

# Carlisle VSH Compliant Roofing Systems

## Code Approval Guide

January 2024

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Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**EcoStorm VSH Ratings - New Construction**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld - .060" membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:**  
 Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
FM Approved	Loose laid	1/2" EcoStorm VSH	8 (4 sq. ft)	1-90	461161-0-0	NA	461162-0-0	NA	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	16 (2 sq. ft)	1-90	461281-0-0	NA	461307-0-0	NA	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	18 (1.8 sq. ft.)	1-120	461163-0-0	NA	461164-0-0	NA	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-165	461165-0-0	NA	461167-0-0	NA	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)(19)	1-225	461166-0-0	NA	461168-0-0	NA	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	32 (1 sq. ft)(19)	1-270	461112-0-0	NA	461114-0-0	NA	NA
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	461690-0-0	-	461360-0-0	554489-0-0	461118-0-0
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" EcoStorm VSH over Min. 1" InsulBase	4" ribbons of FAST for EcoStorm VSH attachment and 12" o.c. for Polyiso	1-90	-	-	-	554492-0-0	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	461287-0-0	551572-0-0	461310-0-0	554546-0-0	461123-0-0

Factory Mutual Approvals  
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**EcoStorm VSH Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld - .060" membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA
					RoofNAV Number				
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-105	461171-0-0	-	461172-0-0	554482-0-0	461115-0-0
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-150	-	-	-	554484-0-0	461117-0-0
Min. 2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-165	461206-0-0	-	461207-0-0	554483-0-0	461116-0-0
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer</b>									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	4" ribbons of FAST for EcoStorm VSH attachment and 12" o.c. for Polyiso	1-90	461290-0-0	551581-0-0	461314-0-0	554517-0-0	461154-0-0
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over 1" Insulfoam Roofing EPS	4" ribbons of FAST for EcoStorm VSH attachment and 6" o.c. for EPS	1-90	-	-	-	554488-0-0	461121-0-0

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**EcoStorm VSH Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld - .060" membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA
					RoofNAV Number				
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	FAST Rig Splatter	1-135	-	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	32 (1 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	FAST Rig Splatter	1-240	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer</b>									
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	-	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-135	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied</b>									
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	-	-	-	-	-

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**EcoStorm VSH Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld - .060" membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA
					RoofNAV Number				
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	1/2" EcoStorm VSH over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-135	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-225	461264-0-0 (1-270)	551576-0-0	461295-0-0 (1-315)	554547-0-0	461120-0-0
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-225	461266-0-0 (1-180)	-	-	554497-0-0	461130-0-0
Min. 2" Insulfoam Channel Dry EPS	12" ribbons of FAST	1/2" EcoStorm VSH over Min. 2" Insulfoam Roofing EPS	4" ribbons of FAST for EcoStorm VSH attachment and 12" o.c. for EPS	1-285	-	551575-0-0 (1-180)	-	554521-0-0	-
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-705	-	-	461192-0-0	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	554493-0-0	461125-0-0

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**EcoStorm VSH Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld - .060" membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA
					RoofNAV Number				
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	554496-0-0	461126-0-0
Min. 3/4" Optim-R	6" ribbons of FAST	1/2" EcoStorm VSH	6" ribbons of FAST	1-120	461294-0-0	551571-0-0 (1-90)	-	554519-0-0	461159-0-0
1/2" EcoStorm VSH	FAST Rig Splatter	-	-	1-270	-	551577-0-0	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	EcoStorm VSH	12" ribbons of FAST	1-225 (Cav-Grip III)	461267-0-0	551564-0-0	461298-0-0	-	461137-0-0
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	EcoStorm VSH	12" ribbons of FAST	1-255 (Cav-Grip III)	-	-	-	-	461131-0-0
Min. 3/4" Optim-R	6" ribbons of FAST	EcoStorm VSH	6" ribbons of FAST	1-165	461292-0-0	551570-0-0 (1-90)	-	554518-0-0	461157-0-0
Min. 3/4" Optim-R	12" ribbons of FAST	EcoStorm VSH	12" ribbons of FAST	1-60	-	551569-0-0	-	-	461155-0-0
<b>Concrete Deck with SureMB 70 SA with Cav-Grip III Primer</b>									
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	EcoStorm VSH	12" ribbons of FAST	1-285	519866-0-0	-	519865-0-0	-	-
<b>Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer</b>									

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**EcoStorm VSH Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld - .060" membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA
					RoofNAV Number				
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	EcoStorm VSH	12" ribbons of FAST	1-225	461272-0-0 (1-255)	551568-0-0 (1-255)	-	554514-0-0	461143-0-0
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	EcoStorm VSH	6" ribbons of FAST	1-90	-	-	524130-0-0	-	486677-0-0
<b>Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	-	486676-0-0
<b>(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)</b>									
FM Approved	Loose laid	EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-	NA	NA
FM Approved	Loose laid	EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-	NA	NA
-	-	EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-	NA	NA
-	-	EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-	NA	NA

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**EcoStorm VSH Ratings - Recover**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number			
<b>Steel Deck (Min. 22-Gauge)</b>								
-	-	EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-	NA
-	-	EcoStorm VSH	16 (2 sq. ft)	1-90	461810-0-0	-	461519-0-0	NA
-	-	EcoStorm VSH	32 (1 sq. ft.)	1-270			524216-0-0	
Max. 1" InsulBase	Loose-laid	EcoStorm VSH	8 (4 sq. ft)	1-90	-	-	552118-0-0	NA
-	-	EcoStorm VSH	6" ribbons of FAST	1-150	-	-	-	489958-0-0
<b>Concrete Deck</b>								
Min. 1/2" InsulBase Polyiso or SecurShield	6" ribbons of FAST	EcoStorm VSH	12" ribbons of FAST	1-90	461280-0-0	-	467534-0-0	-
-	-	EcoStorm VSH	6" ribbons of FAST	1-150	466720-0-0	-	466721-0-0	-
<b>Gypsum Deck</b>								
-	-	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.

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**StormBase Ratings - New Construction**

**Membrane Type:** Sure-White FleeceBACK - 145 membrane (white EPDM)  
Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
<b>Steel Deck (Min. 22 Gauge)</b>							
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 2" StormBase	17 (1.9 sq. ft)	1-150	439043-0-0	439042-0-0	NA
Min. 1-1/2" InsulBase Polyiso	Loose laid	Min. 2" StormBase	32 (1 sq. ft)(19)	1-270	439045-0-0	439044-0-0	NA
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	Min. 2" StormBase	12" ribbons of FAST	1-90	439066-0-0	439065-0-0	-
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	439067-0-0	-
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	-	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft)	Min. 2" StormBase	12" ribbons of FAST	1-90	439064-0-0	439063-0-0	427172-0-0
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	427201-0-0
Min. 1-1/2" Polyiso	Loose laid	Min. 2" StormBase	Full-Coverage FAST	1-90	-	-	419427-0-0
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft)	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	427202-0-0
Min. 3" Insulfoam VIII over 1/2" Dens Deck	16 (2 sq. ft)	Min. 1-1/2" Insulam OSB	6" ribbons of FAST	1-150	-	-	434590-0-0
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer</b>							
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	-
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 2" StormBase	12" ribbons of FAST	1-90	439062-0-0	439061-0-0	434469-0-0
Min. 1/2" Dens Deck Prime or Securock	20 (1.6 sq. ft.)	Min. 2" StormBase	6" ribbons of FAST	1-135	Pending	Pending	Pending
<b>Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer</b>							
Min. 1/2" Dens Deck Prime or Securock	16 (2 sq. ft.)	Min. 2" StormBase	12" ribbons of FAST	1-90	Pending	Pending	Pending
Min. 1/2" Dens Deck Prime or Securock	20 (1.6 sq. ft.)	Min. 2" StormBase	6" ribbons of FAST	1-135	Pending	Pending	Pending
<b>Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied</b>							
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	-	-	-
Min. 1/2" Dens Deck Prime or Securock	20 (1.6 sq. ft.)	Min. 2" StormBase	6" ribbons of FAST	1-135	Pending	Pending	Pending

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**StormBase Ratings - New Construction**

**Membrane Type:** Sure-White FleeceBACK - 145 membrane (white EPDM)  
Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
<b>Concrete Deck</b>							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-315	-	-	427190-0-0
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	Full-Coverage FAST	1-270	439021-0-0	439020-0-0	-
-	-	Min. 2" StormBase	Full-Coverage FAST	1-270	439019-0-0	439018-0-0	-
-	-	Min. 2" StormBase	12" ribbons of FAST	1-165	-	-	434470-0-0
-	-	Min. 2" StormBase	Hot Asphalt	1-300	-	-	419424-0-0
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-255	439023-0-0	439022-0-0	427203-0-0
<b>Concrete Deck with SureMB 70 SA and Cav-Grip III Primer</b>							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-270	Pending	Pending	Pending
<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. 2" StormBase	12" ribbons of FAST	1-270	-	444182-0-0	-
<b>Gypsum Deck Tear-Off</b>							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	-
<b>Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	-

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**StormBase Ratings - Recover**

**Membrane Type:** Sure-White FleeceBACK - 145 membrane (white EPDM)  
Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
Sure-Weld EXTRA - .080" (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. for membrane attachment with FleeceBACK membranes  
Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					Concrete Deck		
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	-
-	-	Min. 2" StormBase	Full-Coverage FAST	1-90	-	-	419421-0-0

**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  
Carlisle VSH Compliant Roofing System

**DensDeck StormX Prime Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld and Sure-Weld EXTRA - .060" or .080" membrane (TPO)  
 Sure-Flex - .080" membrane (PVC)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld and Sure-Weld EXTRA membranes  
 Hydrobond Water Based PVC bonding adhesive for Sure-Flex PVC, Sure-Flex Fleeceback and Sure-Flex KEE HP Fleeceback

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA	Sure-Flex	Sure-Flex FleeceBack	Sure-Flex KEE HP FleeceBack
					RoofNAV Number							
<b>Steel Deck (Min. 22-Gauge)</b>												
Min. 1-1/2" InsulBase Polyiso	Loose-Laid	5/8" DensDeck StormX	8 (4 sq. ft.)	1-90	-	-	553273-0-0 (.080")	NA	NA	NA	NA	NA
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	551675-0-0	551609-0-0	-	-	554309-0-0	554266-0-0	-
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	5/8" DensDeck StormX over Min. 1-1/2" InsulBase	12" ribbons of FAST	1-90	-	551674-0-0	551601-0-0	478034-0-0	478034-0-0	554409-0-0	554295-0-0	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	551679-0-0	-	481545-0-0	477811-0-0	554346-0-0	554273-0-0	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	5/8" DensDeck StormX over Min. 1-1/2" InsulBase	12" ribbons of FAST	1-90	-	551678-0-0	551612-0-0	-	-	554410-0-0	554296-0-0	-
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-120	-	551699-0-0	551654-0-0	478621-0-0	478621-0-0	-	-	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	5/8" DensDeck StormX	6" ribbons of FAST	1-135	-	551702-0-0	551656-0-0	478620-0-0	478620-0-0	554411-0-0 (1-120)	-	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	5/8" DensDeck StormX	4" ribbons of FAST	1-165 C-Deck	-	-	-	478622-0-0	478624-0-0	-	-	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	5/8" DensDeck StormX	4" ribbons of FAST	1-225 E-Deck	-	-	551652-0-0	478623-0-0	478625-0-0	-	-	-
Min. 1/2" DensDeck Prime	16 (2 sq. ft.)	5/8" DensDeck StormX and Min. 1.5" InsulBase in adhesive	12" ribbons of FAST	1-90	-	-	551653-0-0	477985-0-0	477983-0-0	-	-	-

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**DensDeck StormX Prime Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld and Sure-Weld EXTRA - .060" or .080" membrane (TPO)  
 Sure-Flex - .080" membrane (PVC)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld and Sure-Weld EXTRA membranes  
 Hydrobond Water Based PVC bonding adhesive for Sure-Flex PVC, Sure-Flex Fleeceback and Sure-Flex KEE HP Fleeceback

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA	Sure-Flex	Sure-Flex FleeceBack	Sure-Flex KEE HP FleeceBack
					RoofNAV Number							
Min. 1/2" DensDeck Prime	16 (2 sq. ft.)	5/8" DensDeck StormX and Min. 1" Insulfoam Roofing EPS in adhesive	6" ribbons of FAST	1-90	-	-	-	-	-	554435-0-0	-	-
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer</b>												
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	551692-0-0	551624-0-0	478004-0-0	478004-0-0	554315-0-0	-	-
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	5/8" DensDeck StormX over 1" Insulfoam Roofing EPS	6" ribbons of FAST	1-90	-	-	-	-	-	554434-0-0	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	FAST - Rig Splatter	1-135	-	-	-	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer</b>												
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	-	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-135	-	-	-	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied</b>												
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	478647-0-0	478648-0-0	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	6" ribbons of FAST	1-135	-	-	-	-	-	-	-	-
<b>Concrete Deck</b>												

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**DensDeck StormX Prime Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld and Sure-Weld EXTRA - .060" or .080" membrane (TPO)  
 Sure-Flex - .080" membrane (PVC)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld and Sure-Weld EXTRA membranes  
 Hydrobond Water Based PVC bonding adhesive for Sure-Flex PVC, Sure-Flex Fleeceback and Sure-Flex KEE HP Fleeceback

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA	Sure-Flex	Sure-Flex FleeceBack	Sure-Flex KEE HP FleeceBack
					RoofNAV Number							
Min. 1.5" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-465	-	551668-0-0 (1-270)	551638-0-0 (1-315)	477785-0-0	477786-0-0	-	554276-0-0 (1-315)	554304-0-0 (1-315)
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-465	-	-	-	478649-0-0	478650-0-0	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>												
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-255	-	551693-0-0	551635-0-0	478007-0-0	478007-0-0	554415-0-0	554264-0-0	554300-0-0
Min. 1" Insulfoam Roofing EPS	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-315	-	-	-	-	-	554432-0-0	-	-
<b>Concrete Deck with SureMB 70 SA and Cav-Grip III Primer</b>												
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-255	-	-	-	-	-	554437-0-0	-	-
<b>Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer</b>												
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-315	-	551696-0-0 (1-255)	551646-0-0 (1-255)	478014-00	478014-0-0	554420-0-0	554269-0-0	-
<b>Gypsum Deck Tear-Off</b>												
Min. 1-1/2" InsulBase Polyiso	FAST Splatter	5/8" DensDeck StormX	FAST Splatter	1-90	-	-	551594-0-0	479141-0-0	479141-0-0	-	-	-
<b>Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>												

Factory Mutual Approvals  
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**DensDeck StormX Prime Ratings - New Construction**

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld and Sure-Weld EXTRA - .060" or .080" membrane (TPO)  
 Sure-Flex - .080" membrane (PVC)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld and Sure-Weld EXTRA membranes  
 Hydrobond Water Based PVC bonding adhesive for Sure-Flex PVC, Sure-Flex Fleeceback and Sure-Flex KEE HP Fleeceback

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure-Weld EXTRA	Sure-Flex	Sure-Flex FleeceBack	Sure-Flex KEE HP FleeceBack
					RoofNAV Number							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	478628-0-0	478628-0-0	-	-	-
<b>Lightweight Insulating Concrete over Steel Decking</b>												
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-135	-	551683-0-194470	551619-0-194470	497923-0-194470	497923-0-194470	-	-	-
<b>Lightweight Insulating Concrete over Structural Concrete</b>												
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	551684-0-50916	551622-0-50916	497941-0-50916	497941-0-50916	554414-0-50916	-	-



Factory Mutual Approvals  
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### DensDeck StormX Prime Ratings - Recover

**Membrane Type:** Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld and Sure-Weld EXTRA - .060" or .080" membrane (TPO)

**Membrane Adhesive:** Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld and Sure-Weld EXTRA membranes  
 Hydrobond Water Based PVC bonding adhesive for Sure-Flex PVC, Sure-Flex Fleeceback and Sure-Flex KEE HP Fleeceback

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld	Sure- Weld EXTRA	Sure-Flex PVC	Sure-Flex Fleeceback {PVC and KEE HP}
					RoofNAV Number						
<b>Steel Deck (Min. 22-Gauge)</b>											
-	-	5/8" DensDeck StormX	6" ribbons of FAST	1-90	-	-	-	497942-0-0	497942-0-0	-	-
<b>Concrete Deck</b>											
Min. 1/2" InsulBase Polyiso or SecurShield	6" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	-	-	-	-
-	-	5/8" DensDeck StormX	6" ribbons of FAST	1-150	-	-	-	-	-	-	-
<b>Gypsum Deck</b>											
-	-	5/8" DensDeck StormX	6" ribbons of FAST	1-90	-	-	-	-	-	-	-
<b>Tectum Deck</b>											
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	477989-0-0	477989-0-0	-	-

**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  
Carlisle VSH Compliant Roofing System

### SecurShield HD Composite Ratings - New Construction

**Membrane Type:**

Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:**

Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-Seal FleeceBACK 145	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number				
<b>Steel Deck (Min. 22-Gauge)</b>									
2" SecurShield HD Composite	8 (4 sq. ft.)	-	-	1-90	551139-0-0 (4" o.c.)	551132-0-0 (4" o.c.)	-	NA	NA
2" SecurShield HD Composite	20 (1.6 sq. ft.)	-	-	1-165	551283-0-0 (4" o.c.)	-	-	NA	NA
Min. 1-1/2" InsulBase Polyiso	Loose-Laid	2" SecurShield HD Composite	20 (1.6 sq. ft.)	1-165	-	551281-0-0 (4" o.c.)	-	NA	NA
2" SecurShield HD Composite	32 (1 sq. ft.)	-	-	1-270	551286-0-0 (4" o.c.)	551282-0-0 (4" o.c.)	-	NA	NA
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	2" SecurShield HD Composite	12" ribbons of FAST	1-90	551342-0-0	-	-	550948-0-0	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	2" SecurShield HD Composite	12" ribbons of FAST	1-90	551358-0-0	551344-0-0	-	550949-0-0	550889-0-0
Min. 1-1/2" InsulBase Polyiso	16 (2 sq. ft.)	2" SecurShield HD Composite	6" ribbons of FAST	1-105	-	-	-	550957-0-0	550874-0-0
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	2" SecurShield HD Composite	4" ribbons of FAST	1-165	551364-0-0	551350-0-0	-	550930-0-0	-
Min. 2" InsulBase Polyiso	32 (1 sq. ft.)	2" SecurShield HD Composite	4" ribbons of FAST	1-225	-	-	-	550932-0-0	550876-0-0 (1-270)

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### SecurShield HD Composite Ratings - New Construction

**Membrane Type:**

Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:**

Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-Seal FleeceBACK 145	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number				
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	2" SecurShield HD Composite	12" ribbons of FAST	1-90	551346-0-0	-	-	-	550829-0-0
<b>Steel Deck (Min. 22-Gauge) with VapAir Seal 725TR and Cav-Grip III or 702 Primer</b>									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	2" SecurShield HD Composite	12" ribbons of FAST	1-90	551362-0-0	-	551556-0-0	550956-0-0	-
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	2" SecurShield HD Composite over Min. 1-1/2" InsulBase	12" ribbons of FAST	1-90	551361-0-0	-	551554-0-0	550955-0-0	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	2" SecurShield HD Composite	6" ribbons of FAST	1-135	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer</b>									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	2" SecurShield HD Composite	6" ribbons of FAST	1-135	-	-	-	-	-
<b>Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied</b>									
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-

Factory Mutual Approvals  
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### SecurShield HD Composite Ratings - New Construction

**Membrane Type:**

Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:**

Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-Seal FleeceBACK 145	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number				
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	2" SecurShield HD Composite	6" ribbons of FAST	1-135	-	-	-	-	-
<b>Concrete Deck</b>									
Min. 1" InsulBase Polyiso	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-180	-	-	-	-	-
2" SecurShield HD Composite	12" ribbons of FAST	-	-	1-180	551335-0-0	-	-	-	-
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-	-
<b>Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-	534253-0-0 (1-315)
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-255	-	-	-	-	-
<b>Concrete Deck with SureMB 70 SA with Cav-Grip III Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-	-

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**SecurShield HD Composite Ratings - New Construction**

**Membrane Type:**

Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:**

Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-Seal FleeceBACK 145	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number				
<b>Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer</b>									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-	550891-0-0
<b>Gypsum Deck Tear-Off</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-
<b>Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer</b>									
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-
<b>Lightweight Insulating Concrete over Steel Decking</b>									
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	552896-0-194470
<b>Lightweight Insulating Concrete over Structural Concrete</b>									
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-	-

Factory Mutual Approvals  
Carlisle VSH Compliant Roofing System

**SecurShield HD Composite Ratings - Recover**

**Membrane Type:**  
 Sure-Seal FleeceBACK - 115 or 145 membrane (black EPDM)  
 Sure-White FleeceBACK - 115 or 145 membrane (white EPDM)  
 Sure-Weld FleeceBACK - 115 or 135 membrane (TPO)  
 Sure-Weld EXTRA - .080" membrane (TPO)

**Membrane Adhesive:**  
 Flexible FAST and Flexible FAST Dual Tank beads 4" o.c. or Splatter for membrane attachment with FleeceBACK membranes  
 Sure-Weld Bonding Adhesive, Low VOC Bonding Adhesive or Cav-Grip III Adhesive/Primer for Sure-Weld EXTRA membrane

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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Numbers			
<b>Concrete Deck</b>								
-	-	2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
-	-	2" SecurShield HD Composite	6" ribbons of FAST	1-150	-	-	-	-
<b>Gypsum Deck</b>								
-	-	2" SecurShield HD Composite	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.

Carlisle VSH Compliant Roofing System

Reference Notes

1. DELETED

2. DELETED

3. DELETED

4. DELETED

5. DELETED

6. DELETED

7. DELETED

8. DELETED

9. DELETED

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.

Carlisle SynTec Systems, a division of Carlisle Construction Materials LLC, P.O. Box 7000, Carlisle, PA 17013  
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