

# TEXAS DEPARTMENT OF INSURANCE

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## PRODUCT EVALUATION RC-274

Effective December 1, 2010  
Revised April 1, 2011

*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 shall be subject to reevaluation **December 2013**.*

*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.*

**GenFlex EPDM and GenFlex TPO Roofing Systems** manufactured by

**GenFlex Roofing Systems**  
**1722 Indian Wood Circle, Suite A**  
**Maumee, OH 43537**  
**(800) 443-4272**

will be accepted in designated catastrophe zones along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

### PRODUCT DESCRIPTION

**Genflex AFR EPDM** is a 45- or 60-mil, non-reinforced, fire rated EPDM membrane meeting ASTM D4637, Type I requirements.

**GenFlex II EPDM** is a 45- or 60-mil, non-reinforced, EPDM membrane meeting ASTM D4637, Type I requirements.

**GenFlex II FR EPDM** is a 45- or 60-mil, non-reinforced, fire rated EPDM membrane meeting ASTM D4637, Type I requirements.

**GenFlex II FRM EPDM** is a 45- or 60-mil, scrim-reinforced, fire rated EPDM membrane meeting ASTM D4637, Type II requirements.

**Genflex TPO** membranes are nominal 45-mil (1.1mm) or 60-mil (1.5mm) thick, polyester scrim reinforced single-ply roof membrane.

**GenFlex TPO Plus** membranes are nominal 72-mil (1.8 mm) or 80-mil (2.0-mm) thick, internally reinforced thermoplastic polyolefin roof covers.

**GenFlex TPO Peel & Stick** membranes are nominal 45-mil (1.1 mm) or 60-mil (1.5-mm) thick, internally reinforced thermoplastic (TPO) roof covers with a self-adhering backing.

### LIMITATIONS and INSTALLATION

#### General installation Requirements:

All International Residential Code (IRC) and the International Building Code (IBC) requirements must be satisfied and manufacturer's installation instructions followed, unless otherwise specified by this product evaluation.

**For All applications:** The roof shall have a minimum slope of  $\frac{1}{4}$  : 12.

1. Preliminary insulation attachment for System type D shall require a minimum of four fasteners per 4 x 8 ft board or minimum two fasteners per 4 x 4 ft board.

WOOD DECKS - WIND UPLIFT PERFORMANCE							
SYSTEM TYPE C: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
Assembly No.	Substrate	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
1	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d smooth or ring shank nails spaced 6" o.c.	(Optional) One or more layers, any combination	loose laid	Min. 1.5-inch GenFlex ISO	GenFast #12 with a minimum length of 3-1/4" or GenFast #14 Fasteners with a minimum length of 3" and GenFast 3" Insulation Plates	GenFlex II, II FR, AFR or II FRM	GenFlex Bonding Adhesive
2	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d smooth or ring shank nails spaced 6" o.c.	(Optional) One or more layers, any combination	loose laid	Min. 1-inch GenFlex Wood Fiber Roof Insulation	GenFast #12 with a minimum length of 2-7/8" or GenFast #14 Fasteners with a minimum length of 3" and GenFast 3" Insulation Plates	GenFlex II, II FR, AFR or II FRM	GenFlex Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4 ft board		Parts per 4 x 8 ft board	
0 < P ≤ 45		2.0		8		16	
45 < P < 50		1.8		9		18	
50 < P < 60		1.5		11		22	
60 < P < 70		1.2		13		26	
70 < P < 80		1.1		15		30	
80 < P < 90		1.0		16		32	

WOOD DECKS - WIND UPLIFT PERFORMANCE								
SYSTEM TYPE C: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER								
Assembly No.	Substrate	Base Insulation Layer(s)		Top Insulation Layer			Roof Cover	
		Type	Attach	Type	Attach	Primer	Type	Attach
3	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d ring shank nails spaced 6" o.c.	(Optional) One or more layers, any combination	loose laid	Min. 2.0-inch GenFlex ISO	GenFast 3" Insulation Plates with GenFast #15 Fasteners with a minimum length of 4"	GenFlex Clear Primer	GenFlex TPO	Peel & Stick
Design Pressure (psf)		Insulation Attachment						
		Density (ft2 / fastener)	Parts per 4 x 4 ft board			Parts per 4 x 8 ft board		
0 < P ≤ 60		1.78	9			18		
60 < P < 70		1.5	11			22		
70 < P < 80		1.3	12			24		
80 < P < 90		1.1	14			28		
90 < P < 100		1.0	15			30		
100 < P < 110		0.9	17			34		

WOOD DECKS - WIND UPLIFT PERFORMANCE					
SYSTEM TYPE D: PRELIMINARILY ATTACHED INSULATION, MECHANICALLY ATTACHED ROOF COVER					
Assembly No.	Substrate	Insulation Layer(s)		Roof Cover	
		Type	Attach	Membrane	Fastener
4	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d ring shank nails spaced 6" o.c.	One or more layers, any combination	Preliminarily attached	GenFlex TPO or TPO Plus	GenFast #15 Fasteners with a minimum length of 4" and GenFast 2-3/8" WH Seam Plates or #15 Roofgrip with a minimum length of 4" and OMG 2-3/8" Eyehook Seam Plates
<b>Design Pressure (psf)</b>		<b>Base Sheet Attachment</b>			
0 < P ≤ 37.5		6-inch o.c. at 6-inch laps and 90-inch o.c.			
37.5 < P < 75		Lap Row: 6-inch o.c. within 6-inch wide laps spaced 90-inch o.c. Field Row: 6-inch o.c. in one intermediate row between laps.			
75 < P < 110		Lap Row: 6-inch o.c. within 6-inch wide laps spaced 90-inch o.c. Field Rows: 6-inch o.c. in two equally spaced intermediate rows between laps.			

\*Laps are sealed with a 1.5-inch heat weld, field rows are covered with a 5-inch TPO strip and 1.5-inch heat welds on either side fully encapsulating fasteners.

WOOD DECKS - WIND UPLIFT PERFORMANCE					
SYSTEM TYPE D: PRELIMINARILY ATTACHED INSULATION, MECHANICALLY ATTACHED ROOF COVER					
Assembly No.	Substrate	Insulation Layer(s)		Roof Cover	
		Type	Attach	Membrane	Fastener
5	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d ring shank nails spaced 6" o.c.	One or more layers, any combination	Prelim. attached	GenFlex TPO or TPO Plus	GenFast #14 with a minimum length of 4" and 1" wide GenFast Polymer Batten Strip
<b>Design Pressure (psf)</b>		<b>Base Sheet Attachment</b>			
0 < P ≤ 37.5		<b>Topside attachment:</b> 6-inch o.c. at laps 90-inch o.c. covered with 5-inch strips with 1.5-inch heat weld on both sides.			
37.5 < P < 75		Lap Row: 6-inch o.c. within 6-inch wide laps spaced 90-inch o.c. Field Row: 6-inch o.c. in one intermediate row between laps.			
75 < P < 110		Lap Row: 6-inch o.c. within 6-inch wide laps spaced 90-inch o.c. Field Rows: 6-inch o.c. in two equally spaced intermediate rows between laps.			

\*Laps and field rows are covered with a 5-inch TPO strip and 1.5-inch heat welds on either side fully encapsulating fasteners.

WOOD DECKS - WIND UPLIFT PERFORMANCE					
SYSTEM TYPE D: PRELIMINARILY ATTACHED INSULATION, MECHANICALLY ATTACHED ROOF COVER					
Assembly No.	Substrate	Insulation Layer(s)		Roof Cover	
		Type	Attach	Membrane	Fastener
6	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d ring shank nails spaced 6" o.c.	One or more layers, any combination	Prelim. attached	GenFlex TPO or TPO Plus	GenFast #14 Fasteners with a minimum length of 4" and GenFast 2-3/8" WH Seam Plates or #14 Roofgrip with a minimum length of 4" and OMG 2-3/8" Eyehook Seam Plates
Design Pressure (psf)	Base Sheet Attachment				
< P ≤ 45.0	6-inch o.c. at 6-inch laps and 69-inch o.c.				
5 < P < 90	Lap Row: 6-inch o.c. within 5-inch wide laps spaced 69-inch o.c. Field Row: 6-inch o.c. in one intermediate row between laps.				
0 < P < 130	Lap Row: 6-inch o.c. within 5-inch wide laps spaced 69-inch o.c. Field Rows: 6-inch o.c. in two equally spaced intermediate rows between laps.				

\*Laps are sealed with a 1.5-inch heat weld, field rows are covered with a 5-inch TPO strip and 1.5-inch heat welds on either side fully encapsulating fasteners.

WOOD DECKS - WIND UPLIFT PERFORMANCE					
SYSTEM TYPE D: PRELIMINARILY ATTACHED INSULATION, MECHANICALLY ATTACHED ROOF COVER					
Assembly No.	Substrate	Insulation Layer(s)		Roof Cover	
		Type	Attach	Membrane	Fastener
7	Min. 19/32" plywood or wood plank at max. 24" spans attached using 8d smooth or ring shank nails spaced 6" o.c.	One or more layers, any combination	Preliminarily attached	GenFlex II EPDM or II FR EPDM	GenFast #12 with a minimum length of 3-1/4" or GenFast #14 with a minimum length of 4" through GenFast Metal Bar Anchors (16 ga.)
Design Pressure (psf)	Base Sheet Attachment				
0 < P ≤ 45.0	6-inch o.c. at 7-inch laps and 72-inch o.c.				
45 < P < 90	Lap Row: 6-inch o.c. within 7-inch wide laps spaced 72-inch o.c. Field Row: 6-inch o.c. in one intermediate row between laps.				
90 < P < 130	Lap Row: 6-inch o.c. within 7-inch wide laps spaced 72-inch o.c. Field Rows: 6-inch o.c. in two equally spaced intermediate rows between laps.				

\*Laps are sealed with a 1.5-inch weld, field rows are covered with a 6-inch EPDM strip and 1.5-inch welds on either side fully encapsulating fasteners.

**The following notes apply.**

1. Roof decks shall be in accordance with TDI requirements to the satisfaction of the AHJ.
2. Insulation / base sheet fasteners shall be of sufficient length for the following deck engagement:  
Wood: Minimum  $\frac{3}{4}$ -inch penetration.
3. Unless otherwise noted, the insulation may be any polyisocyanurate, polystyrene, fiberboard, perlite and/or gypsum-based insulation board that meet the QA requirements of the Texas Department of Insurance.
4. For mechanically attached or strip-bonded components, the maximum design pressure for the selected assembly shall meet or exceed the Zone 1 design pressure determined in accordance with ASCE Standard 7, and Zones 2 and 3 shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria.
5. 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.
6. Preliminary insulation attachment for System type D shall require a minimum of four fasteners per 4 x 8 ft board or minimum two fasteners per 4 x 4 ft board.