPDM Membrane

Deck Type	Insulation	Thickness	Maximum Slope (ASTM E-108 Class A)	
			VersiGard Reinforced	VersiGard Reinforced FR
New Construction or Tearoff: Steel (Min. 22 gauge) Structural Concrete Wood (2) Tectum	Versico Recovery Board	1/2" Min.	1"	3-1/2"
	Versico Recovery Board (min. 1/2") or Versico (min. 1/4") Dens-Deck or Securock over: FM Approved Insulation (1)	See FM RoofNAV		
Retrofit-No Tearoff (4): Structural Concrete	Versico Polyisocyanurate MP-H	1.5" - 12"	1/2"	1-1/2"
	DuraPink (3)	2" Max.	N/A	1-1/2"

Deck Type	Insulation	Thickness	Maximum Slope (ASTM E-108 Class A)	
			VersiGard Reinforced	VersiGard Reinforced FR
Retrofit-No Tearoff (4): Steel (Min. 22 gauge) Wood (2) Tectum	Versico Recovery Board	1/2"-1"	1"	3-1/2"
	Versico Polyisocyanurate MP-H	1" Max	1/2"	1-1/2"
	Versico DuraPink (3)	1" Max.	N/A	1-1/2"

Notes:

- (1) On steel decks, a thermal barrier of FM approved perlite or gypsum board (Type "X" or Type "C") is required under expanded and extruded polystyrene insulations. For specific thermal barrier requirements, consult the respective insulation manufacturer or current published FM Approval Guide.
- (2) On FM approved wood decks, minimum 1/4" thick gypsum board must be installed beneath the insulations listed. Polystyrene insulations must incorporate 1/4" gypsum board in addition to standard thermal barrier requirements.
- (3) Durapink™ insulation can only be used on recovery projects as a single layer directly over the existing membrane. Refer to Versico Specifications for additional requirements.
- (4) Existing roof must be FM Class 1 rated.

VersiGard Reinforced Mechanically Attached Roofing Systems

1-120 (120 psf) Wind Uplift Equivalency Ratings*

Wind uplift testing has been completed in accordance with the FM Approvals 4470 Test Procedure which was witnessed and certified by Architectural Testing, Incorporated, an industry recognized Independent Testing Laboratory. Over a 22 gauge steel roof deck, the following results were obtained. (Performance Test Report is on file and available from Versico.)

Membrane Requirements:

Maximum 7 foot wide VersiGard Reinforced .060" thick EPDM membrane with Versico HPV Fasteners and 2" diameter Polymer Seam Plates spaced 6" on center. *

120 psf Uplift Resistance* (1-120 Approval Equivalency on 12' X 24' Table) (1)		
Insulation	Minimum Thickness	Insulation Fastening Density
Any approved insulation	Minimum Approved Thickness (2)	1 per 8 square feet

Notes:

1. Testing conducted on minimum 22 gauge steel roof deck secured to the structural steel supports having a maximum span of 6' on center. The deck is fastened to the minimum 1/4" thick steel supports with ITW Buildex Traxx/5 fasteners spaced a maximum of 6" on center. Deck side laps are secured with Traxx/1 Fasteners spaced a maximum of 30" on center.
 2. 1/2" thick Versico Recovery Board cannot be installed as a single layer directly over wide rib (type B) or intermediate rib (type F) steel decks. For flute spanability criteria with Polyisocyanurate insulation, contact the respective insulation manufacturer.
- * A formal FM Approvals (FM) Class 1-120 rating is available using 10-foot wide VersiGard Reinforced .075" EPDM membrane and HP Fasteners/Polymer Plates. In addition, formal FM 1-120, 1-135 and 1-150 ratings are available when Sure-Tite Fasteners/ST Fastening Bars are used for membrane securement. Refer to page 21 for requirements.**

VERSICO METAL RETROFIT ROOFING SYSTEM

UNDERWRITERS LABORATORIES (UL) APPROVALS

The UL ratings achieved with the Metal Retrofit Roofing System are identical to the approvals listed for the VersiGard Reinforced Mechanically Attached Roofing System over non-combustible decks depending on the membrane selected (Standard Reinforced or FR Reinforced EPDM). These ratings are listed on pages 17-19.

FM APPROVALS

As referenced in FM Approvals Loss Prevention Data Sheet 1-31, the method of recovering an existing metal roof system with a single-ply Mechanically Attached roofing system where the membrane is secured through the existing metal roof directly to the structural purlins is recognized as an appropriate recovery system when installed per the recommendations of FM.

FM Approvals has accepted the securement of Versico's reinforced EPDM membrane with RUSS (Reinforced Universal Securement Strip) as an alternate to "in-seam fastening" as used in our VersiGard Reinforced Mechanically Attached Roofing System. As such, the wind uplift resistance of the Versico Metal Retrofit Roofing System will be equivalent to an FM 1-90 system when structural purlins are spaced a maximum of 6-1/2' on center and the RTS is secured with Versico HPV or Purlin Fasteners and Polymer Seam Plates a maximum of 6" on center into the purlins. For FM Class 60 wind uplift equivalency, the purlins could be spaced a maximum of 6-1/2' on center with the RTS secured with Versico Fasteners and 2" diameter Polymer Seam Plates spaced a maximum of 12" on center into the purlins.

As a standard FM Approvals requirement, additional membrane and insulation securement is necessary in the corner and/or perimeter areas as outlined in FM Loss Prevention Data Sheets 1-28, 1-29 and 1-31. These bulletins should be reviewed in their entirety for specific requirements concerning insulation types, fastening enhancements and other items that may be necessary.

NATIONAL, STATE & CITY BUILDING CODE APPROVALS

Authority	Approval	Approved Systems
ICC - International Code Council	Report ESR-1184 Report ESR-1463	“B” “A” and “MF”
SBCCI	These Code Bodies merged to form ICC as of March 2003 Refer to ICC approval	“B”
BOCA		“B”
NES – National Evaluation Service, Inc.		“B” “A” and “MF”
ICBO		“B” “A” and “MF”

Metropolitan Dade County, Florida Building Code Compliance Product Control Notice of Acceptance

Deck Type	Acceptance No.	Expires
Cementitious Wood Fiber	06-0331.03	6/28/11
Concrete	06-0403.03	6/28/11
Gypsum	06-0403.02	6/28/11
Lightweight Concrete	06-0403.04	6/28/11
Steel	06-0403.05	6/28/11
Wood	06-0403.01	6/28/11
Recover	06-0331.02	6/28/11

**Versico Roofing Systems, P. O. Box 1289, Carlisle, PA 17013
800-992-7663**

Versico and VersiGard are Trademarks of Versico Corporation.
Foamular and DuraPink are Trademarks of U. C. Industries, Inc.
Hypalon is a Trademark of E.I. du Pont de Nemours & Company, Inc.
Dens-Deck is a Trademark of Georgia-Pacific
Styrofoam is a Trademark of Dow Chemical Company

The contents of this issue represent the applicable information available at the time of publication. The contents of older issues are no longer accurate due to subsequent changes.

2011 Copyright Versico Roofing Systems