

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
1A	Wood	New, Reroof (Tear-Off) or Recover	C-1	Mech. Attached Insulation, Bonded Roof Cover	3
1B	Wood	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	3
1C	Wood	New or Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet (nails), Bonded Roof Cover	4
1D	Wood	New, Reroof (Tear-Off) or Recover	E-2	Non-Insulated, Mech. Attached Base Sheet (screws & plates), Bonded Roof Cover	4
1E	Wood	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	5

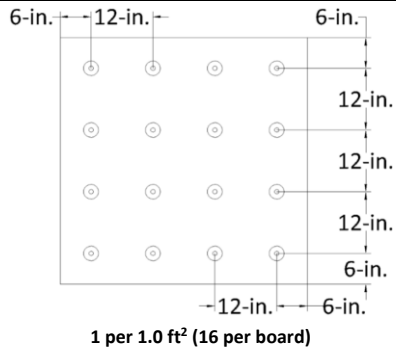
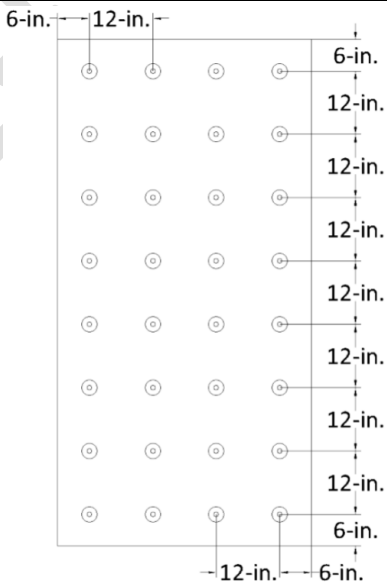
The following notes apply to the systems outlined herein:

- The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with requirements of the applicable Code to the satisfaction of the Authority Having Jurisdiction.
- Unless otherwise noted, fasteners and stress plates shall be as follows. Fasteners shall be of sufficient length for the following engagements:

FASTENER/PLATE OPTIONS			
DECK TYPE	BY	PARTS	MINIMUM ENGAGEMENT
Wood	OMG	OMG #12 Standard Fastener or OMG #14 Heavy Duty Fastener with OMG 3 in. Galvalume Steel Plate (non-ribbed)	Minimum ¾-inch plywood penetration or minimum 1-inch wood plank embedment
	Altenloh, Brink & Co. US, Inc.	Trufast #12 DP or Trufast #14 HD with Trufast 3" Metal Insulation Plates	

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- For mechanically attached components or partially-bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with FBC or IBC Chapter 16. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are [ANSI/SPRI WD1](#), [FM Loss Prevention Data Sheet](#) 1-29, Roofing Application Standard RAS 117 and RAS 137. Assemblies marked with an asterisk* carry the limitations set forth in Section 2.2.10.1 of [FM Loss Prevention Data Sheet](#) 1-29 for Zone 2/3 enhancements.
- For assemblies with all components fully bonded, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC or IBC Chapter 16. No rational analysis is permitted for these systems.
- For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with [ANSI/SPRI FX-1](#) or Testing Application Standard TAS 105.
- For bonded insulation or membrane over existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing shall be conducted on mock-ups of the proposed new roof assembly. For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing. Field uplift testing shall be in accordance with ASTM E907, [FM Loss Prevention Data Sheet](#) 1-52 or Testing Application Standard TAS 124.
- Refer to FBC 1511 or IBC 1512 for requirements and limitations regarding recover installations. For Structural Concrete Deck or Recover Applications using System Type C-1 the base insulation layer is optional and for System Type D-2, the insulation is optional. Alternatively, an FBC Approved insulation board or coverboard may be used as a separation layer. Board products shall be preliminarily attached prior to roof cover installation ([Note 14](#)). The separator component shall be documented as meeting FBC 1505 and, for foam plastic, FBC or IBC Chapter 26, when installed with the roof cover in Recover applications.

- 14 **Insulation Attachment:**
- 14A Unless otherwise noted, insulation may be any one layer or combination of FBC Approved (Local or Statewide) board(s) that meet FBC 1505 or IBC 1506 and, for foam plastic, FBC or IBC Chapter 26, when installed with the roof cover.
- 14B For System Types B-1 or C-1, optional one or more layer(s) of FBC Approved board-stock roof insulation may be installed atop the substrate prior to mechanical attachment of the subsequent top layer, with no adverse effect on the MDP performance limitation.
- 14C Preliminary insulation attachment: Unless otherwise noted, use FBC Approved roofing fasteners and plates and refer to Section 2.2.10.1.3 of [FM Loss Prevention Data Sheet 1-29](#).
- 14D Unless otherwise noted, insulation or coverboard attachment patterns for Type B-1, Type B-2 and Type C-1 systems are as outlined below.

INSULATION ATTACHMENT PATTERNS – 4x4 FT BOARDS	INSULATION ATTACHMENT PATTERNS – 4x8 FT BOARDS
 1 per 1.0 ft² (16 per board)	 1 per 1.0 ft² (32 per board)

- 15 “MDP” = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC or IBC 1609 for determination of design wind loads. [\(Notes 9 and 10\)](#)

TABLE 1A: WOOD DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer (Note 13 , Note 14)	Top Insulation Layer			Roof Cover			MDP (psf)
			Type	Fasteners (Note 11)	Attach	Base Ply	Ply	Cap	
W-1.	Min. 15/32" plywood; 2 ft span	(Optional) One or more layers, any combination, loose laid	Min. 3/8-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.0 ft ²	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-52.5
W-2.	Min. 15/32" plywood; 2 ft span	(Optional) One or more layers, any combination, loose laid	Min. 2-inch ACFoam II, EnergyGuard Polyiso, ENRGY 3, H-Shield, ISO 95+ GL or Multi-Max FA3	Note 2	1 per 1.0 ft ²	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-82.5

TABLE 1B: WOOD DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE D-2: INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER

System No.	Deck (Note 1)	Insulation Layer (Note 13 , Note 14)	Base Sheet			Roof Cover			MDP (psf)
			Type	Fasteners (Note 11)	Attach	Base Ply	Ply	Cap Ply	
W-3.	Min. 15/32" plywood; 2 ft span	Any type, thickness or combination, loose-laid	EasyLay	Note 2	10-inch o.c. in the min. 4-inch lap and 10-inch o.c. in two (2), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-60.0
W-4.	Min. 15/32" plywood; 2 ft span	Any type, thickness or combination, loose-laid	EasyLay	Note 2	8-inch o.c. in the min. 4-inch lap and 8-inch o.c. in four (4), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-135.0
W-5.	Min. 15/32" plywood; 2 ft span	Any type, thickness or combination, loose-laid	EasyNailBase	Note 2	6-inch o.c. in the min. 4-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-135.0

TABLE 1C: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET (NAILS), BONDED ROOF COVER

System No.	Deck (Note 1)	Base Sheet			Roof Cover			MDP (psf)
		Type	Fasteners (Note 11)	Attach	Base Ply	Ply	Cap Ply	
W-6.	Min. 19/32" plywood; 2 ft span	EasyLay	12 ga. annular ring shank nails and min. 32 ga., 1-5/8" diameter tin-caps. (Ref: FBC 1517.5 & 1711)	7-inch o.c. in the 4-inch lap and 7-inch o.c. in three (3), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-60.0
W-7.	Min. 15/32" plywood; 2 ft span	EasyLay	12 ga. annular ring shank nails and min. 32 ga., 1-5/8" diameter tin-caps. (Ref: FBC 1517.5 & 1711)	4-inch o.c. in the 4-inch lap and 4-inch o.c. in four (4), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-120.0
W-8.	Min. 15/32" plywood; 2 ft span	EasyNailBase	12 ga. annular ring shank nails and min. 32 ga., 1-5/8" diameter tin-caps. (Ref: FBC 1517.5 & 1711)	4-inch o.c. in the 4-inch lap and 4-inch o.c. in five (5), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-120.0

TABLE 1D: WOOD DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET (SCREWS & PLATES), BONDED ROOF COVER

System No.	Deck (Note 1)	Base Sheet			Roof Cover			MDP (psf)
		Type	Fasteners (Note 11)	Attach	Base Ply	Ply	Cap Ply	
W-9.	Min. 15/32" plywood; 2 ft span	EasyLay	Note 2	10-inch o.c. in the min. 4-inch lap and 10-inch o.c. in two (2), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-60.0
W-10.	Min. 15/32" plywood; 2 ft span	EasyLay	Note 2	8-inch o.c. in the min. 4-inch lap and 8-inch o.c. in four (4), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-135.0
W-11.	Min. 15/32" plywood; 2 ft span	EasyNailBase	Note 2	6-inch o.c. in the min. 4-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-135.0

TABLE 1E: WOOD DECKS – NEW CONSTRUCTION or REROOF (Tear-Off)
SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER

System No.	Deck (Note 1)		Roof Cover			MDP (psf)
	Type	Joint Treatment	Base Ply	Ply	Cap	
W-12.	Min. 15/32" plywood; 2 ft span	None	(Optional) EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-75.0
W-13.	APA rated, 7/16 CAT, 0.418 in., Exposure 1 OSB; 2 ft span	None	(Optional) EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-82.5
W-14.	Min. 19/32" plywood; 2 ft span	None	EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-112.5
W-15.	Min. 15/32" plywood; 2 ft span	Plywood joints are covered with 4-inch wide strips of EasyBase or StormGear SA Base, self-adhering, rolled into place to create continuous bond.	(Optional) EasyBase or StormGear SA Base, self-adhering	(Optional) EasyBase or StormGear SA Base, self-adhering	EasyStick Plus or StormGear SA Cap, self-adhering	-120.0