

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 or 72 MPH	1" (20 psi) Polyisocyanurate	16(10)	12" (5)(6)	6" (5)	Carlisle Drip Edge, SecurEdge™ 200
	1-1/2" (20 psi) Polyisocyanurate	10			
	2" (20 psi) Polyisocyanurate	8			
	1/2" SecurShield HD (12)	12			
	1/4" DensDeck Prime or 1/4" Securock (2)	12			
80 MPH	1/2" SecurShield HD Plus (12)	8	12" (5)(6)(7)	6' (5)(7)	Carlisle Drip Edge, SecurEdge 200 (11)
	1/2" HP Recovery Board (2)	16			
	2" SecurShield HD Composite	6			
	1/2" DensDeck Prime or 1/2" Securock (2)	8			
	1-1/2" Polyisocyanurate	10			
	2" (25 -psi) Polyisocyanurate	8			
90 MPH	1/2" DensDeck Prime or 1/2" 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 (12) or 1-1/2" (20-psi) SecurShield Polyiso	16			
	1/2" SecurShield HD Plus (12)	12			
	2" (20-psi) SecurShield or 2" SecurShield HD Polyiso Composite	8			
	1-1/2" StormBase (OSB/Polyiso Composite) or 1/2" EcoStorm VSH (2)	8			
	1-1/2" Insulfoam HD Composite	16			
100 MPH	2" (25-psi) SecurShield Polyiso (1)	16	FS	FS	Carlisle Drip Edge (3), SecurEdge 200 (3)(4) or SecurEdge 2000 or 3000
110 MPH	1-1/2" StormBase (OSB/Polyiso Composite) or 1/2" EcoStorm VSH (2)	16	FS	FS	SecurEdge 2000 or 3000
	1/2" SecurShield HD Plus (12)				
120 MPH	5/8" DensDeck Prime or 5/8" Securock (2)	16	FS	FS	SecurEdge 2000 or 3000
	1-1/2" StormBase (OSB/Polyiso Composite) (1) or 1/2" EcoStorm VSH (2)	17			
	1/2" SecurShield HD Plus (12)	24			
	2" SecurShield HD Composite	16			

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'.
- (11) 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.
- (12) 1/2" SecurShield HD limited to 90 mph. 1/2" SecurShield HD Plus limited to 120 mph.

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 15/32" plywood.

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

Underlayment/Insulation & Required Attachment Assemblies Up to 20 YR Warranty for SAT EPDM Adhered Roofing Systems

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 a lower speed coverage. (i.e. 72 MPH underlayment may be used for 55 MPH underlayment)

Peak Gust Wind Speed Warranty	Minimum Membrane Underlayment	Insulation Attachment		Metal Edging			
		# of Fasteners per 4' x 8' board size (1)	Adhesive Ribbon Spacing for 4' x 4' size board				
			Field		Perimeter		
55 or 72 MPH	1" (20 psi) Polyisocyanurate	16 (9)	12" (4)(5)	6" (4)	Carlisle Drip Edge, SecurEdge 200		
	1-1/2" (20 psi) Polyisocyanurate	10					
	2" (20 psi) Polyisocyanurate	8					
	1/2" SecurShield HD (3)	12					
	1/4" DensDeck Prime or 1/4" Securock (2)						
	2" (1.25 lb/density) Insulfoam SP*						
80 MPH	1/2" DensDeck Prime or 1/2" Securock (2)	8	12" (4)(5)(6)	6" (4)(6)	Carlisle Drip Edge, SecurEdge 200 (12)		
	1/2" SecurShield HD (3)	16					
	1/2" SecurShield HD Plus (3)	8					
	2" SecurShield HD Composite	6					
	1-1/2" (25-psi) Polyisocyanurate	10					
	2" (25 -psi) Polyisocyanurate	8					
	2" (1.25 lb/density) Insulfoam SP**	16				6" (4)(5)(6)	6" (4)(6)
	1-1/2" Insulfoam HD Composite*	12				12"(8)	6"(6)(7)
90 MPH	1/2" DensDeck Prime or 1/2" Securock (2)	12	6" (8)	6" (6)(7)	Carlisle Drip Edge (10), SecurEdge 200 (10)(11) or SecurEdge 2000 or 3000.		
	1/2" SecurShield HD (3) or 1-1/2" (20-psi) SecurShield Polyiso	16					
	1/2" SecurShield HD Plus (3)	12					
	1-1/2" StormBase (OSB/Polyiso Composite) or 1/2" EcoStorm VSH	8					
	2" (20-psi) SecurShield Polyiso or 2" SecurShield HD Composite	8					
	1-1/2" Insulfoam HD Composite	16					
100 MPH	5/8" DensDeck Prime or 5/8" Securock (2)	16	FS	FS	Carlisle Drip Edge (10), SecurEdge 200 (10)(11) or SecurEdge 2000 or 3000.		
	1/2" SecurShield HD Plus (3)						
	1-1/2" StormBase (OSB/Polyiso Composite) or 1/2" EcoStorm VSH						
	2" (25-psi) SecurShield Polyiso (1)						
	2" SecurShield HD Composite						

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) Cover boards must be installed over a min. 1" thick approved Carlisle Insulation.
- (3) 1/2" SecurShield HD limited to 72 mph. 1/2" SecurShield HD Plus limited to 120 mph.
- (4) Gravel Surface BUR - Field @ 6" O.C. / Perimeter @ 4" O.C.
- (5) Steel Decks - Field & Perimeter @ 6" O.C.

- (6) Cementitious Wood Fiber - Field @ 6" O.C. / Perimeter @ 4" O.C.
 - (7) Smooth BUR - Field @ 6" O.C. / Perimeter @ 4" O.C.
 - (8) Gravel Surface BUR – FS
 - (9) Reduced fastening (11 fasteners per 4 x 8 board) is acceptable on Reroof/No Tear off projects with a maximum roof height of 40'.
 - (10) Carlisle HP or HP-X Fasteners must be used to secure Carlisle Drip Edge or SecurEdge 200 Metal Fascia to perimeter wood nailers.
 - (11) Membrane securement is required at the base of the SecurEdge 200 waterdam.
 - (12) 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.
- *Maximum warranty available 20 year.
** Maximum warranty available 15 year.

Additional Design Considerations (Up to 20 YR Warranty)

- 1 - Minimum membrane thickness 60-mil SAT EPDM
- 2 - Building height shall not exceed 100*
- 3 - Local Wind Zone per ASCE 7 shall not exceed 130 mph*
- 4- Acceptable decking: 22-gauge or heavier steel, structural concrete, 1-1/2" wood plank, or 15/32" plywood.
- 5- All "T-joints" must be overlaid with appropriate flashing material or Carlisle "T-Joint" Covers.

* Projects where building height exceeds 100' or warranty wind speed exceeds 100 mph, shall be submitted to Carlisle for review.

Underlayment Fastening Criteria 25 YR or 30 YR Warranty

Table VIII

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 or 72 MPH	1" to 2" (25 psi) Polyisocyanurate	16	6" (3)(5)	6" (5)	Carlisle Drip Edge, SecurEdge 200 (9)
	1/2" HP Recovery Board (1)(10)				
	1/4" DensDeck Prime or 1/4" Securock (2)				
	1/2" SecurShield HD (2)				
80 MPH	1-1/2" to 2" (25-psi) SecurShield Polyisocyanurate	20	6" (4)(5)(6)	6" (5)(6)	Carlisle Drip Edge (7), SecurEdge 200 (7)(8) or SecurEdge 2000 or 3000.
	1/2" DensDeck Prime or 1/2" Securock (2)	16			
	1/2" SecurShield HD Plus (2)	20			
	1/2" SecurShield HD (2)	20			
90 MPH	1/2" SecurShield HD (2)	24	FS	FS	SecurEdge 2000 or 3000
	1/2" SecurShield HD Plus (2)	20			
	1/2" DensDeck Prime or 1/2" Securock (2)				
100 MPH	5/8" DensDeck Prime or 5/8" Securock (2)	16	FS	FS	SecurEdge 2000 or 3000
	1-1/2" StormBase (OSB/Polyiso Composite) or 1/2" EcoStorm VSH (2)				
	2" SecurShield HD Composite (2)				
	1/2" SecurShield HD Plus (2)	24			

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.

(9) 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.

(10) 1/2" Recovery Board limited to 55 mph.

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 15/32" 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-02-20 "EPDM Membrane Splicing and Splice Repairs" and appropriate Carlisle Details for additional design enhancements

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