

CA-01-RR-08-20 Code Highlights: Re-Roofing

This document is intended to serve as a quick reference guide for code tested assemblies for the re-roofing market segment. While the document does not cover all the tested assemblies, it targets a specific application associated with reroofing like recover, partial tear-off (membrane removal only), or a complete tear-off of the existing roofing assembly. Each release will focus on an application category in response to demands from the field.

Feedback or suggestions concerning future releases is strongly suggested.

Re-Roofing Assemblies for Recover Applications

As part of Carlisle's commitment to providing unique roofing solutions for the re-roofing market, this publication spotlights economically viable options for recovering existing roofing systems. The assemblies are designed to offer simple, convenient, and value-based roofing solutions; allowing for quick installation with minimal disturbance or interference to the building operation. The existing substrates include asphaltic roofs, standing seam metal roofs, and single-ply membrane assemblies.

The tables below highlight various EPDM, PVC, TPO, and FleeceBACK® membrane recover assemblies designed for installation over existing roofs without tearing off. The tables are grouped by the type of the new assembly (adhered or mechanically fastened), the use of insulation or cover boards (insulated or uninsulated), and the type of the existing roofing system. Two tables are also included for specialty applications for VacuSeal™ and RapidLock® options.

The following notes apply to all tables contained in this document:

- All testing has been conducted by ANSI-accredited testing laboratories.
- All wind uplift resistance values represent the highest pressure attained during testing. Safety factors have not been applied.
- The wind uplift rating of a new assembly cannot exceed the wind uplift rating of an existing roofing system when the new assembly is adhesively attached directly to the existing roof cover.
- The wind uplift resistance values of the adhesively attached assemblies document the ultimate attachment strength to the specifically listed existing roof covers. Load resistance of the roof deck must be verified to the satisfaction of the Authority Having Jurisdiction.

While the focus of this Code Alert is to bring awareness to the various available tested assemblies and ratings, it does not address specific warranty requirements. Selection of materials within each assembly may be influenced by project-specific warranty expectations. The Carlisle Project Review & Design Group must be consulted with questions concerning warranty requirements and any related design enhancements.

Recover Applications – Directly Adhered Membrane

Substrate: Existing Single-Ply			
Existing Substrate	Membrane	Attachment	Tested Pressure (psf)
EPDM	Min. 100-mil Sure-Seal®/Sure-White® EPDM FleeceBACK, Sure-Weld® TPO FleeceBACK or any Sure-Flex® PVC FleeceBACK (Min. 105-mil)	Flexible FAST™ or Flexible FAST Dual Tank 12" o.c.	-60
EPDM	Min. 100-mil Sure-Seal/Sure-White EPDM FleeceBACK, Sure-Weld TPO FleeceBACK, or any Sure-Flex PVC FleeceBACK (Min. 105-mil)	Flexible FAST or Flexible FAST Dual Tank 6" o.c.	-150
EPDM	Min. 100-mil Sure-Seal/Sure-White EPDM FleeceBACK, Sure-Weld TPO FleeceBACK, or any Sure-Flex PVC FleeceBACK (Min. 105-mil)	Flexible FAST @ 1 gal/square (Full Coverage) or Flexible FAST Dual Tank (Full Coverage) splatter application @ 3.7 lbs/sq	-270
TPO	Min. 100-mil Sure-Weld TPO FleeceBACK	Flexible FAST Dual Tank (Full Coverage) splatter application @ 3.7 lbs/sq	-540
EPDM	Min. 100-mil Sure-Seal/Sure-White EPDM FleeceBACK, Sure-Weld TPO FleeceBACK, or any Sure-Flex PVC FleeceBACK (Min. 105-mil)	Flexible FAST @ 1 gal/square (Full Coverage) or Flexible FAST Dual Tank (Full Coverage) splatter application @ 3.7 lbs/sq	-630
TPO	Min. 45-mil Sure-Weld TPO	CAV-GRIP® III Low-VOC Adhesive	-1170
Substrate: Existing Asphaltic Roof			
Multi-Ply	Min. 90-mil Sure-Seal FleeceBACK AFX EPDM or 120-mil Sure-Weld FleeceBACK AFX TPO	Cold Applied Adhesive	-120

Recover Applications - Insulated Adhered Membrane

Substrates: Existing granule surfaced BUR, smooth surfaced BUR, granule surfaced APP or SBS modified bitumen, smooth surfaced SBS modified bitumen or gravel surfaced BUR (loose gravel removed)			
Insulation/Cover Board	Attachment	Membrane/Attachment	Tested Pressure (psf)
Min. ¼" DensDeck® Prime or SECUROCK® Gypsum-Fiber or Min. ½" EcoStorm VSH™, SecurShield® HD or SecurShield HD Plus	Flexible FAST or Flexible FAST Dual Tank 12" o.c. (6" o.c. for gravel BUR)	Min. 45-mil Sure-Seal FR, Sure-White, Sure-Tough™, or Sure-Tough FR adhered using 90-8-30A, CAV-GRIP III, or EPDM x-23 Low-VOC Bonding Adhesive	-605
		Min. 45-mil Sure-Weld membrane adhered using CAV-GRIP III, Low-VOC, or Sure-Weld Bonding Adhesive. Min. 100-mil Sure-Seal/Sure-White FleeceBACK, Sure-Weld FleeceBACK, or any PVC FleeceBACK (Min. 105-mil) adhered using Flexible FAST (FULL), Flexible FAST Dual Tank (Splatter), or HydroBond Adhesive Min. 50-mil Sure-Flex PVC, Sure-Flex PVC FRS, or Sure-Flex KEE HP membrane adhered using Low-VOC PVC Bonding Adhesive	
Min. ¼" DensDeck Prime or Min. ½" SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST Dual Tank 12" o.c. (6" o.c. for gravel BUR)	Min. 50-mil Sure-Flex PVC or Sure-Flex PVC FRS adhered with HydroBond Adhesive	
Substrate: Gravel Surfaced BUR (loose gravel removed)			
1" Insulfoam SP	Flexible FAST @ 1 gal/sq (Full Coverage)	Min. 100-mil Sure-Weld FleeceBACK or Sure-Flex KEE HP FleeceBACK adhered using Flexible FAST @ 1 gal/sq (Full Coverage)	-445
Substrate: Existing Adhered EPDM Single-Ply			
Min. ½" SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST Dual Tank 6" o.c.	Min. 100-mil Sure-Seal/Sure-White FleeceBACK, Sure-Weld FleeceBACK, or any PVC FleeceBACK (Min. 105-mil) adhered using Flexible FAST or Flexible FAST Dual Tank, 12" o.c.	-90
		Min. 45-mil Sure-Seal FR, Sure-White, Sure-Tough, or Sure-Tough FR adhered using 90-8-30A, CAV-GRIP III, or EPDM x-23 Low-VOC Bonding Adhesive Min. 45-mil Sure-Weld membrane adhered using CAV-GRIP III, Low-VOC, or Sure-Weld Bonding Adhesive. Min. 100-mil Sure-Seal/Sure-White FleeceBACK, Sure-Weld FleeceBACK, or any PVC FleeceBACK (Min. 105-mil) adhered using Flexible FAST (FULL), Flexible FAST Dual Tank (Splatter), or HydroBond Adhesive Min. 50-mil Sure-Flex PVC, Sure-Flex PVC FRS, or Sure-Flex KEE HP membrane adhered using Low-VOC PVC Bonding Adhesive	-135

Recover Applications – Mechanically Fastened Membrane (Optional Insulation)

Substrates: Existing granule surfaced BUR, smooth surfaced BUR, granule surfaced APP or SBS modified bitumen or smooth surfaced SBS modified bitumen					
Deck	Insulation	Membrane	Fasteners / Plates	Attachment	Tested Pressure (psf)
Min. 22-ga. Steel	(Optional)	Min. 45-mil Sure-Weld/ Sure-Weld Extra	Carlisle HP-X Fasteners / Piranha Plates	12' sheets fastened 12" o.c.	-60
Min. 19/32" Plywood or Wood Plank	(Optional)	Min. 60-mil Sure-Weld/ Sure-Weld Extra	Carlisle HP-X Fasteners / Piranha Plates	10' sheets fastened 6" o.c.	-90
Min. 22-ga. Steel	(Optional)	Min. 45-mil Sure-Weld/ Sure-Weld Extra	Carlisle HP-X Fasteners / Piranha Plates	10' or 12' sheets fastened 6" o.c.	-105
Min. 22-ga. Steel	(Optional)	Min. 45-mil Sure- Tough or Sure-Tough FR	Carlisle HP-X Fasteners / Polymer Batten or Metal Fastening Bar	8' sheets fastened 12" o.c.	-60
Min. 22-ga. Steel	(Optional)	Min. 45-mil Sure- Tough or Sure-Tough FR	Carlisle HP Fasteners / Polymer Seam Plates	10' sheets fastened 6" o.c.	-90
Min. 22-ga. Steel	Min. 3/8" R- Tech FanFold, 1/4" DensDeck Prime or SECUROCK Gypsum-Fiber or Min. 1/2" EcoStorm VSH, SecurShield HD	Min. 50-mil Sure-Flex PVC or KEE HP	Carlisle HP-X Fasteners / Piranha Plates	81" sheets fastened 12" o.c.	-75
			Carlisle HP-X Fasteners / Oval Barbed Plates	10' sheets fastened 6" o.c.	-90
Min. 19/32" Plywood or Wood Plank	Carlisle HP-X Fasteners / Piranha Plates		81" sheets fastened 6" o.c.	-120	

Recover Applications - Induction Welded Assemblies

Substrates: Existing granule surfaced BUR, smooth surfaced BUR, granule surfaced APP or SBS modified bitumen or smooth surfaced SBS modified bitumen					
Deck	Insulation	Membrane	Fasteners	Fastening Density	Tested Pressure (psf)
Min. 22-ga. Steel	(Optional)	Min. 45-mil Sure-Weld/ Sure-Weld Extra TPO	Carlisle HP-X Fasteners / RhinoBond Plates	1 per 5.3 ft ² (6 parts per 4x8 area/board)	-90
Min. 19/32" Plywood or Wood Plank	(Optional)	Min. 45-mil Sure-Weld/ Sure-Weld Extra TPO	Carlisle HP-X Fasteners and RhinoBond Plate	1 per 4 ft ² (2 x 2 ft grid pattern)	-90
Min. 22-ga. Steel	Min. 3/8" R- Tech FanFold, ¼" DensDeck Prime or SECUROCK Gypsum-Fiber or Min. ½" EcoStorm VSH, SecurShield HD	Min. 50-mil Sure-Flex PVC or KEE HP	Carlisle HP-X Fasteners / RhinoBond Plates	1 per 5.3 ft ² (6 parts per 4 x 8 area/board)	-90
Min. 19/32" Plywood or Wood Plank			Carlisle HP-X Fasteners and RhinoBond Plate	1 per 4 ft ² (2 x 2 ft grid pattern)	-90

Recover Applications – Metal Retrofit Assemblies

Substrate: Existing Standing Seam Metal Roof				
Insulation	Membrane	Fasteners / Plates	Attachment	Tested Pressure (psf)
One or more layers, any combination, any thickness	Min. 45-mil Sure-Tough EPDM	HP Purlin or Retrodriller Fasteners / 2" Polymer Seam Plates	Max. 78" Purlins fastened 12" o.c.	-60
			60" Purlins fastened 12" o.c. with 9" PS R.U.S.S.	
One or more layers, any combination, any thickness	Min. 50-mil Sure-Flex PVC or Sure-Flex KEE HP	HP Purlin or Retrodriller Fasteners / Piranha Plates	Max. 75" Purlins fastened 18" o.c.	-60
			120" Purlins fastened 12" o.c.	
One or more layers, any combination, any thickness	Min. 60-mil Sure-Weld TPO	HP Purlin or Retrodriller Fasteners / RhinoBond Plates	120" Purlins fastened 12" o.c.	-60
One or more layers, any combination, any thickness	Min. 45-mil Sure-Weld TPO	HP Purlin or Retrodriller Fasteners / Piranha Plates	Max. 138" Purlins fastened 12" o.c.	-60
			Max. 138" Purlins fastened 12" o.c. with 10" TPO PS R.U.S.S.	-75

Recover Applications - RapidLock Assemblies

Substrates: Existing granule surfaced BUR, smooth surfaced BUR, granule surfaced APP or SBS modified bitumen or smooth surfaced SBS modified bitumen			
RapidLock Cover Board	Attachment	Attachment	Tested Pressure (psf)
½" SecurShield HD RL	Flexible FAST or Flexible FAST Dual Tank 6" o.c.	Any Carlisle EPDM, TPO, or PVC RapidLock Membrane	-150
½" SecurShield HD RL	Flexible FAST or Flexible FAST Dual Tank (Full Coverage)	Any Carlisle EPDM, TPO, or PVC RapidLock Membrane	-285

Recover Applications - VacuSeal V2T Vent

Substrates: Any Existing Roofing Assembly				
Insulation	Underlayment	Membrane	Attachment	Tested Pressure (psf)
(Optional) Any insulation and/or cover board, any combination, any thickness- loose-laid	12"-wide strips of VacuSeal Air Distribution Strip, loose-laid in a crossing pattern, linking the V2T vents and distributing air underneath the membrane and V2T roof vent	Minimum 45-mil Sure-Weld or Min. 50-mil Sure-Flex PVC or Sure-Flex KEE HP	VacuSeal Vent installed in accordance with Carlisle instructions, spaced maximum 50' o.c.	-195*

* Note: This listing not for use in HVHZ Areas