

**Table II Underlayment/Insulation & Required Attachment Assemblies Up to 20 YR Warranty**

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 with lesser speed coverage. (i.e. 72 MPH underlayment may be used for 55 MPH underlayment)**

Peak Gust Wind Speed Warranty	Minimum Membrane Underlayment (Carlisle Supplied Only)	Insulation/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 (9)	12" (4)(5)	6" (4)	Carlisle Drip Edge, SecurEdge™ 200 or 300
	1-1/2" (20-psi) Polyisocyanurate	10			
	2" (20 -psi) Polyisocyanurate	8			
	1/2" SecurShield HD (2)	12			
	1/4" DensDeck or 1/4" Securock (2)	12			
80 MPH	1/2" SecurShield HD Plus (2)	8	6" (4)(6)	6" (4)(6)	Carlisle Drip Edge, SecurEdge 200 or 300 (10)
	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" (20-psi) Polyisocyanurate	10			
	2" (20 -psi) Polyisocyanurate	8			
90 MPH	1/2" DensDeck or 1/2" Securock (2)	12	6" (8)	6" (6)(7)	Carlisle Drip Edge (3), SecurEdge 2000 or 3000.
	1/2" SecurShield HD (2) or 1-1/2" (20-psi) SecurShield Polyiso	16			
	1/2" SecurShield HD Plus (2)	12			
	2" (20-psi) SecurShield Polyiso	8			
	1-1/2" StormBase (OSB/Polyiso Composite) or 1/2" EcoStorm VSH (2)	8	6" (4)(6)	6" (4)(6)	
	2" SecurShield HD Composite	8			
	1-1/2" Insulfoam HD Composite	16			
100 MPH	2" (25-psi) SecurShield Polyiso (1)	16	FS	FS	Carlisle Drip Edge (3), 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 (2)				
120 MPH	5/8" DensDeck 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 (2)	24			
	2" SecurShield HD Composite	16			

FS = Full Spray, Splatter 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) Carlisle HP or HP-X Fasteners must be used to secure Carlisle Drip Edge or SecurEdge 200 Metal Fascia to perimeter wood nailers.

(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) 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.

**Additional Design Considerations (Up to 20 YR Warranty)**  
(Required in conjunction with Table II)

- 1 - Building height shall not exceed 100 foot\*
  - 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 - All "T-joints" must be overlaid with appropriate flashing material
  - 5 - Membrane Attachment: 15 YR Warranty - Adhesive Bead Spacing 12" o.c. field, 6" o.c. perimeter up to 55 MPH; 6" o.c. field, 6" perimeter 72 MPH ; 4" o.c. or Full Spray field and perimeter 80 MPH
  - 6 - Membrane Attachment: 20 YR Warranty - Adhesive Bead Spacing 6" o.c. field and perimeter up to 55 MPH; 6" o.c. field, 4" o.c perimeter 72 MPH ; 4" o.c. or Full Spray field and perimeter 80 MPH
- \* For projects where building height exceeds 100' or wind speed exceeds 130 mph, please submit to Carlisle for review.

**Table III Underlayment/Insulation & Required Attachment Assemblies 25 YR or 30 YR Warranty**

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" to 2" (25 psi) Polyisocyanurate	16	6" (3)(5)	6" (5)	Carlisle Drip Edge, SecurEdge 200 or 300 (8)
	1/2" HP Recovery Board (1)(9)				
	1/4" DensDeck Prime or 1/4" Securock (2)				
	1/2" SecurShield HD (2)(7)				
80 MPH	1-1/2" to 2" (25-psi) SecurShield Polyisocyanurate	20	6" (3)(5)(6)	6" (5)(6)	Carlisle Drip Edge (4), SecurEdge 200 or 300(4)(5) 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)(7)	20			
90 MPH	1/2" SecurShield HD (2)(7)	24	FS	FS	
	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, Splatter 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) 1/2" SecurShield HD limited to 90 mph.
- (8) 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.
- (9) 1/2" Recovery Board limited to 55 mph.

**Additional Design Considerations (25 YR or 30 YR Warranty)**  
(Required in conjunction with Table III)

- 1 - Minimum membrane thickness of 145-mil FleeceBACK EPDM, 135-mil FleeceBACK TPO, PVC or KEE HP PVC
- 2 - Building height shall not exceed 100 foot \*
- 3 - 1/4" per horizontal foot slope is preferred; however, 1/8" slope with sufficient number of drains and crickets / saddles may be accepted.
- 4 - Local Wind Zone per ASCE 7 shall not exceed 130 mph\*
- 5 - Acceptable decking: 22-gauge or heavier steel, structural concrete, 1-1/2" wood plank, or 15/32" plywood. Other decks should be submitted for Carlisle review.
- 6 - All "T-joints" must be overlaid with appropriate flashing material.
- 7 - Two layers of insulation with staggered joints, bottom layer must be a minimum 1-1/2" (20-psi) Polyisocyanurate.
- 8 - New construction or complete tear-off of existing roofing material.
- 9 - Membrane Attachment: 25/30 YR Warranty - Adhesive Bead Spacing 4" o.c., Splatter or Full Spray field and perimeter up to 100 MPH

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

**Table IV Flexible FAST Application for FleeceBACK Membrane Adhesion**

Peak Gust Wind Speed Warranty	Warranty Length in Years					
	5 to 15 years		20 years		25 years	
	Field	Perimeter*	Field	Perimeter*	Field	Perimeter*
55 MPH	12"	6"	6"	6"	FS	FS
72 MPH	6"	6"	6"	FS	FS	FS
80 to 120 MPH	FS	FS	FS	FS	FS	FS

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

\*Refer to Table V

**Table V Minimum Perimeter Width**

Width of Perimeter	Building Height
4 feet	25 feet
8 feet	26 to 50 feet
12 feet	51 to 75 feet
18 feet	76 to 100 feet
Contact Carlisle	Greater than 100 feet

- C. A warranty covering leaks caused by hail can be issued, refer to Table I – “FleeceBACK Adhered Systems Warranty Options” in this specification for further information. Contact Carlisle for additional information.

- D. On projects utilizing FleeceBACK 115 membrane, a 5, 10, 15, or 20-year warranty with limited coverage for accidental punctures (up to 16 man-hours per year) is available. An additional 4 man-hours per year can be obtained when using Flexible FAST Adhesive in full coverage spray or extrusions at 4" on center.
- E. On projects utilizing FleeceBACK 135 or 145 membrane, a 5, 10, 15, 20, 25 or 30-year warranty with limited coverage for accidental punctures (up to 32 man-hours per year) is available for an additional charge. An additional 4 man-hours per year can be obtained when using Flexible FAST Adhesive in full coverage spray or extrusions at 4" on center.
- F. Upon review by Carlisle, projects incorporating white TPO FleeceBACK Membrane may be eligible for a 10- year Reflectivity Warranty Amendment. These projects must be submitted to Carlisle prior to installation and preferably prior to bid.
- G. 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.

#### H. **Access for Warranty Service**

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

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

**CAUTION:** Applications such as walking decks, terraces, patios or areas subjected to conditions not typically found on roofing systems are **not** covered by this specification and not eligible for system warranties as stated herein. The FleeceBACK Plaza Waterproofing specification (published separately) may be referenced for applicable installation procedures and system warranties available.

### 1.06 **Job Conditions**

- A. On phased roofing, temporary closures should be provided to prevent moisture infiltration. When a temporary roof is specified, Carlisle 725TR in conjunction with CCW-702 or CAV-GRIP III Low-VOC Adhesive/Primer may be used. Refer to Product Section Part II for additional product information and Specification Supplement G-08-20.
- 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. Dual Tank Splatter application not approved for applications over 5,000 feet above sea level. Contact Carlisle for all bead applications over 5,000 feet above sea level.