

Code Approval Guide

August 2024

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Carlisle SynTec Systems, a division of Carlisle Construction Materials LLC

CODE APPROVAL GUIDE

August 2024

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-Flex 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-Weld 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 2 sections; UL Approvals and FM Approvals. Underwriters Laboratories rated roof assemblies are grouped according to deck type (non-combustible or combustible) and are further categorized by the severity of fire exposure (Class A, B or C). FM Approvals approved assemblies are categorized according to deck type and the specific type of construction (new, tear-off or retrofit).

The listed assemblies contained in this guide are grouped generically based on deck classification. Specific substrate requirements for each 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 Underwriters Laboratories and FM Approvals Code Compliance

These guidelines are intended to focus on the essential criteria to be followed when an Underwriters Laboratories (UL) and/or FM Approvals (FM) approved assembly is specified. Generally, the 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 system must be UL and/or FM approved and must have been tested together as part of a complete roofing assembly.**

In addition to the code approval listings in this guide, information pertaining to approved assemblies can also be obtained directly from UL and FM as follows:

1. *Underwriters Laboratories On-Line Certifications Directory (<https://productiq.ulprospector.com/en>).*
2. *FM Approvals RoofNAV website (roofnav.com).* FM RoofNAV assembly numbers can be obtained from this website.

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) ratings.

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 manufacturers concerning the most current available approvals.

- **Prior to project bid** - Products specified by the architect must be thoroughly investigated to determine if the specified rating can be achieved and local building codes must be consulted regarding any additional requirements.

- **Prior to installation** - Project managers should review the code requirements with field construction personnel to ensure compliance with project requirements.

Upon completion of the roofing installation, each project is inspected by a 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.

Sure-Flex™ PVC & KEE HP Mechanically-Fastened Roofing System

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

Membrane .050", .060" or .080" Sure-Flex PVC Reinforced Membrane

Type: .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

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

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

Sure-Flex™ PVC & KEE HP Mechanically-Fastened Roofing System

UL Approval - Combustible (1) - ANSI/UL 790 Spread of Flame Test - Class A

Membrane .050", .060" or .080" Sure-Flex PVC Reinforced Membrane

Type: .050", .060" or .080" Sure-Flex KEE HP 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 |
|-------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------|
| Combustible (1) - ANSI/UL 790 Spread of Flame Test-Class A | | | | |
| 1 | Minimum 1/4" SECUROCK® Gypsum Fiber or Glass Mat Roof Board (2) | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 2-1/2" |
| 2 | Minimum 1/4" DensDeck or DensDeck Prime Roof Boards (2) | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 2-1/2" |
| 3 | N/A | Minimum 1" thick layer of SecurShield or SecurShield HD Composite is placed directly over a combustible roof deck. An optional layer or layers of any Carlisle Polyisocyanurate Insulation may be used below the minimum 1" thick top layer, any combination, any thickness. (3) | N/A | 1/2" |
| 4 | N/A | Minimum 1" thick layer of SecurShield or SecurShield HD Composite over a minimum 3-1/2" thick layer of any UL Classified EPS insulation is placed directly over a combustible roof deck. (3) | N/A | 1/2" |
| 5 | N/A | OPTIONAL layer or layers of any Carlisle Polyisocyanurate Insulation may be used below the minimum 1/2" thick top layer, any combination, any thickness. (3) | 1/2" thick SecurShield HD or SecurShield HD Plus is placed directly over a combustible roof deck. (3) | 1" |
| 6 | N/A | Minimum 4" thick layer of any UL Classified EPS insulation is placed directly over a combustible roof deck. (3) | 1/2" thick SecurShield HD or SecurShield HD Plus. (3) | 1/2" |
| 7 | N/A | Minimum 1-1/2" layer of Insulfoam HD Composite over a minimum 3" layer of Insulfoam EPS. (2) | N/A | 1/2" |
| 8 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (2) | 3" |
| 9 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 3/8" SECUROCK® Gypsum Fiber Roof Board (2) | 2" |
| 10 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 1/2" SECUROCK® Gypsum Fiber Roof Board (2) | 4" |
| 11 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 1/4" SECUROCK® Glass-Mat or Coated Glass Mat Roof Boards (2) | Unlimited |
| 12 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 1/4" DensDeck/DensDeck Prime Roof Board (2) | Unlimited |
| 13 | Two layers of Carlisle FR Base Sheet | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. (OPTIONAL) | N/A | 3/4" |

Sure-Flex™ PVC & KEE HP Mechanically-Fastened Roofing System

UL Approval - Non-Combustible and Combustible (1) - ANSI/UL 790 Spread of Flame Test - Class B

Membrane .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
Type: .050", .060" or .080" Sure-Flex KEE HP 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 |
|-------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------|-------------|---------------|
| Combustible (1) - ANSI/UL 790 Spread of Flame Test-Class B | | | | |
| 1 | One Layer of Carlisle FR Base Sheet | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. (OPTIONAL) | N/A | 1/2" |
| 2 | Inverted G3 cap sheet | N/A | N/A | 1/2" |
| System ID | Thermal Barrier/ Base Sheet | Insulation | Cover Board | Maximum Slope |
| Non-Combustible - ANSI/UL 790 Spread of Flame Test-Class B | | | | |
| 3 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | Unlimited |

Sure-Flex™ PVC & KEE HP Mechanically-Fastened Roofing System

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

Membrane .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
Type: .050", .060" or .080" Sure-Flex KEE HP 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 |
|---------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------|
| Combustible - ANSI/UL 790 Spread of Flame Test-Class C | | | | |
| 1 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. Optionally, any UL Classified insulation, any combination, any thickness may be used below the Carlisle Polyisocyanurate Insulation. | N/A | Unlimited |
| 2 | N/A | Any UL Classified insulation, any combination, any thickness. (OPTIONAL) | Minimum 5/16" EcoStorm VSH (2) | 1/2" |
| 3 | N/A | 1/2" Min. HP Recovery Board | N/A | 1" |

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 |
|-----------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|
| 1 | Non-Combustible and Combustible | Any Class A, B or C roof covering system. | One layer of Carlisle FR Base Sheet (OPTIONAL) | 3/4" |
| 2 | Non-Combustible | Class A, B or C built-up or modified bitumen system, (smooth surface, cap sheet or gravel surfaced with gravel maintained). Or Class A, B or C single-ply system (polystyrene in existing single-ply system must be below a coverboard or minimum 1 in. thickness of polyisocyanurate), to retain the existing Classification. | Insulfoam "R-TECH" Type "I", "VIII", "II", "IX" or "FanFold" 1 in. maximum thickness. | 1/2" |
| 3 | Non-Combustible and Combustible | Class A, B or C built-up system, smooth surface, cap sheet or gravel surfaced (gravel maintained) to retain the existing Classification. | Insulfoam "R-TECH" Type "I", "VIII", "II", "IX", "FanFold" 1 in. maximum thickness. | 1/2" |

Sure-Flex™ (PVC) Mechanically-Fastened Roofing System for InsulBase and SecurShield
Factory Mutual (FM) Approvals

FM Approval - Field Sheet Securement Criteria (10)(11)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

| Membrane Width | Fastener/Plate (10) | Fastener Spacing | FM Ratings over Min. 22 Gauge | FM Ratings over Min. 22 Gauge |
|----------------|----------------------|------------------|-------------------------------|----------------------------------------------------|
| | | | Grade C Steel (33 ksi) | Grade E Steel (80 ksi) (11) or Structural Concrete |
| 120" | HP-X/Piranha | 6" | | 1-75 (307057-0-0) |
| | HP-Xtra/Piranha Xtra | 12" | | 1-60 (307052-0-0) |
| | HP-X/Oval Barbed | 6" | | 1-90 (323786-0-0) |
| 81" | HP-X/Piranha | 6" | | 1-105 (143334-0-0) |
| | | 12" | 1-75 (143339-0-0) | 1-90 (143340-0-0) |
| | HP-Xtra/Piranha Xtra | 12" | 1-75 (336447-0-0) | 1-90 (143337-0-0) |
| | HP-X/Piranha | 18" | 1-60 (143349-0-0) | 1-60 (143349-0-0) |
| 60" | HP-X/Piranha | 12" | 1-90 (393514-0-0) | 1-90 (393514-0-0) |
| | | 6" | 1-120 (394663-0-0) | 1-150 (393538-0-0) |
| 40-1/2" | HP-X/Piranha | 6" | 1-165 (143335-0-0) | 1-165 (143335-0-0) |
| | | 12" | 1-120 (353942-0-0) | 1-120 (353942-0-0) |

FM Approval - Induction Welding Securement Criteria

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

| FM Approvals – Induction Welding Securement | | | | | |
|---------------------------------------------|-------------------------------|----------------------------|-----------------------------|--------|--------|
| Deck Type | Fastener/Plate | Rating | Fasteners per 4' x 8' Board | | |
| | | | Zone 1 | Zone 2 | Zone 3 |
| Min. 22 Gauge Grade C Steel (33 ksi) | HP-X / RhinoBond PVC Plate | 1-90 (341110-0-0) | 6 | 9 | 12 |
| | | 1-105 (341109-0-0) | 8 | 12 | 16 |
| | | 1-165 (387207-0-0) | 16 | 24 | 32 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-Xtra / RhinoBond PVC Plate | 1-135 (346217-0-0) | 8 | 12 | 16 |
| | | HP-X / RhinoBond PVC Plate | 1-120 (341108-0-0) | 8 | 12 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-X / RhinoBond PVC Plate | 1-195 (387224-0-0) | 16 | 24 | 32 |

| FM Approvals – Induction Welding Linear Securement | | | | | |
|----------------------------------------------------|----------|---------------------|-------------|--------------------------|--------------------|
| Deck Type | Fastener | Plate | Row Spacing | Fastener Spacing in Rows | Rating |
| Min. 22 Gauge Grade E Steel (80 ksi) | HP-X | RhinoBond PVC PLATE | 5' | 6" | 1-180 (323359-0-0) |
| | | | 5' | 12" | 1-105 (323363-0-0) |
| | | | 5' | 18" | 1-75 (323361-0-0) |
| | | | 10' | 6" | 1-120 (323358-0-0) |
| | | | 10' | 12" | 1-60 (323357-0-0) |

Sure-Flex™ (PVC) Mechanically-Fastened Roofing System for InsulBase and SecurShield Recover
 Factory Mutual (FM) Approvals

FM Approval - Field Sheet Securement Criteria (10)(11)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

| Membrane Width | Fastener/Plate (10) | Fastener Spacing | FM Ratings over Min. 22 Gauge | FM Ratings over Min. 22 Gauge |
|----------------|----------------------|------------------|-------------------------------|----------------------------------------------------|
| | | | Grade C Steel (33 ksi) | Grade E Steel (80 ksi) (11) or Structural Concrete |
| 120" | HP-X/Piranha | 6" | | 1-75 |
| | HP-Xtra/Piranha Xtra | 12" | | 1-60 |
| | HP-X/Oval Barbed | 6" | | 1-90 |
| 81" | HP-X/Piranha | 6" | | 1-105 (303455-0-0) |
| | | 12" | 1-75 (380198-0-0) | 1-90 (303465-0-0) |
| | HP-Xtra/Piranha Xtra | 12" | 1-75 | 1-90 (303462-0-0) |
| | HP-X/Piranha | 18" | 1-60 (303466-0-0) | 1-60 (303466-0-0) |
| 60" | HP-X/Piranha | 12" | 1-90 (393577-0-0) | 1-90 (393577-0-0) |
| | | 6" | 1-120 (303576-0-0) | 1-150 (303581-0-0) |
| 40-1/2" | HP-X/Piranha | 6" | 1-165 (303456-0-0) | 1-165 (303456-0-0) |
| | | 12" | 1-105 (303463-0-0) | 1-105 (303463-0-0) |

FM Approval - Induction Welding Securement Criteria

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

| FM Approvals – Induction Welding Securement | | | | | |
|---------------------------------------------|-------------------------------|----------------------------|-----------------------------|--------|--------|
| Deck Type | Fastener/Plate | Rating | Fasteners per 4' x 8' Board | | |
| | | | Zone 1 | Zone 2 | Zone 3 |
| Min. 22 Gauge Grade C Steel (33 ksi) | HP-X / RhinoBond PVC Plate | 1-90 (341113-0-0) | 6 | 9 | 12 |
| | | 1-105 (341112-0-0) | 8 | 12 | 16 |
| | | 1-165 (387429-0-0) | 16 | 24 | 32 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-Xtra / RhinoBond PVC Plate | 1-135 (383685-0-0) | 8 | 12 | 16 |
| | | HP-X / RhinoBond PVC Plate | 1-120 (341111-0-0) | 8 | 12 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-X / RhinoBond PVC Plate | 1-195 (387435-0-0) | 16 | 24 | 32 |

Sure-Flex™ (PVC) Mechanically-Fastened Roofing System for DensDeck and Securock
Factory Mutual (FM) Approvals

FM Approval - Field Sheet Securement Criteria (10)(11)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

| Membrane Width | Fastener/Plate (10) | Fastener Spacing | FM Ratings over Min. 22 Gauge | FM Ratings over Min. 22 Gauge |
|----------------|----------------------|------------------|-------------------------------|----------------------------------------------------|
| | | | Grade C Steel (33 ksi) | Grade E Steel (80 ksi) (11) or Structural Concrete |
| 120" | HP-X/Piranha | 6" | | 1-75 |
| | HP-Xtra/Piranha Xtra | 12" | | 1-60 |
| | HP-X/Oval Barbed | 6" | | 1-90 |
| 81" | HP-X/Piranha | 6" | | 1-105 (236903-0-0) |
| | | 12" | 1-75 (237573-0-0) | 1-90 (237591-0-0) |
| | HP-Xtra/Piranha Xtra | 12" | 1-75 | 1-90 (236919-0-0) |
| | HP-X/Piranha | 18" | 1-60 (237596-0-0) | 1-60 (237596-0-0) |
| 60" | HP-X/Piranha | 12" | 1-90 (393513-0-0) | 1-90 (393513-0-0) |
| | | 6" | 1-120 (394658-0-0) | 1-150 (393538-0-0) |
| 40-1/2" | HP-X/Piranha | 6" | 1-165 (236904-0-0) | 1-165 (236904-0-0) |
| | | 12" | 1-105 (237538-0-0) | 1-105 (237538-0-0) |

FM Approval - Induction Welding Securement Criteria

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

| FM Approvals – Induction Welding Securement | | | | | |
|---------------------------------------------|-------------------------------|----------------------------|-----------------------------|--------|--------|
| Deck Type | Fastener/Plate | Rating | Fasteners per 4' x 8' Board | | |
| | | | Zone 1 | Zone 2 | Zone 3 |
| Min. 22 Gauge Grade C Steel (33 ksi) | HP-X / RhinoBond PVC Plate | 1-90 (341230-0-0) | 6 | 9 | 12 |
| | | 1-105 (341229-0-0) | 8 | 12 | 16 |
| | | 1-165 (387203-0-0) | 16 | 24 | 32 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-Xtra / RhinoBond PVC Plate | 1-135 (346233-0-0) | 8 | 12 | 16 |
| | | HP-X / RhinoBond PVC Plate | 1-120 (341228-0-0) | 8 | 12 |
| Grade E Steel (11) (80 ksi) | HP-X / RhinoBond PVC Plate | 1-195 (387215-0-0) | 16 | 24 | 32 |

| FM Approvals – Induction Welding Linear Securement | | | | | |
|----------------------------------------------------|----------|---------------------|-------------|--------------------------|--------------------|
| Deck Type | Fastener | Plate | Row Spacing | Fastener Spacing in Rows | Rating |
| Min. 22 Gauge Grade E Steel (80 ksi) | HP-X | RhinoBond PVC PLATE | 5' | 6" | 1-180 (434606-0-0) |
| | | | 5' | 12" | 1-105 (434605-0-0) |
| | | | 5' | 18" | 1-75 (424604-0-0) |
| | | | 10' | 6" | 1-120 (434603-0-0) |
| | | | 10' | 12" | 1-60 (434602-0-0) |

Sure-Flex™ (PVC) Mechanically-Fastened Roofing System for SecurShield HD and InsulBase HD
Factory Mutual (FM) Approvals

FM Approval - Field Sheet Securement Criteria (10)(11)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

| Membrane Width | Fastener/Plate (10) | Fastener Spacing | FM Ratings over Min. 22 Gauge | FM Ratings over Min. 22 Gauge |
|----------------|----------------------|------------------|-------------------------------|----------------------------------------------------|
| | | | Grade C Steel (33 ksi) | Grade E Steel (80 ksi) (11) or Structural Concrete |
| 120" | HP-X/Piranha | 6" | | 1-75 |
| | HP-Xtra/Piranha Xtra | 12" | | 1-60 |
| | HP-X/Oval Barbed | 6" | | 1-90 |
| 81" | HP-X/Piranha | 6" | 1-75 (333705-0-0) | 1-105 (280570-0-0) |
| | | 12" | 1-75 (281249-0-0) | 1-90 (281250-0-0) |
| | HP-Xtra/Piranha Xtra | 12" | 1-75 (337160-0-0) | 1-90 (281247-0-0) |
| | HP-X/Piranha | 18" | 1-60 (281251-0-0) | 1-60 (281251-0-0) |
| 60" | HP-X/Piranha | 12" | 1-90 (394656-0-0) | 1-90 (394656-0-0) |
| | | 6" | 1-120 (394661-0-0) | 1-150 |
| 40-1/2" | HP-X/Piranha | 6" | 1-165 (281245-0-0) | 1-165 (281245-0-0) |
| | | 12" | 1-105 (281248-0-0) | 1-120 (354136-0-0) |

FM Approval - Induction Welding Securement Criteria

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

| FM Approvals – Induction Welding Securement | | | | | |
|---------------------------------------------|-------------------------------|----------------------------|-----------------------------|--------|--------|
| Deck Type | Fastener/Plate | Rating | Fasteners per 4' x 8' Board | | |
| | | | Zone 1 | Zone 2 | Zone 3 |
| Min. 22 Gauge Grade C Steel (33 ksi) | HP-X / RhinoBond PVC Plate | 1-90 (340690-0-0) | 6 | 9 | 12 |
| | | 1-105 (340680-0-0) | 8 | 12 | 16 |
| | | 1-165 (387204-0-0) | 16 | 24 | 32 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-Xtra / RhinoBond PVC Plate | 1-135 (346232-0-0) | 8 | 12 | 16 |
| | | HP-X / RhinoBond PVC Plate | 1-120 (340668-0-0) | 8 | 12 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-X / RhinoBond PVC Plate | 1-195 (387216-0-0) | 16 | 24 | 32 |

| FM Approvals – Induction Welding Linear Securement | | | | | |
|----------------------------------------------------|----------|---------------------|-------------|--------------------------|--------------------|
| Deck Type | Fastener | Plate | Row Spacing | Fastener Spacing in Rows | Rating |
| Min. 22 Gauge Grade E Steel (80 ksi) | HP-X | RhinoBond PVC PLATE | 5' | 6" | 1-180 (434596-0-0) |
| | | | 5' | 12" | 1-105 (434595-0-0) |
| | | | 5' | 18" | 1-75 (434594-0-0) |
| | | | 10' | 6" | 1-120 (434593-0-0) |
| | | | 10' | 12" | 1-60 |

Sure-Flex™ (PVC) Mechanically-Fastened Roofing System for SecurShield HD and InsulBase HD Recover
 Factory Mutual (FM) Approvals

FM Approval - Field Sheet Securement Criteria (10)(11)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

| Membrane Width | Fastener/Plate (10) | Fastener Spacing | FM Ratings over Min. 22 Gauge | FM Ratings over Min. 22 Gauge |
|----------------|----------------------|------------------|-------------------------------|----------------------------------------------------|
| | | | Grade C Steel (33 ksi) | Grade E Steel (80 ksi) (11) or Structural Concrete |
| 120" | HP-X/Piranha | 6" | - | 1-75 |
| | HP-Xtra/Piranha Xtra | 12" | - | 1-60 |
| | HP-X/Oval Barbed | 6" | - | 1-90 |
| 81" | HP-X/Piranha | 6" | - | 1-105 (303455-0-0) |
| | | 12" | 1-75 (380198-0-0) | 1-90 (303465-0-0) |
| | HP-Xtra/Piranha Xtra | 12" | 1-75 | 1-90 (303462-0-0) |
| | HP-X/Piranha | 18" | 1-60 (303466-0-0) | 1-60 (303466-0-0) |
| 60" | HP-X/Piranha | 12" | 1-90 (393577-0-0) | 1-90 (393577-0-0) |
| | | 6" | 1-120 (303576-0-0) | 1-150 (303581-0-0) |
| 40-1/2" | HP-X/Piranha | 6" | 1-165 (303456-0-0) | 1-165 (303456-0-0) |
| | | 12" | 1-105 (303463-0-0) | 1-105 (303463-0-0) |

FM Approval - Induction Welding Securement Criteria

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

| FM Approvals – Induction Welding Securement | | | | | |
|---------------------------------------------|-------------------------------|----------------------------|-----------------------------|--------|--------|
| Deck Type | Fastener/Plate | Rating | Fasteners per 4' x 8' Board | | |
| | | | Zone 1 | Zone 2 | Zone 3 |
| Min. 22 Gauge Grade C Steel (33 ksi) | HP-X / RhinoBond PVC Plate | 1-90 (341113-0-0) | 6 | 9 | 12 |
| | | 1-105 (341112-0-0) | 8 | 12 | 16 |
| | | 1-165 (387429-0-0) | 16 | 24 | 32 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-Xtra / RhinoBond PVC Plate | 1-135 (383685-0-0) | 8 | 12 | 16 |
| | | HP-X / RhinoBond PVC Plate | 1-120 (341111-0-0) | 8 | 12 |
| Min. 22 Gauge Grade E Steel (11) (80 ksi) | HP-X / RhinoBond PVC Plate | 1-195 (387435-0-0) | 16 | 24 | 32 |

FM Class A Roof Deck Construction and Insulation Approvals (14)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

| Deck Type | Insulation | Insulation Thickness | Maximum Slope for ASTM E-108 Class "A" Rating | |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------|-------------------------------------|
| | | | Sure-Flex PVC | Sure-Flex PVC KEE HP |
| New Construction/Tear-off: Steel (Minimum 22 gauge) Structural Concrete | Carlisle HP Recovery Board or FM Approved High Density Wood Fiberboard | 1/2" Min. | 1" | 2-1/2" |
| | Carlisle HP Recovery Board (min. 1/2") , DensDeck Prime (min. 1/4") or Securock (min. 1/4") Over: FM Approved Insulation (12) | Refer to FM RoofNAV website | 5" (with DensDeck Prime overlay) | 5" (with DensDeck Prime overlay) |
| Retrofit (No Tear-off) (13): Structural Concrete | Carlisle SecurShield HD or SecurShield HD Plus Over: FM Approved Insulation (12) | 1/2" Refer to FM RoofNAV website | 1" | 2" |
| | Carlisle Polyisocyanurate InsulBase | 1" - 12" | 1" | 1-1/2" |
| | Carlisle Insulfoam SP (12) | 2" - 12" | 2" | 2" |
| Retrofit (No Tear-off) (13): Steel (Minimum 22 gauge) | Carlisle HP Recovery Board | 1/2" - 1" | 1" | 2-1/2" |
| | Carlisle SecurShield HD or SecurShield HD Plus | 1/2" | | |
| | Carlisle Polyisocyanurate InsulBase | 1" Max. | 1" | 1-1/2" |

Sure-Flex™ (PVC) Mechanically-Fastened Roofing System

ANSI-SPRI 4474 Approvals

.050", .060" or .080" Sure-Flex PVC Reinforced Membrane

Membrane Type: .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

| Membrane Width | Fastener/Plate (15) | Fastener Spacing | Ratings over Min. 22 Gauge | |
|----------------|----------------------|------------------|----------------------------|-----------------------------------------------|
| | | | Grade C Steel (30 ksi) | Grade E Steel (80 ksi) or Structural Concrete |
| 120" | HP-X/Piranha | 6" | 1-75 | 1-75 |
| | HP-Xtra/Piranha Xtra | 12" | 1-60 | 1-60 |
| | HP-X/Oval Barbed | 6" | 1-90 | 1-90 |
| 81" | HP-X/Piranha | 6" | 1-105 | 1-105 |
| | | 12" | 1-75 | 1-90 |
| | HP-Xtra/Piranha Xtra | 12" | 1-90 | 1-90 |
| | HP-X/Piranha | 18" | 1-60 | 1-60 |
| | HP-Xtra/Piranha Xtra | 18" | 1-60 | 1-60 |
| 40-1/2" | HP-X/Piranha | 6" | 1-165 | 1-165 |
| | | 12" | 1-120 | 1-120 |

Sure-Flex™ (PVC) 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-Flex™ Mechanically-Fastened Roofing System over non-combustible decks depending on the membrane selected.

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.

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane (120" only)

FM Approvals – Metal Retrofit

| Purlin Spacing | Fastener/Plate | Spacing | Rating | Coverboard | Sure-Flex PVC and Sure Flex KEE HP | | |
|------------------|-----------------------|---------|--------|-------------------------------|------------------------------------|-------------------------------|------------|
| 60 Inches | HP Purlin/ Piranha | 6" | 1-105 | SecurShield HD / InsulBase HD | 379904-0-0 | | |
| | | | | HP Recovery Board | | | |
| | | | | InsulBase/SecurShield | | | |
| | | | | DensDeck/SECUROCK | 272712-0-0 | | |
| | | 12" | 1-90 | 12" | 1-90 | SecurShield HD / InsulBase HD | 281330-0-0 |
| | | | | | | HP Recovery Board | |
| | | | | | | InsulBase/SecurShield | |
| | | | | | | DensDeck/SECUROCK | 272720-0-0 |
| | | 18" | 1-60 | 18" | 1-60 | SecurShield HD / InsulBase HD | 281332-0-0 |
| | | | | | | HP Recovery Board | |
| | | | | | | InsulBase/SecurShield | |
| | | | | | | DensDeck/SECUROCK | 272723-0-0 |

FM Approvals – Induction Welding Metal Retrofit

| Deck Type | Fastener | Plate | Row Spacing | Fastener Spacing in Rows | Rating | Coverboard | Sure-Flex PVC | Sure-Flex KEE HP | |
|-------------------------------------------------|-----------|---------------------|-------------|--------------------------|--------|-------------------------------|-------------------------------|------------------|------------|
| Structural Steel Purlin (Metal Retrofit) | HP Purlin | RhinoBond PVC Plate | 5' | 6" | 1-180 | SecurShield HD / InsulBase HD | 408587-0-0 | 408587-0-0 | |
| | | | | | | HP Recovery Board | 373493-0-0 | 373495-0-0 | |
| | | | | | | InsulBase/SecurShield | 373491-0-0 | 373491-0-0 | |
| | | | | | | DensDeck/SECUROCK | 373492-0-0 | 373492-0-0 | |
| | | | 5' | 12" | 1-105 | 1-105 | SecurShield HD / InsulBase HD | 408586-0-0 | 408586-0-0 |
| | | | | | | | HP Recovery Board | 373488-0-0 | 373489-0-0 |
| | | | | | | | InsulBase/SecurShield | 373490-0-0 | 373490-0-0 |
| | | | | | | | DensDeck/SECUROCK | 373487-0-0 | 373487-0-0 |
| | | | 5' | 18" | 1-75 | 1-75 | SecurShield HD / InsulBase HD | 408585-0-0 | 408585-0-0 |
| | | | | | | | HP Recovery Board | 373485-0-0 | 373486-0-0 |
| | | | | | | | InsulBase/SecurShield | 373482-0-0 | 373482-0-0 |
| | | | | | | | DensDeck/SECUROCK | 373479-0-0 | 373479-0-0 |
| | | | 10' | 6" | 1-120 | 1-120 | SecurShield HD / InsulBase HD | 408582-0-0 | 408582-0-0 |
| | | | | | | | HP Recovery Board | 373480-0-0 | 373481-0-0 |
| | | | | | | | InsulBase/SecurShield | 373482-0-0 | 373482-0-0 |
| | | | | | | | DensDeck/SECUROCK | 373479-0-0 | 373479-0-0 |
| | | | 10' | 12" | 1-60 | 1-60 | SecurShield HD / InsulBase HD | 408564-0-0 | 408564-0-0 |
| | | | | | | | HP Recovery Board | 373477-0-0 | 373478-0-0 |
| | | | | | | | InsulBase/SecurShield | 372618-0-0 | 372618-0-0 |
| | | | | | | | DensDeck/SECUROCK | 372616-0-0 | 372616-0-0 |

Sure-Flex™ PVC & KEE HP Adhered Roofing System

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

Membrane Adhesive: Low VOC PVC Bonding Adhesive, HydroBond Adhesive (Sure-Flex PVC Membrane only) or Cav-Grip PVC

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

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

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

Sure-Flex™ PVC & KEE HP Adhered Roofing System

UL Approval - Combustible (1) - ANSI/UL 790 Spread of Flame Test - Class A

Membrane Adhesive: Low VOC PVC Bonding Adhesive, HydroBond Adhesive (Sure-Flex PVC Membrane only) or Cav-Grip PVC

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP 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 |
|-------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------|
| Combustible (1) - ANSI/UL 790 Spread of Flame Test-Class A | | | | |
| 1 | Minimum 1/4" SECUROCK® Gypsum Fiber or Glass Mat Roof Board (2) | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 1-1/2" |
| 2 | Minimum 1/4" DensDeck or DensDeck Prime Roof Boards (2) | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 1-1/2" |
| 3 | N/A | Minimum 1" thick layer of SecurShield or SecurShield HD Composite is placed directly over a combustible roof deck. An optional layer or layers of any Carlisle Polyisocyanurate Insulation may be used below the minimum 1" thick top layer, any combination, any thickness. (3) | N/A | 1/2" |
| 4 | N/A | Minimum 1" thick layer of SecurShield or SecurShield HD Composite over a minimum 3-1/2" thick layer of any UL Classified EPS insulation is placed directly over a combustible roof deck. (3) | N/A | 1/2" |
| 5 | N/A | OPTIONAL layer or layers of any Carlisle Polyisocyanurate Insulation may be used below the minimum 1/2" thick top layer, any combination, any thickness. (3) | 1/2" thick SecurShield HD or SecurShield HD Plus is placed directly over a combustible roof deck. (3) | 1" |
| 6 | N/A | Minimum 4" thick layer of any UL Classified EPS insulation is placed directly over a combustible roof deck. (3) | 1/2" thick SecurShield HD or SecurShield HD Plus. (3) | 1/2" |
| 7 | N/A | Minimum 1-1/2" layer of Insulfoam HD Composite over a minimum 3" layer of Insulfoam EPS. (2) | N/A | 1/2" |
| 8 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (2) | 3" |
| 9 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 3/8" SECUROCK® Gypsum Fiber Roof Board (2) | 2" |
| 10 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 1/2" SECUROCK® Gypsum Fiber Roof Board (2) | 4" |
| 11 | N/A | Any UL Classified Insulation, any thickness (OPTIONAL) | Minimum 1/4" DensDeck Prime Roof Board (2) | Unlimited |
| 12 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, minimum 2" thickness. (2) | Minimum 7/16" EcoStorm VSH | 1" |
| 13 | Two layers of Carlisle FR Base Sheet | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 3/4" |

Sure-Flex™ PVC & KEE HP Adhered Roofing System

UL Approval - Non-Combustible and Combustible (1) - ANSI/UL 790 Spread of Flame Test - Class B

Membrane Adhesive: Low VOC PVC Bonding Adhesive, HydroBond Adhesive (Sure-Flex PVC Membrane only) or Cav-Grip PVC

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP 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 |
|-------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------|-------------|---------------|
| Combustible (1) - ANSI/UL 790 Spread of Flame Test-Class B | | | | |
| 1 | One Layer of Carlisle FR Base Sheet | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 1/2" |
| Non-Combustible - ANSI/UL 790 Spread of Flame Test-Class B | | | | |
| 2 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. | N/A | 2-1/2" |

Sure-Flex™ (PVC) Adhered Roofing System

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

Membrane Adhesive: Low VOC PVC Bonding Adhesive, HydroBond Adhesive (Sure-Flex PVC Membrane only) or Cav-Grip PVC

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP 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 |
|--------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------|
| Non-Combustible or Combustible (1) - ANSI/UL 790 Spread of Flame Test-Class C | | | | |
| 1 | N/A | Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. Optionally, any UL Classified insulation, any combination, any thickness may be used below the Carlisle Polyisocyanurate Insulation. | N/A | Unlimited |
| 2 | N/A | Any UL Classified insulation, any combination, any thickness. (OPTIONAL) | Minimum 5/16" EcoStorm VSH (2) | 1/2" |
| 3 | N/A | 1/2" HP Recovery Board | N/A | 1" |

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------|--------|-------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose laid | 1/2" SecurShield HD | 12 (2.67 sq. ft) | 1-75 | 461352-0-0 | - |
| FM Approved | Loose laid | 1/2" SecurShield HD | 16 (2 sq. ft) | 1-90 | 385920-0-0 | 385924-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-90 | - | 462147-0-0 (LVOC) |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD over 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 354273-0-0 | 354278-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-90 | 353920-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD over 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 354279-0-0 (HydroBond) | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-90 | 353921-0-0 | 353925-0-0 (LVOC) |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | 1/2" SecurShield HD over 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 354280-0-0 | 354284-0-0 |
| Min. 2" InsulBase Polyiso | 16 (2 sq. ft.) | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-120 | 454528-0-0 | 454529-0-0 (TRU GROUND) |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | 1/2" SecurShield HD | 6" ribbons or Rig Splatter of FAST | 1-135 | 454532-0-0 (TRU GROUND) | 454533-0-0 (TRU GROUND) |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | 1/2" SecurShield HD over 1-1/2" InsulBase Polyiso | 6" ribbons or Rig Splatter of FAST | 1-135 | 538587-0-0 | - |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | 1/2" SecurShield HD | 4" ribbons or Rig Splatter of FAST | 1-225 | 454541-0-0 (TRU GROUND) | 454542-0-0 (TRU GROUND) |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | 1/2" SecurShield HD | 4" ribbons or Rig Splatter of FAST | 1-225 | 538590-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | 24 (1.33 sq. ft.) | 1/2" SecurShield HD | 4" ribbons or Rig Splatter of FAST | 1-165 | 446204-0-0 | 446205-0-0 (LVOC) |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft) | SecurShield HD over InsulBase Polyiso | 6" ribbons of FAST | 1-90 | - | 450181-0-0 |
| Steel Deck (Min. 22 Gauge)/VapAir Seal 725 TR and Cav-Grip III or 702 Primer | | | | | | |
| Min. 1/2" Dens-Deck Prime or Securock | 8 (4 sq. ft) | Min. 1/2" SecurShield HD over Min. 1-1/2" InsulBase | 12" ribbons or Rig Splatter of FAST | 1-90 | 404126-0-0 | 404128-0-0 (LVOC) |
| Min. 1/2" Dens-Deck Prime or Securock | 20 (1.6 sq. ft) | Min. 1/2" SecurShield HD over Min. 1-1/2" InsulBase | FAST - Rig Splatter | 1-135 | - | - |
| Min. 1/2" Dens-Deck Prime or Securock | 32 (1 sq. ft) | Min. 1/2" SecurShield HD over Min. 1-1/2" InsulBase | FAST - Rig Splatter | 1-225 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" Dens-Deck Prime or Securock | 8 (4 sq. ft) | Min. 1/2" SecurShield HD over Min. 1/2" InsulBase | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" Dens-Deck Prime or Securock | 20 (1.6 sq. ft) | Min. 1/2" SecurShield HD over Min. 1/2" InsulBase | 6" ribbons of FAST | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Bast Torch Applied | | | | | | |
| Min. 1/2" Dens-Deck Prime or Securock | 8 (4 sq. ft) | Min. 1/2" SecurShield HD over Min. 1/2" InsulBase | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" Dens-Deck Prime or Securock | 20 (1.6 sq. ft) | Min. 1/2" SecurShield HD over Min. 1/2" InsulBase | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------|--------------|----------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-225 | 424763-0-0 (HydroBond) | - |
| Min. 1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-90 | 424668-0-0 (Hydrobond) | - |
| Min. 3/4" Optim-R | 6" ribbons of FAST | 1/2" SecurShield HD | 6" ribbons of FAST | 1-120 | 438110-0-0 (LVOC) | - |
| Min. 3/4" Optim-R | 6" ribbons of FAST | 1/2" SecurShield HD | 6" ribbons of FAST | 1-120 | 438112-0-0 (HydroBond) | 438113-0-0 (LVOC) |
| Min. 2" Insulfoam EPS | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-285 | 429737-0-0 (HydroBond) | - |
| Min. 2" Insulfoam EPS | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-285 | 429725-0-0 (LVOC & CGP) | 429726-0-0 (LVOC) |
| Min. 1-1/2" Insulfoam HD Comp | Full-Coverage FAST | - | - | 1-225 | 424573-0-0 (Hydrobond) | - |
| Min. 1/2" InsulBase Polyiso | Hot Asphalt | 1/2" SecurShield HD | Hot Asphalt | 1-240 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | SecurShield HD over InsulBase Polyiso | 6" ribbons or Rig Splatter of FAST | 1-90 | - | 450180-0-0 |
| Min. 1/2" InsulBase Polyiso | Loose laid | 1/2" SecurShield HD | 16 (2 sq. ft.) | 1-90 | 434257-0-0 (LVOC) | 434257-0-0 (LVOC) |
| Min. 2" ChannelDry EPS | Loose laid | Min. 2" Insulfoam HD Comp | 6" ribbons of FAST | 1-90 | 427788-0-0 | 427788-0-0 |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 3/4" Optim-R | 6" ribbons of FAST | 1/2" SecurShield HD | 6" ribbons of FAST | 1-165 702 | 437593-0-0 (LVOC) | 437597-0-0 (LVOC) |
| Min. 3/4" Optim-R | 6" ribbons of FAST | 1/2" SecurShield HD | 6" ribbons of FAST | 1-120 702 | 437596-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso or Min. 2" Insulfoam EPS | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-255 | 429729-0-0 (LVOC) | 429730-0-0 (LVOC) |
| | | | | | 429739-0-0 (HydroBond) | - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-315 | 364647-0-0 (LVOC) | 364657-0-0 (LVOC) |
| | | | | | 424751-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | 1/2" SecurShield HD | 6" ribbons of FAST | 1-465 | - | - |
| Concrete Deck /SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-285 | 519848-0-0 (LVOC) | 519849-0-0 |
| | | | | | 519855-0-0 (Hydrobond) | - |
| Concrete Deck /SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-240 | - | - |
| Min. 1/2" InsulBase Polyiso or 1-1/2" SecurShield | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons of FAST | 1-225 | 424798-0-0 (Hydrobond) | - |
| 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 and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD | 12" ribbons or Rig Splatter of FAST | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over 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: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| - | - | 1/2" SecurShield HD | 12 (2.67 sq. ft) | 1-75 | - | - |
| - | - | 1/2" SecurShield HD | 16 (2 sq. ft) | 1-90 | 395944-0-0 | 395945-0-0 |
| - | - | 1/2" SecurShield HD | 6" ribbons of FAST | 1-90 | - | - |
| - | - | 1/2" SecurShield HD | 4" ribbons of FAST | 1-150 | - | - |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | 1/2" SecurShield HD | 6" ribbons of FAST | 1-150 | - | - |
| - | - | 1/2" SecurShield HD | 6" ribbons of FAST | 1-150 | - | - |
| Gypsum Deck | | | | | | |
| - | - | 1/2" SecurShield HD | 6" ribbons of FAST | 1-90 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Plus Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------|---------------|---------------------------------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | 1/2" SecurShield HD Plus | 8 (4 sq. ft.) | 1-90 | 343627-0-0 | 343628-0-0 |
| FM Approved | Loose laid | 1/2" SecurShield HD Plus | 18 (1.8 sq. ft.) | 1-120 | 371287-0-0 LVOC 369888-0-0 (HydroBond) | 371288-0-0 |
| FM Approved | Loose laid | 1/2" SecurShield HD Plus | 24 (1.33 sq. ft.) | 1-165 | 371285-0-0 | - |
| FM Approved | Loose laid | 1/2" SecurShield HD Plus | 24 (1.33 sq. ft.) | 1-225 (30) | 371286-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD Plus | 12" ribbons or Rig Splatter of FAST | 1-90 | 345060-0-0 (LVOC) 353920-0-0 HydroBond) | 345061-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" SecurShield HD Plus over Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 354273-0-0 (LVOC) 354279-0-0 (HydroBond) | 354278-0-0 |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft.) | 1/2" SecurShield HD Plus | 12" ribbons or Rig Splatter of FAST | 1-90 | 353921-0-0 | 353925-0-0 |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft.) | 1/2" SecurShield HD Plus over Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 538586-0-0 | 354284-0-0 |
| Min. 2" InsulBase Polyiso | 16 (2 sq. ft.) | 1/2" SecurShield HD Plus | 12" ribbons or Rig Splatter of FAST | 1-120 | - | - |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | 1/2" SecurShield HD Plus | 6" ribbons or Rig Splatter of FAST | 1-135 | 454532-0-0 | - |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | 1/2" SecurShield HD Plus over Min. 1-1/2" InsulBase Polyiso | 6" ribbons or Rig Splatter of FAST | 1-135 | 538587-0-0 | - |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | 1/2" SecurShield HD Plus | 4" ribbons or Rig Splatter of FAST | 1-225 | 454541-0-0 | - |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | 1/2" SecurShield HD Plus over Min. 1-1/2" InsulBase Polyiso | 4" ribbons or Rig Splatter of FAST | 1-225 | 538590-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | 24 (1.33 sq. ft.) | 1/2" SecurShield HD Plus | 4" ribbons or Rig Splatter of FAST | 1-165 | 446204-0-0 | 446205-0-0 |
| 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 725 TR and 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 | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | 1/2" SecurShield HD Plus over InsulBase Polyiso | FAST - Rig Splatter | 1-135 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 32 (1 sq. ft.) | 1/2" SecurShield HD Plus over InsulBase Polyiso | FAST - Rig Splatter | 1-225 | - | - |
| Steel Deck (Min. 22 Gauge)/ SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | 1/2" SecurShield HD Plus over InsulBase Polyiso | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | 1/2" SecurShield HD Plus over InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |
| 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 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | 1/2" SecurShield HD Plus over InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield HD Plus Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------|--------|---------------------------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons or Rig Splatter of FAST | 1-225 | 387061-0-0 (LVOC) 424761-0-0 (HydroBond) | 387338-0-0 - |
| Min. 2" Insulfoam EPS | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-285 | 429725-0-0 (LVOC) | 429726-0-0 |
| Min. 2" Insulfoam EPS | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-285 | 429737-0-0 (HydroBond) | 429726-0-0 |
| Min. 1/2" InsulBase Polyiso | Loose laid | 1/2" SecurShield HD Plus | 16 (2 sq. ft.) | 1-90 | 434258-0-0 (LVOC) | 434258-0-0 (LVOC) |
| Min. 1/2" InsulBase Polyiso | Hot Asphalt | 1/2" SecurShield HD Plus | Hot Asphalt | 1-240 | - | - |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso or Min. 2" Insulfoam | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-255 | 429729-0-0 (LVOC) 429739-0-0 (HydroBond) | 429730-0-0 - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-315 | 364647-0-0 (LVOC) 424751-0-0 (HydroBond) | 364657-0-0 (LVOC) - |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | 1/2" SecurShield HD Plus | 6" ribbons of FAST | 1-465 | - | - |
| Concrete Deck/SureMB 70 SA with Cav-Grip III Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-285 | 519848-0-0 (LVOC) 519855-0-0 (HydroBond) | 519849-0-0 - |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-225 | 393033-0-0 (LVOC) | 393038-0-0 |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield HD Plus | 12" ribbons of FAST | 1-225 | 424798-0-0 (HydroBond) | - |
| 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 and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1/2" SecurShield HD Plus | 12" ribbons or Rig Splatter of FAST | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over 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: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------------|--------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| - | - | 1/2" SecurShield HD Plus | 8 (4 sq. ft) | 1-90 | 396132-0-0 | 396133-0-0 |
| - | - | 1/2" SecurShield HD Plus | 24 (1.33 sq. ft) | 1-225 | 481548-0-0 | 481549-0-0 |
| - | - | 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 | Full-Coverage FAST | 1-90 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

InsulBase Polyiso Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 16 (2 sq. ft.) | - | - | 1-90 | 187383-0-0 (LVOC) | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft.) | - | - | 1-90 | 187575-0-0 (LVOC) | 345901-0-0 |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft.) | - | - | 1-90 | 345900-0-0 (HydroBond) | NA |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | - | - | 1-135 | 325911-0-0 (LVOC) | 325946-0-0 |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | 1-135 | 424164-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | Min. 1" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 489975-0-0 (LVOC) | 489976-0-0 (LVOC) |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft.) | Min. 2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 187137-0-0 (LVOC) | 187137-0-0 |
| Min. 2" InsulBase Polyiso | 16 (2 sq. ft.) | Min. 1" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-105 | 454530-0-0 | 454531-0-0 |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | Min. 1" InsulBase Polyiso | 6" ribbons or Rig Splatter of FAST | 1-150 | 455835-0-0 | 455836-0-0 |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | Min. 1" InsulBase Polyiso | 4" ribbons or Rig Splatter of FAST | 1-270 | 455875-0-0 | 455877-0-0 |
| Min. 1/2" Dens Deck or DensDeck Prime | 16 (2 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | 1-90 | 181116-0-0 (LVOC) | - |
| Steel Deck (Min. 22 Gauge)/VapAir Seal 725 TR 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 or Rig Splatter of FAST | 1-90 | 211245-0-0 | 400229-0-0 |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | FAST - Rig Splatter | 1-135 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 32 (1 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | FAST - Rig Splatter | 1-240 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA with Cav-Grip III Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120 TG 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 | 454499-0-0 | 454400-0-0 |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

InsulBase Polyiso Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | FAST Full-Coverage | - | - | 1-450 | 424518-0-0 (HydroBond) | - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | - | - | 1-285 | - | 434245-0-0 (LVOC) |
| Min. 1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | - | - | 1-315 | 424559-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | - | - | 1-315 | 269947-0-0 (LVOC) | - |
| Min. 1-1/2" InsulBase Polyiso | Hot Asphalt | - | - | 1-315 | 269947-0-0 (LVOC) | - |
| | | | | 1-300 | 424551-0-0 (HydroBond) | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 424561-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | 16 (2 sq. ft.) | Min. 1-1/2" InsulBase Polyiso | Full-Coverage FAST | 1-90 | 424523-0-0 (HydroBond) | - |
| Min. 1" InsulBase Polyiso | 20 (1.6 sq. ft) | - | - | 1-90 | 424552-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | 16 (2 sq. ft.) | - | - | 1-90 | 424534-0-0 (HydroBond) | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | - | - | 1-90 | 424562-0-0 (HydroBond) | - |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | - | - | 1-255 | 434244-0-0 (LVOC) | 434244-0-0 |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-315 | 462916-0-0 | 462919-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-465 | 462918-0-0 | 462920-0-0 |
| Concrete Deck/SureMB 70 SA with Cav-Grip III Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | 1-285 | 519872-0-0 | 519859-0-0 |
| | | | | | 519856-0-0 (HydroBond) | - |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | 1-315 | - | - |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-315 | 462947-0-0 | 462949-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-465 | 462948-0-0 | 462950-0-0 |
| Gypsum Deck Tear-Off | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 16 (2 sq. ft) | - | - | 1-90 | - | - |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | - | - | 1-90 | 164217-0-0 (LVOC) | - |
| Gypsum Deck Tear-Off/VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | - | - | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over 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: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------------|--------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| 1" InsulBase Polyiso | 20 (1.6 sq. ft.) | - | - | 1-90 | 164654-0-0 (LVOC) | - |
| 1-1/2" InsulBase Polyiso | 16 (2 sq. ft.) | - | - | 1-90 | 475858-0-0 | 475859-0-0 (LVOC) |
| 1" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-90 | - | - |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-90 | 303378-0-0 (LVOC) | - |
| Gypsum Deck | | | | | | |
| 1-1/2" InsulBase Polyiso | 16 (2 sq. ft.) | - | - | 1-90 | 371869-0-0 (LVOC) | 371870-0-0 |
| 1-1/2" InsulBase Polyiso | 16 (2 sq. ft.) | - | - | 1-90 | 466940-0-0 (HydroBond) | - |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | - | - | 1-90 | 467861-0-0 (LVOC) | 467865-0-0 (LVOC) |

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield and SecurShield HD Composite Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------|---------------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| Min. 1-1/2" SecurShield or SecurShield HD Comp. | 16 (2 sq. ft.) | - | - | 1-90 | - | - |
| Min. 2" SecurShield or SecurShield HD Comp. | 8 (4 sq. ft.) | - | - | 1-90 | 345915-0-0 (HydroBond) | - |
| Min. 2" SecurShield or SecurShield HD Comp. | 20 (1.6 sq. ft.) | - | - | 1-135 | 143333-0-0 | - |
| Min. 2" SecurShield or SecurShield HD Comp. | 32 (1 sq. ft.) | - | - | 1-225 (30) | 325903-0-0 | 399391-0-0 |
| Min. 2" SecurShield or SecurShield HD Comp. | 32 (1 sq. ft.) | - | - | 1-225 (30) | 424166-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1-1/2" SecurShield or 2" SecurShield HD Comp. | 12" ribbons or Rig Splatter of FAST | 1-90 | - | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft.) | Min. 2" SecurShield HD Comp. | 12" ribbons or Rig Splatter of FAST | 1-90 | 461415-0-0 | - |
| Min. 2" InsulBase Polyiso | 16 (2 sq. ft.) | Min. 1/2" SecurShield Polyiso | 12" ribbons or Rig Splatter of FAST | 1-105 | 454530-0-0 | 454531-0-0 |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | Min. 1" SecurShield Polyiso | 6" ribbons or Rig Splatter of FAST | 1-150 | 455835-0-0 | 455836-0-0 |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | Min. 1" SecurShield Polyiso | 4" ribbons of FAST | 1-270 | 455875-0-0 | 455877-0-0 |
| Min. 1/2" DensDeck Prime or Securock | 16 (2 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | 12" ribbons of FAST | 1-90 | - | - |
| Steel Deck (Min. 22 Gauge)/VapAir Seal 725 TR and Cav-Grip III or 702 Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | 12" ribbons of FAST | 1-90 | 400813-0-0 | 400819-0-0 |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | FAST - Rig Splatter | 1-135 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 32 (1 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | FAST - Rig Splatter | 1-240 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | 6" ribbons of FAST | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | 1-1/2" SecurShield | 12" ribbons of FAST | 1-90 | 454499-0-0 | 454500-0-0 |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 2" SecurShield or SecurShield HD Comp. | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

SecurShield and SecurShield HD Composite Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | Min. 1-1/2" SecurShield | 12" ribbons or Rig Splatter of FAST | 1-225 | 424569-0-0 (HydroBond) | - |
| Min. 1-1/2" SecurShield | 12" ribbons or Rig Splatter of FAST | - | - | 1-225 | 424570-0-0 (HydroBond) | - |
| Min. 1/2" SecurShield or SecurShield HD Comp. | Hot Asphalt | - | - | 1-300 | - | - |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 2" SecurShield or SecurShield HD Comp. | Full-Coverage FAST | - | - | 1-255 | 434244-0-0 (LVOC) | 434244-0-0 (LVOC) |
| Min. 1/2" SecurShield | 6" ribbons of FAST | - | - | 1-315 | 462916-0-0 | 462919-0-0 |
| Min. 1-1/2" SecurShield | 6" ribbons of FAST | - | - | 1-465 | 462918-0-0 | 462920-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 2" SecurShield HD Comp. | 12" ribbons of FAST | 1-255 | 400838-0-0 | 400832-0-0 |
| Concrete Deck/SureMB 70 SA with Cav-Grip III Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield or SecurShield HD Comp. | 12" ribbons of FAST | 1-285 | - | - |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" SecurShield or SecurShield HD Comp. | 12" ribbons of FAST | 1-330 | - | - |
| 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 Comp. | 16 (2 sq. ft) | - | - | 1-90 | - | - |
| Min. 1-1/2" SecurShield or SecurShield HD Comp. | 12" ribbons of FAST | - | - | 1-90 | 164217-0-0 | - |
| Gypsum Deck Tear-Off/VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" SecurShield or SecurShield HD Comp. | 12" ribbons or Rig Splatter of FAST | - | - | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge) | | | | | | |
| Min. 1-1/2" SecurShield or SecurShield HD Comp. | 16 (2 sq. ft) | - | - | 1-75 | - | - |
| Min. 2" SecurShield or SecurShield HD Comp. | 8 (4 sq. ft) | - | - | 1-90 | - | - |
| Min. 2" SecurShield or SecurShield HD Comp. | 20 (1.6 sq. ft.) | - | - | 1-150 | - | - |
| Min. 2" SecurShield or SecurShield HD Comp. | 32 (1 sq. ft.) | - | - | 1-225 | - | - |

FM Approvals
 Design "A" Adhered Roofing Systems
SecurShield Ratings - Recover

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------------|--------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | 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 | Full-Coverage FAST | - | - | 1-90 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

Securock Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose laid | Min. 1/4" Securock | 12 (2.66 sq. ft) SecurFAST Plate | 1-75 | 345921-0-0 (HydroBond) | - |
| FM Approved | Loose laid | Min. 1/2" Securock | 10 (3.2 sq. ft) | 1-90 | 211999-0-0 (LVOC) | - |
| FM Approved | Loose laid | Min. 1/2" Securock | 10 (3.2 sq. ft) | 1-90 | 345911-0-0 (HydroBond) | 350400-0-0 |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/4" Securock | 10 (3.2 sq. ft) SecurFAST Plate | 1-90 | 345909-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 8 (4 sq. ft) | 1-90 | 212271-0-0 (LVOC) | - |
| FM Approved | Loose laid | Min. 5/8" Securock | 8 (4 sq. ft) | 1-90 | 345913-0-0 (HydroBond) | 350401-0-0 |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 8 (4 sq. ft) SecurFAST Plate | 1-90 | 319026-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 6 (5.33 sq. ft) SecurFAST Plate | 1-75 | - | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 5/8" Securock | 6 (5.33 sq. ft) SecurFAST Plate | 1-90 | 212009-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 20 (1.6 sq. ft) | 1-165 | 424163-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 32 (1 sq. ft) | 1-285 | 325914-0-0 (LVOC) | 325947-0-0 |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 32 (1 sq. ft) | 1-225 | 424162-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 32 (1 sq. ft) | 1-225 | 399395-0-0 (LVOC) | 399399-0-0 (LVOC) |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | Min. 1/4" Securock | 12" ribbons or Rig Splatter of FAST | 1-90 | 403963-0-0 (LVOC) | 408074-0-0 (LVOC) |
| Min. 1-1/2" InsulBase Polyiso | 8 (4 sq. ft.) | Min. 1/4" Securock | 12" ribbons or Rig Splatter of FAST | 1-90 | 187180-0-0 (LVOC) | - |
| Min. 1-1/2" InsulBase Polyiso | 18 (1.8 sq. ft.) | Min. 1/4" Securock | 6" ribbons or Rig Splatter of FAST | 1-105 | - | - |
| Min. 2" InsulBase Polyiso | 16 (2 sq. ft.) | Min. 1/2" Securock | 12" ribbons or Rig Splatter of FAST | 1-120 | 455775-0-0 | 455775-0-0 |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | Min. 1/2" Securock | 6" ribbons or Rig Splatter of FAST | 1-135 | 455742-0-0 | 455742-0-0 |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | Min. 1/2" Securock | 4" ribbons or Rig Splatter of FAST | 1-225 | 455817-0-0 | 455817-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 24 (1.33 sq. ft.) | Min. 1/4" Securock | 4" ribbons or Rig Splatter of FAST | 1-165 | 455814-0-0 (LVOC) | 455814-0-0 (LVOC) |
| Min. 1/2" DensDeck Prime or Securock | 16 (2 sq. ft.) | Min. 1/4" Securock over InsulBase Polyiso | 12" ribbons of FAST | 1-90 | - | - |
| Steel Deck (Min. 22 Gauge)/VapAir Seal 725 TR and Cav-Grip III or 702 Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | 1/4" Securock over Min. 1- 1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 386902-0-0 (HydroBond) | - |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | 1/4" Securock over Min. 1" Insulfoam EPS | 6" ribbons of FAST | 1-90 | 387333-0-0 (LVOC) | 387334-0-0 (LVOC) |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | 1/4" Securock over Min. 1" Insulfoam EPS | 6" ribbons of FAST | 1-90 | 502785-0-0 | 502785-0-0 |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA and Cav-Grip III | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | 1/2" Securock over Min. 1- 1/2" InsulBase Polyiso | FAST - Rig Splatter | 1-135 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 32 (1 sq. ft.) | 1/2" Securock over Min. 1- 1/2" InsulBase Polyiso | FAST - Rig Splatter | 1-225 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 90TG or 120TG Base Torch Applied | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | 1/4" Securock over Min. 1- 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | 1/4" Securock over Min. 1- 1/2" InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

Securock Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" Securock | 12" ribbons or Rig Splatter of FAST | 1-120 | 424738-0-0 (HydroBond) | - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" Securock | 12" ribbons or Rig Splatter of FAST | 1-285 | 429656-0-0 (LVOC) | - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" Securock | 12" ribbons or Rig Splatter of FAST | 1-225 | 400710-0-0 (LVOC) | 400711-0-0 (LVOC) |
| FM Approved | Loose laid | Min. 1/2" Securock | 10 (3.2 sq. ft.) | 1-90 | 395790-0-0 | - |
| Min. 1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 10 (3.2 sq. ft.) | 1-90 | 424818-0-0 | 398874-0-0 |
| Min. 1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 20 (1.6 sq. ft.) | 1-150 | 424819-0-0 | 398909-0-0 |
| Min. 1/2" InsulBase Polyiso | Loose laid | Min. 1/2" Securock | 32 (1 sq. ft.) | 1-270 | 424821-0-0 | 398910-0-0 |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" Securock | 12" ribbons of FAST | 1-315 | 424744-0-0 (Hydrobond) | - |
| | | | | | 364510-0-0 (LVOC) | 364511-0-0 |
| 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 | - | - |
| Concrete Deck/SureMB 70 SA with Cav-Grip III Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" Securock | 12" ribbons of FAST | 1-285 | 519840-0-0 | 519841-0-0 |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" Securock | 12" ribbons of FAST | 1-330 | 424801-0-0 (HydroBond) | 394638-0-0 |
| 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 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | Min. 1/4" Securock | 12" ribbons or Rig Splatter of FAST | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge) | | | | | | |
| Celcore | | | | | | |
| 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: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|----------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 2" InsulBase Polyiso | Hot Asphalt | Min. 1/4" Securock | Hot Asphalt | 1-495 | 303398-0-0 (LVOC) | 303398-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 1/4" Securock | 6" ribbons of FAST | 1-150 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

DensDeck Prime Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------|------------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose laid | Min. 1/4" DensDeck Prime | 12 (2.67 sq. ft) | 1-90 | 345893-0-0 (HydroBond) | - |
| FM Approved | Loose laid | Min. 1/2" DensDeck Prime | 10 (3.2 sq. ft) | 1-90 | 345920-0-0 (HydroBond) | 379949-0-0 |
| FM Approved | Loose laid | Min. 1/2" DensDeck Prime | 20 (1.6 sq. ft) | 1-105 | 345904-0-0 (HydroBond) | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" DensDeck Prime | 8 (4 sq.ft) | 1-90 | 388252-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/4" DensDeck Prime | 18 (1.8 sq. ft) | 1-105 | 382311-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" DensDeck Prime | 18 (1.8 sq. ft) | 1-135 | 383701-0-0 | 396259-0-0 |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" DensDeck Prime | 20 (1.6 sq. ft) | 1-150 | 383711-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" DensDeck Prime | 32 (1 sq. ft) | 1-165 | 387932-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" DensDeck Prime | 32 (1 sq. ft) | 1-180 (29) | 384597-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | Min. 1/2" DensDeck Prime | 32 (1 sq. ft) | 1-255 (30) | 387933-0-0 | 510376-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | Min. 1/4" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-90 | 403961-0-0 (LVOC) | 403961-0-0 (LVOC) |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | Min. 1/4" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-90 | 187145-0-0 (LVOC) | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | Min. 1/4" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-90 | 428869-0-0 (HydroBond) | - |
| Min. 2" InsulBase Polyiso | 16 (2 sq. ft.) | Min. 1/2" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-120 | 455774-0-0 | 455774-0-0 |
| Min. 2" InsulBase Polyiso | 20 (1.6 sq. ft.) | Min. 1/2" DensDeck Prime | 6" ribbons or Rig Splatter of FAST | 1-135 | 455741-0-0 | 455741-0-0 |
| Min. 2" InsulBase Polyiso | 32 (1 sq. ft.) | Min. 1/2" DensDeck Prime | 4" ribbons or Rig Splatter of FAST | 1-165 | 455812-0-0 (LVOC) | 455812-0-0 (LVOC) |
| Min. 1/2" DensDeck Prime or Securock | 16 (2 sq. ft.) | Min. 1/4" DensDeck Prime over InsulBase Polyiso | 12" ribbons of FAST | 1-90 | - | - |
| Steel Deck (Min. 22 Gauge)/VapAir Seal 725 TR and Cav-Grip III or 702 Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 1/4" DensDeck Prime over InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | 1-90 | 400374-0-0 (HydroBond) | 400351-0-0 (LVOC) |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 1/4" DensDeck Prime over Insulfoam EPS | 6" ribbons of FAST | 1-90 | 502785-0-0 | 502785-0-0 |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 1/2" DensDeck Prime over InsulBase Polyiso | FAST - Rig Splatter | 1-135 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 32 (1 sq. ft.) | Min. 1/2" DensDeck Prime over InsulBase Polyiso | FAST - Rig Splatter | 1-240 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 1/4" DensDeck Prime over InsulBase Polyiso | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 1/4" DensDeck Prime over InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 90TG and 120TG Base Torch Applied | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft) | Min. 1/4" DensDeck Prime over InsulBase Polyiso | 12" ribbons of FAST | 1-90 | 458442-0-0 | 470109-0-0 (LVOC) |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 1/4" DensDeck Prime over InsulBase Polyiso | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

DensDeck Prime Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | Roof/NAV Number | |
| Concrete Deck | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-315 | 345857-0-0 | - |
| Min. 1/2" InsulBase Polyiso | Hot Asphalt | Min. 1/4" DensDeck Prime | Hot Asphalt | 1-300 | - | - |
| Min. 1" InsulBase Polyiso | Loose laid | Min. 5/8" DensDeck Prime | 8 (4 sq. ft) | 1-90 | 424540-0-0 | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | Min. 1/4" DensDeck Prime | Full-Coverage FAST | 1-90 | 424532-0-0 | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | Min. 1/4" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-90 | 424531-0-0 | - |
| Concrete Deck/VapAir Seal 725 TR and 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 | 424748-0-0 | - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" DensDeck Prime | 12" ribbons of FAST | 1-315 | 364642-0-0 | 364511-0-0 |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 1/4" DensDeck Prime | 6" ribbons of FAST | 1-465 | - | - |
| Concrete Deck/SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" DensDeck Prime | 12" ribbons of FAST | 1-285 | 519847-0-0 | 519841-0-0 |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" DensDeck Prime | 12" ribbons of FAST | 1-330 | 424803-0-0 (Hydrobond) | 394638-0-0 |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 1/4" DensDeck Prime | 12" ribbons of FAST | 1-315 | - | 393037-0-0 |
| 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 | 164605-0-0 | - |
| Gypsum Deck Tear-Off/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons or Rig Splatter of FAST | Min. 1/4" DensDeck Prime | 12" ribbons or Rig Splatter of FAST | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over 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: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| - | - | 1/2" DensDeck Prime | 6" ribbons of FAST | 1-135 | 458985-0-0 | 458985-0-0 |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/4" DensDeck Prime | 12" ribbons of FAST | 1-90 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

StormBasae Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose Laid | Min. 2" StormBase | 17 (1.8 sq. ft) | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/VapAir Seal 725 TR and 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 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 2" StormBase | 6" ribbons of FAST | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 2" StormBase | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 2" StormBase | 6" ribbons of FAST | 1-135 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 90TG and 120TG Base Torch Applied | | | | | | |
| Min. 1/2" DensDeck Prime or Securock | 8 (4 sq. ft.) | Min. 2" StormBase | 12" ribbons of FAST | 1-90 | - | - |
| Min. 1/2" DensDeck Prime or Securock | 20 (1.6 sq. ft.) | Min. 2" StormBase | 6" ribbons of FAST | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

StormBasae Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|---------------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 2" StormBase | 12" ribbons of FAST | 1-360 | 342089-0-0 (LVOC) | - |
| | | | | | 424575-0-0 (HydroBond) | - |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 2" StormBase | 12" ribbons of FAST | 1-315 | - | - |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 2" StormBase | 12" ribbons of FAST | 1-255 | - | - |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 2" StormBase | 6" ribbons of FAST | 1-315 | - | - |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 2" StormBase | 6" ribbons of FAST | 1-360 | - | - |
| Concrete Deck/SureMB 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 2" StormBase | 12" ribbons of FAST | 1-285 | - | - |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | Min. 2" StormBase | 12" ribbons of FAST | 1-330 | - | - |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 2" StormBase | 6" ribbons of FAST | 1-315 | - | - |
| Min. 1-1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 2" StormBase | 6" ribbons of FAST | 1-360 | - | - |
| 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 725 TR and 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 Over Steel Decking (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose Laid | Min. 2" StormBase | 17 (1.8 sq. ft) | 1-135 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

StormBase Rating - Recover

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 6" ribbons of FAST | Min. 2" StormBase | 6" ribbons of FAST | 1-150 | - | - |

FM Approvals
Design "A" Adhered Roofing Systems

HP Recovery Board Ratings - New Construction

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
.050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC)

| Base Insulation Layer (Max. thickness 36") | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose laid | Min. 1/2" HP Recovery Board | 16 (2 sq. ft) | 1-90 | - | - |
| Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge) | | | | | | |
| FM Approved | Loose laid | Min. 1/2" HP Recovery Board | 16 (2 sq. ft) | 1-90 | - | - |

FM Approvals

EcoStorm VSH Ratings - New Construction (SH RATINGS ONLY)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------|------------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| Min. 1-1/2" InsulBase Polyiso | Loose laid | 1/2" EcoStorm VSH | 8 (4 sq. ft) | 1-90 | - | - |
| FM Approved | Loose laid | 1/2" EcoStorm VSH | 18 (1.8 sq. ft) | 1-120 | - | - |
| FM Approved | Loose laid | 1/2" EcoStorm VSH | 32 (1 sq. ft) | 1-165 | 518805-0-0 | - |
| FM Approved | Loose laid | 1/2" EcoStorm VSH | 24 (1.33 sq. ft) | 1-225 (30) | - | - |
| FM Approved | Loose laid | 1/2" EcoStorm VSH | 32 (1 sq. ft) | 1-270 (30) | 518806-0-0 | - |
| Min. 1-1/2" InsulBase Polyiso | 10 (3.2 sq. ft.) | 1/2" EcoStorm VSH | 6" ribbons of FAST | 1-90 | - | - |
| Min. 2" InsulBase Polyiso | 8 (4 sq. ft) | 1/2" EcoStorm VSH | 6" ribbons of FAST | 1-90 | - | - |
| 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. 1-1/2" InsulBase Polyiso | 24 (1.33 sq. ft.) | 1/2" EcoStorm VSH | 4" ribbons of FAST | 1-165 | - | - |
| 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 725 TR and 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 | - | - |
| Steel Deck (Min. 22 Gauge)/SureMB 70 SA and Cav-Grip III 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 | - | - |
| 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 | - | - |

FM Approvals

EcoStorm VSH Ratings - New Construction (SH RATINGS ONLY)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|----------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Concrete Deck | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" EcoStorm VSH | 12" ribbons of FAST | 1-225 | - | - |
| Min. 2" Insulfoam EPS | 12" ribbons of FAST | 1/2" EcoStorm VSH | 12" ribbons of FAST | 1-285 | - | - |
| Min. 1/2" InsulBase Polyiso | Loose laid | 1/2" EcoStorm VSH | 16 (2 sq. ft.) | 1-90 | - | - |
| Concrete Deck/VapAir Seal 725 TR and Cav-Grip III, 702-LV or 702 Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso or Min. 2" Insulfoam | 12" ribbons of FAST | 1/2" EcoStorm VSH | 12" ribbons of FAST | 1-255 | - | - |
| 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 70 SA and Cav-Grip III Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" EcoStorm VSH | 12" ribbons of FAST | 1-285 | 519875-0-0 | - |
| Concrete Deck/SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer | | | | | | |
| Min. 1/2" InsulBase Polyiso | 12" ribbons of FAST | 1/2" EcoStorm VSH | 12" ribbons of FAST | 1-225 | - | - |
| 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 and 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 | - | - |
| Cellular Lightweight Insulating Concrete Over 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 (SH RATINGS ONLY)

Membrane Type: .050", .060" or .080" Sure-Flex PVC Reinforced Membrane
 .050", .060" or .080" Sure-Flex KEE HP Reinforced Membrane

Membrane Adhesive: Low VOC PVC Bonding Adhesive (LVOC) Cav-Grip PVC (CGP) or HydroBond Water-Based PVC Bonding Adhesive (HydroBond)

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

| Base Insulation Layer | Base Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Top Insulation Layer | Top Layer Fastening (mechanically fastened see notes 25, 26 & 27) | Rating | Sure-Flex PVC | Sure-Flex KEE HP (LVOC Only) |
|-----------------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|--------|------------------|------------------------------------|
| | | | | | RoofNAV Number | |
| Steel Deck (Min. 22 Gauge) | | | | | | |
| - | - | 1/2" EcoStorm VSH | 8 (4 sq. ft) | 1-90 | - | - |
| - | - | 1/2" EcoStorm VSH | 6" 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. 1/2" InsulBase Polyiso | 6" ribbons of FAST | 1/2" EcoStorm VSH | 6" ribbons of FAST | 1-90 | - | - |

NATIONAL, STATE & CITY BUILDING CODE APPROVALS

| Authority | Approval # |
|----------------------------------|-------------------|
| ICC – International Code Council | Report ESR-1463 |

State of Florida Evaluation Report

| Evaluation Report Number | Evaluation Report Use |
|---------------------------------|--------------------------------------------------|
| FL-14165 | Not for use in High Velocity Hurricane Zone area |
| FL-16438 | For use in High Velocity Hurricane Zone area |

**Dade County (South Florida) Approvals
Expires August, 2026**

| Deck Type | Acceptance # |
|-------------------------|---------------------|
| Wood | 21-0409.07 |
| Steel | 21-0409.06 |
| Structural Concrete | 21-0409.03 |
| Cementitious Wood Fiber | 21-0409.05 |
| Gypsum | 21-0409.02 |
| Recover | 21-0409.04 |

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

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Sure-Flex™ (PVC) Reference Notes

1. 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.
2. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below.
3. All insulation joints must be staggered a minimum of 12 inches from the deck joints or from the insulation joints directly below.
4. DELETED
5. DELETED
6. DELETED
7. DELETED
8. DELETED
9. DELETED
10. On Steel Deck (Min. 22 Gauge), 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.
11. Testing conducted on FM approved 22-gauge Grade E Steel Deck (Min. 22 Gauge) meeting ASTM Designation A611 or A653 Grade 80.

FM Approval - Field Sheet Securement and Induction Welding Securement Criteria for InsulBase and SecurShield

FM Approval - Field Sheet Securement & Induction Welding Securement Criteria for InsulBase & SecurShield Recover

FM Approval - Field Sheet Securement and Induction Welding Securement Criteria for Dens Deck & Securock

FM Approval - Field Sheet Securement and Induction Welding Securement Criteria for SecurShield HD

FM Approval - Field Sheet Securement and Induction Welding Securement Criteria for SecurShield HD Recover

17. DELETED

18. DELETED

19. DELETED

20. DELETED

21. DELETED

22. DELETED

23. DELETED

24. DELETED

25. Sure-Seal HP fastener/Sure-Seal Insulation plate.

26. InsulFAST fastener/Sure-Seal Insulation plate.

27. InsulFAST fastener/SecurFAST Insulation Fastening plate.

28. DELETED

29. 80 ksi with one fastener per attachment point.

30. 80 ksi with two fasteners per attachment point.