

FleeceBACK[®]

Roofing Systems

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

Code Approval Guide

August, 2020

Table of Contents

UL Approvals

Non-Combustible - ANSI UL - Class A.....	2
Combustible - ANSI UL - Class A.....	3
Combustible - ANSI UL - Class B.....	5
Combustible and Non-Combustible - ANSI UL - Class C.....	5

Existing UL Rating Retained

Combustible and Non-Combustible.....	5
--------------------------------------	---

FM Approvals

SecurShield HD New Construction.....	6
SecurShield HD Recover.....	8
SecurShield HD Plus New Construction.....	9
SecurShield HD Plus Recover.....	11
InsulBase Polyiso New Construction.....	12
InsulBase Polyiso Recover.....	14
SecurShield New Construction.....	15
SecurShield Recover.....	17
SecurShield HD Composite New Construction.....	18
Securock New Construction.....	20
Securock Recover.....	22
DensDeck Prime New Construction.....	23
DensDeck Prime Recover.....	25
StormBase New Construction.....	26
StormBase Recover.....	28
EcoStorm VSH New Construction.....	29
EcoStorm VSH Recover.....	30

Wind Uplift Testing.....	31
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Reference Notes.....	32
----------------------	----



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

Membrane Type:
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane
 Sure-White FleeceBACK - 100, 115 or 145 membrane
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane

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	Sure-Flex PVC KEE HP
1	Non-Combustible	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 pef, 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 or EcoStorm VSH	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	Cellular Lightweight Concrete	N/A	N/A	1"	1/2"	1"	2-1/2"	1-1/2"
10	Precast concrete with grouted joints	N/A	N/A	1"	1/2"	1"	2-1/2"	1-1/2"
11	Structural (poured-in-place) concrete	N/A	N/A	1"	1/2"	1"	2-1/2"	1-1/2"

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

Membrane Type:
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane
 Sure-White FleeceBACK - 100, 115 or 145 membrane
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane

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

System ID	Thermal Barrier/ Base Sheet	Insulation	Cover Board (2)	Maximum Slope				
				Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC	Sure-Flex KEE HP
Combustible - ANSI/UL 790 Spread of Flame Test-Class A								
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"	1-1/2"
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"	1/4"	2-1/2"	1-1/2"
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"	1/4"	1/2"	1/2"
4	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"	1/4"	1/2"	1/2"
5	Carlisle FR Base Sheet	Minimum 1.4" layer of any UL Classified Carlisle Polyisocyanurate Insulation, any combination. (1)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	1/4"	1/2"	1/2"
6	N/A	Minimum 4" layer of any UL Classified EPS Insulation. (1)(6)	Minimum 1/2" SecurShield HD or SecurShield HD Plus	1/2"	1/2"	1/4"	1/2"	1/2"
7	N/A	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness.	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (1)	2"	1"	3"	3"	3"
8	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 3/8" SECUROCK® Gypsum Fiber Roof Board (1)	2"	1"	3"	2"	2"
9	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/2" SECUROCK® Gypsum Fiber Roof Board (1)	2"	1"	3"	3"	4"
10	One Ply of Type G2	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" SECUROCK® Gypsum Fiber Roof Board (1)	2"	1"	3"	3"	3"
11	N/A	Any UL Classified Insulation, any thickness (OPTIONAL)	Minimum 1/4" DensDeck Prime Roof Boards (1)	2"	1"	3"	3"	Unlimited
12	Three layers of Carlisle FR Base Sheet	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness (OPTIONAL)	N/A	1/2"	1/2"	1/4"	1/2"	1/2"

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

Membrane Type:
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane
 Sure-White FleeceBACK - 100, 115 or 145 membrane
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane

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

System ID	Thermal Barrier/ Base Sheet	Insulation	Cover Board (2)	Maximum Slope				
				Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC	Sure-Flex KEE HP
13	N/A	Any UL Classified Polyiso Insulation, any thickness (OPTIONAL)	SecurShield HD (all insulation and roof deck joints must be staggered 12")	1/2'	1/2'	1/4"	1/2"	1/2"
14	N/A	Any UL Classified Polyiso Insulation, any thickness (OPTIONAL)	Minimum 1" SecurShield, SecurShield NH or SecurShield HD Composite. (1)(3) (all insulation and roof deck joints must be staggered 12")	1/2"	1/2"	1/4"	1/2"	1/2"
15	N/A	Min. 2" layer of any UL Class ified Carlisle Polyiso	Min. 1/2" EcoStorm VSH	1"	1"	N/A	1"	1"
16	Carlisle FR Base Sheet 1S (Optional)	Minimum 1" layer of SecurShield, SecerShield NH or SecurShield HD Composite over a minimum 3-1/2" layer of any UL Classified EPS Insulation. (1)(3) (all insulation and roof deck joints must be staggered 12")	N/A	1/2"	1/2"	1/4"	1/2"	1/2"

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

Membrane Type:
 Sure-Seal FleeceBACK - 100, 115 or 145 membrane
 Sure-White FleeceBACK - 100, 115 or 145 membrane
 Sure-Weld FleeceBACK - 100, 115 or 135 membrane
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane

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	Sure-Flex PVC KEE HP
Combustible - ANSI/UL 790 Spread of Flame Test-Class B								
1	N/A	Minimum 1.9" layer of SecurShield or SecurShield HD Composite. (7)(8)	N/A	1/2"	1/2"	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	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"
4	Inverted G3 cap sheet	N/A	N/A	1/2"	1/2"	1/2"	1/2"	1/2"
Combustible - ANSI/UL 790 Spread of Flame Test-Class C								
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate Insulation	N/A	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
2	N/A	Any UL Classified Carlisle Polyisocyanurate Insulation, any combination, any thickness. (OPTIONAL)	Minimum 1/2" EcoStorm VSH	1/2"	1/2"	1/2"	1/2"	1/2"
Non-Combustible - ANSI/UL 790 Spread of Flame Test-Class C								
1	N/A	Any combination, any thickness of UL Classified Carlisle Polyisocyanurate 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	Sure-Flex PVC KEE HP
1	Combustible or Non-Combustible	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"

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (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	400037-0-0	400038-0-0	400040-0-0	400043-0-0	400043-0-0
Min. 1-1/2" InsulBase Polyiso	Loose laid	1/2" SecurShield HD	10 (3.2 sq. ft)	1-90	326686-0-0	-	-	-	-
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	443435-0-0 6" o.c.	443441-0-0 6" o.c.	396796-0-0	-	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" SecurShield HD Plus	6" ribbons of FAST	1-165	-	-	399875-0-0 4" o.c.	-	-
Min. 2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" SecurShield HD	4" ribbons of FAST	1-165	-	-	-	433763-0-0 4" o.c.	433764-0-0 4" o.c.
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	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 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.
Steel Deck (Min. 22-Gauge) with SureMB 90TG, 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" SecurShield HD over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
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. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	397947-0-0 4" o.c.	-	-
Min. 2" Insulfoam VIII Roofing EPS over Min. 2" ChannelDry EPS	8 (4 sq. ft)	1/2" SecurShield HD	6" ribbons of FAST	1-90	-	-	445239-0-0	445241-0-0	-
Min. 2" Insulfoam VIII Roofing EPS over Min. 2" ChannelDry EPS	16 (2 sq. ft.)	Min 2" Insulfoam HD Composite	6" ribbons of FAST	1-90	427781-0-0	-	427789-0-0	-	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD	12" ribbons of FAST	1-255	434269-0-0 4" o.c.	-	450325-0-0 4" o.c.	-	-
				1-165	-	-	-	459961-0-0 6" o.c.	459962-0-0 6" o.c.
Min. 3/4" Optim-R	6" ribbons of FAST	1/2" SecurShield HD	6" ribbons of FAST	1-165	437579-0-0 4" o.c.	-	-	437598-0-0 4" o.c.	-
Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer									

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:** Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening <small>(mechanically fastened see notes 11, 12 & 13)</small>	Top Insulation Layer	Top Layer Fastening <small>(mechanically fastened see notes 11, 12 & 13)</small>	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC	Sure-Flex PVC KEE HP
					RoofNAV Number				
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD	12" ribbons of FAST	1-255	-	-	-	-	-
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 with 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 of FAST	1-90	-	-	-	-	-
(Celcore) 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	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex KEE HP
					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	427487-0-0	427488-0-0	427489-0-0	427492-0-0	427493-0-0
-	-	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 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	-	-	-	-	-
Gypsum Deck									
-	-	1/2" SecurShield HD	6" 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.

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					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	430037-0-0	430038-0-0	430039-0-0	430040-0-0	430041-0-0
FM Approved	Loose laid	1/2" SecurShield HD Plus	18 (1.8 sq. ft)	1-120	418929-0-0	418939-0-0	418931-0-0	418932-0-0	418933-0-0
FM Approved	Loose laid	1/2" SecurShield HD Plus	24 (1.33 sq. ft)	1-225	418930-0-0	418940-0-0	418936-0-0	418937-0-0	418938-0-0
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	1-165	-	-	399875-0-0 4" o.c.	-	-
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	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 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.
Steel Deck (Min. 22-Gauge) with SureMB 90TG, 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" SecurShield HD over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-225	-	-	-	-	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-255	-	-	-	-	-
Concrete Deck with 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	1-255	-	-	-	-	-
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 with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" SecurShield HD Plus	12" ribbons of FAST	1-90	-	-	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)									
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	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
-	-	1/2" SecurShield HD Plus	16 (2 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	-	-	-	-	-
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	6" ribbons of FAST	1/2" SecurShield HD Plus	6" 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.

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
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. 2" InsulBase Polyiso	32 (1 sq. ft)	-	-	1-210	399326-0-0	-	-	-	-
Min. 1" InsulBase Polyiso	Loose laid	Min. 2" InsulBase Polyiso	32 (1 sq. ft)	1-225	399320-0-0	-	-	-	-
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. 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	432889-0-0 6" o.c.	-	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.	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft)	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	452038-0-0 12" o.c.	-
Steel Deck (Min. 22-Gauge) with SureMB 90TG and 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft)	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-315	-	-	-	-	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	-	-	1-255	-	-	-	-	-
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-330	-	-	-	-	-
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	-	-	-	-	-
Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive:
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	-	-	1-150	384630-0-0	-	-	385465-0-0	385466-0-0
Concrete Deck									
Min. 1/2" InsulBase Polyiso	Hot Asphalt	-	-	1-90	-	-	-	-	-
Gypsum Deck									
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
Min. 1" InsulBase Polyiso	6" 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.

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive:
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
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	Loose laid	Min. 2" SecurShield	32 (1 sq. ft.)	1-270	432890-0-0	-	-	-	-
Min. 2" SecurShield	32 (1 sq. ft.)	-	-	1-225	399421-0-0	-	-	-	-
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	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.
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1-1/2" SecurShield	12" ribbons FAST	1-90	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with SureMG 90TG and 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1-1/2" SecurShield	12" ribbons FAST	1-90	-	-	-	-	-
Concrete Deck									
3/4" Optim-R	12" ribbons of FAST	Min. 1/2" SecurShield	12" ribbons of FAST	1-90	438096-0-0	438105-0-0	-	-	-
3/4" Optim-R	12" ribbons of FAST	Min. 1/2" SecurShield	12" ribbons of FAST	1-120	-	-	-	438114-0-0	-
Min. 1/2" SecurShield	12" ribbons of FAST	-	-	1-225	-	-	-	-	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

Base Insulation Layer (Max. thickness 36")	Base Layer Fastening <small>(mechanically fastened see notes 11, 12 & 13)</small>	Top Insulation Layer	Top Layer Fastening <small>(mechanically fastened see notes 11, 12 & 13)</small>	Rating	Sure-Seal	Sure-White	Sure-Weld	Sure-Flex PVC	Sure-Flex PVC KEE HP
					RoofNAV Number				
3/4" Optim-R	12" ribbons of FAST	Min. 1/2" SecurShield	12" ribbons of FAST	1-165 702	437579-0-0	-	-	437598-0-0	-
3/4" Optim-R	12" ribbons of FAST	Min. 1/2" SecurShield	12" ribbons of FAST	1-90 702	437581-0-0	437588-0-0	-	-	-
Min. 1-1/2" SecurShield	12" ribbons of FAST	-	-	1-255	-	-	-	-	-
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1" SecurShield	12" ribbons of FAST	1-330	-	-	-	-	-
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1" SecurShield	12" ribbons of FAST	1-225	-	-	427205-0-0	-	-
Gypsum Deck Tear-Off									
Min. 1-1/2" SecurShield	16 (2 sq. ft.)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield	12" ribbons of FAST	-	-	1-90	-	-	-	-	-
Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1-1/2" SecurShield	12" ribbons of FAST	-	-	1-90	-	-	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)									
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	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
1" SecurShield	16 (2 sq. ft)	-	-	1-90	-	-	400218-0-0	400220-0-0	400220-0-0
Concrete Deck									
1-1/2" SecurShield	12" ribbons of FAST	-	-	1-90	154475-0-0 12" o.c.	-	-	-	-
Gypsum Deck									
1" SecurShield	20 (1.6 sq. ft)	-	-	1-90	-	-	-	-	-
1" SecurShield	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.

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
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. 2" SecurShield HD Composite	32 (1 sq. ft.)	-	-	1-225	399335-0-0 4" o.c.	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose Laid	Min. 2" SecurShield HD Composite	8 (4 sq. ft.)	1-90	-	-	446124-0-0 12" 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	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 2" SecurShield HD Composite	12" ribbons of FAST	1-90	303325-0-0 4" o.c.	-	-	-	-
Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
Min. 1/2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-225	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-255	-	-	-	-	-
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1" SecurShield HD Composite	12" ribbons of FAST	1-330	-	-	-	-	-
Gypsum Deck Tear-Off									
Min. 1-1/2" SecurShield HD Composite	16 (2 sq. ft.)	-	-	1-90	-	-	-	-	-
Min. 1-1/2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-90	-	-	-	-	-
Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1-1/2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-90	-	-	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)									
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	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
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	-	-	443298-0-0 4" o.c.	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	8 (4 sq. ft) SecurFAST Plate	1-90	-	-	443330-0-0 4" o.c.	-	-
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	443308-0-0 4" o.c.	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	6 (5.33 sq. ft) SecurFAST Plate	1-75	-	-	443377-0-0 4" o.c.	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 5/8" Securock	6 (5.33 sq. ft) SecurFAST Plate	1-90	-	-	443346-0-0 4" o.c.	-	-
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)	1-270	399129-0-0	399128-0-0	-	-	-
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	16(2 sq. ft.)	Min. 1/4" Securock	6" ribbons of FAST	1-120	466248-0-0 4" o.c.	-	-	-	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1/4" Securock	6" ribbons of FAST	1-135	-	-	459646-0-0 6" o.c.	-	-
Min. 2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 1/4" Securock	4" ribbons of FAST	1-225	-	-	400153-0-0 4" o.c.	-	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	Min. 1/4" Securock	4" ribbons of FAST	1-225	-	-	459647-0-0 4" o.c.	-	-
Min. 5/8" Securock	16 (2 sq. ft.)	Min. 1/4" Securock over 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	400158-0-0 4" o.c.	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Primer or Securock	8 (4 sq. ft.)	Min. 1/4" Securock over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	459964-0-0 12" o.c.	459965-0-0 12" o.c.	317157-0-0 6" o.c.	343678-0-0 4" o.c.	459965-0-0 12" o.c.
Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied									
Min. 1/2" DensDeck Primer or Securock	8 (4 sq. ft.)	Min. 1/4" Securock over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-270	-	-	-	459251-0-0 4" o.c.	459262-0-0 4" o.c.
Min. 1/2" InsulBase Polyiso	Loose laid	Min. 1/2" Securock	10 (3.2 sq. ft)	1-90	-	-	-	397995-0-0	-
FM Approved	Loose laid	Min. 1/2" Securock	20 (1.6 sq. ft)	1-150	-	-	-	398844-0-0 4" o.c.	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
FM Approved	Loose laid	Min. 1/2" Securock	32 (1 sq. ft)	1-270			-	398845-0-0	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-255	460703-0-0 4" o.c.	-	450325-0-0 4" o.c.	-	-
				1-165	460701-0-0 6" o.c.	-	-	-	-
				1-90	460700-0-0 12" o.c.	-	-	-	-
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" Securock	12" ribbons of FAST	1-255	-	-	-	-	-
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 with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" Securock	12" ribbons of FAST	1-90	-	-	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)									
FM Approved	Loose laid	Min. 1/4" Securock	12 (2.67 sq. ft)	1-75	-	-	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	10 (3.2 sq. ft)	1-90	-	-	-	-	-
FM Approved	Loose laid	Min. 5/8" Securock	8 (4 sq. ft)	1-90	-	-	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	20 (1.6 sq. ft)	1-150	-	-	-	-	-
FM Approved	Loose laid	Min. 1/2" Securock	32 (1 sq. ft)	1-255	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Concrete Deck									
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.

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

**Membrane,
Base Layer and
Top Layer Adhesive:**
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (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	8 (4 sq. ft)	1-90	454399-00	-	-	-	-
Min. 1/2" InsulBase Polyiso	Loose laid	Min. 1/4" DensDeck Prime	18 (1.8 sq. ft)	1-105	-	-	-	452710-0-0	452711-0-0
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" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-255	399337-0-0	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	32 (1 sq. ft)	1-270	-	-	-	418941-0-0	-
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. 2" InsulBase Polyiso	16 (2 sq. ft.)	Min. 1/2" DensDeck Prime	12" ribbons of FAST	1-120	466248-0-0 4" o.c.	-	-	-	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	Min. 1/2" DensDeck Prime	6" ribbons of FAST	1-135	-	-	459646-0-0 4" o.c.	-	-
Min. 2" InsulBase Polyiso	32 (1.0 sq. ft.)	Min. 1/2" DensDeck Prime	4" ribbons of FAST	1-135	-	-	459647-0-0 4" o.c.	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	Min. 1/2" DensDeck Prime over InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1/4" DensDeck Prime over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	459964-0-0 12" o.c.	459965-0-0 12" o.c.	317157-0-0 6" o.c.	343679-0-0 6" o.c.	343679-0-0 6" o.c.
Steel Deck (Min. 22-Gauge) with SureMB 90TG and 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	Min. 1/4" DensDeck Prime over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-315	-	-	-	400227-0-0 Spray	400231-0-0 Spray

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	-	-	-	464243-0-0 12" o.c.	464244-0-0 12" o.c.
Min. 1/2" InsulBase Polyiso	Loose laid	Min. 1/2" DensDeck Prime	18 (1.8 sq. ft)	1-135	-	-	-	437373-0-0 4" o.c.	437389-0-0 4" o.c.
Concrete Deck with VapAir Seal 725TR 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	-	-	-	400228-0-0 Spray	400233-0-0 Spray
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-255	-	-	-	-	-
Min. 1" Insulfoam Roofing EPS	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-105	-	-	-	394471-0-0 6" o.c.	394578-0-0 6" o.c.
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	-	-	-	343688-0-0 12" o.c.	343688-0-0 12" o.c.
Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime	12" ribbons of FAST	1-90	457961-0-0 12" o.c.	-	-	343688-0-0 12" o.c.	343688-0-0 12" o.c.
(Celcore) 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	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible 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 (TPO)
 Sure-Flex PVC FleeceBACK - 105, 115 or 135 membrane (white PVC)
 Sure-Flex KEE HP FleeceBACK - 105, 115 or 135 membrane (white PVC)

Membrane, Base Layer and Top Layer Adhesive:
 Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III Primer									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 1/4" DensDeck Prime over Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
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.

Factory Mutual Approvals
FleeceBACK with Flexible FAST Adhered Roofing System

StormBase Ratings - New Construction

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

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22 Gauge)									
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 2" Stormbase	17 (1.9 sq. ft)	1-150	-	439043-0-0 VSH	439042-0-0 VSH	-	-
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 2" Stormbase	32 (1 sq. ft)	1-270	-	439045-0-0 VSH	439044-0-0 VSH	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	439066-0-0 VSH	439065-0-0 VSH	-	-
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 2" Stormbase over min 1-1/2" InsulBase	12" ribbons of FAST	1-90	-	439068-0-0 VSH	439067-0-0 VSH	-	-
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 1-1/2" Insulam OSB over InsulFoam EPS	6" ribbons of FAST	1-90	-	439058-0-0 VSH	-	-	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 2" Stormbase over min 1-1/2" InsulBase	12" ribbons of FAST	1-90	-	-	439059-0-0 VSH	-	-
-	-	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	439062-0-0 VSH	439061-0-0 VSH	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	Min. 2" Stormbase	12" ribbons of FAST	1-90	-	439064-0-0 VSH	439063-0-0 VSH	-	-
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	-	-	-	-	-
Concrete Deck									
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 FAST	Min. 2" Stormbase	Full-Coverage FAST	1-270	-	439021-0-0 VSH	439020-0-0 VSH	-	-
-	-	Min. 2" Stormbase	Full-Coverage FAST	1-270	-	439019-0-0 VSH	439018-0-0 VSH	-	-
Min. 1/2" InsulBase Polyiso	Hot Asphalt	Min. 7/16" OSB	Hot Asphalt	1-300	-	-	-	-	-
Min. 2" ChannelDry EPS	Loose laid	Min. 2" Insulam OSB	6" ribbons of FAST	1-150	427764-0-0	427769-0-0	427778-0-0	-	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" Stormbase	Full-Coverage FAST	1-255 Cav-Grip III	-	439023-0-0 VSH	439022-0-0 VSH	-	-
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 7/16" OSB	12" ribbons of FAST	1-255 Cav-Grip III	-	-	-	-	-
				1-195 702-LV	-	-	-	-	-
				1-90 702	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible FAST Adhered Roofing System

StormBase Ratings - New Construction

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

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
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	-	-	-	-	-
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 7/16" OSB	12" ribbons of FAST	1-330	-	-	-	-	-
Gypsum Deck Tear-Off									
Min. 1-1/2" InsulBase Polyiso	Full-Coverage FAST	Min. 7/16" OSB	Full-Coverage FAST	1-90	-	-	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)									
FM Approved	Loose laid	Min. 7/16" OSB	17 (1.8 sq. ft)	1-105	-	-	-	-	-

Factory Mutual Approvals
FleeceBACK with Flexible FAST Adhered Roofing System

StormBase Ratings - Recover

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

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22 Gauge)									
FM Approved	Loose laid	Min. 7/16" OSB	17 (1.8 sq. ft)	1-105	-	-	-	-	-
Concrete Deck									
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.

Factory Mutual Approvals

EcoStorm VSH Ratings - New Construction

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

Membrane Type:

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

Flexible FAST and Flexible FAST Dual Tank (VSH Approvals are all 4" o.c. ribbons)

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	Sure-Flex PVC KEE HP
					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	461161-0-0 (VSH)	-	461162-0-0 (VSH)	-	-
FM Approved	Loose laid	1/2" EcoStorm VSH	18 (1.8 sq. ft)	1-120	461163-0-0 (VSH)	-	461164-0-0 (VSH)	-	-
FM Approved	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-225	461166-0-0 (VSH)	-	461168-0-0 (VSH)	-	-
FM Approved	Loose laid	1/2" EcoStorm VSH	32 (1 sq. ft.)	1-270	461112-0-0 (VSH)	-	461112-0-0 (VSH)	-	-
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	461287-0-0 (VSH)	-	461305-0-0 (VSH)	-	-
Min. 2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-120	461201-0-0 (VSH)	-	461202-0-0 (VSH)	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-165	461206-0-0 (VSH)	-	461207-0-0 (VSH)	-	-
Min. 2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-180	461217-0-0 (VSH)	-	461218-0-0 (VSH)	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	461290-0-0 (VSH)	-	461314-0-0 (VSH)	-	-
Steel Deck (Min. 22-Gauge) with SureMB 90TG, 120TG Base Torch Applied									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-90	-	-	-	-	-
Concrete Deck									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-315	461179-0-0	-	461180-0-0	-	-
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-255	461175-0-0 (VSH)	-	461298-0-0 (VSH)	-	-
Concrete Deck with 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	1-255	461273-0-0 (VSH)	-	461302-0-0 (VSH)	-	-
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 with 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	-	-	-	-	-
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)									
FM Approved	Loose laid	1/2" EcoStorm VSH	8 (2.67 sq. ft)	1-90	-	-	-	-	-
-	-	1/2" EcoStorm VSH	8 (2.67 sq. ft)	1-90	-	-	-	-	-

Factory Mutual Approvals
EcoStorm VSH Ratings - Recover

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

Membrane, Base Layer and Top Layer Adhesive: Flexible FAST and Flexible FAST Dual Tank (VSH Approvals are all 4" o.c. ribbons)

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	Sure-Flex PVC KEE HP
					RoofNAV Number				
Steel Deck (Min. 22-Gauge)									
-	-	1/2" EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-	-	-
-	-	1/2" EcoStorm VSH	12" ribbons of FAST	1-90	461280-0-0 (VSH)	-	-	-	-
-	-	1/2" EcoStorm VSH	6" ribbons of FAST	1-150	466719-0-0 (VSH)	-	-	-	-
Concrete Deck									
Min. 1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-150	-	-	-	-	-
		1/2" EcoStorm VSH	6" ribbons of FAST	1-150	-	-	-	-	-
Gypsum Deck									
Min. 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1/2" EcoStorm VSH	6" 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.

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)

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

6. Any UL Classified Insulation, any combination, any thickness, may be used below the 4.5" minimum total thickness.
7. All insulation joints must be staggered a minimum of 6 inches from the deck joints or from the insulation joints directly below.
8. Any thickness of UL Classified Carlisle Polyisocyanurate Insulation may be used below the 1.9" thickness of SecurShield or SecurShield HD Composite.
9. Any UL Classified insulation, any combination, any thickness, may be used below the SecurShield CD.
10. Existing adhered or mechanically fastened EPDM or Hypalon roofing systems. Contact Carlisle regarding suitability and specific requirements.

11. Sure-Seal HP fastener/Sure-Seal Insulation plate.
12. InsulFAST fastener/Sure-Seal Insulation plate.
13. InsulFAST fastener/SecurFAST Insulation Fastening plate.
14. Testing conducted on minimum 22 gauge FM approved Grade C Steel Deck fastened 4 feet on center.
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.
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.
17. Testing was conducted with EPDM FleeceBACK membrane; however, FM testing has shown that Sure-Weld FleeceBACK membrane secured with FAST Adhesive is equivalent.
18. 80 ksi with one fastener per attachment point.
19. 80 ksi with two fasteners per attachment point.