

Carlisle VSH Compliant Roofing Systems

Code Approval Guide

April 2022

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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 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			
Steel Deck (Min. 22-Gauge)								
FM Approved	Loose laid	1/2" EcoStorm VSH	8 (4 sq. ft)	1-90	461161-0-0	-	461162-0-0	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	16 (2 sq. ft)	1-90	461281-0-0	-	461307-0-0	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	18 (1.8 sq. ft.)	1-120	461163-0-0	-	461164-0-0	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)	1-165	461165-0-0	-	461167-0-0	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	24 (1.33 sq. ft)(19)	1-225	461166-0-0	-	461168-0-0	NA
FM Approved	Loose laid	1/2" EcoStorm VSH	32 (1 sq. ft)(19)	1-270	461112-0-0	-	461114-0-0	NA
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	461118-0-0
Min. 2" InsulBase Polyiso	8 (4 sq. ft)	1/2" EcoStorm VSH	6" ribbons of FAST	1-90	461287-0-0	-	461310-0-0	461123-0-0
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	461115-0-0
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1/2" EcoStorm VSH	4" ribbons of FAST	1-150	-	-	-	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	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	-	-	-	-
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	-	461314-0-0	461154-0-0
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1/2" EcoStorm VSH over 1" Insulfoam Roofing EPS	6" ribbons of FAST	1-90	-	-	-	461121-0-0
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	Pending	-	Pending	Pending
Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III 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	Pending	-	Pending	Pending
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	Pending	-	Pending	Pending
Steel Deck (Min. 22-Gauge) with SureMB 90TG or 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	-	-	-	-
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	Pending	-	Pending	Pending

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 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 <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 FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number			
Concrete Deck								
Min. 1" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-225	461264-0-0 (1-270)	-	461295-0-0 (1-315)	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)	-	-	461130-0-0
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1/2" EcoStorm VSH	12" ribbons of FAST	1-705	-	-	461192-0-0	-
Min. 1.5" InsulBase Polyiso	10 (3.2 sq. ft.)	EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	461125-0-0
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	461126-0-0
Min. 3/4" Optim-R	6" ribbons of FAST	EcoStorm VSH	6" ribbons of FAST	1-120	461294-0-0	-	-	461159-0-0
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer								
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	EcoStorm VSH	12" ribbons of FAST	1-225 (Cav-Grip III)	461267-0-0	-	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 (702)	461292-0-0	-	-	461157-0-0
Min. 3/4" Optim-R	12" ribbons of FAST	EcoStorm VSH	12" ribbons of FAST	1-60 (702)	-	-	-	461155-0-0
Concrete Deck with SureMB 70 SA with Cav-Grip III Primer								
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	EcoStorm VSH	12" ribbons of FAST	1-285	Pending	-	519865-0-0	Pending
Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer								
Min. 1/2" InsulBase Polyiso	Full-Coverage FAST	EcoStorm VSH	12" ribbons of FAST	1-225	461272-0-0 (1-255)	-	-	461143-0-0
Gypsum Deck Tear-Off								
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	486677-0-0
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	EcoStorm VSH	6" ribbons of FAST	1-90	-	-	-	486676-0-0
(Celcore) Cellular Lightweight Insulating Concrete Over Steel Decking (Min. 22 Gauge)								
FM Approved	Loose laid	EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-	NA
FM Approved	Loose laid	EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-	NA
-	-	EcoStorm VSH	12 (2.67 sq. ft)	1-75	-	-	-	NA
-	-	EcoStorm VSH	16 (2 sq. ft)	1-90	-	-	-	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			
Steel Deck (Min. 22-Gauge)								
-	-	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	6" ribbons of FAST	1-150	-	-	-	489958-0-0
Concrete Deck								
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	-
Gypsum Deck								
-	-	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
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	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	HP Fastener/Insulation Plate- 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	HP Fastener/Insulation Plate- 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	HP Fastener/Insulation Plate- 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
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	-
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
Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer							
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
Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied							
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
Concrete Deck							
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
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	12" ribbons of FAST	1-255	439023-0-0	439022-0-0	427203-0-0
Concrete Deck with SureMB 70 SA and Cav-Grip III Primer							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-270	Pending	Pending	Pending
Concrete Deck with SureMB 90TG and 120TG Base Torch Applied/Cut-Back Asphalt Primer							
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-270	-	444182-0-0	-
Gypsum Deck Tear-Off							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	-
Gypsum Deck Tear-Off with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer							
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	Min. 2" StormBase	12" ribbons of FAST	1-90	-	-	-

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 (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
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)

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

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				
Steel Deck (Min. 22-Gauge)									
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	481545-0-0	477811-0-0
Min. 2" InsulBase Polyiso	16 (2 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-120	-	-	-	478621-0-0	-
Min. 2" InsulBase Polyiso	20 (1.6 sq. ft.)	5/8" DensDeck StormX	6" ribbons of FAST	1-135	-	-	-	478620-0-0	-
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	-	-	-	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	-	-	-	477985-0-0	477983-0-0
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.)	5/8" DensDeck StormX over 1-1/2" InsulBase Polyiso	12" ribbons of FAST	1-90	-	-	-	478004-0-0	-
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	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer									
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	-	-	-	-	-
Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied									
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	-	-	-	-	-
Concrete Deck									
Min. 1.5" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-465	-	-	-	477785-0-0	477786-0-0
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
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer									

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)

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

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	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-255	-	-	-	478007-0-0	-
Concrete Deck with SureMB 70 SA and Cav-Grip III Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-255	-	-	-	-	-
Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer									
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-315	-	-	-	478014-00	-
Gypsum Deck Tear-Off									
Min. 1-1/2" InsulBase Polyiso	FAST Splatter	5/8" DensDeck StormX	FAST Splatter	1-90	-	-	-	479141-0-0	-
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	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	-	-
Lightweight Insulating Concrete over Steel Decking									
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-135	-	-	-	497923-0-194470	497923-0-194470
Lightweight Insulating Concrete over Structural Concrete									
Min. 1-1/2" InsulBase Polyiso	4" ribbons of FAST	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	497941-0-50916	497941-0-50916

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

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				
Steel Deck (Min. 22-Gauge)									
-	-	5/8" DensDeck StormX	6" ribbons of FAST	1-90	-	-	-	497942-0-0	497942-0-0
Concrete Deck									
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	-	-	-	-	-
Gypsum Deck									
-	-	5/8" DensDeck StormX	6" ribbons of FAST	1-90	-	-	-	-	-
Tectum Deck									
Min. 1" InsulBase Polyiso	20 (1.6 sq. ft.)	5/8" DensDeck StormX	12" ribbons of FAST	1-90	-	-	-	477989-0-0	477988-0-0

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
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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 Splatler 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 & 13)</small>	Top Insulation Layer	Top Layer Fastening <small>(mechanically fastened see notes 11, 12 & 13)</small>	Rating	Sure-Seal FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number			
Steel Deck (Min. 22-Gauge)								
Min. 1-1/2" InsulBase Polyiso	10 (3.2 sq. ft.)	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
Min. 2" InsulBase Polyiso	8 (4 sq. ft.)	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	18 (1.8 sq. ft.)	1-1/2" SecurShield HD Composite	6" ribbons of FAST	1-105	-	-	-	-
Min. 1-1/2" InsulBase Polyiso	24 (1.33 sq. ft.)	1-1/2" SecurShield HD Composite	4" ribbons of FAST	1-150	-	-	-	-
Min. 2" InsulBase Polyiso	24 (1.33 sq. ft.)	1-1/2" SecurShield HD Composite	4" ribbons of FAST	1-165	-	-	-	-
Min. 1/2" DensDeck Prime or 5/8" Securock	16 (2 sq. ft.)	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.)	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	1-1/2" SecurShield HD Composite	6" ribbons of FAST	1-135	-	-	-	-
Steel Deck (Min. 22-Gauge) with SureMB 70 SA and Cav-Grip III Primer								
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	1-1/2" SecurShield HD Composite	6" ribbons of FAST	1-135	-	-	-	-
Steel Deck (Min. 22-Gauge) with SureMB 90TG or 120TG Base Torch Applied								
Min. 1/2" DensDeck Prime or Securock	8 (4 sq. ft.)	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
Min. 1/2" DensDeck Prime or Securock	20 (1.6 sq. ft.)	1-1/2" SecurShield HD Composite	6" ribbons of FAST	1-135	-	-	-	-
Concrete Deck								
Min. 1" InsulBase Polyiso	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-

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 Splatler 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 & 13)</small>	Top Insulation Layer	Top Layer Fastening <small>(mechanically fastened see notes 11, 12 & 13)</small>	Rating	Sure-Seal FleeceBACK	Sure-White FleeceBACK	Sure-Weld FleeceBACK	Sure-Weld EXTRA
					RoofNAV Number			
Concrete Deck with VapAir Seal 725TR and Cav-Grip III, 702-LV or 702 Primer								
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-
Min. 2" Insulfoam Roofing EPS	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-255	-	-	-	-
Concrete Deck with SureMB 70 SA with Cav-Grip III Primer								
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-
Concrete Deck with SureMB 90TG, 120TG Base Torch Applied and Cut-Back Asphalt Primer								
Min. 1/2" InsulBase Polyiso	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-225	-	-	-	-
Gypsum Deck Tear-Off								
Min. 1-1/2" InsulBase Polyiso	12" ribbons of FAST	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" InsulBase Polyiso	12" ribbons of FAST	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-

Factory Mutual Approvals
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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 (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 Numbers			
Concrete Deck								
-	-	1-1/2" SecurShield HD Composite	12" ribbons of FAST	1-90	-	-	-	-
-	-	1-1/2" SecurShield HD Composite	6" ribbons of FAST	1-150	-	-	-	-
Gypsum Deck								
-	-	1-1/2" 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.

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