



Sure-Weld® (TPO) Adhered Roofing Systems
Code Approval Guide
 August, 2020
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CARLISLE SynTec

A Division of Carlisle Construction Materials, Incorporated

CODE APPROVAL GUIDE

August, 2020

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 Carlisle's Sure-Weld™ Adhered and Mechanically-Fastened Roofing Systems. Various independent test laboratory results along with national building code approvals are also identified in this guide. Code approvals available with Carlisle's FleeceBack™, Hot Mopped, Sure Flex and Sure-Seal® Roofing Systems are identified in separately published Code Approval Guides.

Code ratings are categorized by roof system type (Mechanically-Fastened Adhered) and are separated into two sections: UL Approvals and FM Approvals. UL rated roof assemblies are grouped according to deck type (non-combustible or combustible) and are further categorized according to deck type and the specific type of construction (new, recover, tear-off or retrofit).

The listed assemblies contained in the guide are grouped generically based on deck classification. Specific substrate requirements for each Carlisle roofing system can be identified in the respective Carlisle 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 HP Recovery Board/Polyisocyanurate indicates the HP 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 UL AND FM APPROVALS

CODE COMPLIANCE

No table of figures entries found. Approvals (FM) approved assembly is specified. Generally, the Carlisle published specifications reflect the minimum requirements necessary to obtain the applicable Carlisle warranty. Code requirements are not specifically covered in the Carlisle specifications and are considered to be above and beyond the provisions of the Carlisle 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 systems must be UL and/or FM approved and must have been tested together as part of a complete roof 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 Certification Directory (ul.com)*
2. *FM Approvals RoofNav website (roofnav.com).* FM RoofNav assembly numbers can be obtained from this website.

UL, FM Approvals and ANSI/SPRI WD-1 Clarifications/Enhancements

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 use the UL Category Code BXUV.

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 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.

Note: All Carlisle roof systems referenced within this document meet Class 1 construction and Severe Hail (SH) rating.

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 Carlisle.

RECOVERS

Recover approvals in this document are based on the following existing roofing system assumption - the existing Smooth Asphalt BUR, Modified Bitumen or single-ply system was FM Approved at the time of installation.

SUMMARY

Due to complexity of the code documents and the variety of information that must be reviewed, it is important to consult with Carlisle and other respective manufactures 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 Carlisle Technical Representative to ensure compliance with Carlisle's current specification requirements for the issuance of the applicable warranty. However, this inspection is not for the purpose of verifying code compliance.

UL Approval - Non-Combustible - ANSI/UL 790 Spread of Flame Test (Class A)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Non-Combustible: Steel; St. Concrete; Gypsum; Tectum (Min. 2" thick)

System ID	Deck Type	Insulation	Cover Board	Maximum Slope	
				Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS
1	Non-Combustible	InsulBase, SecurShield, SecurShield HD, SecurShield HD Plus or SecurShield HD Composite- any combination, any thickness	N/A	1/2"	1-1/2"
2		Any UL Classified EPS or XPS Insulation, any thickness	Minimum 1/2" SecurShield HD, SecurShield HD Plus or SecurShield HD Composite	1/2"	1/2"
3		Minimum 1" layer of InsulBase, SecurShield, or SecurShield HD Composite over any UL Classified EPS or XPS Insulation, maximum 1.25 pcf, any thickness	N/A	1/2"	1/2"
4		Insulfoam SP or Insulfoam SP over Insulfoam EPS, any thickness and density.	N/A	1"	1"
5		Insulfoam HD Composite or Insulfoam HD Composite over Insulfoam EPS, any thickness and density.	N/A	1/2"	1/2"
6		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Gypsum-Fiber Board	3"	3"
7		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Glass Mat Board	3"	Unlimited
8		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" DensDeck/DensDeck Prime Roof Boards	3" Sure-Weld 2-1/2" Sure-Weld EXTRA	Unlimited
9		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" HP Recovery Board	1-1/2"	1-1/2"
10		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 7/16" APA Rated OSB or Minimum 1-1/2" StormBase	1-1/2"	1-1/2"
11		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" EcoStorm VSH	2-1/2"	2-1/2"
12		Any UL Classified Insulation, any combination, any thickness	Carlisle FR Base Sheet	1"	1"
13	Cellular Lightweight Concrete	N/A	N/A	1-1/2"	1-1/2"
14	Structural (poured-in-place) concrete	N/A	N/A	1-1/2"	1-1/2"

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems

UL Approval - Combustible - ANSI/UL 790 Spread of Flame Test (Class A)

Membrane Type:
 .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane
 Sure-Weld FleeceBACK FR 150

Combustible: 7/16-in. (minimum) thick non-veneer APA-rated sheathing (oriented strand board panels, structural particleboard panels, composite panels or waferboard panels); 15/32-in. (minimum) thick plywood 3/4 in. (minimum) wood; Tectum (less than 2" thick)

System ID	Thermal Barrier/Base Sheet	Insulation	Cover Board	Maximum Slope		
				Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS	Sure-Weld FleeceBACK FR
Combustible - ANSI/UL 790 Spread of Flame Test-Class A						
1	Minimum 1/4" SECUROCK Gypsum Fiber or Glass Mat Roof Boards (1)	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/2"	1-1/2"	N/A
2	Minimum 1/4" DensDeck/DensDeck Prime Roof Boards (1)	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/2"	1-1/2"	N/A
3	N/A	Minimum 3" layer or two layers of 1-1/2" SecurShield or SecurShield HD Composite. (1)(3)	N/A	1/2"	1/2"	N/A
4	N/A	Minimum 2-1/2" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (1)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	N/A
5	Carlisle FR Base Sheet	Minimum 1.4" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (1)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	N/A
6	N/A	Minimum 4" layer of any UL Classified EPS Insulation. (1)(6)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	N/A
7	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 3/8" SECUROCK® Gypsum Fiber Roof Board (1)	3"	3"	N/A
8	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" SECUROCK® Gypsum Fiber Roof Board (1)	3"	3"	N/A
9	One Ply of Type G2	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (1)	3"	3"	N/A
10	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Glass Mat Roof Board (1)	3"- Sure-Weld 2-1/2"- Sure-Weld EXTRA	Unlimited	N/A
11	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" DensDeck/DensDeck Prime Roof Boards (1)	3"- Sure-Weld 2-1/2"- Sure-Weld EXTRA	Unlimited	N/A
12	Three layers of Carlisle FR Base Sheet	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness (OPTIONAL)	N/A	1/2"	1/2"	N/A
13	N/A	Any UL Classified Polyiso Insulation, any thickness (OPTIONAL)	SecurShield HD (all insulation and roof deck joints must be staggered 12")	1/2"	1/2"	N/A
14	N/A	Any UL Classified Polyiso Insulation, any thickness (OPTIONAL)	Minimum 1" SecurShield, SecurShield NH or SecurShield HD Composite. (1)(3) (all insulation and roof deck joints must be staggered 12")	1/2"	1/2"	N/A
15	Carlisle FR Base Sheet 1S (Optional)	Minimum 1" layer of SecurShield, SecurShield NH or SecurShield HD Composite over a minimum 3-1/2" layer of any UL Classified EPS Insulation. (1)(3) (all insulation and roof deck joints must be staggered 12")	N/A	1/2"	1/2"	N/A

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems

UL Approval - Combustible - ANSI/UL 790 Spread of Flame Test (Class B)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Combustible: 7/16-in. (minimum) thick non-veneer APA-rated sheathing (oriented strand board panels, structural particleboard panels, composite panels or waferboard panels); 15/32-in. (minimum) thick plywood 3/4 in. (minimum) wood; Tectum (less than 2" thick)

System ID	Thermal Barrier/Base Sheet	Insulation	Cover Board (2)	Maximum Slope	
				Sure-Weld, Sure-Weld EXTRA or Spetro-Weld	Sure-Weld HS
Combustible - ANSI/UL 790 Spread of Flame Test-Class B					
1	N/A	Minimum 1.9" layer of SecurShield or SecurShield HD Composite. (7)(8)	N/A	1/2"	1/2"
2	N/A	Minimum 1.4" layer of any UL Classified Carlisle Polyisocyanurate Insulation. (7)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"
3	One Layer of Carlisle FR Base Sheet	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. (OPTIONAL)	N/A	1/2"	1/2"
4	Inverted G3 cap sheet	N/A	N/A	1/2"	1/2"

Sure-Weld®(TPO) Mechanically-Fastened or Induction Welding Roofing Systems

UL Approval - Combustible and Non-Combustible - ANSI/UL 790 Spread of Flame Test (Class C)

Membrane Type:
 .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Combustible: 7/16-in. (minimum) thick non-veneer APA-rated sheathing (oriented strand board panels, structural particleboard panels, composite panels or waferboard panels); 15/32-in. (minimum) thick plywood 3/4 in. (minimum) wood; Tectum (less than 2" thick)

Non-Combustible: Steel, St. Concrete, Gypsum or Tectum (Min. 2" thick)

System ID	Thermal Barrier/Base Sheet	Insulation	Cover Board	Maximum Slope	
				Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS
Combustible - ANSI/UL 790 Spread of Flame Test-Class C					
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Isulation	N/A	Unlimited	Unlimited
2	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Isulation	Minimum 1/2" EcoStorm VSH	1/2"	1/2"
Non-Combustible - ANSI/UL 790 Spread of Flame Test-Class C					
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Isulation	N/A	Unlimited	Unlimited

**Existing UL Rating Retained
 Non-Combustible or Combustible
 (Directly over existing Class A, B or C)**

System ID	Deck Type	Existing Substrate	Insulation	Maximum Slope	
				Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS
1	N/A	Direct application over Smooth Asphalt BUR (Type III or IV Asphalt)	N/A	1/2"	1/2"
2	N/A	Direct application over Mineral Surfaced Cap Sheet	N/A	1/2"	1/2"
3	N/A	Direct application over Modified Bitumen	N/A	1/2"	1/2"
4	N/A	Direct application over approved single-ply	N/A	1/2"	1/2"
5	N/A	Carlisle FR Base Sheet IS 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"
6	N/A	Existing minimum Class C smooth or gravel surface (gravel maintained) DUR, mineral cap sheet or Modified Bitumen	Max. 1" Insulfoam R-Tech or SP	1/2"	1/2"

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems
 FM Approvals and Equivalencies

FM Approval - Field Sheet Securement Criteria For Insulbase and SecurShield
 (Please see notes 10, 11, 12 and 15)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width (11)	Fastener/Plate (12)	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) (13) or Structural Concrete	
			Sure-Weld	Sure-Weld EXTRA	Sure-Weld	Sure-Weld EXTRA
4 Feet (14)	HP-X /Piranha	6"	1-165 136102-0-0	1-165 136102-0-0	1-165 136102-0-0	1-165 136102-0-0
		12"	1-105 136101-0-0	1-105 136101-0-0	-	-
6 Feet	HP-X/Piranha	12"	1-90 392183-0-0	1-90 392183-0-0	-	-
8 Feet	HP-X /Piranha	6"	1-75 350392-0-0	1-75 350392-0-0	1-135 12496-0-0	1-135 12496-0-0
		12"	1-75 392184-0-0	1-75 392184-0-0	1-90 12562-0-0	1-90 12562-0-0
10 Feet	HP-X /Piranha	6"	-	-	1-90 107469-0-0	1-90 107469-0-0
		12"	-	-	1-75 107470-0-0	1-75 107470-0-0
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-90 12788-0-0	1-90 12788-0-0
12 Feet	HP-X /Piranha	6"	-	-	-	-
		12"	-	-	-	-
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-60 141023-0-0	1-60 141023-0-0

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems
 FM Approvals and Equivalencies

FM Approval - Field Sheet Securement Criteria For Insulbase and SecurShield Recover
 (Please see notes 10, 11, 12 and 15)

Membrane .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
Type: .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width (11)	Fastener/Plate (12)	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) (13) or Structural Concrete	
			Sure-Weld	Sure-Weld EXTRA	Sure-Weld	Sure-Weld EXTRA
4 Feet (14)	HP-X /Piranha	6"	1-165	1-165	1-165	1-165
		12"	1-105	1-105	-	-
6 Feet	HP-X/Piranha	12"	1-90 392185-0-0	1-90 392185-0-0	-	-
8 Feet	HP-X /Piranha	6"	1-75	1-75	1-135	1-135
		12"	1-75 392186-0-0	1-75 392186-0-0	1-90	1-90
10 Feet	HP-X /Piranha	6"	-	-	1-90	1-90
		12"	-	-	1-75	1-75
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-90	1-90
12 Feet	HP-X /Piranha	6"	-	-	-	-
		12"	-	-	-	-
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-60	1-60

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems
 FM Approvals and Equivalencies

FM Approval - Field Sheet Securement Criteria For SecurShield HD

(Please see notes 10, 11, 12 and 15)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width (11)	Fastener/Plate (12)	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) (13) or Structural Concrete	
			Sure-Weld	Sure-Weld EXTRA	Sure-Weld	Sure-Weld EXTRA
4 Feet (14)	HP-X /Piranha	6"	1-165	-	1-165	-
		12"	1-105	-	-	-
6 Feet	HP-X/Piranha	12"	1-90 393936-0-0	1-90 393936-0-0	-	-
8 Feet	HP-X /Piranha	6"	1-75 332741-0-0	1-75 332741-0-0	1-135	1-135
		12"	1-75 393938-0-0	1-75 393938-0-0	1-90	1-90
10 Feet	HP-X /Piranha	6"	-	-	1-75 330173-0-0	1-75 330173-0-0
		12"	-	-	1-75	1-75
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-90	1-90
12 Feet	HP-X /Piranha	6"	-	-	-	-
		12"	-	-	-	-
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-60 282218-0-0	1-60 282218-0-0

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems
 FM Approvals and Equivalencies

FM Approval - Field Sheet Securement Criteria For SecurShield HD Recover
 (Please see notes 10, 11, 12 and 15)

Membrane .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
Type: .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width (11)	Fastener/Plate (12)	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) (13) or Structural Concrete	
			Sure-Weld	Sure-Weld EXTRA	Sure-Weld	Sure-Weld EXTRA
4 Feet (14)	HP-X /Piranha	6"	1-165	1-165	1-165	1-165
		12"	1-105	1-105	-	-
6 Feet	HP-X/Piranha	12"	1-90 392185-0-0	1-90 392185-0-0	-	-
8 Feet	HP-X /Piranha	6"	1-75	1-75	1-135	1-135
		12"	1-75 392186-0-0	1-75 392186-0-0	1-90	1-90
10 Feet	HP-X /Piranha	6"	-	-	1-90	1-90
		12"	-	-	1-75	1-75
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-90 12800-0-0	1-90 12800-0-0
12 Feet	HP-X /Piranha	6"	-	-	-	-
		12"	-	-	-	-
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-60	1-60

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems
 FM Approvals and Equivalencies

FM Approval - Field Sheet Securement Criteria For Dens-Deck/Securock

(Please see notes 10, 11, 12 and 15)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width (11)	Fastener/Plate (12)	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) (13) or Structural Concrete	
			Sure-Weld	Sure-Weld EXTRA	Sure-Weld	Sure-Weld EXTRA
4 Feet (14)	HP-X /Piranha	6"	1-165 136104-0-0	1-165 136108-0-0	1-165 136104-0-0	1-165 136108-0-0
		12"	1-105 136103-0-0	1-105 136107-0-0	-	-
6 Feet	HP-X/Piranha	12"	1-90 393937-0-0	1-90 392179-0-0	-	-
8 Feet	HP-X /Piranha	6"	1-75 349303-0-0	-	1-135 12511-0-0	1-135 12511-0-0
		12"	1-75 392180-0-0	1-75 393939-0-0	1-90 12565-0-0	1-90 12565-0-0
10 Feet	HP-X /Piranha	6"	-	-	1-90	1-90
		12"	-	-	1-75 12546-0-0	1-75 12546-0-0
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-90 12792-0-0	1-90 12792-0-0
12 Feet	HP-X /Piranha	6"	-	-	-	-
		12"	-	-	-	-
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-60 140537 -0-0	1-60 140537 -0-0

Sure-Weld® (TPO) Mechanically-Fastened or Induction Welding Roofing Systems
 FM Approvals and Equivalencies

FM Approval - Field Sheet Securement Criteria For HP Recovery Board

(Please see notes 10, 11, 12 and 15)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width (11)	Fastener/Plate (12)	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) (13) or Structural Concrete	
			Sure-Weld	Sure-Weld EXTRA	Sure-Weld	Sure-Weld EXTRA
4 Feet (14)	HP-X /Piranha	6"	1-165	1-165	1-165	1-165
		12"	1-105 136113-0-0	1-105 136113-0-0	-	-
6 Feet	HP-X/Piranha	12"	1-90	1-90	-	-
8 Feet	HP-X /Piranha	6"	1-75 350380-0-0	1-75	1-135	1-135
		12"	1-75	1-75	1-90	1-90
10 Feet	HP-X /Piranha	6"	-	-	1-90	1-90
		12"	-	-	1-75	1-75
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-90	1-90
12 Feet	HP-X /Piranha	6"	-	-	-	-
		12"	-	-	-	-
	HP-Xtra /Piranha Xtra	6"	-	-	-	-
		12"	-	-	1-60 140537-0-0	1-60 140537-0-0

FM Approvals – Induction Welding Grid Securement

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Deck Type	Fastener/Plate	Rating	Fasteners per 4' x 8' Board Field	Insulation	RhinoBond	IsoWeld		
Min. 22 gauge Grade C Steel Deck	HP-X/Induction Plate	1-90	6	SecurShield HD	312416-0-0			
				Insulbase/SecurShield	222555-0-0	378853-0-0		
				DensDeck/Securock	312399-0-0			
	HP-X/Induction Plate	1-105 (RhinoBond) 1-90 (IsoWeld)	8	8	SecurShield HD	312412-0-0		
					Insulbase/SecurShield	222553-0-0	378881-0-0	
					DensDeck/Securock	312325-0-0		
	HP-X/IsoWeld	1-150	10	10	SecurShield HD	N/A		
					Insulbase/SecurShield	N/A	378890-0-0	
					DensDeck/Securock	N/A		
	HP-X/RhinoBond	1-165	16	16	SecurShield HD	387011-0-0		
					Insulbase/SecurShield	386367-0-0		
					DensDeck/Securock	387010-0-0		
Min. 22 gauge Grade E Steel Deck	HP-X / RhinoBond	1-120	8	SecurShield HD	312414-0-0			
				Insulbase/SecurShield	222375-0-0			
				DensDeck/Securock	312376-0-0			
	HP-X/Induction Plate	1-195	16	16	SecurShield HD	387159-0-0		
					Insulbase/SecurShield	387161-0-0	441954-0-0	
					DensDeck/Securock	387158-0-0		
Concrete	HD 14-10/Induction Plate	1-90	6	SecurShield HD	312579-0-0			
				Insulbase/SecurShield		378850-0-0		
				DensDeck/Securock	312577-0-0			
		1-105 (RhinoBond) 1-90 (IsoWeld)	8	8	8	SecurShield HD		
						Insulbase/SecurShield	311967-0-0	378839-0-0
						DensDeck/Securock		
		1-120	8	8	8	SecurShield HD	312569-0-0	
						Insulbase/SecurShield		
						DensDeck/Securock	312567-0-0	
		1-195	16	16	16	SecurShield HD	387015-0-0	
						Insulbase/SecurShield	386369-0-0	442231-0-0
						DensDeck/Securock	387014-0-0	

FM Approvals - Induction Welding Linear Securement

Deck Type	Fastener	Plate	Row Spacings	Fastener Spacing in Rows	Rating
Min. 22 gauge Grade E Steel Deck	HP-X	RhinoBond	5'	12"	1-75 323353-0-0
			5'	6"	1-135 323355-0-0
			10'	6"	1-75 323398-0-0

90 psf Uplift Resistance Test (1-90 Equivalency on 12' x 24' Table)

Wind uplift testing has been completed in accordance with the FM 4470 Test Procedure which is 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 HP-X Fasteners and Piranha Plates for membrane securement. The Performance Test Report is on file and available from Carlisle.

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane .

Deck Type	Field Membrane Width	Fastener Spacing	Insulation Type and Thickness	Insulation Fastening
Min. 22 gauge	10' See notes 16 and 17.	12"	Per Carlisle Specification	Per Carlisle Specification

FM Class A Roof Deck Construction and Insulation Approvals (18)

Membrane Type:
 .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Deck Type	Insulation (19)	Insulation Thickness	Maximum Slope for ASTM E-108 Class "A" Rating	
			Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS
New Construction/Tearoff: Steel (Minimum 22 gauge) Structural Concrete Retrofit (No Tearoff) (21): Structural Concrete	Carlisle HP Recovery Board	1/2" Min.	1-1/2" (with Recovery Board or Securock overlay) 5" (with DensDeck overlay and Sure-Weld Standard) 3" (with DensDeck overlay and Sure-Weld EXTRA)	2" (with Recovery Board or Securock overlay) 5" (with DensDeck overlay)
	Carlisle HP Recovery Board (min. 1/2"), DensDeck (min. 1/4") or Securock (min. 1/4") Over: FM Approved Insulation (20)	Refer to FM RoofNav website		
	Carlisle Polyisocyanurate InsulBase or SecurShield	1-1/2"-12"	1/2"	1-1/2"
	Carlisle SecurShield HD or SecurShield HD Plus Over: FM Approved Insulation (20)	1/2" / Refer to FM RoofNAV website		
Retrofit (No Tearoff) (21): Steel (Minimum 22 gauge)	Carlisle HP Recovery Board	1/2"-1"	1-1/2"	2"
	Carlisle Polyisocyanurate InsulBase or SecurShield	1" Max.	1/2"	1-1/2"
	Carlisle SecurShield HD or SecurShield HD Plus	1/2"		

Sure-Weld® (TPO) Mechanically Fastened or Induction Welding Roofing Systems

ANSI-SPRI WD-1/ASCE 7-10 Approvals

Membrane Type:
 .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Width	Fastener/Plate	Spacing	Min. 22 Gauge Grade C Steel (33 ksi)		Min. 22 Gauge Grade E Steel (80 ksi) or Structural Concrete		Wood Deck	Min. 18 Gauge Steel
			Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS	Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Sure-Weld HS		
4 Feet	HP-X /Piranha	6"	1-165	-	1-165	-	-	-
		12"	1-105	-	1-105	-	-	-
6 Feet	HPX/Piranha	12"	1-90	-	-	-	-	-
8 Feet	HP-X /Piranha	6"	1-105	-	1-135	1-120	1-90	-
		12"	1-75	1-60	1-90	1-75	1-75	-
	HP-Xtra /Piranha Xtra	12"	1-90	1-75	1-90	1-75	-	-
10 Feet	HP-X /Piranha	6"	1-105	1-90	1-120	1-75	-	-
		9"	1-75	1-60	1-90	1-90	-	-
		12"	1-60	-	1-75	1-75	-	1-90
	HP-Xtra /Piranha Xtra	6"	1-120	-	1-120	-	-	-
		12"	1-60	-	1-90*	-	-	-
12 Feet	HP-X /Piranha	6"	1-105	-	1-120	1-75	-	-
		9"	1-75	1-60	1-75	-	-	-
		12"	1-60	-	1-60	1-60	-	-
	HP-Xtra /Piranha Xtra	6"	1-120	-	1-120	-	-	-
		9"	1-75	-	1-75	-	-	-
		12"	1-60	-	1-60	-	-	-

*Max 1-75 using Spectro-Weld

Sure-Weld® 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 Sure-Weld™ Mechanically-Fastened Roofing System over non-combustible decks depending on the membrane selected. [Click here for ratings.](#)

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.

FM Approvals – Metal Retrofit

Purlin Spacing	Fastener/Plate	Spacing	Coverboard	Rating	Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Rating	Sure-Weld HS
60 Inches	HP Purlin/Piranha	6"	HD	1-135	272454-0-0	1-120	281696-0-0
			Recovery board	1-135	272491-0-0	1-120	272501-0-0
			Insulbase				
			DD/SR	1-135	272456-0-0	1-120	272502-0-0
		12"	HD	1-120	393577-0-0	1-75	281716-0-0
			Recovery board	1-60	242483-0-0	1-75	272504-0-0
			Insulbase	1-120	399954-0-0		
			DD/SR	1-75	272513-0-0	1-75	272504-0-0
120 Inches	HP Purlin/Piranha	6"	HD	1-120	393574-0-0	1-75	281692-0-0
			Recovery board	1-105	272661-0-0	1-75	272497-0-0
			Insulbase	1-120	399955-0-0		
			DD/SR	1-120	272710-0-0	1-75	272498-0-0
		12"	HD	1-60	393572-0-0	1-60	281694-0-0
			Recovery board	1-60	272632-0-0	1-60	272499-0-0
			Insulbase	1-60	399950-0-0	1-60	
			DD/SR	1-60	272642-0-0	1-60	379730-0-0
138 inches	HP Purlin/Piranha	6"	HD	1-120	393574-0-0	1-75	281692-0-0
			Recovery board	1-105	272661-0-0	1-75	272497-0-0
			Insulbase	1-120	399955-0-0		
			DD/SR	1-105	272663-0-0	1-75	272498-0-0

FM Approvals – Metal Retrofit Pressure-Sensitive RUSS Strip

Purlin Spacing	Fastener/Plate	Spacing	Coverboard	Rating	Sure-Weld, Sure-Weld EXTRA or Spectro-Weld	Rating	Sure-Weld HS
60 Inches	HP Purlin/Piranha	12"	HD	1-120	272568-0-0	1-75	281720-0-0
			Recovery board			1-120	272587-0-0
			Insulbase				
			DD/SR	1-120	272568-0-0	1-120	379735-0-0
120 Inches	HP Purlin/Piranha	6"	HD			1-120	281719-0-0
			Recovery board			1-120	272578-0-0
			Insulbase				
			DD/SR	1-120	272563-0-0	1-120	212578-0-0
120 Inches	HP Purlin/Piranha	12"	HD			1-75	281722-0-0
			Recovery board			1-75	379736-0-0
			Insulbase				
			DD/SR	1-75	272576-0-0	1-75	379736-0-0

FM Approvals – Induction Welding Metal Retrofit

Deck Type	Fastener	Plate	Row Spacings	Fastener Spacing in Rows	Rating	Coverboard	Rating	RoofNAV Number
Structural Steel Purlin (Metal Retrofit)	HP Purlin	RhinoBond	5'	12"	1-75	HD	1-75	408547-0-0
						Recovery board		373502-0-0
						Insulbase		373503-0-0
						DD/SR		373500-0-0
			5'	6"	1-135	HD	1-135	408560-0-0
						Recovery board		373506-0-0
						Insulbase		373507-0-0
						DD/SR		373504-0-0
			10'	6"	1-75	HD	1-75	408558-0-0
						Recovery board		373499-0-0
						Insulbase		373497-0-0
						DD/SR		373496-0-0

Sure-Weld® (TPO) Adhered Roofing Systems

UL Approval - Non-Combustible - ANSI/UL 790 Spread of Flame Test (Class A)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Non-Combustible: Steel; St. Concrete; Gypsum; Tectum (Min. 2" thick)

System ID	Deck Type	Insulation	Cover Board	Maximum Slope		
				Sure-Weld or Spectro-Weld	Sure-Weld HS	Sure-Weld EXTRA
1	Non-Combustible	InsulBase, SecurShield, SecurShield HD, SecurShield HD Plus or SecurShield HD Composite-any combination, any thickness	N/A	1/4"	1/2"	1/4"
2		Any UL Classified EPS or XPS Insulation, any thickness	Minimum 1/2" SecurShield HD, SecurShield HD Plus or SecurShield HD Composite	1/4"	1/2"	1/4"
3		Minimum 1" layer of InsulBase, SecurShield, or SecurShield HD Composite over any UL Classified EPS or XPS Insulation, maximum 1.25 pcf, any thickness	N/A	1/4"	1/2"	1/4"
4		Insulfoam HD Composite or Insulfoam HD Composite over Insulfoam EPS, any thickness and density.	N/A	1/4"	1/2"	1/4"
5		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Gypsum-Fiber	3"	3"	2-1/2" 3"-CGIII
6		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" DensDeck Prime Roof Boards	3"	Unlimited	2-1/2" 3"-CGIII
7		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" HP Recovery Board	1-1/2" 1"-CGIII	1"	1/4" 1"-CGIII
8		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 7/16" APA Rated OSB or Minimum 1-1/2" StormBase	1-1/2" 1"-CGIII	1"	1/4" 1"-CGIII
9		Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" EcoStorm VSH	2-1/2"	2-1/2"	2-1/2"
10	Cellular Lightweight Concrete	N/A	N/A	1-1/2" 1"-CGIII	1"	1/4" 1"-CGIII
11	Structural (poured-in-place) concrete	N/A	N/A	1-1/2" 1"-CGIII	1"	1/4" 1"-CGIII

Sure-Weld® (TPO) Adhered Roofing Systems

UL Approval - Combustible - ANSI/UL 790 Spread of Flame Test (Class A)

Membrane .045" or .060" Sure-Weld Standard Reinforced Membrane
Type: .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Combustible: 7/16-in. (minimum) thick non-veneer APA-rated sheathing (oriented strand board panels, structural particleboard panels, composite panels or waferboard panels); 15/32-in. (minimum) thick plywood 3/4 in. (minimum) wood; Tectum (less than 2" thick)

System ID	Thermal Barrier/ Base Sheet	Insulation	Cover Board (26)	Maximum Slope		
				Sure-Weld or Spectro-Weld	Sure-Weld HS	Sure-Weld EXTRA
Combustible - ANSI/UL 790 Spread of Flame Test-Class A						
1	Minimum 1/4" SECUROCK® Gypsum Fiber or Glass Mat Roof Boards (25)	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/4"	1/2" 1/4"-CGIII	1/4"
2	Minimum 1/4" DensDeck/DensDeck Prime Roof Boards (25)	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/4"	1/2" 1/4"-CGIII	1/4"
3	N/A	Minimum 3" layer or two layers of 1-1/2" SecurShield or SecurShield HD Composite. (25)(27)	N/A	1/4"	1/2" 1/4"-CGIII	1/4"
4	N/A	Minimum 2-1/2" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (25)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/4"	1/2" 1/4"-CGIII	1/4"
5	Carlisle FR Base Sheet	Minimum 1-1/4" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (25)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/4"	1/2" 1/4"-CGIII	1/4"
6	N/A	Minimum 4" layer of any UL Classified EPS Insulation. (25)(30)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/4"	1/2" 1/4"-CGIII	1/4"
7	N/A	Minimum 1-1/2" layer of Insulfoam HD Composite over a minimum 3" layer of Insulfoam EPS. (25)(30)	N/A	1/4"	1/2" 1/4"-CGIII	1/4"
8	N/A	Minimum 2" layer of Insulfoam HD Composite over a minimum 2-1/2" layer of Insulfoam EPS. (25)(30)	N/A	1/4"	1/2" 1/4"-CGIII	1/4"
9	N/A	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (25)	3"	3"	2-1/2" 3"-CGIII
10	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 3/8" SECUROCK® Gypsum Fiber Roof Board (25)	3"	3"	2-1/2" 3"-CGIII
11	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" SECUROCK® Gypsum Fiber Roof Board (25)	3"	3"	2-1/2" 3"-CGIII
12	One Ply of Type G2	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (25)	3"	3"	2-1/2" 3"-CGIII
13	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" DensDeck Prime Roof Board (25)	3"	Unlimited	2-1/2" 3"-CGIII
14	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	SecurShield HD FR	1/4"	1/2" 1/4"-GCIII	1/4"
15	N/A	Minimum 3.5" Layer of any UL Classified EPS Insulation (OPTIONAL)	SecurShield HD FR	1/4"	1/2" 1/4"-GCIII	1/4"
16	N/A	Any UL Classified Polyiso Insulation, any thickness (OPTIONAL)	Minimum 1" SecurShield, SecurShield NH or SecurShield HD Composite. (1)(3) (all insulation and roof deck joints must be staggered 12")	1/2"	1/2"	1/4"
17	Carlisle FR Base Sheet 1S (Optional)	Minimum 1" layer of SecurShield, SecurShield NH or SecurShield HD Composite over a minimum 3-1/2" layer of any UL Classified EPS Insulation. (1)(3) (all insulation and roof deck joints must be staggered 12")	N/A	1/2"	1/2"	1/4"

Sure-Weld® (TPO) Adhered Roofing Systems

UL Approval - Combustible - ANSI/UL 790 Spread of Flame Test (Class B)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Combustible: 7/16-in. (minimum) thick non-veneer APA-rated sheathing (oriented strand board panels, structural particleboard panels, composite panels or waferboard panels); 15/32-in. (minimum) thick plywood 3/4 in. (minimum) wood; Tectum (less than 2" thick)

System ID	Thermal Barrier/Base Sheet	Insulation	Cover Board	Maximum Slope		
				Sure-Weld or Spectro-Weld	Sure-Weld HS	Sure-Weld EXTRA
Combustible - ANSI/UL 790 Spread of Flame Test-Class B						
1	N/A	Minimum 1.9" layer of SecurShield or SecurShield HD Composite. (31)(32)	N/A	1/4"	1/2" 1/4"-CGIII	1/4"
2	N/A	Minimum 1.4" layer of any UL Classified Carlisle Polyisocyanurate Insulation. (31)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/4"	1/2" 1/4"-CGIII	1/4"
3	One Layer of Carlisle FR Base Sheet	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/4"	1/2" 1/4"-CGIII	1/4"

Sure-Weld® (TPO) Adhered Roofing Systems

UL Approval - Combustible and Non-Combustible - ANSI/UL 790 Spread of Flame Test (Class C)

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Combustible: 7/16-in. (minimum) thick non-veneer APA-rated sheathing (oriented strand board panels, structural particleboard panels, composite panels or waferboard panels); 15/32-in. (minimum) thick plywood 3/4 in. (minimum) wood; Tectum (less than 2" thick)

Non-Combustible: Steel, St. Concrete, Gypsum or Tectum (Min. 2" thick)

System ID	Thermal Barrier/Base Sheet	Insulation	Cover Board	Maximum Slope		
				Sure-Weld or Spectro-Weld	Sure-Weld HS	Sure-Weld EXTRA
Combustible - ANSI/UL 790 Spread of Flame Test-Class C						
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Isulation	N/A	Unlimited	Unlimited	Unlimited
2	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Isulation	Minimum 1/2" EcoStorm VSH	1/2"	1/2"	1/2"
Non-Combustible - ANSI/UL 790 Spread of Flame Test-Class C						
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Isulation	N/A	Unlimited	Unlimited	Unlimited

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD	12 (2.67 sq. ft)	1-75	295747-0-0	295747-0-0	295747-0-0
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD	16 (2 sq. ft)	1-90	385909-0-0	-	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD	8 (4 sq. ft.) AccuTrac Plates only	1-60	454501-0-0 60 mil only	454502-0-0	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD	11 (2.9 sq. ft.) AccuTrac Plates only	1-90	454506-0-0 60 mil only	454507-0-0	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-90	353874-0-0	353916-0-0 (SWBA)	353918-0-0 (SWBA)
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" SecurShield HD	6" ribbons of FAST	1-90	353875-0-0	353917-0-0 (LVOC)	353919-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-105	325939-0-0 (LVOC)	326014-0-0 (LVOC)	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-150	325941-0-0 (SWBA)	326019-0-0 (SWBA)	-
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	1/2" SecurShield HD	12" ribbons of FAST	1-120	454516-0-0	454520-0-0	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-135	454518-0-0	454524-0-0	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-225	454538-0-0	454540-0-0	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-165	325940-0-0 (LVOC)	326017-0-0 (LVOC)	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	1/2" SecurShield HD over InsulBase Polyiso	6" ribbons FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" SecurShield HD over InsulBase Polyiso	6" ribbons of FAST	1-90	404100-0-0	404113-0-0	404114-0-0
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" SecurShield HD over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-225	381226-0-0	382997-0-0	382998-0-0
3/4" Optim-R	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-120	438104-0-0	438107-0-0 (SWBA)	438108-0-0
Min. 2" Insulfoam EPS	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-225	429710-0-0	429711-0-0	-
Min. 1-1/2" InsulBase Polyiso	8 (4 sq. ft)	1/2" SecurShield HD	6" ribbons of FAST	1-90	423342-0-0	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-90	423338-0-0	-	423333-0-0
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
3/4" Optim-R	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-165 702	437589-0-0	437591-0-0 (SWBA)	437592-0-0
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-240	364507-0-0 (SWBA)	364508-0-0 (SWBA)	364509-0-0 (SWBA)

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Min. 2" Insulfoam EPS	12" ribbons of FAST	1/2" SecurShield HD or SecurShield HD Plus	12" ribbons of FAST	1-255	429712-0-0	429713-0-0	429714-0-0
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-465	-	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso or Min. 1-1/2" SecurShield	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-240	394501-0-0	394540-0-0 (SWBA)	392967-0-0 (SWBA)
				1-225	-	394536-0-0	-
				1-195	394514-0-0	394538-0-0	394548-0-0
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-465	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-90	-	-	-
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-90	-	-	-
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	1/2" SecurShield HD	12 (2.67 sq. ft)	1-75	-	-	-
FM Approved	Loose laid	1/2" SecurShield HD	16 (2 sq. ft)	1-90	-	-	-
-	-	1/2" SecurShield HD	12 (2.67 sq. ft)	1-75	-	-	-
-	-	1/2" SecurShield HD	16 (2 sq. ft)	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
-	-	1/2" SecurShield HD	12 (2.67 sq. ft)	1-75	299384-0-0	299384-0-0	299384-0-0
-	-	1/2" SecurShield HD	16 (2 sq. ft)	1-90	427475-0-0	427485-0-0	427477-0-0
-	-	1/2" SecurShield HD	6" ribbons of FAST	1-150	430659-0-0	430661-0-0	-
Concrete Deck							
-	-	1/2" SecurShield HD	6" ribbons of FAST	1-150	389428-0-0	389430-0-0	389429-0-0
Gypsum Deck							
-	-	1/2" SecurShield HD	6" ribbons of FAST	1-90	386254-0-0	386255-0-0	-

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Plus Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD Plus	8 (4 sq. ft)	1-90	325933-0-0	326002-0-0	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD Plus	18 (1.8 sq. ft)	1-120	325934-0-0	326005-0-0 (LVOC)	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD Plus	24 (1.33 sq. ft)	1-150	325936-0-0 (SWBA)	326024-0-0 (SWBA)	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" SecurShield HD Plus	24 (1.33 sq. ft)	1-225 (35)	325937-0-0	326010-0-0 (LVOC)	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	10 (3.2 sq. ft.)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-90	353874-0-0	353916-0-0 (SWBA)	353918-0-0 (SWBA)
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-90	353875-0-0	353917-0-0 (LVOC)	353919-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-105	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD Plus	4" ribbons of FAST	1-150	-	-	-
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	1/2" SecurShield HD	12" ribbons of FAST	1-120	-	-	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-135	-	-	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-225	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD Plus	4" ribbons of FAST	1-165	-	-	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	1/2" SecurShield HD Plus over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" SecurShield HD Plus over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" SecurShield HD Plus over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-225	381226-0-0	382997-0-0	382998-0-0
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1/2" InsulBase Polyiso or Min. 1-1/2" SecurShield	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-255	364507-0-0 (SWBA)	364508-0-0 (SWBA)	364509-0-0 (SWBA)
					364523-0-0 (LVOC)	-	-
Min. 2" Insulfoam EPS	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-225	429715-0-0	429716-0-0	429717-0-0

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Plus Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD Plus	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD Plus	6" ribbons of FAST	1-465	-	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso or Min. 1-1/2" SecurShield	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-240	394501-0-0	394540-0-0 (SWBA)	392967-0-0 (SWBA)
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD Plus	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD Plus	6" ribbons of FAST	1-465	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-90	-	-	-
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-90	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	1/2" SecurShield HD Plus	12 (2.67 sq. ft)	1-75	-	-	-
FM Approved	Loose laid	1/2" SecurShield HD Plus	16 (2 sq. ft)	1-90	-	-	-
-	-	1/2" SecurShield HD Plus	12 (2.67 sq. ft)	1-75	-	-	-
-	-	1/2" SecurShield HD Plus	16 (2 sq. ft)	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Plus Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
-	-	1/2" SecurShield HD Plus	18 (1.8 sq. ft)	1-120	466155-0-0 (LVOC)	466156-0-0 (LVOC)	-
-	-	1/2" SecurShield HD Plus	18 (1.8 sq. ft)	1-120	466157-0-0 (CAV-GRIP III)	-	-
-	-	1/2" SecurShield HD Plus	24 (1.33 sq. ft)	1-225	466158-0-0 (LVOC)	466159-0-0 (LVOC)	-
-	-	1/2" SecurShield HD Plus	24 (1.33 sq. ft)	1-225	466160-0-0 (CAV-GRIP III)	-	-
-	-	1/2" SecurShield HD Plus	8 (4 sq. ft)	1-90	325932-0-0	-	-
-	-	1/2" SecurShield HD Plus	6" ribbons of FAST	1-90	-	-	-
-	-	1/2" SecurShield HD Plus	4" ribbons of FAST	1-150	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" SecurShield HD Plus	6" ribbons of FAST	1-150	-	-	-
-	-	1/2" SecurShield HD Plus	6" ribbons of FAST	1-150	-	-	-
Gypsum Deck							
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-90	458915-0-0	458918-0-0	-

FM Approvals
Design "A" Adhered Roofing Systems

InsulBase Polyiso Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso	16 (2 sq. ft.)	-	-	1-90	13221-0-0	13256-0-0	63400-0-0
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	-	-	1-90	13222-0-0	13259-0-0	63401-0-0
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	-	-	1-150	135476-0-0 (SWBA)	135474-0-0 (SWBA)	135477-0-0 (SWBA)
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1" InsulBase Polyiso	12" ribbons of FAST	1-90	459121-0-0	459122-0-0	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	Min. 2" InsulBase Polyiso	12" ribbons of FAST	1-90	188863-0-0	188878-0-0	188900-0-0
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1-105	454517-0-0	454522-0-0	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1" InsulBase Polyiso	6" ribbons of FAST	1-150	455832-0-0	455872-0-0	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	Min. 1" InsulBase Polyiso	4" ribbons of FAST	1-270	455869-0-0	455873-0-0	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	352057-0-0	-	-
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	454497-0-0	454498-0-0	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-315	279654-0-0	279656-0-0	279705-0-0
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-480	222698-0-0 (SWBA)	222698-0-0 (SWBA)	222698-0-0 (SWBA)
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	-	-	1-315	462904-0-0	462910-0-0	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	-	-	1-465	462905-0-0	462911-0-0	-
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-255	445235-0-0	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	-	-	1-465	462940-0-0	462944-0-0	-
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	-	-	1-195	392380-0-0	392380-0-0	392380-0-0
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-90	392375-0-0	392375-0-0	392375-0-0
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	16 (2 sq. ft.)	-	-	1-90	93423-0-0	95309-0-0	-

FM Approvals
Design "A" Adhered Roofing Systems

InsulBase Polyiso Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-90	459955-0-0	459958-0-0	-
Gypsum Deck Tear-Off VapAir Seal 725TR with Cav-Grip III Primer, Carlisle 702 LV Primer or Carlisle 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-90	459954-0-0	459956-0-0	-
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso	16 (2 sq. ft)	-	-	1-90	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	-	-	1-90	-	-	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-150	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

InsulBase Polyiso Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	164685-0-0	164687-0-0	164695-0-0
1/2" InsulBase Polyiso	6" ribbons of FAST	-	-	1-90	-	430066-0-0	-
Concrete Deck							
1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-90	-	-	-
Gypsum Deck							
1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	-	-	-
1" InsulBase Polyiso	12" ribbons of FAST	-	-	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield and SecurShield HD Composite Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" SecurShield or SecurShield HD Composite	16 (2 sq. ft.)	-	-	1-90	188569-0-0	188569-0-0	188569-0-0
Min. 2" SecurShield or SecurShield HD Composite	8 (4 sq. ft.)	-	-	1-90	188870-0-0	188870-0-0	188870-0-0
Min. 2" SecurShield or SecurShield HD Composite	20 (1.6 sq. ft.)	-	-	1-150	135476-0-0 (SWBA)	135476-0-0 (SWBA)	135476-0-0 (SWBA)
Min. 2" SecurShield Only	32 (1 sq. ft.)	-	-	1-225 (35)	399364-0-0	399364-0-0	399364-0-0
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1-1/2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-
Min. 2" InsulBase Polyiso or SecurShield	8 (4 sq. ft.)	Min. 2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	1-90	254630-0-0	254630-0-0	254630-0-0
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1-105	454517-0-0	454522-0-0	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1" InsulBase Polyiso	6" ribbons of FAST	1-150	455832-0-0	455833-0-0	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	Min. 1" InsulBase Polyiso	4" ribbons of FAST	1-270	455869-0-0	455873-0-0	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	Min. 1-1/2" SecurShield or SecurShield HD Composite	6" ribbons of FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1-1/2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	1-90	352057-0-0	-	-
Steel Deck (Min. 22 Gauge)/SureMB 120TG or 90TG Base Torch Applied							
Min. 1/2" DensDeck Prime	8 (4 sq. ft.)	Min. 1-1/2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	1-90	454497-0-0	454598-0-0	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	1-225	323655-0-0	-	-
Concrete Deck/VapAir Seal 725TR with Cav-Grip III Primer, Carlisle 702 LV Primer or Carlisle 702 Primer							
Min. 1/2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	-	-	1-255	445235-0-0	-	-
Min. 1/2" SecurShield	6" ribbons of FAST	-	-	1-315	-	-	-
Min. 1-1/2" SecurShield	6" ribbons of FAST	-	-	1-465	-	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	1-330	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield and SecurShield HD Composite Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Min. 1/2" SecurShield	6" ribbons of FAST	-	-	1-315	-	-	-
Min. 1-1/2" SecurShield	6" ribbons of FAST	-	-	1-465	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" SecurShield or SecurShield HD Composite	16 (2 sq. ft)	-	-	1-90	-	-	-
Min. 1-1/2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	-	-	1-90	-	-	-
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" SecurShield or SecurShield HD Composite	12" ribbons of FAST	-	-	1-90	-	-	-
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
Min. 1-1/2" SecurShield or SecurShield HD Composite	16 (2 sq. ft)	-	-	1-75	-	-	-
Min. 2" SecurShield or SecurShield HD Composite	8 (4 sq. ft)	-	-	1-90	-	-	-
Min. 2" SecurShield or SecurShield HD Composite	20 (1.6 sq. ft.)	-	-	1-150	-	-	-
Min. 2" SecurShield or SecurShield HD Composite	32 (1 sq. ft.)	-	-	1-225	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-
Concrete Deck							
1/2" SecurShield	12" ribbons of FAST	-	-	1-90	-	-	-
Gypsum Deck							
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-
1" SecurShield	12" ribbons of FAST	-	-	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

Securock Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/4" Securock	12 (2.66 sq. ft)	1-75	269962-0-0 (LVOC)	269964-0-0 (LVOC)	269968-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/4" Securock	10 (3.2 sq. ft) SecurFAST Plate	1-90	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 3/8" Securock	8 (4 sq. ft) SecurFAST Plate	1-90	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	10 (3.2 sq. ft)	1-90	269985-0-0	269986-0-0 (LVOC)	269988-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	8 (4 sq. ft) SecurFAST Plate	1-90	443300-0-0	443314-0-0	443303-0-0
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	6 (5.33 sq. ft) SecurFAST Plate	1-75	443360-0-0	443361-0-0	443350-0-0
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 5/8" Securock	8 (4 sq. ft)	1-90	269989-0-0 (LVOC)	269990-0-0 (LVOC)	269992-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 5/8" Securock	6 (5.33 sq. ft)	1-90	443331-0-0	443332-0-0	443334-0-0
Min. 1" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	20 (1.6 sq. ft)	1-150	269993-0-0	269994-0-0	269996-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	32 (1 sq. ft)	1-255	239271-0-0 (LVOC)	239272-0-0 (LVOC)	269952-0-0 (LVOC)
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1/4" Securock	12" ribbons of FAST	1-90	301750-0-0	301750-0-0	301753-0-0 (LVOC)
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 1/4" Securock	12" ribbons of FAST	1-90	-	-	-
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	1/2" SecurShield HD	12" ribbons of FAST	1-120	455769-0-0	455773-0-0	
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-135	455772-0-0	455772-0-0	
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-225	455811-0-0	455811-0-0	
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	Min. 1/4" Securock over Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1/4" Securock over Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	327597-0-0	396795-0-0	437319-0-0
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1/4" Securock over Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	FAST Full Coverage	Min. 1/4" Securock	FAST Full Coverage	1-315	307662-0-0 (SWBA)	307751-0-0 (SWBA)	307702-0-0 (SWBA)
Min. 1/2" InsulBase Polyiso	Hot Asphalt	Min. 1/4" Securock	Hot Asphalt	1-495	282246-0-0	-	-
Min. 1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	10 (3.2 sq. ft)	1-90	393508-0-0	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	32 (1 sq. ft)	1-255	398846-0-0	398848-0-0	398849-0-0
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							

FM Approvals
Design "A" Adhered Roofing Systems

Securock Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-255	333171-0-0	364616-0-0 (LVOC)	364627-0-0 (LVOC)
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" Securock	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" Securock	6" ribbons of FAST	1-465	-	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso or Min 1-1/2" SecurShield	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-255	394468-0-0	394544-0-0	394544-0-0
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" Securock	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" Securock	6" ribbons of FAST	1-465	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-90	-	-	-
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-90	-	-	-
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	Min. 1/4" Securock	12 (2.67 sq. ft)	1-75	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	10 (3.2 sq. ft)	1-90	-	-	-
FM Approved	Loose laid	Min. 5/8" Securock	8 (4 sq. ft)	1-90	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	20 (1.6 sq. ft)	1-150	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	32 (1 sq. ft)	1-225	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

Securock Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
1/2" InsulBase Polyiso	10 (3.2 sq. ft)	Min. 1/4" Securock	12" ribbons of FAST	1-90	301766-0-0 (LVOC)	288835-0-0 (LVOC)	288837-0-0 (LVOC)

FM Approvals
Design "A" Adhered Roofing Systems

DensDeck Prime Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	Min. 1/4" DensDeck Prime	12 (2.67 sq. ft)	1-90	92102-0-0	95279-0-0	92103-0-0
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	Min. 1/2" DensDeck Prime	10 (3.2 sq. ft)	1-90	92073-0-0	95221-0-0	92074-0-0
Min. 1-1/2" InsulBase Polyiso or Securshield	Loose laid	5/8" DensDeck Prime	8 (4 sq. ft)	1-90	92098-0-0	95274-0-0	92099-0-0
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	8 (4 sq.ft)	1-90	388249-0-0	388251-0-0	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/4" DensDeck Prime	18 (1.8 sq. ft)	1-105	382309-0-0	382310-0-0	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	18 (1.8 sq. ft)	1-135	383699-0-0	383700-0-0	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	20 (1.6 sq. ft)	1-150	383709-0-0	383710-0-0	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-165	387927-0-0	384594-0-0	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-180 (34)	384593-0-0	384595-0-0	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-255 (35)	387928-0-0	387931-0-0	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	437158-0-0	437158-0-0	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	188976-0-0	188980-0-0	188976-0-0
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	Min. 1/2" DensDeck Prime	12" ribbons of FAST	1-120	455769-0-0	455772-0-0	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1/2" DensDeck Prime	6" ribbons of FAST	1-135	455722-0-0	455723-0-0	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	Min. 1/2" DensDeck Prime	4" ribbons of FAST	1-225	455811-0-0	455811-0-0	-
Min. 1/2" DensDeck Prime	16 (2 sq. ft.)	Min. 1/4" DensDeck Prime over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	303447-0-0	303448-0-0	303451-0-0
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime	8 (4 sq. ft.)	1/4" DensDeck Prime over Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	327597-0-0	396795-0-0	437319-0-0
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime	8 (4 sq. ft.)	1/4" DensDeck Prime over Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	327597-0-0	396795-0-0	437319-0-0
Concrete Deck							
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-195	298143-0-0	298143-0-0	298143-0-0
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-255	333171-0-0	364616-0-0	-

FM Approvals
Design "A" Adhered Roofing Systems

DensDeck Prime Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" DensDeck Prime	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" DensDeck Prime	6" ribbons of FAST	1-465	-	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-315	-	434646-0-0	-
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" DensDeck Prime	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	Min. 1/4" DensDeck Prime	6" ribbons of FAST	1-465	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	173520-0-0	173525-0-0	173520-0-0
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	-	-	-
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	Min. 1/4" DensDeck Prime	12 (2.67 sq. ft)	1-90	-	-	-
FM Approved	Loose laid	Min. 1/2" DensDeck Prime	10 (3.2 sq. ft)	1-90	-	-	-
FM Approved	Loose laid	Min. 5/8" DensDeck Prime	8 (4 sq. ft)	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

DensDeck Prime Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck							
Min. 1/2" InsulBase Polyiso	20 (1.6 sq. ft)	Min. 1/4" DensDeck Prime	Hot Asphalt	1-90	265212-0-0	265212-0-0	265212-0-0
-	-	Min. 1/2" DensDeck Prime	10 (3.2 sq. ft)	1-90	430067-0-0	430068-0-0	-
Min. 1" InsulBase Polyiso or Min 1" SecurShield	Loose Laid	Min. 1/4" DensDeck Prime	16 (2 sq. ft.)	1-90	391004-0-0	391442-0-0	391443-0-0

FM Approvals
Design "A" Adhered Roofing Systems

StormBase Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
.045" or .060" Sure-Weld HS Reinforced Membrane
.080" Sure-Weld EXTRA Reinforced Membrane
.060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso	Sure-seal Insulation and Sure-Seal HP 10 (3.2 sq. ft)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	427172-0-0 VSH	-
Min. 2" InsulBase Polyiso	Sure-seal Insulation and Sure-Seal HP 8 (4 sq. ft)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	427201-0-0 VSH	-
Min. 1-1/2" Polyiso	Loose laid	Min. 2" Stormbase	Full-Coverage FAST	1-90	-	419427-0-0 VSH	-
Min. 1/2" DensDeck Prime or 5/8" Securock	Sure-seal Insulation and Sure-Seal HP 16 (2 sq. ft)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	427202-0-0 VSH	-
Min. 3" Insulfoam VIII over 1/2" Dens Deck	16 (2 sq. ft)	Min. 1-1/2" Insulam OSB	6" ribbons of FAST	1-150	-	434590-0-0 VSH	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	434469-0-0 VSH	-
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso or SecurShield	12" ribbons of FAST	Min. 2" Stormbase	12" ribbons of FAST	1-315	-	427190-0-0 VSH	-
Min. 2" ChannelDry EPS under Insulfoam VIII	16 (2 sq. ft)	Min. 2" Insulam OSB	6" ribbons of FAST	1-90	427784-0-0	427784-0-0	427786-0-0
-	-	Min. 2" Stormbase	12" ribbons of FAST	1-165	-	434470-0-0 VSH	-
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1/2" InsulBase Polyiso or SecurShield	12" ribbons of FAST	Min. 2" Stormbase	12" ribbons of FAST	1-255	-	427203-0-0	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied with Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso or SecurShield	12" ribbons of FAST	Min. 2" Stormbase	12" ribbons of FAST	1-255	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	-	-
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	-	-
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	Min. 2" Stormbase	17 (1.8 sq. ft)	1-150	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

HP Recovery Board Ratings - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" HP Recovery Board	16 (2 sq. ft)	1-90	212437-0-0	-	-
Concrete Deck							
Min. 1-1/2" InsulBase Polyiso	Hot Asphalt	Min. 1/2" HP Recovery Board	Hot Asphalt	1-300	224117-0-0	224118-0-0	224117-0-0
Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	Min. 1/2" HP Recovery Board	16 (2 sq. ft)	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

HP Recovery Board Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck							
Min. 1/2" InsulBase Polyiso	20 (1.6 sq. ft)	1/2" HP Recovery Board	Hot Asphalt	1-90	265212-0-0	265214-0-0	265212-0-0
Concrete Deck							
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft)	1/2" HP Recovery Board	Hot Asphalt	1-90	265217-0-0	265218-0-0	265217-0-0

FM Approvals

EcoStorm VSH Ratings - New Construction

.045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Type:

Membrane Adhesive:

Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" EcoStorm VSH	8 (4 sq. ft)	1-90	465630-0-0	-	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" EcoStorm VSH	18 (1.8 sq. ft)	1-120	-	-	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-150	-	-	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-225 (35)	463866-0-0	-	-
Min. 1-1/2" InsulBase Polyiso or SecurShield	10 (3.2 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	465603-0-0	461118-0-0 VSH	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	466514-0-0	461123-0-0 VSH	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-105	463867-0-0	461115-0-0 VSH	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-150	463869-0-0	461117-0-0 VSH	-
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	1/2" EcoStorm VSH	12" ribbons of FAST	1-120	-	-	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-135	-	-	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-225	-	-	-
Min. 2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-180	-	461214-0-0 VSH	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	1/2" EcoStorm VSH over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-
Steel Deck (Min. 22 Gauge)/VapAir Seal 725TR with Cav-Grip III or 702 Primer							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over InsulBase Polyiso	6" ribbons of FAST	1-90	466775-0-0	461154-0-0 VSH	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	1/2" EcoStorm VSH over Insulfoam Roofing EPS	6" ribbons of FAST	1-90	465656-0-0	461121-0-0 VSH	-
Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied							
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-225	465627-0-0	461120-0-0 VSH	-
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-285	466520-0-0	461129-0-0 VSH	-
Concrete Deck/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1/2" InsulBase Polyiso or Min. 1-1/2" SecurShield	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-240	466522-0-0	461135-0-0 VSH	-
Min. 2" Insulfoam EPS	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-225	-	461131-0-0 VSH	-
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-465	-	-	-
Concrete Deck/SureMB 90TG or 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso or Min. 1-1/2" SecurShield	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-240	466770-0-0	461141-0-0 VSH	-
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-315	-	-	-
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-465	-	-	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-90	-	-	-
Gypsum Deck Tear-Off/VapAir Seal 725TR with Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-90	-	-	-

FM Approvals

EcoStorm VSH Ratings - New Construction

- Membrane Type:** .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane
- Membrane Adhesive:** Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro- Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
(Celcore) Cellular Lightweight Insulating Concrete/Steel Decking (Min. 22 Gauge)							
FM Approved	Loose laid	1/2" EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-
FM Approved	Loose laid	1/2" EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-
-	-	1/2" EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-
-	-	1/2" EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-

FM Approvals

EcoStorm VSH Ratings - Recover

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA), Cav-Grip III (CGIII) or Low VOC Bonding Adhesive (LVOC)

Base and Top Layer Adhesive: FAST = Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 22, 23 & 24)	Rating	Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
					RoofNAV Number		
Steel Deck (Min. 22 Gauge)							
-	-	1/2" EcoStorm VSH	18 (1.8 sq. ft)	1-120	-	-	-
-	-	1/2" EcoStorm VSH	18 (1.8 sq. ft)	1-120	-	-	-
-	-	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-225	-	-	-
-	-	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-225	-	-	-
-	-	1/2" EcoStorm VSH	8 (4 sq. ft)	1-90	-	-	-
-	-	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-
-	-	1/2" EcoStorm VSH	4" ribbons of FAST	1-150	-	-	-
Concrete Deck							
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-150	-	-	-
-	-	1/2" EcoStorm VSH	6" ribbons of FAST	1-150	-	-	-
Gypsum Deck							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-90	-	-	-

FM Approvals
Design "A" Adhered Roofing Systems

Lightweight Insulating Concrete - New Construction

Membrane Type: .045" or .060" Sure-Weld Standard Reinforced Membrane
 .045" or .060" Sure-Weld HS Reinforced Membrane
 .080" Sure-Weld EXTRA Reinforced Membrane
 .060" or .080" Spectro-Weld Reinforced Membrane

Membrane Adhesive: Sure-Weld Bonding Adhesive (SWBA) or Low VOC Bonding Adhesive (LVOC)

Deck Type	Lightweight Insulating Concrete	Rating	Maximum Slope		
			Sure-Weld or Spectro-Weld	Sure-Weld EXTRA	Sure-Weld HS
			RoofNAV Number		
Steel	Celcore	1-135	243956-0-194470 1-1/2" Slope	244212-0-194470 3/4" Slope	-
Concrete	Elastizell	1-180	191311-0-50936 1-1/2" Slope SWBA Only	-	-
			173455-0-50936 3/4" Slope SWBA Only	-	-

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 Expires August, 2023

Deck Type	Acceptance #
Lightweight Concrete	14-0626.07
Wood	14-0626.03
Steel	14-0626.02
Structural Concrete	14-0626.05
Cementitious Wood Fiber	14-0626.04
Gypsum	14-0626.08
Recover	14-0626.06

(Using Sure-Weld™ Standard or EXTRA Reinforced Membrane)

1. Sure-Weld™ White and Tan TPO Membranes exceed the requirements for the U.S.E.P.A. ENERGY STAR® Program for reflective roofing materials.
2. Sure-Weld™ 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.

Carlisle SynTec, a division of Carlisle Construction Materials Incorporated, P.O. Box 7000, Carlisle, PA 17013
(800)-4SYNTEC (800-479-6832)

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SURE-WELD® TPO

Reference Notes

1. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly.
2. Any roof covering system listed for use over a combustible roof deck can be installed over a non-combustible roof deck and achieve the same classification.
3. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 3" minimum total thickness of SecurShield or SecurShield HD Composite.
4. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 1.9" thickness of SecurShield or SecurShield HD Composite.
5. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 1" thickness of SecurShield CD.

6. Any UL Classified Insulation, any combination, any thickness, may be used below the 4-1/2" minimum total thickness.
7. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below.

8. Any thickness of UL Classified Carlisle Polyisocyanurate Insulation may be used below the 1.9" thickness of SecurShield or SecurShield HD Composite.
9. Any UL Classified insulation, any combination, any thickness, may be used below the SecurShield CD.
10. For roof deck construction (new, tear-off or retrofit), approved insulations and maximum roof slopes, click here.
11. Refer to Carlisle specifications for minimum requirements regarding sheet widths and fastener spacing.
12. On steel decks, Carlisle HP-X Fasteners and Piranha Plates or HP-Xtra Fasteners and Piranha Xtra Plates are required as identified in this chart. On structural concrete decks, CD-10, HP Concrete Spikes or HD 14-10 Fasteners are used with Piranha Plates.
13. 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. (click here for FM requirements)
14. Ratings achieved using steel decking attached to structural purlins spaced 5' o.c.
15. Please reference for ANSI-SPRI WD-1/ASCE 7-10 for non-FM insured projects, click here.
16. For roof deck construction (new, tear-off or retrofit), approved insulations and maximum roof slopes, click here.
17. On steel decks, Carlisle HP-X Fasteners and Piranha Plates or HP-Xtra Fasteners and Piranha Xtra Plates are required as identified in this chart. On structural concrete decks, CD-10, HP Concrete Spikes or HD 14-10 Fasteners are used with Piranha Plates.
18. The fastener spacing for membrane securement is dependent on the deck type, desired wind uplift rating and the Carlisle Fastening Plate and Fastener utilized as identified, click here for more information.
19. Insulation shall be fastened in accordance with Carlisle Specifications.
20. 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.
21. Existing roof must be FM Class 1 rated.
22. Sure-Seal HP fastener/Sure-Seal Insulation plate.
23. InsulFAST fastener/Sure-Seal Insulation plate.
24. InsulFAST fastener/SecurFAST Insulation Fastening plate.
25. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below.

26. Any roof covering system listed for use over a combustible roof deck can be installed over a non-combustible roof deck and achieve the same classification.
27. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 3" minimum total thickness of SecurShield or SecurShield HD Composite.
28. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 1.9" thickness of SecurShield or SecurShield HD Composite.
29. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 1" thickness of SecurShield CD.
30. Any UL Classified Insulation, any combination, any thickness, may be used below the 4-1/2" minimum total thickness.
31. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below.

32. Any thickness of UL Classified Carlisle Polyisocyanurate Insulation may be used below the 1.9" thickness of SecurShield or SecurShield HD Composite.
33. Any UL Classified insulation, any combination, any thickness, may be used below the SecurShield CD.
34. 80 ksi with one fastener per attachment point.
35. 80 ksi with two fasteners per attachment point.