



Product Evaluation

RC123 | 0616

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: RC-123

Effective Date: June 1, 2016

Re-evaluation Date: June 2020

Product Name: U.S. Ply, Inc. Modified Bitumen Roof Covering Systems Installed Over Wood Decks

Manufacturer: U.S. Ply, Inc.
2000 E. Richmond Ave
Fort Worth, TX 76104
(817) 413-0103

General Description:

Base/Ply Sheets Hot Asphalt Applied:

- **USP™ Base** is a Type II weathering grade asphalt with a fiberglass mat roll roofing membrane intended for use as a base or ply sheet.
- **USP™ Type IV Glass Ply Sheet** is an asphalt coated fiberglass mat roll roofing membrane intended for use as a base or ply sheet.
- **USP™ Type VI Premium Glass Ply Sheet** is an asphalt coated fiberglass mat roll roofing membrane intended for use as a base or ply sheet.
- **ASTM D4601 (Type I or II)** is a Type I or Type II asphalt coated fiberglass mat base sheet.
- **ASTM D2178 (Type IV or VI)** is a Type IV or VI asphalt coated fiberglass mat base sheet.
- **DuraFlex™ 30 SBS Base** is a SBS modified, asphaltic, fiberglass reinforced membrane intended for use as a base or interply sheet.
- **DuraFlex™ 60 SBS Base** is a SBS modified bitumen smooth surfaced fiberglass mat roll roofing membrane intended for use as a base or interply sheet.
- **DuraFlex™ SBS PolyBase** is a SBS modified asphaltic membrane reinforced with a non-woven polyester mat enhanced with fiberglass strands and intended for use as a base or ply sheet.
- **DuraFlex™ G4S SBS** is a SBS modified bitumen smooth surfaced fiberglass mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ 190S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.

Base/Ply Sheets Hot Asphalt Applied Continued):

- **DuraFlex™ 250S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.

Base/Ply Sheets APP Torch Applied:

- **All Weather™ APP Smooth** is an APP modified bitumen smooth surfaced, polyester reinforced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **USP™ APP 160SCA** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **TuffCap™ 190S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **USP™ APP 160S PLUS** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **DuraWeld™ 4S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **DuraWeld™ 5S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **SafeWeld™ 180S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **SafeWeld™ X4S APP** is an APP modified bitumen composite reinforced fiberglass/polyester smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.

Base/Ply Sheets SBS Torch Applied:

- **DuraFlex™ 60TG SBS** is a SBS modified, fiberglass mat reinforced, asphaltic membrane intended for use as a base or interply sheet in torch applied systems.
- **DuraFlex™ 90TG SBS** is a SBS modified, fiberglass mat reinforced, asphaltic membrane intended for use as a base or interply sheet in torch applied systems.
- **DuraFlex™ 190S TG SBS** is a SBS modified, non-woven polyester mat reinforced, asphaltic membrane intended for use as a base or ply sheet in torch applied systems.
- **DuraFlex™ 250S TG SBS** is a SBS modified, non-woven polyester mat reinforced, asphaltic membrane intended for use as a base or ply sheet in torch applied systems.

Base/Ply Sheets Cold Adhesive Applied:

- **DuraFlex™ 60 SBS Base** is a SBS modified bitumen smooth surfaced fiberglass mat roll roofing membrane intended for use as a base or interply sheet.
- **DuraFlex™ G4S SBS** is a SBS modified bitumen smooth surfaced fiberglass mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ SBS PolyBase** is a SBS modified asphaltic membrane reinforced with a non-woven polyester mat enhanced with fiberglass strands and intended for use as a base or ply sheet.
- **DuraFlex™ 190S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ 250S SBS Base** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ Dual Smooth SBS** is a SBS modified bitumen smooth surfaced composite fiberglass and polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.

Cap Sheets Hot Asphalt Applied:

- **All Weather™ SBS Granule** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **USP™ Mineral Cap Sheet** is a weathering grade asphalt with a high quality fiberglass mat and granule surfaced roll roofing intended for use as a cap sheet.
- **TuffCap™ 190M SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet in hot or cold applied systems.
- **DuraFlex™ 190S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ 190 SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 190FR SBS** is a SBS modified bitumen fire-resistant granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 250S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ 250 SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 250FR SBS** is a SBS modified bitumen fire-resistant granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ G4S SBS** is a SBS modified bitumen smooth surfaced fiberglass mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ G4M SBS** is a SBS modified bitumen granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ G4FR SBS** is a SBS modified bitumen fire-resistant granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ Dual Cap FR SBS** is a SBS modified bitumen fire-resistant granule surfaced composite fiberglass and polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraSTAR™ G4 MOP SBS** is a SBS white reflective film clad modified bitumen fire-resistant granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet.

Cap Sheets APP Torch Applied:

- **All Weather™ APP Smooth** is an APP modified bitumen smooth surfaced, polyester reinforced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **All Weather™ APP Granule** is an APP modified bitumen granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **USP™ APP 160SCA** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **TuffCap™ 190S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **USP™ APP 160S PLUS** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **TuffCap™ 190M APP** is an APP modified bitumen granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **DuraWeld™ 4S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.

Cap Sheets APP Torch Applied (Continued):

- **DuraWeld™ 5S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **DuraWeld™ 4M APP** is an APP modified bitumen granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **DuraWeld™ 4MFR APP** is an APP modified bitumen granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **SafeWeld™ 180S APP** is an APP modified bitumen smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **SafeWeld™ 180M APP** is an APP modified bitumen granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **SafeWeld™ 180FR APP** is an APP modified bitumen fire-resistant granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **SafeWeld™ X4S APP** is an APP modified bitumen composite reinforced fiberglass/polyester smooth surfaced roll roofing membrane intended for heat fused (torch) application only as a base, interply or cap sheet.
- **SafeWeld™ X4M APP** is an APP modified bitumen composite reinforced fiberglass/polyester granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **SafeWeld™ X4FR APP** is an APP modified bitumen fire-resistant composite reinforced fiberglass/polyester granule surfaced roll roofing membrane intended for heat fused (torch) application only as a cap sheet.
- **DuraSTAR™ 4S APP** is an APP modified bitumen smooth white reflective coated roll roofing membrane intended for heat fused (torch) application only as a cap sheet.

Cap Sheets SBS Torch Applied:

- **DuraFlex™ G4FR TG SBS** is a SBS modified bitumen fire-resistant granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet in torch applied systems.
- **DuraFlex™ 190 TG SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet in torch applied systems.
- **DuraFlex™ 190FR TG SBS** is a SBS modified bitumen fire-resistant granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet in torch applied systems.
- **DuraFlex™ 250 TG SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet in torch applied systems.
- **DuraFlex™ 250FR TG SBS** is a SBS modified bitumen fire-resistant granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet in torch applied systems.
- **DuraSTAR™ G4 TGW SBS** is a SBS white reflective film clad modified bitumen fire-resistant granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet in torch applied systems.

Cap Sheets Cold Adhesive Applied:

- **All Weather™ SBS Granule** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **TuffCap™ 190M SBS** is SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet in hot or cold applied systems.
- **DuraFlex™ G4S SBS** is a SBS modified bitumen smooth surfaced fiberglass mat roll roofing membrane intended for use as a base, interply or cap sheet.

Cap Sheets Cold Adhesive Applied (Continued):

- **DuraFlex™ G4M SBS** is a SBS modified bitumen granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ G4FR SBS** is a SBS modified bitumen fire-resistant granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 190S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ 190 SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 190FR SBS** is a SBS modified bitumen fire-resistant granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 250S SBS** is a SBS modified bitumen smooth surfaced polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ 250 SBS** is a SBS modified bitumen granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ 250 FR SBS** is a SBS modified bitumen fire-resistant granule surfaced polyester mat roll roofing membrane intended for use as a cap sheet.
- **DuraFlex™ Dual Smooth SBS** is a SBS modified bitumen smooth surfaced composite fiberglass and polyester mat roll roofing membrane intended for use as a base, interply or cap sheet.
- **DuraFlex™ Dual Cap FR SBS** is a SBS modified bitumen fire-resistant granule surfaced fiberglass mat roll roofing membrane intended for use as a cap sheet.

Base Sheets Self-Adhered:

- **RapidGRIP™ READI-BASE** is a SBS sand surfaced, self-adhering fiberglass mat roll roofing membrane intended for use as a base sheet.

Insulations & Coverboards:

- **ACFoam-II** is a polyisocyanurate roof insulation manufactured by Atlas Roofing Corporation.
- **ACFoam-III** is a polyisocyanurate roof insulation manufactured by Atlas Roofing Corporation.
- **ACFoam-IV** is a polyisocyanurate roof insulation manufactured by Atlas Roofing Corporation.
- **ISO 95+ GL** is a polyisocyanurate roof insulation.
- **H-Shield** is a polyisocyanurate roof insulation manufactured by Hunter Panels, LLC.
- **H-Shield CG** is a polyisocyanurate roof insulation manufactured by Hunter Panels, LLC.
- **ENRGY 3** is a polyisocyanurate roof insulation manufactured by Johns Manville Corporation.
- **Multi-Max FA-3** is a polyisocyanurate roof insulation manufactured by Rmax Operating, LLC.
- **Structodek High Density Fiberboard** is a high density roofing board manufactured by Blue Ridge Fiberboard, Inc.
- **SECUROCK Gypsum-Fiber Roof Board** is a water-resistant gypsum core coverboard manufactured by US Gypsum Corporation.
- **DensDeck Prime** is a fiberglass faced, water-resistant gypsum core coverboard manufactured by Georgia-Pacific Gypsum, LLC.
- **FescoBoard** is an expanded mineral fiber core coverboard manufactured by Johns Manville Corporation.

Adhesives:

- **ICP Adhesive CR-20** is a dual component polyurethane insulation adhesive manufactured by ICP Adhesives and Sealants, Inc.
- **OlyBond 500 is a dual component polyurethane foam adhesive.** OlyBond 500 is available in 5 gal. containers or 1,500 ml SpotShot cartridges manufactured by OMG, Inc.
- **USP #330 SBS Modified Adhesive** is an asbestos free rubberized adhesive manufactured by Tropical Roofing Products Corporation.
- **DuraFlex 901 Premium SBS Modified Adhesive** is a high-performance, high-solids, asphalt based polymer modified adhesive.

Fasteners and Plates:

- **TruFast TP** is a #10 threaded point, #3 Phillips truss head, Tru-Kote PC-3 corrosion-resistant coating roofing fastener manufactured by Altenloh, Brinck & Co. U.S., Inc.
- **Trufast #12 DP Fastener** is a #3 Phillips truss or hex head, Tru-Kote PC-3 corrosion-resistant coating roofing fastener manufactured by Altenloh, Brinck & Co. U.S., Inc.
- **Trufast #12 DPH Fastener** is a #3 Phillips truss or hex head, Tru-Kote PC-3 corrosion-resistant coating roofing fastener manufactured by Altenloh, Brinck & Co. U.S., Inc.
- **Trufast 3" Metal Insulation Plate** is a 3" diameter, 26-gauge, Galvalume AZ-50 stress plate manufactured by Altenloh, Brinck & Co. U.S., Inc.
- **Trufast 3" Recessed Metal Insulation Plate** is a 3" diameter, 26-gauge, Galvalume AZ-50 stress plate manufactured by Altenloh, Brinck & Co. U.S., Inc.
- **OMG #12 Standard Roofgrip** is a #3 Phillips truss head, CR-10 corrosion-resistant coating roofing fastener manufactured by OMG, Inc.
- **OMG Heavy Duty** is a #3 Phillips truss head, CR-10 corrosion-resistant coating roofing fastener manufactured by OMG, Inc.
- **OMG 3" Galvalume Steel Plate** is a 3" diameter Cat. No. SPGA3-R, Galvalume coated steel plate.
- **PlyFast #10 TP** is a #10 threaded point, #3 Phillips truss head, Tru-Kote PC-3 corrosion-resistant coating roofing fastener private labeled with Altenloh, Brinck & Co. U.S., Inc.
- **PlyFast #12 CDP Fastener** is a #3 Phillips truss or hex head, Tru-Kote PC-3 corrosion-resistant coating roofing fastener private labeled with Altenloh, Brinck & Co. U.S., Inc.
- **PlyFast Standard Metal Plate** is a 3" diameter, 26-gauge, Galvalume AZ-50 stress plate private labeled with Altenloh, Brinck & Co. U.S., Inc.

Base and Anchor Sheet Fasteners:

- **Steel Round Jevcaps** are galvanized, minimum 1-1/4" long, 11-gauge annular ring shank nails with integral 1" diameter profiled caps.
- **Hurricane Capnails** are galvanized, 1-1/4" long, 11-gauge annular ring shank nails with integral 1-5/8" diameter, 30-gauge sheet metal caps.
- **"Nails & Tin Caps"**: Nails shall be galvanized minimum 11-gauge, annular ring shank nails having not less than 20 rings per inch, heads not less than 3/8" diameter of sufficient length for minimum 1/2" penetration through the underside of sheathing. Tin caps shall be not less than 1-5/8" diameter, not less than 32-gauge sheet metal.

Limitations and Installation:

Roof Framing: The maximum allowable spacing of the roof framing must be as specified in this evaluation report.

Roof Deck: For new applications, the roof deck must be secured to the roof framing to resist the required uplift loads.

Positive Drainage of Roof Deck: Roof decks, in which this product is to be installed upon, must be provided with positive drainage. A minimum roof slope after construction of 1/4" per foot is recommended.

Design Wind Pressures: The design wind uplift pressures must be specified in the assemblies listed in this evaluation report.

General installation Requirements:

All IRC and IBC requirements must be satisfied and manufacturer's installation instructions followed, unless otherwise specified by this product evaluation.

Membrane Attachment: The membrane must be mechanically attached or fully adhered using the fasteners, plates and adhesives specified in this evaluation report.

Fasteners: Fasteners must be of sufficient length to penetrate into and through the plywood deck a minimum of 3/4".

Installation: Installation must be in accordance with the Table 2 through Table 6. Unless specified in Table 2 through Table 6, roof cover components to be applied as specified in Table 1.

TABLE 1: U.S. PLY, INC. ROOF COVERS			
Reference	Layer	Material	Application
BP-AA (Base and Ply sheets, Asphalt-Applied)	Base	USP™ Base, USP™ Type IV Glass Ply Sheet, USP™ Type VI Premium Glass Ply Sheet, ASTM D4601 (Type I or II), ASTM D2178 (Type IV or VI), DuraFlex™ 30 SBS Base, DuraFlex™ 60 SBS Base, DuraFlex™ SBS PolyBase, DuraFlex™ G4S SBS, DuraFlex™ 190S SBS or DuraFlex™ 250S SBS	Hot asphalt at 25 lbs/square
	Ply	USP™ Base, USP™ Type IV Glass Ply Sheet, USP™ Type VI Premium Glass Ply Sheet, ASTM D4601 (Type I or II), ASTM D2178 (Type IV or VI), DuraFlex™ 30 SBS Base, DuraFlex™ 60 SBS Base, DuraFlex™ SBS PolyBase, DuraFlex™ G4S SBS, DuraFlex™ 190S SBS or DuraFlex™ 250S SBS	
SBS-AA (SBS, Asphalt-Applied)	Cap	All Weather™ SBS Granule, USP™ Mineral Cap Sheet, TuffCap™ 190M SBS, DuraFlex™ 190S SBS, DuraFlex™ 190 SBS, DuraFlex™ 190FR SBS, DuraFlex™ 250S SBS, DuraFlex™ 250FR SBS, DuraFlex™ G4S SBS, DuraFlex™ G4M SBS, DuraFlex™ G4FR SBS, DuraFlex™ Dual Cap FR SBS or DuraSTAR™ G4 MOP SBS	Hot asphalt at 25 lbs/square
APP-TA (APP, Torch-Applied)	Base	All Weather™ APP Smooth, USP™ APP 160SCA, TuffCap™ 190S APP, USP™ APP 160S PLUS, DuraWeld™ 4S APP, DuraWeld™ 5S APP, SafeWeld™ 180S APP or SafeWeld™ X4S APP	Torch applied
	Ply	All Weather™ APP Smooth, USP™ APP 160SCA, TuffCap™ 190S APP, USP™ APP 160S PLUS, DuraWeld™ 4S APP, DuraWeld™ 5S APP, SafeWeld™ 180S APP or SafeWeld™ X4S APP	
	Cap	All Weather™ APP Smooth, All Weather™ APP Granule, USP™ APP 160SCA, TuffCap™ 190S APP, USP™ APP 160S PLUS, TuffCap™ 190M APP, DuraWeld™ 4S APP, DuraWeld™ 5S APP, DuraWeld™ 4M APP, DuraWeld™ 4MFR APP, SafeWeld™ 180S APP, SafeWeld™ 180M APP, SafeWeld™ 180FR APP, SafeWeld™ X4S APP, SafeWeld™ X4M APP, SafeWeld™ X4FR APP or DuraSTAR™ 4S APP	
SBS-TA (SBS, Torch-Applied)	Base	DuraFlex™ 60TG SBS, DuraFlex™ 90TG SBS, DuraFlex™ 190S TG SBS or DuraFlex™ 250S TG SBS	Torch applied
	Ply	DuraFlex™ 60TG SBS, DuraFlex™ 90TG SBS, DuraFlex™ 190S TG SBS or DuraFlex™ 250S TG SBS	
	Cap	DuraFlex™ G4FR TG SBS, DuraFlex™ 190 TG SBS, DuraFlex™ 190FR TG SBS, DuraFlex™ 250 TG SBS, DuraFlex™ 250FR TG SBS or DuraSTAR™ G4 TGW SBS	
APP-CA (APP, Cold-Applied)	Base	DuraFlex™ 60 SBS Base, DuraFlex™ G4S SBS, DuraFlex™ SBS PolyBase, DuraFlex™ 190S SBS, DuraFlex™ 250S SBS or DuraFlex™ Dual Smooth SBS	USP #330 SBS Modified Adhesive or DuraFlex 901 Premium SBS Modified Adhesive at 1.5 gal/square.
	Ply	DuraFlex™ 60 SBS Base, DuraFlex™ G4S SBS, DuraFlex™ SBS PolyBase, DuraFlex™ 190S SBS, DuraFlex™ 250S SBS or DuraFlex™ Dual Smooth SBS	
	Cap	All Weather™ SBS Granule, TuffCap™ 190M SBS, DuraFlex™ G4S SBS, DuraFlex™ G4M SBS, DuraFlex™ G4FR SBS, DuraFlex™ 190S SBS, DuraFlex™ 190 SBS, DuraFlex™ 190FR SBS, DuraFlex™ 250S SBS, DuraFlex™ 250 SBS, DuraFlex™ 250 FR SBS, DuraFlex™ Dual Smooth SBS or DuraFlex™ Dual Cap FR SBS	

Limitation and Installation:

TABLE 2: U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED ANCHOR SHEET, BONDED INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Anchor Sheet		Insulation		Roof Cover		
		Type	Attach	Base	Top	Base	Ply	Cap
1A	Minimum 15/32" APA plywood panel sheathing, Exposure 1, 40/20	DuraFlex 30 SBS Base	Trufast 3" Metal Insulation Plates with TruFast TP or Trufast #12 DP fasteners with a minimum length of 1-5/8" or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners with a minimum length of 1-5/8" or OMG 3" Galvalume Plates with OMG #12 Standard Roofgrip fasteners with a minimum length of 1-5/8" or OMG Heavy Duty fasteners with a minimum length of 1-3/4"	Minimum 1-1/2" Polyisocyanurate Insulation, hot asphalt applied	Minimum 1/2" Structodek High Density Fiberboard, SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime or minimum 3/4" FescoBoard, hot asphalt applied	BP-AA, SBS-TA or APP-TA. (Torch applied to SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime only)	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
1B	Minimum. 15/32" APA plywood panel sheathing, Exposure 1, 40/20	USP Base	Trufast 3" Metal Insulation Plates with TruFast TP or Trufast #12 DP fasteners with a minimum length of 1-5/8" or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners with a minimum length of 1-5/8"	Minimum 1-1/2" Polyisocyanurate Insulation, hot asphalt applied	Minimum 1/2" Structodek High Density Fiberboard, SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime or minimum 3/4" FescoBoard, hot asphalt applied	BP-AA, SBS-TA or APP-TA. (Torch applied to SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime only)	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
Design Pressure (psf)		Anchor Sheet Attachment						
0 < P ≤ -75		6" o.c. at 3" laps and 12" o.c. at two, equally spaced, staggered center rows.						

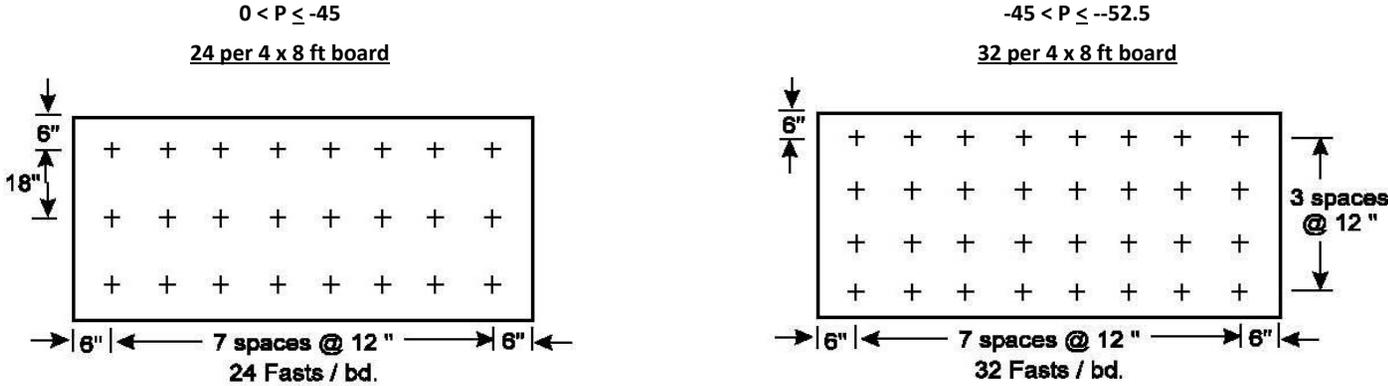
Limitation and Installation (Continued):

TABLE 3: U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, BONDED INSULATION, BONDED ROOF COVER						
Assembly No.	Deck	Insulation		Roof Cover		
		Base	Top	Base	Ply	Cap
2A	Min. 19/32" APA plywood panel sheathing, Exposure 1, 40/20	Minimum 1-1/2" ACFoam-II, ACFoam-III, ISO 95+ GL, H-Shield, H-Shield CG, ENRGY 3 or Multi-Max FA-3 in Tite-Set® Roofing Adhesive and 3M Polyurethane Foam Insulation Adhesive CR-20.	Minimum 1/2" Blue Ridge Structodek High Density Fiberboard or minimum 1/4" SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime in Tite-Set® Roofing Adhesive and 3M Polyurethane Foam Insulation Adhesive CR-20	BP-AA, SBS-TA or APP-TA (Torch applied to DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board only)	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
Design Pressure (psf)		Insulation Attachment				
0 < P ≤ -52.5		ICP Adhesive CR-20 in continuous 2.5" to 3.0" ribbons spaced 12" o.c.				

Limitation and Installation (Continued):

TABLE 4: U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
3A	Minimum 15/32" APA wood structural panel sheathing, Exposure 1, 40/20	Minimum 1.5-inch ISO 95+ GL, ACFoam-II, ACFoam-III, ACFoam-IV, H-Shield, H-Shield CG, ENRGY 3 or Multi-Max FA-3	Trufast 3" Metal Insulation plates with Trufast TP or Trufast #12 DP fasteners with a minimum length of 3-3/4" or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners with a minimum length of 3-3/4" or OMG 3" Galvalume Plates with OMG Heavy Duty fasteners with a minimum length of 3".	Minimum 1/2" Structodek High Density Fiberboard, SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime or minimum 3/4" FescoBoard	Hot asphalt	BP-AA, SBS-TA or APP-TA (Torch applied to DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board only)	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener Spacing and Pattern to Attain Design Pressure (psf)



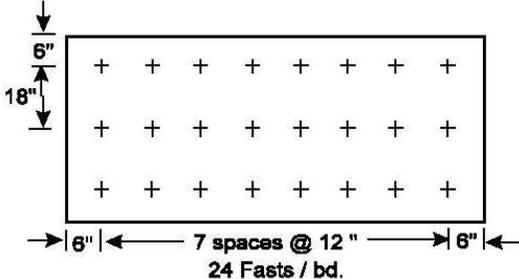
Limitation and Installation (Continued):

TABLE 4 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
3B	Minimum 15/32" APA plywood panel sheathing, Exposure 1, 40/20	Minimum 1-1/2" ISO 95+ GL, ACfoam-II, ACfoam-III, ACfoam-IV, H-Shield, H-Shield CG, ENRGY 3 or Multi-Max FA-3	Trufast 3" Metal Insulation plates with Trufast TP or Trufast #12 DP fasteners with a minimum length of 3-3/4" or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners with a minimum length of 3-3/4" or OMG 3" Galvalume Plates with OMG Heavy Duty fasteners with a minimum length of 3".	Minimum 1/2" SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime	Hot asphalt	BP-AA, SBS-TA or APP-TA	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener Spacing and Pattern to Attain Design Pressure (psf)

$0 < P \leq -52.5$

24 per 4 x 8 ft board



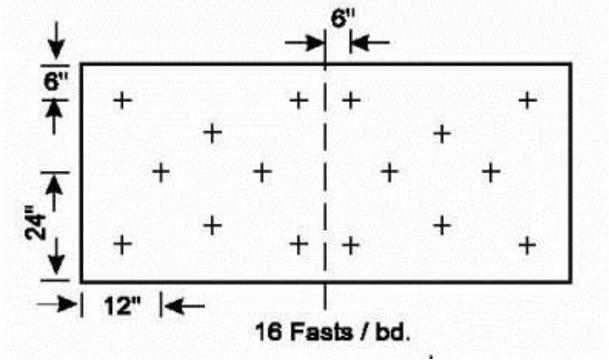
Limitation and Installation (Cont):

TABLE 4 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
3C	Minimum 19/32" APA plywood panel sheathing, Exposure 1, 40/20	Minimum 2" ACFoam-II or Multi-Max FA-3	Trufast 3" Metal Insulation Plates with Trufast #12 DP fasteners or 3" round PlyFast Standard Metal Plate with PlyFast #12 CDP fasteners or OMG 3" Galvalume Plates with OMG #12 Standard Roofgrip fasteners. Fasteners must have a minimum length of 3-3/4".	Minimum 3/8" SECUROCK Gypsum-Fiber Roof Board	Hot asphalt at 25 lbs/sq or ICP Adhesive CR-20 or OlyBond 500	RapidGRIP™ READI-BASE, self-adhered	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener and Adhesive Spacing and Pattern to Attain Design Pressure (psf)

$0 < P \leq -52.5$

Base: 16 per 4x8 ft board



Top: Adhesive Ribbon Spacing

DP (psf)	Ribbon Spacing
$0 < P \leq -52.5$	Max. 12-inch o.c.

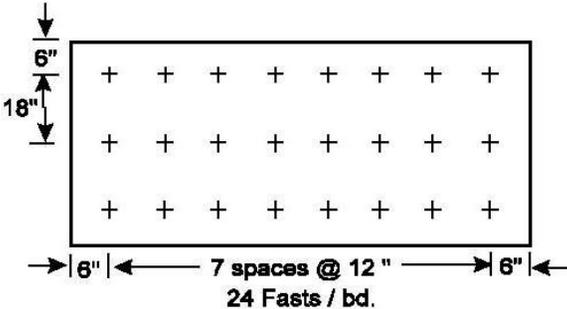
Limitation and Installation (Continued):

TABLE 5: U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
4A	Minimum 15/32" APA wood structural panel sheathing, Exposure 1, 40/20	Minimum 1-1/2" polyisocyanurate insulation	Loose laid	Minimum 1/4" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Trufast 3" Metal Insulation Plates with TruFast TP or Trufast #12 DP screws or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners. Fasteners must have a minimum length of 3-3/4".	BP-AA, SBS-TA or APP-TA	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener Spacing and Pattern to Attain Design Pressure (psf)

$0 < P \leq -30$

24 per 4 x 8 ft board



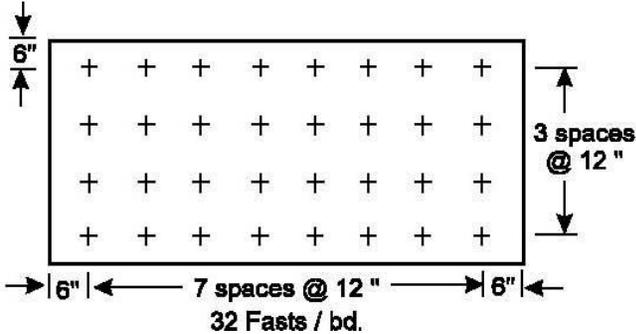
Limitation and Installation (Continued):

TABLE 5 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
4B	Minimum 15/32" APA wood structural panel sheathing, Exposure 1, 40/20	Minimum 1-1/2" polyisocyanurate insulation	Loose laid	Minimum 1/4" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	OMG 3" Galvalume Plates with OMG Heavy Duty fasteners with a minimum length of 4"	BP-AA, SBS-TA or APP-TA	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener Spacing and Pattern to Attain Design Pressure (psf)

$0 < P \leq -52.5$

32 per 4 x 8 ft board



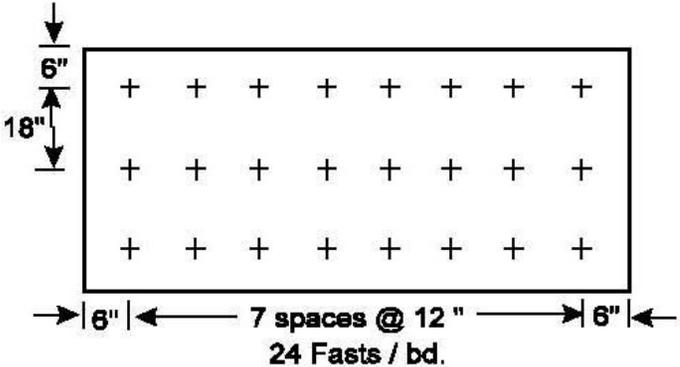
Limitation and Installation (Continued):

TABLE 5 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
4C	Minimum 15/32" APA plywood panel sheathing, Exposure 1, 40/20	Minimum 1-1/2" polyisocyanurate insulation	Loose laid	Minimum 1/4" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Trufast 3" Metal Insulation Plates with TruFast TP or Trufast #12 DP fasteners with a minimum length of 3-3/4" or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners with a minimum length of 3-3/4" or OMG 3" Galvalume Plates with OMG Heavy Duty fasteners with a minimum length of 4"	BP-AA, SBS-TA or APP-TA	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener and Adhesive Spacing and Pattern to Attain Design Pressure (psf)

0 < P ≤ -52.5

24 per 4x8 ft board



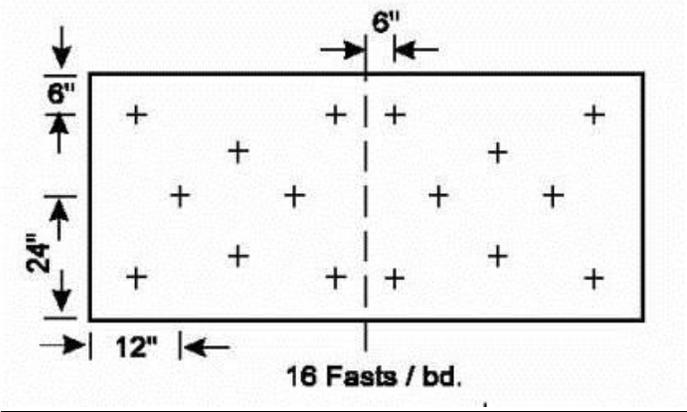
Limitation and Installation (Continued):

TABLE 5 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, MECHANICALLY ATTACHED TOP INSULATION, BONDED ROOF COVER								
Assembly No.	Deck	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover		
		Type	Attach	Type	Attach	Base	Ply	Cap
4D	Minimum 15/32" APA plywood panel sheathing, Exposure 1, 40/20	(Optional) Any Approved Polyisocyanurate insulation.	Loose laid	Minimum 2" ACfoam-III	Trufast 3" Metal Insulation Plates with Trufast #12 DP fasteners with or 3" round PlyFast Standard Metal Plate with PlyFast #12 CDP fasteners. Fasteners must have a minimum length of 3-3/4".	RapidGRIP™ READI-BASE, self-adhered	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA

Required Insulation Board Fastener and Adhesive Spacing and Pattern to Attain Design Pressure (psf)

$0 < P \leq -52.5$

Base: 16 per 4x8 ft board



Limitation and Installation (Continued):

TABLE 6: U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER					
Assembly No.	Deck	Base Sheet		Roof Cover	
		Type	Fasteners	Ply	Cap
5A	Minimum. 15/32" APA wood structural panel sheathing, Exposure 1, 40/20	USP™ Base or DuraFlex™ 30 SBS Base	Steel Round Jevcaps	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
Design Pressure (psf)		Anchor Sheet Attachment			
0 < P ≤ -30.0		9" o.c. at 3" laps and 9" o.c. at three, equally spaced center rows.			

TABLE 6 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER					
Assembly No.	Deck	Base Sheet		Roof Cover	
		Type	Fasteners	Ply	Cap
5B	Minimum 15/32" APA wood structural panel sheathing, Exposure 1, 40/20	USP™ Base or DuraFlex™ 30 SBS Base	Hurricane Cap Nails	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
Design Pressure (psf)		Anchor Sheet Attachment			
0 < P ≤ -45.0		8" o.c. at 3" laps and 8" o.c. at three, equally spaced center rows.			
-45.0 < P ≤ -60.0		6" o.c. at 3" laps and 6" o.c. at three, equally spaced center rows.			

Limitation and Installation (Continued):

TABLE 6 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER					
Assembly No.	Deck	Base Sheet		Roof Cover	
		Type	Fasteners	Ply	Cap
5C	Nominal 1"x 6" board decking (minimum S.G. 0.50)	USP™ Base or DuraFlex™ 30 SBS Base	Steel Round Jevcaps	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
Design Pressure (psf)		Anchor Sheet Attachment			
0 < P ≤ -45.0		6" o.c. at 3" laps and 6" o.c. at two, equally spaced center rows.			
-45.0 < P ≤ -52.5		6" o.c. at 3" laps and 6" o.c. at three, equally spaced center rows.			

TABLE 6 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER					
Assembly No.	Deck	Base Sheet		Roof Cover	
		Type	Fasteners	Ply	Cap
5D	Minimum 19/32" APA plywood panel sheathing, Exposure 1, 40/20	USP™ Base or DuraFlex™ 30 SBS Base	12-gauge annular ring shank nails and minimum 32-gauge., 1-5/8" diameter tin-caps	(Optional) BP-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA
Design Pressure (psf)		Anchor Sheet Attachment			
0 < P ≤ -60		8" o.c. at 4" laps and 8" o.c. at three equally spaced, staggered rows in the field of the sheet.			

Limitation and Installation (Continued):

TABLE 6 (CONTINUED): U.S. PLY, INC. MODIFIED BITUMEN – NEW CONSTRUCTION or REROOF (Tear-Off) WOOD DECK, NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER					
Assembly No.	Deck	Base Sheet		Roof Cover	
		Type	Fasteners	Ply	Cap
5E	Minimum. 15/32" APA wood structural panel sheathing, Exposure 1, 40/20	USP™ Base or DuraFlex™ 30 SBS Base	Trufast 3" Metal Insulation Plates with Trufast TP or Trufast #12 DP fasteners with a minimum length of 1-5/8" or 3" round PlyFast Standard Metal Plate with PlyFast #10 TP or #12 CDP fasteners with a minimum length of 1-5/8" or OMG 3" Galvalume Plates with OMG #12 Standard Roofgrip fasteners with a minimum length of 1-5/8" or OMG Heavy Duty fasteners with a minimum length of 1-3/4".	(Optional) APP-CA	APP-CA
Design Pressure (psf)		Anchor Sheet Attachment			
0 < P ≤ -45		6" o.c. at 3" laps and 12" o.c. at two equally spaced center rows.			

Note: Keep the manufacturer’s installation instructions at the job site during the installation. Use corrosion resistant fasteners as specified in the IRC, the IBC, and the Texas Revisions.