

Adhered Roofing Systems Underlayment Fastening Criteria Up to 20 YR Warranty

Table VI

Other Requirements are Listed in Additional Design Considerations following this Table

All Carlisle Products listed for higher wind speed coverage can also be used for Warranties for lower speed coverage.
(i.e. 72 MPH underlayment may be used for 55 MPH underlayment)

Maximum Peak Gust Wind Speed Warranty	Minimum Membrane Underlayment	Underlayment Attachment			Metal Edging
		# of Fasteners per 4' x 8' board size (1)	Adhesive Ribbon Spacing for 4' x 4' size board		
			Field	Perimeter	
55 MPH	1" (20 psi) Polyisocyanurate	16(10)	12" (5)(6)	6" (5)	Carlisle Drip Edge, SecurEdge™ 200
	1-1/2" (20 psi) Polyisocyanurate	10	12" (5)(6)	6" (5)	
	2"(20 psi) Polyisocyanurate	8	12" (5)(6)	6" (5)	
72 or 80 MPH	1/4" Dens-Deck Prime (2)	12	12" (5)(6)(7)	6" (5)(7)	Carlisle Drip Edge, SecurEdge 200 may be fastened with ring shank nails staggered 4" on center. Carlisle HP or HP-X Fasteners may also be used fastened 12" on center.
	1/4" Securock (2)				
	1/2" HP Recovery Board (2)	16(10)	12" (5)(6)(7)	6" (5)(7)	
	1/2" SecurShield HD (2)				
	1/2" SecurShield HD Plus (2)	8	12" (5)(6)(7)	6" (5)(7)	
	1-1/2" Polyisocyanurate	10	12" (5)(6)(7)	6" (5)(7)	
	2" (25 -psi) Polyisocyanurate	8	12" (5)(6)(7)	6" (5)(7)	
90 MPH	1/2" Dens-Deck Prime or Securock(2)	12	6" (9)	6" (7)(8)	Carlisle Drip Edge (3), SecurEdge 200 (3)(4) or SecurEdge 2000 or 3000.
	1/2" SecurShield HD (2)	24	6" (9)	6" (7)(8)	
	1/2" SecurShield HD Plus (2)	12	6" (9)	6" (7)(8)	
	1-1/2" (20-psi) SecurShield	16	6" (9)	6" (7)(8)	
	2" (20-psi) SecurShield	8	6" (9)	6" (7)(8)	
	2" HD Polyiso Composite	8	6" (9)	6" (7)(8)	
	1-1/2" Insulfoam HD Composite	16	6" (9)	6" (7)(8)	
100 MPH	1/2" Securshield HD Plus (2)	16	FS	FS	Carlisle Drip Edge (3), SecurEdge 200 (3)(4) or SecurEdge 2000 or 3000.
	5/8" Dens Deck Prime (2)				
	5/8" Securock (2)				
	7/16" Oriented Strand Board (OSB) (2)	17	FS	FS	
	2" (25-psi) SecurShield (1)	16	FS	FS	
	2" HD Polyiso Composite	16	FS	FS	
110 MPH	1/2" SecurShield HD Plus (2)	16	FS	FS	SecurEdge 2000 or 3000
	5/8" Dens Deck Prime (1)(2)				
	5/8" Securock (1)(2)				
	7/16" Oriented Strand Board (OSB) (2)	17	FS	FS	
120 MPH	1/2" SecurShield HD Plus (2)	24	FS	FS	SecurEdge 2000 or 3000
	5/8" Dens Deck Prime (2)				
	5/8" Securock (2)				
	7/16" Oriented Strand Board (OSB) (1)(2)	17	FS	FS	

FS = Full Spray or Ribbons @ 4" O.C.

(1) For Building heights between 51-100', enhance 12'-wide perimeter with 50% more fasteners and plates.

(2) For Steel Decks, Cover boards must be installed over a min. 1" thick approved Carlisle Insulation.

- (3) Carlisle HP or HP-X Fasteners must be used to secure Carlisle Drip Edge or SecurEdge 200 Metal Fascia to perimeter wood nailers.
- (4) Membrane securement is required at the base of the SecurEdge 200 waterdam.
- (5) Gravel Surface BUR - Field @ 6" O.C. / Perimeter @ 4" O.C.
- (6) Steel Decks - Field & Perimeter @ 6" O.C.
- (7) Cementitious Wood Fiber - Field @ 6" O.C. / Perimeter @ 4" O.C.
- (8) Smooth BUR - Field @ 6" O.C. / Perimeter @ 4" O.C.
- (9) Gravel Surface BUR – FS
- (10) Reduced fastening (11 fasteners per 4x 8 board) is acceptable on Reroof/No Tear off projects with a maximum roof height of 40'.

Additional Adhered Design Considerations - Up to 20 YR Warranty

- 1 - Building height shall not exceed 100'
- 2 - Local Wind Zone per ASCE 7 shall not exceed 130 mph
- 3 - Acceptable decking: 22-gauge or heavier steel, structural concrete, 1-1/2" wood plank, or 3/4" plywood.

* For projects where building height exceeds 100' or wind speed exceeds 130 mph, please submit to Carlisle for review.

Adhered Roofing Systems Underlayment Fastening Criteria 25 YR or 30 YR Warranty

Table VII

Other Requirements are Listed in Additional Design Considerations following this Table

All Carlisle Products listed for higher wind speed coverage can also be used for Warranties for lower speed coverage. (i.e. 72 MPH underlayment may be used for 55 MPH underlayment)

Maximum Peak Gust Wind Speed Warranty	Minimum Membrane Underlayment	Underlayment Attachment		Metal Edging	
		# of Fasteners per 4' x 8' board size (1)	Adhesive Ribbon Spacing for 4' x 4' size board		
			Field		Perimeter
55 MPH	1-1/2" to 2-1/2" (25 psi) Polyisocyanurate	16	6" (3)(5)	6" (5)	Carlisle Drip Edge, SecurEdge 200 may be fastened with ring shank nails staggered 4" on center. Carlisle HP or HP-X Fasteners may also be used fastened 12" on center.
	1/2" HP Recovery Board (1)				
	1/4" Dens-Deck Prime (2)				
	1/4" Securock (2)				
72 or 80 MPH	1-1/2" to 2-1/2" (25-psi) SecurShield	16	6" (4)(5)(6)	6" (5)(6)	Carlisle Drip Edge (7), SecurEdge 200 (7)(8) or SecurEdge 2000 or 3000.
	1/2" Dens-Deck Prime (2)				
	1/2" Securock (2)				
90 or 100 MPH	5/8" Dens-Deck Prime (2)	16	FS	FS	SecurEdge 2000 or 3000
	5/8" Securock (2)				
	7/16" Oriented Strand Board (OSB) (2)	17	FS	FS	

FS = Full Spray or Ribbons @ 4" O.C.

- (1) For Building heights between 51-100', enhance 12'-wide perimeter with 50% more fasteners and plates.
- (2) Hail coverage offered with substrate.
- (3) Structural Concrete - Field @ 12" O.C. / Perimeter @ 6" O.C.
- (4) 80-mph over structural concrete - Field & Perimeter @ 6" O.C.
- (5) Cementitious Wood Fiber & Wood – FS
- (6) 80-mph over Gypsum Decks – FS

- (7) Carlisle HP or HP-X Fasteners must be used to secure Carlisle Drip Edge or SecurEdge 200 Metal Fascia to perimeter wood nailers.
- (8) Membrane securement is required at the base of the SecurEdge 200 waterdam.

Additional Adhered Design Considerations - 25 YR to 30 YR Warranty

- 1 - Building height shall not exceed 100*
- 2 - Local Wind Zone per ASCE 7 shall not exceed 130 mph*
- 3 - Acceptable decking: 22-gauge or heavier steel, structural concrete, 1-1/2" wood plank, or 3/4" plywood.
- 4 - 1/4" per horizontal foot slope is preferred; however 1/8" slope with sufficient number of drains and crickets / saddles may be accepted
- 5 - Two layers of insulation with staggered joints, bottom layer must be a minimum 1-1/2" (20-psi) Polyisocyanurate
- 6 – New construction or complete tear-off of existing roofing material
- 7 – Refer to Spec Supplement E-02-11 "EPDM Membrane Splicing and Splice Repairs" and appropriate Carlisle Details for additional design enhancements

* For projects where building height exceeds 100' or wind speed exceeds 100 mph, please submit to Carlisle for review.

C. Access for warranty service

It shall be the owner's responsibility to expose the membrane in the event warranty service is required when access is impaired. Such impairment includes, but is not limited to:

- a. Design features, such as window washer systems, which require the installation of traffic surface units in excess of 80 pounds per unit.
- b. Any equipment, ornamentation, building service units and other top surfacing materials, which are not defined as part of this specification.
- c. Photovoltaic and Mounting Systems or other Rooftop equipment which does not provide Carlisle with reasonable access to the membrane system for purposes of warranty investigation and related repairs.
- d. Severely ponded conditions.

CAUTION: APPLICATIONS SUCH AS WALKING DECKS, TERRACES, PATIOS OR AREAS SUBJECTED TO CONDITIONS NOT TYPICALLY FOUND ON ROOFING SYSTEMS WILL **NOT** BE ELIGIBLE FOR A MEMBRANE SYSTEM WARRANTY. CARLISLE MAY BE CONTACTED FOR OTHER AVAILABLE OPTIONS.

- D. The formation or presence of mold or fungi in a building is dependent upon a broad range of factors including, but not limited to, the presence of spores and nutrient sources, moisture, temperatures, climatic conditions, relative humidity, and heating/ventilating systems and their maintenance and operating capabilities. These factors are beyond the control of Carlisle and Carlisle shall not be responsible for any claims, repairs, restoration or damages relating to the presence of any irritants, contaminants, vapors, fumes, molds, fungi, bacteria, spores, mycotoxins, or the like in any building or in the air, land, or water serving the building.

1.06 Job Conditions

- A. On phased roofing, temporary closures should be provided to prevent moisture infiltration. When a temporary roof is specified, Carlisle 725-TR in conjunction with CCW 702 or Cav-Grip Primer may be used. Refer to Product Section Part II for additional product information and Spec Supplement G-08-11 "Application Procedures for 725TR Air and Vapor Barrier".
- B. When possible on multiple level roofs, begin the installation on the highest level to avoid or minimize construction traffic on completed roof sections.
- C. On projects at high altitudes (6,000' and above) rapid flash off (drying) of Bonding Adhesive and Primers will occur due to low atmospheric pressure.
- D. Vapor Retarders
 - 1. Carlisle does not require a vapor retarder for the protection of the membrane; however, it should be considered by the specifier for the protection of the roofing assembly (i.e. primarily insulation, underlayment and adhesives). The