



Code Approval Guide Table of Contents

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VERSICO ROOFING SYSTEMS CODE APPROVAL GUIDE

August 2011

INTRODUCTION

This Code Approval Guide addresses both general information pertaining to Underwriters Laboratories (UL) and FM Approvals (FM) test criteria as well as specific UL and FM code approvals achieved with Versico's VersiWeld™ Adhered and Mechanically Attached 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 VersiGard® Roofing Systems are identified in separately published Code Approval Guides.

Code ratings are categorized by roof system type (Mechanically Attached, Adhered) 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 approved assemblies are categorized according to deck type and the specific type of construction (new, tear-off or retrofit).

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 obtained directly from UL and FM as follows:

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 resistance 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.

VersiWeld (TPO) Mechanically Attached or RhinoBond Roofing Systems Underwriters Laboratories Approvals

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060" or .080" Spectro-Weld Reinforced Membrane (White)

UL Class "A"				
Deck Type	Insulation (1)	Thickness	Maximum Slope	
			VersiWeld, VersiWeld Plus or Spectro-Weld	VersiWeld HS
Non-Combustible and Combustible (For combustible decks, gypsum board must be installed beneath the insulations listed) (2)(3)(4)	Versico Polyisocyanurate MP-H, SecurShield,	Any	1/2"*	1-1/2"
	Versico SecurShield HD or SecurShield HD Plus/Polyisocyanurate Versico SecurShield HD or SecurShield HD Plus/Polystyrene (5)	1/2"/Any		
	Insulfoam SP (5)	Any	1/2"	1/2"
	Versico Recovery Board Versico Recovery Board/Polyisocyanurate Versico Recovery Board/Polystyrene (5)	1/2" - 3" 1/2" Min./Any 1/2" Min./Any	1-1/2"	1-1/2"
	OSB APA rated	7/16"		
	OSB APA rated/Polyisocyanurate OSB APA rated/Polystyrene	7/16" Min./Any 7/16" Min./Any		
Combustible (6)	Dens-Deck	1/4" (2)(4)	3" 2-1/2" Plus	Unlimited**
	Dens-Deck or Securock/Polyisocyanurate	1/4"/Any (4)		
	Dens-Deck or Securock/Polystyrene	1/4"/Any (4)		
	Versico Polyisocyanurate SecurShield (4)	3" Min.	1/2"	1-1/2"
	Polyisocyanurate listed above over 2 layers of Versico FR Base Sheet 1S	Any/2 layers	1/2"	1/2"
Two layers Versico FR Base Sheet 1S	Two layers of Base Sheet	1/2"	1/2"	
Approved Lightweight Insulating Concrete	Direct Application	N/A	3" 2-1/2" Plus	Unlimited

* - 3/4" per foot slope for SecurShield on non-combustible decks only

** - Maximum slope for Securock is 3" per foot

Notes:

- (1) When multiple insulation layers are listed (i.e., Versico Recovery Board/Polyisocyanurate), the insulation listed first (Versico Recovery Board) is directly under the membrane.
- (2) Securock can be used in this application; however, the minimum thickness required is 1/2".
- (3) On Retrofit/No Tearoff projects, where the existing roof is Class A rated, gypsum board may be eliminated. Existing Class B or C rated roofs will require use of gypsum board to achieve a Class A rating, otherwise, the new roofing system will retain existing UL rating.
- (4) Insulation joints (bottom layer) are to be staggered a minimum of 6" from joints in wood deck.
- (5) Assembly not permitted on combustible decks, even with gypsum board underneath.
- (6) Combustible deck ratings can be used on non-combustible decks.

VersiWeld (TPO) Mechanically Attached or RhinoBond Roofing Systems Underwriters Laboratories Approvals

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
.045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
.080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
.060" or .080" Spectro-Weld Reinforced Membrane (White)

UL Class "B"				
Deck Type	Insulation (1)	Thickness	Maximum Slope	
			VersiWeld, VersiWeld Plus or Spectro-Weld	VersiWeld HS
Combustible (2)(3)	Versico Polyisocyanurate SecurShield (2)	1.9" Min.	1/2"	1/2"
	Polyisocyanurate (on Page 1) over Versico FR Base Sheet 1S	1-1/2" Min./ Base Sheet	1/2"	1"
	Versico Recovery Board/Polyisocyanurate over Versico FR Base Sheet 1S	1/2"/1" Min./ Base Sheet	1"	1"
	Versico Recovery Board/ Versico FR Base Sheet 1S	1" Min./Base Sheet	1"	1"
	One Layer Versico FR Base Sheet 1S One Layer Versico FR Base Sheet 1S over minimum Class B Smooth BUR, mineral cap sheet or Modified Bitumen	One Layer of Base Sheet	1/2"	1/2"
	Inverted G3 Cap Sheet	Cap Sheet		
UL Class "C"				
Non-Combustible	Polyisocyanurate listed on Page 1	Any	Unlimited	Unlimited
Combustible	Polyisocyanurate listed on Page 1	2" Min.	Unlimited	Unlimited
Existing UL Rating Retained				
Non-Combustible or Combustible	None – Direct to min. UL Class C rated Type III or IV Smooth Asphalt BUR, Mineral Cap Sheet Modified Bitumen or approved single-ply to remain	N/A	1/2"	1/2"
	Versico FR Base Sheet 1S over existing min. UL Class "C" rated Type III or IV Smooth Asphalt BUR, Mineral Cap Sheet, Modified Bitumen or approved single-ply to remain	Base Sheet	1/2"	3/4"
	Max. 1" Insulfoam R-Tech or SP over minimum Class C smooth or gravel surface (gravel maintained) BUR, mineral cap sheet or Modified Bitumen	Max. 1"	1/2"	1/2"

Notes:

- (1) When multiple insulation layers are listed (i.e., Versico Recovery Board/Polyiso), the insulation listed first (Versico Recovery Board) is directly under the membrane.
- (2) Insulation joints (bottom layer) are to be staggered a minimum of 6" from joints in wood deck.
- (3) Combustible deck ratings can be used on non-combustible decks.
- (4) Assembly acceptable for white VersiWeld membrane only.

VersiWeld (TPO) Mechanically Attached or RhinoBond Roofing Systems FM Approvals and Equivalencies

A. FM Approvals - Field Sheet Securement Criteria (1)(2)(3)

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
.045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
.080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
.060" or .080" Spectro-Weld Reinforced Membrane (White)

Membrane Width (2)	Fastener/ Plate (3)	Spacing	Min. 22 Gauge Grade C Steel		Min. 22 Gauge Grade E Steel (4) or Structural Concrete		Wood Deck (7)	Min. 18 Gauge Steel
			VersiWeld, VersiWeld Plus or Spectro-Weld	Versi Weld HS	VersiWeld, VersiWeld Plus or Spectro-Weld	VersiWeld HS		
4 foot (6)	HPVX /Piranha	6"	1-165 (136102-0-0)	-	1-165 (136102-0-0)	-	-	-
		12"	1-105 (136101-0-0)	-	1-105 (136101-0-0)	-	-	-
8 Foot	HPVX /Piranha	6"	1-105 (12442-0-0)	-	1-135 (12496-0-0)	1-120 (106202-0-0)	1-90 (231874-0-0)	-
		12"	1-60 (12135-0-0)	1-60	1-90 (12562-0-0)	1-75	1-75 (231872-0-0)	
	HPV-XL /HPV-XL	12"	1-90 (143000-0-0)	1-75	1-90 (143000-0-0)	1-75 (142996-0-0)	-	
10 Foot	HPVX /HPVX	6"	1-105 (140986-0-0)	1-90	1-120 (12571-0-0)	1-75 (106197-0-0)	-	-
		9" (5)	1-75 (5)	1-60 (5)	1-90 (5)	1-90 (5)		-
		12"	1-60 (140548-0-0)	-	1-75 (107470-0-0)	1-75 (106205-0-0)		1-90 (12807-0-0)
	HPV-XL /HPV-XL	6"	1-120	-	1-120	-		-
		12"	1-60	-	1-90* (12788-0-0)	-		-
12 Foot	HPVX /HPVX	6"	1-105 (140986-0-0)	-	1-120 (141052-0-0)	1-75 (106197-0-0)	-	-
		9" (5)	1-75 (5)	1-60 (5)	1-75 (5)	-		
		12"	1-60 (140548-0-0)	-	1-60 (140548-0-0)	1-60 (106201-0-0)		
	HPV-XL /HPV-XL	6"	1-120 (141023-0-0)	-	1-120 (141052-0-0)	-		
		9" (5)	1-75 (5)	-	1-75 (5)	-		
		12"	1-60	-	1-60	-		

(RoofNAV Number) – for selected systems directly over Polyiso MP-H

*Max 1-75 using Spectro-Weld

Notes:

- (1) For roof deck construction (new, tearoff or retrofit), approved insulations and maximum roof slopes, refer to item C on page 5.
- (2) Refer to Versico Specifications for minimum requirements regarding sheet widths and fastener spacing.
- (3) On steel decks, Versico HPVX Fasteners and HPVX Plates or HPV-XL Fasteners and HPV-XL Plates are required as identified in the above chart. On structural concrete decks, CD-10, MP Concrete Spikes or MP 14-10 Fasteners are used with HPVX Plates.
- (4) Testing conducted on FM approved 22-gauge Grade E steel decking (ASTM Designation A611 or A653 Grade 80). Refer to FM requirements for deck installation.
- (5) Formal FM approval is not available with fasteners at 9" o.c. Wind uplift resistance testing was successfully completed in accordance with FM 4470 procedures.
- (6) Ratings achieved using steel decking attached to structural purlins spaced 5' o.c.
- (7) FM Approved fire-retardant (FR) treated lumber, minimum 1.5" thick (nominal 2"), or plywood wood deck, minimum 23/32" thick (nominal 3/4") fastened to structure using FM approved fasteners and densities.

B. FM Approvals – RhinoBond Securement Criteria

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
.045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
.080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)

FM Approvals – RhinoBond Grid Securement

Deck Type	Fastener/Plate	Rating	Fasteners per 4’ x 8’ Board		
			Field	Perimeter	Corner
Min. 22 gauge Grade C Steel Deck	HPVX / RhinoBond TPO Plate	1-90	6 (222555-0-0)	10	15
		1-105	8 (222553-0-0)	14	20
Min. 22 gauge Grade E Steel Deck	HPVX / RhinoBond TPO Plate	1-120	8 (222375-0-0)	14	20

(RoofNAV number) over Polyiso MP-H

FM Approvals – RhinoBond Linear Securement

Deck Type	Fastener	Plate	Row Spacings	Fastener Spacing in Rows	Rating
Min. 22 gauge Grade E Steel Deck	HPVX	RhinoBond TPO Plate	5’	12”	1-75
			5’	6”	1-135
Structural Steel Purlin (Metal Retrofit)	Purlin		10’	6”	1-75

C. 1-90 (90 psf) Wind Uplift Equivalency Rating

Wind uplift testing has been completed in accordance with the FM 4470 Test Procedure which was witnessed and certified by Architectural Testing, Incorporated, an industry recognized Independent Testing Laboratory. Over a 22 gauge Grade E steel roof deck, the following results were obtained using HPVX Fasteners and HPVX Plates for membrane securement. The Performance Test Report is on file and available from Versico.

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (white, gray or tan)

90 psf Uplift Resistance (1-90 Equivalency on 12’ x 24’ Table)				
Deck Type	Field Membrane Width	Fastener Spacing	Insulation Type and Thickness	Insulation Fastening
Min. 22 gauge	10’ (See notes 1 and 3 above)	12”	Per Versico Specification	Per Versico Specification

VersiWeld (TPO) Mechanically Attached or RhinoBond Roofing Systems FM Approvals

D. FM Class 1 Roof Deck Construction and Insulation Approvals (1)

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060" or .080" Spectro-Weld Reinforced Membrane (White)

Deck Type	Insulation (2)	Insulation Thickness	Maximum Slope for ASTM E-108 Class "A" Rating	
			VersiWeld, VersiWeld Plus or Spectro-Weld	VersiWeld HS
New Construction/Tearoff: Steel (Minimum 22 gauge) Structural Concrete Wood (5) Retrofit (No Tearoff) (4): Structural Concrete	Versico Recovery Board	1/2" Min.	1-1/2" (with Fiberboard or Securock overlay) 5" (with Dens-Deck overlay and VersiWeld Standard) 3" (with Dens-Deck overlay and VersiWeld Plus)	2" (with Fiberboard or Securock overlay) 5" (with Dens-Deck overlay)
	Versico Recovery Board (min. 1/2"), Dens-Deck (min. 1/4") or Securock (min. 1/4") Over: FM Approved Insulation (3)	Refer to FM RoofNav website		
	Versico Polyisocyanurate MP-H or SecurShield	1.5" - 12"	1/2"	1-1/2"
	Versico SecurShield HD or SecurShield HD Plus Over: FM Approved Insulation (3)	1/2" / Refer to FM RoofNAV website		
Retrofit (No Tearoff) (4): Steel (Minimum 22 gauge)	Versico Recovery Board	1/2" - 1"	1-1/2"	2"
	Versico Polyisocyanurate MP-H or SecurShield	1" Max.	1/2"	1-1/2"
	Versico SecurShield HD or SecurShield HD Plus	1/2"		

Notes:

- (1) **The fastener spacing for membrane securement** is dependant on the deck type, desired wind uplift rating and the Versico Fastening Plate and Fastener utilized **as identified on page 3**.
- (2) Insulation shall be fastened in accordance with Versico Specifications.
- (3) On steel decks, a thermal barrier of FM approved gypsum board is required under expanded or extruded polystyrene. For specific thermal barrier requirements, refer to FM's RoofNAV web-site.
- (4) Existing roof must be FM Class 1 rated.
- (5) FM Approved fire-retardant (FR) treated lumber, minimum 1.5" thick (nominal 2"), or plywood wood deck, minimum 23/32" thick (nominal 3/4"). A thermal barrier of FM approved gypsum board is required under all insulations. For specific thermal barrier requirements, refer to FM's RoofNAV web-site.

VERSIWELD 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 VersiWeld Mechanically Attached Roofing System over non-combustible decks depending on the membrane selected. These ratings are listed on pages 1 and 2.

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 fastened 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.

As a standard FM Approvals requirement, additional membrane and insulation securement is necessary in the corner and/or perimeter areas as outlined in FM Property 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.

VersiWeld (TPO) Adhered Roofing System Underwriters Laboratories Approvals

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
.045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
.080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
.060" or .080" Spectro-Weld Reinforced Membrane (White)

UL Class "A"						
Deck Type	Insulation (1)(2)	Thickness	Bonding Adhesive	Maximum Slope		
				VersiWeld or Spectro-Weld	VersiWeld HS	VersiWeld Plus
Non-Combustible and Combustible (For combustible decks, gypsum board must be installed beneath the insulations listed) (3)(4)(5)	Versico Polyiso MP-H, SecurShield	Any	VersiWeld Bonding Adhesive (SW) or Low VOC Bonding Adhesive (LV)	1/4"	1/2"	1/4"
	Versico SecurShield HD, SecurShield HD Plus/Polyiso Versico SecurShield HD, SecurShield HD Plus / Polystyrene (8)	1/2" / Any	Aqua Base 120 (AQ 120)	3/8"	1/2"	3/8"
	APA Rated Oriented Strand Board (OSB)/Polyiso OSB/Polystyrene	7/16"/Any 7/16"/Any	SW/LV	1-1/2"	1"	1/4" (3/4" for Class B)
	Versico Recovery Board Versico Recovery Board/Polyiso	1/2" - 3" 1/2" Min/Any	SW/LV	1-1/2"	1"	1/4"
	Versico Recovery Board/Polystyrene (8)	1/2" Min/Any	AQ 120	1/2"	1"	1/2"
Combustible (5)(7)	Dens-Deck Prime (6) Dens-Deck Prime or Securock/Polyiso Dens-Deck Prime or Securock/Polystyrene	1/4" (6) 1/4"/Any 1/4"/Any	SW/LV AQ 120	3" 1"	Unlimited* 1" (3" for Class B)	2-1/2" 1"
	Versico Polyiso SecurShield (5)	3" Min.	SW/LV AQ 120	1/4" 3/8"	1/2" 1/2"	1/4" 3/8"
	Polyiso listed above over 2 layers of Versico FR Base Sheet 1S	Any / 2-layers	SW/LV	1/4"	1/2"	1/4"
			AQ 120	3/8"	1/2"	3/8"
	Structural Concrete or Approved Ltwt. Ins. Conc.	N/A	N/A	SW/LV	3"	Unlimited
AQ 120				1"	1" (3" for Class B)	1"

* - Maximum slope with Securock is 3" per foot

Notes:

- (1) When multiple insulation layers are listed (i.e., Versico Recovery Board/Polyisocyanurate), the insulation listed first (Versico Recovery Board) is directly under the membrane.
- (2) Insulation may be mechanically fastened, attached with DASH or FAST Adhesive, Type III or IV asphalt or UL approved cold adhesive.
- (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 Versico/Georgia Pacific Dens-Deck or Georgia Pacific Sound Deadening Board with a minimum weight of 1.09 pounds per square foot may be substituted for 1/2" thick gypsum board.
- (4) On **Retrofit/No Tearoff projects**, where the **existing roof is Class A** rated, the **gypsum board may be eliminated**. Existing Class B or C rated roofs will require the use of gypsum board to achieve a Class A rating, otherwise, the new roofing system will retain existing UL rating.
- (5) Insulation joints (bottom layer) are to be staggered a minimum of 6" from joints in wood deck.
- (6) Dens-Deck Prime cannot be installed directly over an existing roofing membrane.
- (7) Combustible deck ratings can be used on non-combustible decks.
- (8) Assembly not permitted on combustible decks, even with gypsum board underneath.

VersiWeld (TPO) Adhered Roofing System Underwriters Laboratories Approvals

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060" or .080" Spectro-Weld Reinforced Membrane (White)

UL Class "B"					
Deck Type	Insulation (1)(2)	Thickness	Maximum Slope		
			VersiWeld or Spectro- Weld	VersiWeld HS	VersiWeld Plus
Combustible (3)(4)	Versico Polyisocyanurate SecurShield (3)	1.9" Min.	1/4"	1/2"	1/4"
	Polyiso listed on previous page (6)/FR Base Sheet 1S	1-1/2" Min./ Base Sheet	1/4"	1/2"	1/4"
	Versico Recovery Board/Polyiso/FR Base Sheet 1S	1/2" Min./ 1" Min./Base Sheet	1-1/2"	1"	3/4"
	Versico Recovery Board/FR Base Sheet 1S	1" Min./Base Sheet			
UL Class "C"					
Non- Combustible	Polyiso listed on previous page	Any	Unlimited	Unlimited	Unlimited
Combustible	Polyiso listed on previous page	2" Min.	Unlimited	Unlimited	Unlimited

Notes:

- (1) When multiple insulation layers are listed (i.e., Versico Recovery Board/Polyisocyanurate), the insulation listed first (Versico Recovery Board) is directly under the membrane.
- (2) Insulation may be mechanically fastened, attached with DASH or FAST Adhesive, Type III or IV asphalt or UL approved cold adhesive.
- (3) Insulation joints (bottom layer) are to be staggered a minimum of 6" from joints in wood deck.
- (4) Combustible deck ratings can be used on non-combustible decks.

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM Class 1A-60 and 1A-90 Ratings Mechanically Fastened Insulation						
Deck Type	Insulation		Bonding Adhesive	Maximum Slope		
				VersiWeld or Spectro- Weld	VersiWeld Plus	VersiWeld HS
New Construction/Tearoff: Steel (Min. 22 gauge) Structural Concrete Wood (1) Tectum (2) Gypsum (Tearoff only) (3) Retrofit (No Tearoff) (4) Structural Concrete Gypsum (3)	Versico Polyiso MP-H, Securshield	Insulation Thickness: 1.5"-12"	VersiWeld Bonding Adhesive / Low VOC Bonding Adhesive	1/2" (13222-0-0)	1/4" (13259-0-0)	1" (93453-0-0)
		Insulation Fastening Requirements for Steel and Struc. Conc. Decks: Minimum Top Layer Thickness 2" 8 fasteners and Plates per 4' x 8' board Minimum Top Layer Thickness 1.5" 10 fasteners and Plates per 4' x 8' board	Aqua- Base 120	3/4" (145761-0-0)	3/4" (145761-0-0)	3/4" (145761-0-0)

(RoofNAV Number) – for selected systems using 2” thick minimum top layer

Notes:

- (1) FM approved wood decks, a gypsum board must be installed beneath the insulation listed. 16 fasteners per board required for all membranes.
- (2) FM approved Tectum decks must be minimum 2" thick. Insulation 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. Insulation 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.

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060" or .080" Spectro-Weld Reinforced Membrane (White)

Deck Type	Insulation	Insulation Thickness	Insul. Fast. / 4'x8' board (Steel & Conc. Only)	Maximum Slope		
				VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction/Tearoff: Steel (Min. 22 gauge) Structural Concrete Wood (2) Retrofit (No Tearoff): (5) Structural Concrete	Versico SecurShield HD Plus or Versico Recovery Board (min. 1/2") Over: FM Approved Insulation (1)	1/2" Min See FM RoofNAV	16	VersiWeld Bonding Adhesive / Low VOC Bonding Adhesive (VW/LV) 1-1/2"	(VW/LV) 3/4"	(VW/LV) 1-1/2"
	Versico Securock	1/4" Min.	1/4"-12 (1-75)			
	Versico Securock (Min. 1/4") Over: FM Approved Insulations (2)	See FM RoofNAV	1/2"-10 5/8"-8	(VW/LV) 1-1/2" (92102-0-0) (AQ120) 1" (95279-0-0)	(VW/LV) 3/4"	(VW/LV) 3-1/2"
	Versico Dens-Deck Prime (4) Versico Dens-Deck Prime (4) (1/4" Min.) Over: FM Approved Insulation (1)	1/4" Min. See FM RoofNAV	1/4"-12 1/2"-12 5/8"-8			
Retrofit (No Tearoff) (3): Steel (Min. 22 gauge) Wood (2)	Versico Recovery Board (No additional insulation permitted)	1/2" - 1"	16	(VW/LV) 1-1/2" (AQ120) 1"	(VW/LV) 3/4" (AQ120) 1"	(VW/LV) 1-1/2" (AQ120) 1"
	Versico Polyiso MP-H	1" Max.	20	(VW/LV) 1/2" (AQ120) 3/4"	(VW/LV) 1/4" (AQ120) 3/4"	(VW/LV) 1" (AQ120) 3/4"

(RoofNAV Number) – for selected systems using 1/4" thick Dens-Deck Prime top layer

Notes:

- (1) On steel decks, a thermal barrier of FM approved gypsum board is required under expanded or extruded polystyrene insulation. For specific thermal barrier requirements, consult the respective insulation manufacturer or refer to the current published FM Approval Guide.
- (2) On FM Approved wood decks, a gypsum board must be installed beneath the insulation listed. Polystyrene insulations must incorporate 1/4" gypsum board in addition to standard thermal barrier requirements. 16 fasteners per board required for all membranes.
- (3) Existing roof must be FM Class 1 rated.
- (4) 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.

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM 1A-150(1)(2) and FM 1A-90 Ratings Direct Adhesion to OSB (Oriented Strand Board) FM 1A-105 over OSB with Aqua-Base 120					
Deck Type (1)(2)	Insulation	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld EXTRA	VersiWeld HS
New Construction/Tearoff Steel (Min. 22 gauge) Structural Concrete	OSB (Oriented Strand Board) (3)(4) OSB (Min. 7/16”) (3) Over: FM Approved Insulation (3)	7/16” Min. See FM RoofNAV	1-1/2” (13335-0-0)	3/4” (13341-0-0)	1-1/2” (13335-0-0)

(RoofNAV Number) for 1-150 systems

FM 1A-150 Rating Insulation Mechanically Attached					
Deck Type (1)(2)	Insulation (5) (6)	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction/Tearoff Steel (Min. 22 gauge) Structural Concrete	Versico Polyiso MP-H/SecurShield	2” – 12”	1/2” (135476-0-0)	1/4” (135474-0-0)	1” (135477-0-0)
	Versico Securock / Polyiso	1/2” Min. / See Page 9	1-1/2” (269993-0-0)	3/4” (269994-0-0)	3-1/2” (269996-0-0)

(RoofNAV Number) for selected systems

FM 1A-225 Rating Insulation Mechanically Attached					
Deck Type (7)	Insulation (6)(8)	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld EXTRA	VersiWeld HS
New Construction/Tearoff Steel (Min. 22 gauge) Structural Concrete	Versico Polyiso SecurShield	2” – 12”	1/2” (245513-0-0)	1/4” (245509-0-0)	1” (245516-0-0)
	Versico Securock / Polyiso	1/2” Min. / See Page 9	1-1/2” (239271-0-0)	3/4” (239272-0-0)	3-1/2” (269952-0-0)

(RoofNAV Number) for selected systems

Notes:

- (1) **For FM 1-150 rating**, testing was conducted on FM approved 22 gauge Grade C steel roof deck.
- (2) OSB (oriented strand board) shall be APA rated. Provide minimum 1/8” gaps between OSB boards.
For FM 1-150 rating, OSB shall be fastened with 17 Versico Fasteners/Insulation Plates per 4’ x 8’ board in the field of the roof.
- (3) On steel decks, a thermal barrier of FM approved gypsum board 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.
- (4) Care must be exercised during Bonding Adhesive application since 1/8” gaps are required between OSB Boards and solvent from adhesive will degrade polystyrene products.
- (5) Insulation fastened with 20 HPV fasteners and Versico insulation plates per board in the field of the roof
- (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 1-240 rating is available over FM approved 22 gauge Grade E steel roof deck
- (8) Insulation fastened with 32 HP fasteners and Versico insulation plates per board

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM Ratings Direct Application Over Lightweight Insulating Concrete

Deck Type	Insulation	Uplift Rating	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld EXTRA	VersiWeld HS
New FM Approved Celcore Lightweight Insulating Concrete poured over Steel Decking (1)	None – Direct Application	1-135	1-1/2”	3/4”	1-1/2”
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			

Notes:

- (1) Testing conducted on minimum 22-gauge FM approved Grade C steel decking fastened to the purlins spaced 5’ o.c. For decks secured to purlins spaced 6’ o.c., the maximum uplift rating is 1-120.

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM Ratings (3)

Insulation Attachment to Structural Concrete with DASH or FAST Adhesive

Deck Type	Insulation (1)	Insulation Thickness	Uplift Rating	Maximum Slope		
				VersiWeld or Spectro-Weld	VersiWeld EXTRA	VersiWeld HS
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H SecurShield (5)	1.5”-12”	1-705	VersiWeld Bonding Adhesive (VW) or Low VOC Bonding Adhesive (LV) 1/2” (66512-0-0)	(VW/LV) 1/4” (68669-0-0)	(VW/LV) 1”
			1-180	Aqua Base 120 (AQ 120) 3/4” (141213-0-0)	(AQ 120) 3/4” (141213-0-0)	(AQ 120) 3/4” (141213-0-0)
	Versico Dens-Deck Prime/ Polyiso Extruded Polystyrene (2) EPS (4)	1/4” Min./ (See RoofNAV)	1-465	(VW/LV) 1-1/2” (161393-0-0)	(VW/LV) 3/4” (161394-0-0)	(VW/LV) 3-1/2” (163213-0-0)
				(AQ 120) 1”	(AQ 120) 1”	(AQ 120) 3”
	OSB (Oriented Strand Board)/Polyiso Versico Securock/Polyiso	7/16”/See Above	1-465			
		1/4” Min./See Above				
	Versico Recovery Board /EPS (4)	1/2”/FM Approved	1-645		(VW/LV) 1-1/2” (161384-0-0)	(VW/LV) 3/4”
Versico Recovery Board Versico Recovery Board over Polyiso (5)	1/2” Min. 1/2” Min./See above	(AQ 120) 1”			(AQ 120) 1”	(AQ 120) 1”
Versico Polyiso MP-H/ OSB Composite	1.9” – 4”	1-375				

(RoofNAV Number) for selected systems

Notes:

- (1) Versico 725 TR Vapor Retarder may be used beneath any of the insulations listed above and maintain the rating. Prior to installing Versico 725 TR Vapor retarder, apply CCW 702-LV or Cav-Grip Primer as outlined in Versico’s most current Specifications.
- (2) Extruded Polystyrene must be Owens Corning Foamular or Dow Styrofoam.
- (3) A maximum FM 1-195 for VersiWeld Standard/Plus and maximum 1-240 for VersiWeld HS uplift using Aqua Base 120.
- (4) EPS must be FM approved and manufactured from BASF, Huntsman or Nova Beads.
- (5) Limited to 1-480 uplift when using SecurShield

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM Class 1A-150 Ratings (1) Insulation Attachment to Tectum with DASH or FAST Adhesive

Deck Type (1)	Insulation	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction/ Tearoff: Tectum (2” min. deck thickness)	Versico Polyiso MP-H SecurShield	1.5”-12”	VersiWeld Bonding Adhesive or Low VOC Bonding Adhesive (VW/LV) 1/2” Aqua Base 120 (AQ 120) 3/4”	(VW/LV) 1/4” (AQ 120) 3/4”	(VW/LV) 1” (AQ 120) 3/4”
	Versico Recovery Board	1/2” Min.			
	Versico Recovery Board over Polyiso	1/2” Min/ See above	(VW/LV) 1-1/2” (AQ 120) 1”	(VW/LV) 3/4” (AQ 120) 1”	(VW/LV) 1-1/2” (AQ 120) 1”
	Versico Securock over Polyiso	1/4” Min/ See Above			
	Versico Dens-Deck Prime over Polyiso	1/4” Min/ See Above	(VW/LV) 1-1/2” (AQ 120) 1”	(VW/LV) 3/4” (AQ 120) 1”	(VW/LV) 3-1/2” (AQ 120) 3”

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.

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045" or .060" VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045" or .060" VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080" VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060" or .080" Spectro-Weld Reinforced Membrane (White)

FM Class 1A-90 Ratings				
Base Layer Insulation Mechanically Fastened; Top Layer of Insulation Attached with DASH or FAST Adhesive Full Coverage or Extruded 12" o.c.(1)				
Deck Type	Insulation	Maximum Slope		
		VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
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 (5) or FM approved Polyisocyanurate insulation mechanically fastened 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 Dens-Deck Prime, 1/4" thick Securock, minimum 7/16" thick OSB or FM Approved Polyiso (from this Guide) adhered over base layer with DASH or FAST Adhesive	1-1/2" with top layer of Versico Recovery Board, OSB, Dens-Deck or Securock using VersiWeld Bonding Adhesive or Low VOC Bonding Adhesive (VW/LV)	3/4" with top layer of Versico Recovery Board, OSB, Dens-Deck or Securock using (VW/LV)	1-1/2" with top layer of Versico Recovery Board, Securock, OSB or 3-1/2" with top layer of Dens-Deck using (VW/LV)
		1" with top layer of Versico Recovery Board, OSB, Dens-Deck or Securock using Aqua-Base 120	1" with top layer of Versico Recovery Board, OSB, Dens-Deck or Securock using Aqua-Base 120	1" with top layer of Versico Recovery Board, Securock, OSB or 3" with top layer of Dens-Deck using Aqua-Base 120
		1/4" with top layer of Polyiso using (VW/LV)	1/2" with top layer of Polyiso using (VW/LV)	1-1/2" with top layer of Polyiso using (VW/LV)
		3/4" with top layer of Polyiso using Aqua-Base 120	3/4" with top layer of Polyiso using Aqua-Base 120	3/4" with top layer of Polyiso using Aqua-Base 120

Notes:

- (1) DASH or FAST Adhesive shall be applied in accordance with Versico Specifications.
- (2) On FM approved wood decks, a 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 or Dens-Deck Prime must be fastened to the deck at 1 per 2 square feet (enhancements required at perimeter and corner areas).

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM Class 1A-300 Rating - Insulation Attachment with Hot Asphalt (1)(2)

Deck Type	Insulation	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1.5”-12”	VersiWeld Bonding Adhesive/Low VOC Bonding Adhesive (VW/LV) 1/2” Aqua Base 120 3/4”	(VW/LV) 1/4” Aqua Base 120 3/4”	(VW/LV) 2” Aqua Base 120 3/4”
	Versico Recovery Board	1/2” Min.	(VW/LV) 1-1/2” Aqua Base 120 1”	(VW/LV) 3/4” Aqua Base 120 1”	(VW/LV) 1-1/2” Aqua Base 120 1”
	Versico Recovery Board / Polyiso	1/2” Min/ See above			
	Versico Securock / Polyiso	1/2” Min./See Above			
	Versico Dens-Deck Prime / Polyiso	1/2” Min/See Above	(VW/LV) 1-1/2” Aqua Base 120 1”	(VW/LV) 3/4” Aqua Base 120 1”	(VW/LV) 3-1/2” Aqua Base 120 3”

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) A maximum FM 1-195 for VersiWeld Standard/Plus and a maximum 1-240 for VersiWeld HS uplift using Aqua Base 120.

VersiWeld (TPO) Adhered Roofing System FM Approvals

Membrane Type: .045” or .060” VersiWeld Standard Reinforced Membrane (White, Gray or Tan)
 .045” or .060” VersiWeld HS (ES) Reinforced Membrane (White, Gray or Tan)
 .080” VersiWeld Plus Reinforced Membrane (White, Gray or Tan)
 .060” or .080” Spectro-Weld Reinforced Membrane (White)

FM Class 1A-90 Ratings - Insulation Attachment with Hot Asphalt (1)

Deck Type (2)	Insulation	Maximum Slope		
		VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction/ Tearoff: Steel (Min. 22 gauge) Wood (3) Tectum (4) Gypsum (5) (Tearoff Only)	Base layer of FM approved Polyisocyanurate insulation (minimum thickness listed above) mechanically fastened 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 or 1/2” of Dens-Deck Prime using VersiWeld Bonding Adhesive/Low VOC Bonding Adhesive (VW/LV)	3/4” with top layer of Versico Recovery Board or 1/2” Dens-Deck Prime using (VW/LV)	1-1/2” with top layer of Versico Recovery Board or 3-1/2” Dens-Deck Prime using (VW/LV)
	Top Layer of minimum 1/2” thick Versico Recovery Board, Dens-Deck Prime or FM Approved Polyisocyanurate (listed above) secured over base layer with hot asphalt	1” with top layer of Versico Recovery Board or 1/2” Dens-Deck Prime using Aqua-Base 120	1” with top layer of Versico Recovery Board or 1” Dens-Deck Prime using Aqua-Base 120	1” with top layer of Versico Recovery Board or 3” with Dens-Deck Prime using Aqua-Base 120
		1/4” with top layer of Polyiso using (VW/LV)	1/2” with top layer of Polyiso using (VW/LV)	1-1/2” with top layer of Polyiso using (VW/LV)
		3/4” with top layer of Polyiso using Aqua-Base 120	3/4” with top layer of Polyiso using Aqua-Base 120	3/4” with top layer of Polyiso using Aqua-Base 120

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) Specific information concerning structural deck requirements (brand names, span capacity, securement criteria, etc.) must be referenced in the current FM Approval Guide and FM Loss Prevention Data Sheet 1-29.
- (3) On FM approved wood decks, a gypsum board must be installed beneath the insulations listed.
- (4) FM approved Tectum decks must be minimum 2” thick. Fasteners must penetrate the deck a minimum 2”.
- (5) Existing gypsum decks must be FM approved. Insulation fasteners must penetrate the deck a minimum of 1-1/2”.

VersiWeld (TPO) Adhered Roofing System FM Approvals

FM Ratings (3)

Insulation Attachment to Structural Concrete with One Step Insulation Adhesive (1)(2)

Deck Type	Insulation	Insulation Thickness	Uplift Rating	Maximum Slope		
				VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1.5"-12"	1-465	VersiWeld Bonding Adhesive/Low VOC Bonding Adhesive (VW/LV) 1/2" Aqua Base 120 3/4"	(VW/LV) 1/4" Aqua Base 120 3/4"	(VW/LV) 1" Aqua Base 120 3/4"
	Versico Dens-Deck Prime / Polyiso Versico Securock/Polyiso	Min. 1/4"/ See above Min. 1/4"/ See Above		(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"	(VW/LV) 1-1/2" Aqua Base 120 1" (4)
	Versico Recovery Board Versico Recovery Board over Polyiso	1/2" Min. 1/2" Min./See above	1-255			

FM Class 1A-90 Ratings

Insulation Attachment to Poured Gypsum with One Step Insulation Adhesive (1)(2)

Deck Type	Insulation	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS*
Retrofit (Tearoff): Gypsum (5)	Versico Recovery Board Versico Recovery Board over Polyiso	1/2" Min. 1/2" Min./See above	(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"	(VW/LV) 1-1/2" Aqua Base 120 1" (4)
	Versico Dens-Deck Prime over Polyiso	1/4" Min./See above			
	Versico Securock over Polyiso	1/4" Min./See above			

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) Additional beads of One Step Insulation Adhesive are required at perimeters and corners. Bead spacing shall not exceed 6" on center at perimeter areas. Contact Versico for specific requirements.
- 3) A maximum FM 1-195 for VersiWeld Standard/Plus and a maximum 1-240 for VersiWeld HS uplift using Aqua Base 120.
- 4) A maximum slope of 3" is available when using Dens-Deck Prime
- 5) Existing gypsum decks must be FM approved.

VersiWeld (TPO) Adhered Roofing System FM Approvals

FM Ratings (5)

Insulation Attachment to Structural Concrete with OlyBond 500 BA Insulation Adhesive (1)(2)

Deck Type	Insulation	Insulation Thickness	Uplift Rating	Maximum Slope			
				VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS	
New Construction/ Tearoff: Structural Concrete	Versico Polyiso MP-H	1.5"-12"	1-240	VersiWeld Bonding Adhesive/Low VOC Bonding Adhesive (VW/LV) 1/2" Aqua Base 120 3/4"	(VW/LV) 1/4" (94858-0-0) Aqua Base 120 3/4"	(VW/LV) 1" Aqua Base 120 3/4"	
	Versico Recovery Board	1/2"		1-300	(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"	(VW/LV) 1-1/2" Aqua Base 120 1"
	Min 1/2" Versico Recovery Board over: Polyisocyanurate Extruded Polystyrene (3) EPS (4)	See above FM Approved FM Approved			1-465	(VW/LV) 1-1/2" (167234-0-0) Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"
	Versico Securock over: Polyisocyanurate Extruded Polystyrene (3) EPS (4)	Min. 1/4"/ See above FM Approved FM Approved	1-300			(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"
	Versico Dens-Deck Prime over Polyiso/EPS (4)	Min. 1/4"/ See above			1-300	(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"
	Versico Dens-Deck Prime over Polyiso	Min. 1/4"/ See above	1-300	(VW/LV) 1-1/2" Aqua Base 120 1"		(VW/LV) 3/4" Aqua Base 120 1"	(VW/LV) 3-1/2" Aqua Base 120 3"
	Versico Dens-Deck Prime /Extruded Polystyrene (3)	Min. 1/4"/FM Approved		1-300	(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"	(VW/LV) 3-1/2" Aqua Base 120 3"

(RoofNAV number) for selected 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) Additional beads of OlyBond 500 BA Insulation Adhesive are required at perimeters and corners as identified in this guide. Bead spacing shall not exceed 6" on center at perimeter areas and 4" on center at corners.
- 3) Extruded Polystyrene must be Owens Corning Foamular 250 (minimum 1" thick).
- 4) EPS must be FM approved and manufactured from Western Insulfoam or Western EPS (Min. 2" thick).
- 5) A maximum FM 1-195 for VersiWeld Standard/Plus and a maximum 1-240 for VersiWeld HS uplift using Aqua Base 120.

VersiWeld (TPO) Adhered Roofing System FM Approvals

FM Class 1A-90 Ratings

Base Layer Insulation Mechanically Fastened;

Top Layer of Insulation Attached with OlyBond 500 BA Insulation Adhesive (1)

Deck Type	Insulation	Maximum Slope		
		VersiWeld or Spectro-Weld	VersiWeld Plus	VersiWeld HS
New Construction or Tearoff: Steel (Min. 22 gauge) Wood (2) Tectum (3) Gypsum (4) (Tearoff Only)	Base layer of 1/2" thick Dens-Deck Prime or Securock (5) or FM approved Polyiso insulation mechanically fastened to the deck per standard FM Class 1-90 requirements (including enhancements at perimeters and corners).	VersiWeld Bonding Adhesive/Low VOC Bonding Adhesive (VW/LV) 1-1/2" with top layer of Versico Recovery Board, Dens-Deck Prime or Securock Aqua Base 120 1" with top layer of Versico Recovery Board, Dens-Deck Prime or Securock	(VW/LV) 3/4" with top layer of Versico Recovery Board, Dens-Deck Prime or Securock Aqua Base 120 1" with top layer of Versico Recovery Board, Dens-Deck Prime or Securock	(VW/LV) 1-1/2" with top layer of Versico Recovery Board, Securock or 3.5" Dens-Deck Prime Aqua Base 120 1" with top layer of Versico Recovery Board, Securock or 3" with Dens-Deck Prime
	Top Layer of minimum 1/2" thick Versico Recovery Board, 1/4" thick Dens-Deck Prime, 1/4" thick Securock or FM Approved Polyiso (See Page 19) secured over base layer with OlyBond 500 BA Adhesive	(VW/LV) 1/2" with top layer of Polyiso Aqua Base 120 3/4" with top layer of Polyiso	(VW/LV) 1/4" with top layer of Polyiso Aqua Base 120 3/4" with top layer of Polyiso	(VW/LV) 1" with top layer of Polyiso Aqua Base 120 3/4" with top layer of Polyiso

Notes:

- (1) OlyBond 500 BA Adhesive shall be applied in accordance with Versico Specifications.
- (2) On FM approved wood decks, a 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 .FM approved. Insulation fasteners must penetrate the deck a minimum of 1-1/2".
- (5) 1/2" thick Dens-Deck, Dens-Deck Prime or Securock must be fastened to the deck at 1 per 2 square feet.

VersiWeld (TPO) Adhered Roofing System FM Approvals

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

Deck Type (2)	Insulation	Insulation Thickness	Maximum Slope		
			VersiWeld or Spectro-Weld	VersiWeld EXTRA	VersiWeld HS
New Construction/ Tearoff: Tectum (2" min. deck thickness) Tearoff: Gypsum (4)	Versico Polyiso MP-H	1.5"-12"	VersiWeld Bonding Adhesive/Low VOC Bonding Adhesive (VW/LV) 1/2" Aqua Base 120 3/4"	(VW/LV) 1/4" Aqua Base 120 3/4"	(VW/LV) 1" Aqua Base 120 3/4"
	Versico Recovery Board Min. 1/2" Versico Recovery Board, Min. 1/4" Versico Dens-Deck Prime or Min. 1/4" Versico Securock Over: Polyisocyanurate Extruded Polystyrene(3) Expanded Polystyrene(5)	1/2" Min. See Above FM Approved FM Approved	(VW/LV) 1-1/2" Aqua Base 120 1"	(VW/LV) 3/4" Aqua Base 120 1"	(VW/LV) 1-1/2" with Versico Recovery Board, Securock or 3-1/2" with Dens-Deck Prime Aqua Base 120 1-1/2" with Recovery Board, Securock or 3" with Dens-Deck Prime

Notes:

- (1) OlyBond 500 BA Insulation Adhesive is applied in continuous 1/2" 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 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.
- (3) Extruded Polystyrene must be Owens Corning Foamular (Min. 2" thick).
- (4) Existing gypsum deck must be FM approved.
- (5) EPS must be FM approved and manufactured from Western Insulfoam or Western EPS (Min. 2" thick).

VersiWeld (TPO) Adhered Roofing System FM Approvals

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

Deck Type	Insulation Type	Thickness	FM Rating (1)(2)
Structural Concrete (new or tear-off)	Min. 1/4" Dens-Deck/Dens-Deck Prime, Securock or Min. 7/16" OSB over: Dow, Owens Corning or Pactive Extruded Polystyrene FM approved EPS	FM approved	1-495
	Versico Polyiso MP-H Min. 1/4" Dens-Deck/Dens-Deck Prime 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
Minimum 22 gauge, FM approved Steel (new or tear-off)	Base layer of 1/2" Dens-Deck Prime or 1/2" Securock mechanically fastened 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 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. For concrete decks, where a FM rating of 1-150 or less is specified, FM does not require additional extrusions of adhesive at perimeters and corners. However, Versico requires extrusion spacing 6" on center along roof perimeters based on building height. Refer to the applicable Technical Data Bulletin or contact Versico for specific requirements.

NATIONAL, STATE & CITY BUILDING CODE APPROVALS

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

Dade County (South Florida) Approvals

Expire August 31, 2013

Deck Type	Acceptance #
Lightweight Concrete	08-0414.09
Wood	09-1027.08
Steel	09-1027.07
Structural Concrete	10-0322.03
Cementitious Wood Fiber	10-0322.01
Gypsum	10-0322.02
Recover	10-0428.05

Other Approvals

(Using VersiWeld Standard or Plus Reinforced Membrane)

1. **VersiWeld White and Tan TPO Membranes** exceed the requirements for the **U.S.E.P.A. ENERGY STAR® Program** for reflective roofing materials.
2. **VersiWeld TPO Membranes** conform to requirements of the **U.S.E.P.A. Toxic Leachate Test** (40 CFR part 136) performed by an independent analytical laboratory.

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