

# FleeceBACK<sup>®</sup>

## Roofing Systems

### FleeceBACK EPDM, TPO and PVC Adhered Roofing Systems with FAST\* and Flexible FAST Adhesive

#### Code Approval Guide

January, 2017

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\* - Any reference to FAST adhesive in this document includes FAST 100 LV and Flexible FAST



**UL Approval - Non-Combustible - ANSI/UL 790 Spread of Flame Test (Class A)  
FleeceBACK with FAST Adhered Roofing System**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

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

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

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**UL Approval - Combustible - ANSI/UL 790 Spread of Flame Test - Class A**  
**FleeceBACK with FAST Adhered Roofing System**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

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

System ID	Thermal Barrier/ Base Sheet	Insulation	Cover Board (2)	Maximum Slope				
				Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
<b>Combustible - ANSI/UL 790 Spread of Flame Test-Class A</b>								
1	Minimum 1/4" SECUROCK® Gypsum Fiber or Glass Mat Roof Board(1)	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/2"	1/2"	1/4"	2-1/2"	3/4"
2	Minimum 1/4" DensDeck or DensDeck Prime Roof Boards (1)	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/2"	1/2"	1/2"	2-1/2"	3/4"
3	N/A	Minimum 3" layer or two layers of 1-1/2" SecurShield or SecurShield HD Composite. (1)(3)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
4	N/A	Minimum 2.5" layer SecurShield or SecurShield HD Composite over a 2.5" (minimum) layer of Carlisle InsulBase Insulation. (1)(4)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
5	Carlisle FR Base Sheet	Minimum 1.9" layer of SecurShield or SecurShield HD Composite. (1)(4)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
6	N/A	Minimum 2.5" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (1)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	1/2"	1/2"	1/2"
7	Carlisle FR Base Sheet	Minimum 1.4" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (1)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	1/2"	1/2"	1/2"
8	N/A	Minimum 1" layer of SecurShield CD. (1)(5)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
9	N/A	Minimum 4" layer of any UL Classified EPS Insulation. (1)(6)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	1/2"	1/2"	1/2"
10	N/A	Minimum 1" layer of SecurShield CD over a minimum 3.5" layer of any UL Classified EPS Insulation. (1)(6)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
11	N/A	Minimum 1.5" layer of Insulfoam HD Composite over a minimum 3" layer of Insulfoam EPS. (1)(6)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
12	N/A	Minimum 2" layer of Insulfoam HD Composite over a minimum 2.5" layer of Insulfoam EPS. (1)(6)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
13	N/A	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (1)	2"	2"	3"	3"	3"
14	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 3/8" SECUROCK® Gypsum Fiber Roof Board (1)	2"	2"	3"	2"	2"
15	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" SECUROCK® Gypsum Fiber Roof Board (1)	2"	2"	3"	4"	4"

**UL Approval - Combustible - ANSI/UL 790 Spread of Flame Test - Class A  
FleeceBACK with FAST Adhered Roofing System**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

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

System ID	Thermal Barrier/ Base Sheet	Insulation	Cover Board (2)	Maximum Slope				
				Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
16	One Ply of Type G2	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (1)	2"	2"	3"	3"	3"
17	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" DensDeck Prime Roof Boards (1)	2"	2"	3"	3"	Unlimited
18	Three or Two layers of Carlisle FR Base Sheet	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	N/A	1/2"	1/2"	1/2"	1/2"	1/2"

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**UL Approval - Combustible and Non-Combustible - ANSI/UL 790 Spread of Flame Test - Class B and C  
FleeceBACK with FAST Adhered Roofing System**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

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

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

System ID	Thermal Barrier/ Base Sheet	Insulation	Cover Board	Maximum Slope				
				Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
<b>Combustible - ANSI/UL 790 Spread of Flame Test-Class B</b>								
1	N/A	Minimum 1.9" layer of SecurShield or SecurShield HD Composite. (7)(8)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
2	N/A	Minimum 1.4" layer of any UL Classified Carlisle Polyisocyanurate Insulation. (7)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	1/2"	1/2"	1/2"
3	N/A	Minimum 1" layer of SecurShield CD. (7)(9)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
4	One Layer of Carlisle FR Base Sheet	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. (OPTIONAL)	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
5	Inverted G3 cap sheet	N/A	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
<b>Combustible - ANSI/UL 790 Spread of Flame Test-Class C</b>								
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Insulation	N/A	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
<b>Non-Combustible - ANSI/UL 790 Spread of Flame Test-Class C</b>								
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Insulation.	N/A	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

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

System ID	Deck Type	Insulation	Cover Board	Maximum Slope				
				Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
1	<b>Combustible or Non-Combustible</b>	Smooth Asphalt BUR (Type II or IV Asphalt)	N/A	1"	1/2"	1/2"	1"	1"
2		Mineral Surfaced Cap Sheet	N/A	1"	1/2"	1/2"	1"	1"
3		Modified Bitumen	N/A	1"	1/2"	1/2"	1"	1"
4		Sprayed-in-Place Urethane	N/A	2"	1/2"	1/2"	2"	2"
5		Single-Ply (10)	N/A	2"	1/2"	1/2"	2"	2"

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Ratings - New Construction**

**Membrane Type:**

Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,  
Base Layer and  
Top Layer Adhesive:**

FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
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	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" SecurShield HD	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-165	-	-	-	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	1/2" SecurShield HD over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	1/2" SecurShield HD over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	345889-0-0 4" o.c.	345891-0-0 4" o.c.	345892-0-0 4" o.c.	345894-0-0 4" o.c.	345895-0-0 4" o.c.
<b>Concrete Deck</b>									
Min. 1" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-315	341352-0-0 4" o.c.	341361-0-0 4" o.c.	341359-0-0 4" o.c.	384625-0-0 4" o.c.	341379-0-0 4" o.c.
Min. 1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1/2" SecurShield HD	12" ribbons of Olybond 500 BA	1-240	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	1/2" SecurShield HD	Hot Asphalt	1-240	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD	Full-Coverage FAST	1-255 Cav-Grip	354560-0-0 4" o.c.	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-
<b>Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD	12" ribbons of FAST	1-255	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD	Full-Coverage FAST	1-240	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1/2" SecurShield HD	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
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	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	1/2" SecurShield HD	4" ribbons of FAST	1-135	-	-	-	-	-
-	-	1/2" SecurShield HD	4" ribbons of FAST	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	1/2" SecurShield HD	4" ribbons of FAST	1-135	-	-	-	-	-
-	-	1/2" SecurShield HD	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Ratings - Recover**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
-	-	1/2" SecurShield HD	12 (2.67 sq. ft)	1-75	-	-	-	-	-
-	-	1/2" SecurShield HD	16 (2 sq. ft)	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD	4" ribbons of FAST	1-150	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso or SecurShield	6" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-90	394761-0-0 (12" o.c.)	-	-	-	-
-	-	1/2" SecurShield HD	6" ribbons of FAST	1-150	-	-	-	-	-
<b>Tectum Deck</b>									
-	-	1/2" SecurShield HD	Full-Coverage FAST	1-150	-	-	-	-	-
-	-	1/2" SecurShield HD	Full-Coverage FAST	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD	Full-Coverage FAST	1-150	-	-	-	-	-
-	-	1/2" SecurShield HD	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
-	-	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Plus Ratings - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
FM Approved	Loose laid	1/2" SecurShield HD Plus	8 (4 sq. ft)	1-90	-	-	-	-	-
FM Approved	Loose laid	1/2" SecurShield HD Plus	18 (1.8 sq. ft)	1-120	-	-	-	-	-
FM Approved	Loose laid	1/2" SecurShield HD Plus	24 (1.33 sq. ft)	1-225	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-90	-	-	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD Plus	4" ribbons of FAST	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD Plus	4" ribbons of FAST	1-165	-	-	-	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	1/2" SecurShield HD Plus over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	1/2" SecurShield HD Plus over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	345889-0-0 4" o.c.	345891-0-0 4" o.c.	345892-0-0 4" o.c.	345894-0-0 4" o.c.	345895-0-0 4" o.c.
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-225	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1/2" SecurShield HD Plus	12" ribbons of Olybond 500 BA	1-240	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	1/2" SecurShield HD Plus	Hot Asphalt	1-240	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Plus Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST or Dual Tank	1/2" SecurShield HD Plus	12" ribbons of FAST or Dual Tank	1-255	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	Full-Coverage FAST	1-240	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	Full-Coverage FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1/2" SecurShield HD Plus	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
FM Approved	Loose laid	1/2" SecurShield HD Plus	8 (2.67 sq. ft)	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD Plus	8 (2.67 sq. ft)	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	1/2" SecurShield HD Plus	4" ribbons of FAST	1-135	-	-	-	-	-
-	-	1/2" SecurShield HD Plus	4" ribbons of FAST	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	1/2" SecurShield HD Plus	4" ribbons of FAST	1-135	-	-	-	-	-
-	-	1/2" SecurShield HD Plus	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Plus Ratings - Recover**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
-	-	1/2" SecurShield HD Plus	8 (4 sq. ft)	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD Plus	6" ribbons of FAST	1-90	-	-	-	-	-
-	-	1/2" SecurShield HD Plus	4" ribbons of FAST	1-150	-	-	-	-	-
<b>Concrete Deck</b>									
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	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	Full-Coverage FAST	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1/2" SecurShield HD Plus	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	Full-Coverage FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1/2" SecurShield HD Plus	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**InsulBase Polyiso Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening <small>(mechanically fastened see notes 11, 12 &amp; 13)</small>	Top Insulation Layer	Top Layer Fastening <small>(mechanically fastened see notes 11, 12 &amp; 13)</small>	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
Min. 1-1/2" InsulBase Polyiso	16 (2 sq. ft.)	-	-	1-90	154319-0-0 12" o.c.	-	-	343888-0-0 12" o.c.	343888-0-0 12" o.c.
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	-	-	1-90	212395-0-0 12" o.c.	212402-0-0 12" o.c.	212428-0-0 12" o.c.	343950-0-0 12" o.c.	343950-0-0 12" o.c.
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	-	-	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	208668-0-0 12" o.c.	212387-0-0 12" o.c.	212419-0-0 12" o.c.	343911-0-0 12" o.c.	343911-0-0 12" o.c.
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	1-90	-	-	-	343951-0-0 12" o.c.	343951-0-0 12" o.c.
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1" InsulBase Polyiso	6" ribbons of FAST	1-165	-	-	212367-0-0 6" o.c.	-	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	353054-0-0 12" o.c.	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime	16 (2 sq. ft.)	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-105	-	-	-	353054-0-0 12" o.c.	-
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-315	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	-	-	1-315	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	-	-	1-315	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	323994-0-0 4" o.c.
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-330	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**InsulBase Polyiso Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	-	-	1-240	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	16 (2 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	-	-	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Full-coverage Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
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	-	-	-	-	-
Min. 1" InsulBase Polyiso	4" ribbons of FAST	-	-	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	1-1/2" InsulBase Polyiso	4" ribbons of FAST	1-135	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	-	-	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**InsulBase Polyiso Ratings - Recover**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1" InsulBase Polyiso	Full-Coverage FAST	-	-	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Full-Coverage Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1" InsulBase Polyiso	Full-Coverage FAST	-	-	1-150	-	-	-	-	-
Min. 1" InsulBase Polyiso	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1" InsulBase Polyiso	Full-Coverage FAST	-	-	1-90	-	-	-	-	-
Min. 1" InsulBase Polyiso	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
(FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
Min. 1-1/2" SecurShield	16 (2 sq. ft)	-	-	1-90	154319-0-0 12" o.c.	154316-0-0 12" o.c.	154480-0-0 12" o.c.	343888-0-0 12" o.c.	343888-0-0 12" o.c.
Min. 2" SecurShield	8 (4 sq. ft)	-	-	1-90	212395-0-0 12" o.c.	212403-0-0 12" o.c.	212428-0-0 12" o.c.	343950-0-0 12" o.c.	343950-0-0 12" o.c.
Min. 2" SecurShield	20 (1.6 sq. ft.)	-	-	1-165	212368-0-0 6" o.c.	212376-0-0 6" o.c.	283869-0-0 6" o.c.	324020-0-0 6" o.c.	324020-0-0 6" o.c.
Min. 2" SecurShield	32 (1 sq. ft.)	-	-	1-270	245553-0-0 4" o.c.	-	283872-0-0 4" o.c.	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1" SecurShield	12" ribbons FAST	1-90	-	212387-0-0 12" o.c.	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 1" SecurShield	12" ribbons of FAST	1-90	208816-0-0 12" o.c.	212402-0-0 12" o.c.	212427-0-0 12" o.c.	-	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	Min. 1" SecurShield	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1" SecurShield	6" ribbons of FAST	1-165	212367-0-0 6" o.c.	212375-0-0 6" o.c.	212413-0-0 6" o.c.	343906-0-0 6" o.c.	343906-0-0 6" o.c.
Min. 1/2" DensDeck Prime	16 (2 sq. ft.)	Min. 1-1/2" SecurShield	12" ribbons of FAST	1-90	352968-0-0 12" o.c.	353039-0-0 12" o.c.	353032-0-0 12" o.c.	353054-0-0 12" o.c.	353059-0-0 12" o.c.
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 1" SecurShield	12" ribbons FAST	1-105	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1/2" SecurShield	12" ribbons of FAST	-	-	1-225	-	-	-	-	-
Min. 1/2" SecurShield	12" ribbons of Olybond 500 BA	-	-	1-240	-	-	-	-	-
Min. 1/2" SecurShield	Hot Asphalt	-	-	1-300	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 2" SecurShield	Full-Coverage FAST	-	-	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	275084-0-0 4" o.c.	-	275535-0-0 4" o.c.	343932-0-0 4" o.c.	343932-0-0 4" o.c.
				1-90 702	-	-	-	-	323994-0-0 4" o.c.
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1" SecurShield	12" ribbons of FAST	1-330	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1-1/2" SecurShield	16 (2 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield	Full-Coverage FAST	-	-	1-150	-	-	-	-	-
Min. 1-1/2" SecurShield	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" SecurShield	16 (2 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield	Full-Coverage FAST	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
Min. 1-1/2" SecurShield	16 (2 sq. ft)	-	-	1-75	-	-	-	-	-
Min. 2" SecurShield	8 (4 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 2" SecurShield	20 (1.6 sq. ft.)	-	-	1-150	-	-	-	-	-
Min. 2" SecurShield	32 (1 sq. ft.)	-	-	1-270	-	-	-	-	-
Min. 1-1/2" SecurShield	4" ribbons of FAST	-	-	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	1/2" SecurShield	4" ribbons of FAST	1-135	-	-	-	-	-
-	-	1/2" SecurShield	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield Ratings - Recover**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
<b>Concrete Deck</b>									
1-1/2" SecurShield	12" ribbons of FAST	-	-	1-90	154475-0-0 12" o.c.	-	-	-	-
<b>Tectum Deck</b>									
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
1" SecurShield	Full-Coverage FAST	-	-	1-150	-	-	-	-	-
1" SecurShield	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
1" SecurShield	Full-Coverage FAST	-	-	1-90	-	-	-	-	-
1" SecurShield	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Composite Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
Min. 2" SecurShield HD Composite	16 (2 sq. ft.)	-	-	1-90	303555-0-0 12" o.c.	-	303579-0-0 12" o.c.	-	324073-0-0 12" o.c.
Min. 2" SecurShield HD Composite	8 (4 sq. ft.)	-	-	1-90	303560-0-0 12" o.c.	-	303584-0-0 12" o.c.	-	324078-0-0 12" o.c.
Min. 2" SecurShield HD Composite	20 (1.6 sq. ft.)	-	-	1-165	212368-0-0 6" o.c.	-	303593-0-0 6" o.c.	-	324095-0-0 6" o.c.
Min. 2" SecurShield HD Composite	32 (1 sq. ft.)	-	-	1-270	245553-0-0 4" o.c.	-	303613-0-0 4" o.c.	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	303587-0-0 12" o.c.	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	Min. 2" SecurShield HD Composite	12" ribbons of FAST	1-90	303558-0-0 12" o.c.	-	303591-0-0 12" o.c.	-	324080-0-0 12" o.c.
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	Min. 1" SecurShield HD Composite	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 2" SecurShield HD Composite	6" ribbons of FAST	1-165	212367-0-0 6" o.c.	-	303592-0-0 6" o.c.	-	-
Min. 1/2" DensDeck Prime	16 (2 sq. ft.)	Min. 1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 2" SecurShield HD Composite	12" ribbons of FAST	1-105	303325-0-0 4" o.c.	-	-	-	-
<b>Concrete Deck</b>									
Min. 1/2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-225	-	-	-	-	-
Min. 1/2" SecurShield HD Composite	12" ribbons of Olybond 500 BA	-	-	1-240	-	-	-	-	-
Min. 1/2" SecurShield HD Composite	Hot Asphalt	-	-	1-300	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**SecurShield HD Composite Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1" SecurShield HD Composite	12" ribbons of FAST	1-330	-	-	-	-	-
<b>Tectum Deck SecurShield</b>									
Min. 1-1/2" SecurShield HD Composite	16 (2 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield HD Composite	Full-Coverage FAST	-	-	1-150	-	-	-	-	-
Min. 1-1/2" SecurShield HD Composite	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off SecurShield</b>									
Min. 1-1/2" SecurShield HD Composite	16 (2 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield HD Composite	Full-Coverage FAST	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield HD Composite	12" ribbons of Olybond 500 BA	-	-	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
Min. 1-1/2" SecurShield HD Composite	16 (2 sq. ft)	-	-	1-75	-	-	-	-	-
Min. 2" SecurShield HD Composite	8 (4 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 2" SecurShield HD Composite	20 (1.6 sq. ft.)	-	-	1-150	-	-	-	-	-
Min. 2" SecurShield HD Composite	32 (1 sq. ft.)	-	-	1-225	-	-	-	-	-
Min. 1-1/2" SecurShield HD Composite	4" ribbons of FAST	-	-	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 2" SecurShield HD Composite	4" ribbons of FAST	1-135	-	-	-	-	-
-	-	Min. 2" SecurShield HD Composite	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**Securock Ratings - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
FM Approved	Loose laid	Min. 1/4" Securock	12 (2.66 sq. ft)	1-75	-	-	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	10 (3.2 sq. ft)	1-90	326686-0-0 4" o.c.	-	394640-0-0 4" o.c.	375484-0-0 4" o.c.	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/4" Securock	10 (3.2 sq. ft) SecurFAST Plate	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 5/8" Securock	8 (4 sq. ft) SureFAST Plate	1-90	-	-	-	-	-
FM Approved	Loose laid	Min. 5/8" Securock	8 (4 sq. ft)	1-90	-	-	394641-0-0 4" o.c.	375486-0-0 4" o.c.	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	8 (4 sq. ft) SecurFAST Plate	1-90	-	-	-	-	-
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	-	-	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	20 (1.6 sq. ft)	1-150	-	-	394642-0-0 4" o.c.	-	373594-0-0 4" o.c.
FM Approved	Loose laid	Min. 1/2" Securock	32 (1 sq. ft)	1-255	270028-0-0 4" o.c.	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1/4" Securock	6" ribbons of FAST	1-90	345932-0-0 4" o.c.	345885-0-0 4" o.c.	345886-0-0 4" o.c.	345887-0-0 4" o.c.	345888-0-0 4" o.c.
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 1/4" Securock	12" ribbons of FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	Min. 1/4" Securock	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	Min. 1/4" Securock	4" ribbons of FAST	1-165	-	-	-	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 1/4" Securock over 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 1/4" Securock over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	317157-0-0 6" o.c.	-	343679-0-0 6" o.c.

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**Securock Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-315	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/4" Securock	12" ribbons of Olybond 500 BA	1-240	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	Min. 1/4" Securock	Hot Asphalt	1-300	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" Securock	12" ribbons of FAST	1-255 Cav-Grip	354560-0-0 (LV Only)	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" Securock	12" ribbons of FAST	1-255	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" Securock	Full-Coverage FAST	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/4" Securock	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" Securock	Full-Coverage FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/4" Securock	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
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)	1-255	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 1/2" Securock	4" ribbons of FAST	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1" InsulBase Polyiso	4" ribbons of FAST	Min. 1/4" Securock	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**Securock Ratings - Recover**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**DensDeck Prime Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening <small>(mechanically fastened see notes 11, 12 &amp; 13)</small>	Top Insulation Layer	Top Layer Fastening <small>(mechanically fastened see notes 11, 12 &amp; 13)</small>	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
FM Approved	Loose laid	Min. 1/4" DensDeck Prime	12 (2.67 sq. ft)	1-90	-	-	-	-	-
FM Approved	Loose laid	Min. 5/8" DensDeck Prime	8 (4 sq. ft)	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/4" DensDeck Prime	18 (1.8 sq. ft)	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	18 (1.8 sq. ft)	1-135	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	20 (1.6 sq. ft)	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-165	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-180 (18)	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-255 (19)	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	212382-0-0 12" o.c.	212390-0-0 12" o.c.	212422-0-0 12" o.c.	343651-0-0 12" o.c.	343651-0-0 12" o.c.
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	212397-0-0 12" o.c.	212405-0-0 12" o.c.	212430-0-0 12" o.c.	343655-0-0 12" o.c.	343655-0-0 12" o.c.
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	Min. 1/4" DensDeck Prime	6" ribbons of FAST	1-105	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	Min. 1/4" DensDeck Prime	4" ribbons of FAST	1-165	-	-	-	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 1/2" DensDeck Prime over InsulBase Polyiso	32 (1 sq. ft)	1-270	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 1/4" DensDeck Prime over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	317157-0-0 6" o.c.	343679-0-0 6" o.c.	343679-0-0 6" o.c.
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-315	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/4" DensDeck Prime	12" ribbons of Olybond 500 BA	1-300	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	Min. 1/4" DensDeck Prime	Hot Asphalt	1-300	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**DensDeck Prime Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:** FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-255	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" DensDeck Prime	Full-Coverage FAST	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/4" DensDeck Prime	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	-	-	-	343688-0-0 12" o.c.	343688-0-0 12" o.c.
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/4" DensDeck Prime	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
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	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 1/2" DensDeck Prime	4" ribbons of FAST	1-135	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 1/4" DensDeck Prime	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**DensDeck Prime Ratings - Recover**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**HP Recovery Board Ratings - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNA V Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
FM Approved	Loose laid	Min. 1/2" HP Recovery Board	16 (2 sq. ft)	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1/2" HP Recovery Board	6" ribbons of FAST	1-90	-	-	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 1/2" HP Recovery Board	12" ribbons of FAST	1-90	-	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	Min. 1/2" HP Recovery Board	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" DensDeck Prime or Securock	16 (2 sq. ft.)	Min. 1/2" HP Recovery Board over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/2" HP Recovery Board	12" ribbons of FAST	1-315	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/2" HP Recovery Board	12" ribbons of Olybond 500 BA	1-240	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Hot Asphalt	Min. 1/2" HP Recovery Board	Hot Asphalt	1-300	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/2" HP Recovery Board	12" ribbons of FAST	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/2" HP Recovery Board	12" ribbons of FAST	1-330	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/2" HP Recovery Board	Full-Coverage FAST	1-240	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/2" HP Recovery Board	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/2" HP Recovery Board	12" ribbons of FAST	1-90	173473-0-0 (12" o.c.)	173498-0-0 (12" o.c.)	173531-0-0 (12" o.c.)	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 1/2" HP Recovery Board	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-

Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**HP Recovery Board Ratings - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNA V Number				
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
FM Approved	Loose laid	Min. 1/2" HP Recovery Board	16 (2 sq. ft)	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 1/2" HP Recovery Board	4" ribbons of FAST	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 1/2" HP Recovery Board	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**HP Recovery Board Ratings - Recover**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Concrete Deck</b>									
Min. 1" InsulBase Polyiso	Full-Coverage FAST	Min. 1/2" HP Recovery Board	Full-Coverage FAST	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**OSB Ratings - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22 Gauge)</b>									
Min. 1.4" InsulBase Polyiso	Loose laid	Min. 7/16" OSB	17 (1.9 sq. ft)	1-150	-	-	66592-0-0 4" o.c.	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip Primer</b>									
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 7/16" OSB over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 7/16" OSB	12" ribbons of FAST	1-315	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 7/16" OSB	12" ribbons of Olybond 500 BA	1-240	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	Min. 7/16" OSB	Hot Asphalt	1-300	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 7/16" OSB	12" ribbons of FAST	1-255 Cav-Grip	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip, 702-LV or 702 Primer</b>									
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 7/16" OSB over InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 7/16" OSB	12" ribbons of FAST	1-330	-	-	-	-	-
<b>Tectum Deck</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 7/16" OSB	Full-Coverage FAST	1-150	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 7/16" OSB	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 7/16" OSB	Full-Coverage FAST	1-90	-	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of Olybond 500 BA	Min. 7/16" OSB	12" ribbons of Olybond 500 BA	1-90	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
FM Approved	Loose laid	Min. 7/16" OSB	17 (1.8 sq. ft)	1-105	-	-	-	-	-
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Concrete Decking</b>									
Min. 1/2" InsulBase Polyiso	4" ribbons of FAST	Min. 7/16" OSB	4" ribbons of FAST	1-135	-	-	-	-	-

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Factory Mutual Approvals  
FleeceBACK with FAST Adhered Roofing System

**OSB Ratings - Recover**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane, Base Layer and Top Layer Adhesive:**  
 FAST 100LV, Flexible FAST, FAST Bag in a Box, FAST Dual Cartridge and FAST Dual Tank  
 (FAST Dual Tank can only be used on Steel and Concrete Decking)

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Top Insulation Layer	Top Layer Fastening (mechanically fastened see notes 11, 12 & 13)	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
					RoofNAV Number				
<b>Steel Deck (Min. 22 Gauge)</b>									
FM Approved	Loose laid	Min. 7/16" OSB	17 (1.8 sq. ft)	1-105	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 7/16" OSB	12" ribbons of FAST	1-90	-	-	-	-	-

**Note:** 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. Direct membrane application over existing EPDM single-ply only.

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FM Approvals  
Design "A" Adhered Roofing Systems

**Lightweight Insulating Steel/Concrete - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 100, 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane (white, tan or gray TPO)  
 Sure-Flex PVC FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)  
 Sure-Flex PVC KEE HP FRS FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,  
Base Layer and  
Top Layer Adhesive:** FAST 100LV

Deck Type	Lightweight Insulating Concrete	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
			RoofNAV Number				
Steel	Celcore	1-135	-	-	-	-	-
Concrete	Elastizell	1-180	-	-	-	-	-

Deck Type	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC FRS	Sure-Flex PVC KEE HP FRS
		RoofNAV Number				
Concrete	Direct Application	1-270	-	-	-	-

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**Wind Uplift Testing**  
**Insulation Attached to Steel Deck with FAST Adhesive (14)**

Research Testing  
 Sure-Seal/Sure-White FleeceBACK Adhered Roofing Systems  
 Insulation attachment to Steel Decks with FAST Adhesive

Exceeds 120 psf Uplift Resistance			
Insulation and Membrane adhered with 100-LV Adhesive			
Deck Type	Insulation	Insulation Thickness	Failure Mode
Steel - 22 gauge Approved Grade A/B deck fastened to structural purlins (positioned maximum 6' apart) with ITW Buildex Traxx/5 Fasteners spaced 6" on center	InsulBase Polyiso	Minimum 1"	At 150 psf, Steel Deck (22-Gauge) pulled over Steel Deck (22-Gauge) fastener heads (system successfully passed 135 psf cycle)

**Underwriters Laboratories Wind Uplift Testing**  
**Sure-Seal/Sure-White FleeceBACK Adhered Roofing Systems (17)**  
 Insulation attachment to Steel Decks with FAST Adhesive

Deck Type	Insulation	Insulation Thickness	Results
Steel - 22 gauge, Type B Deck fastened to structural purlins (positioned maximum 6' apart) with ITW Buildex Traxx/5 Fasteners spaced 6" on center	InsulBase Polyiso	Min. 1.2"	UL 580 Test Standard (15) – Class 90 Rating (90 psf resistance)  ANSI/UL 1897 Test Standard (16) – 180 psf resistance (at 195 psf, the steel purlin broke)

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## FleeceBACK® with FAST Adhesive

### Reference Notes

1. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below. [\(return to table\)](#)
  2. Any roof covering system listed for use over a combustible roof deck can be installed over a non-combustible roof deck and achieve the same classification. [\(return to table\)](#)
  3. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 3” minimum total thickness of SecurShield or SecurShield HD Composite. [\(return to table\)](#)
  4. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 1.9” thickness of SecurShield or SecurShield HD Composite. [\(return to table\)](#)
  5. Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness may be used below the 1” thickness of SecurShield CD. [\(return to table\)](#)
  6. Any UL Classified Insulation, any combination, any thickness, may be used below the 4.5” minimum total thickness. [\(return to table\)](#)
  7. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below. [\(return to table\)](#)
  8. Any thickness of UL Classified Carlisle Polyisocyanurate Insulation may be used below the 1.9” thickness of SecurShield or SecurShield HD Composite. [\(return to table\)](#)
  9. Any UL Classified insulation, any combination, any thickness, may be used below the SecurShield CD. [\(return to table\)](#)
  10. Existing adhered or mechanically fastened EPDM or Hypalon roofing systems. Contact Carlisle regarding suitability and specific requirements. [\(return to table\)](#)
  11. Sure-Seal HP fastener/Sure-Seal Insulation plate.
  12. InsulFAST fastener/Sure-Seal Insulation plate.
  13. InsulFAST fastener/SecurFAST Insulation Fastening plate.
- } [Click on one of the following to return to chart: SecurShield, SecurShield HD Plus, InsulBase Polyiso, SecurShield, SecurShield HD Composite, Securock, DensDeck Prime, OSB or HP Recovery Board](#)
14. Testing conducted on minimum 22 gauge FM approved Grade C Steel Deck fastened 4 feet on center. [\(return to table\)](#)
  15. UL 580 Test Standard – “Tests for Uplift Resistance of Roof Assemblies”. This test method subjects a 10’ x 10’ sample to various static and oscillating air pressures to determine uplift resistance. [\(return to table\)](#)
  16. ANSI/UL 1897 Test Standard – “Standard Test Method for Uplift Resistance for Roof Covering Systems”. This test method subjects a 10’ x 10’ sample to differential static uplift pressures to determine resistance. This test is essentially the same as Factory Mutual’s (FM) Uplift Testing only the table size is different. [\(return to table\)](#)
  17. Testing was conducted with EPDM FleeceBACK membrane; however, FM testing has shown that Sure-Weld FleeceBACK membrane secured with FAST Adhesive is equivalent. [\(return to table\)](#)
  18. 80 ksi with one fastener per attachment point. [\(return to table\)](#)
  19. 80 ksi with two fasteners per attachment point. [\(return to table\)](#)

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