

Quality Assurance Program: Keystone Certifications Category: Roofing Sub-Category: Metal Roofing Method 1-D
Code: FBC 2014 5th ed.; Sections: 1504.3.2, 1507.4.3, 1506.6, 1507.4.4, 1504.7, 1515.2, 1518.9, 1523.6.5.2.4

	Description	Substrate	Design Uplift Pressure*		Fasteners
.1	1" Nailstrip 24GA 16" width 50.0 ksi Non Structural Non- HVHZ	Roof panel attaching to 15/32" APA plywood over max. 24" o.c. supports spacing	-59.75psf panel slot @16" o.c. -101.0psf panel slot @6 3/4" o.c. -153.5psf panel slot @6 3/4" panel pan @12" o.c.	3/4" tall rib w/ slotted strip/ snap lock	Corrosion Resistant: Panel slot: (1) #10-13 x 1" GP Pancake Type A. Pan of Panel: (2) #10-11 x 1" Eclipse Head Type A. 1/4" min. penetration through plywood. Underlayment: Self-adhered roofing underlayment min. 40 mil thickness. Min. slope shall comply w/ FBC 2014.
.2	1.5" Snap Lock 24GA Standing Seam 16" width 50.0 ksi Non Structural HVHZ	15/32" APA Plywood existing over max. 24" o.c. supports spacing For HVHZ 19/32" APA Plywood new construction Over supports @ 24"o.c	-86.0psf 2 fasteners per clip@24" o.c. -108.5psf 2 fasteners per clip @12" o.c. -116.0psf 2 fasteners per clip @ 6" o.c.	1-1/2" tall rib	Corrosion Resistant: (2) #12-11 x 1 Pancake Type A. Clips..1500SNS, Fixed, 18GA, 3 1/2" long 1/4" min. penetration through plywood. Valspar Fluropon paint coating (optional). Installation: Per manufacturer's recommended details. Use RAS 133 for HVHZ. Fire Barrier: 1/4" "Dens Deck" or approved equal. 2:12. Min slope shall comply w/ FBC 2014.
.3	3/4" Rib Panel 26GA 36" width 80.0 ksi Non Structural HVHZ	Min. 15/32" APA Plywood existing construction over one layer of asphalt shingle (optional) over max. 24" o.c. supports spacing For HVHZ 19/32" APA Plywood new construction over supports @ 24" o.c.	-71.75psf fastening pattern 9"-9"-9"-9" spacing @24" o.c. -159.25psf fastening pattern 6.5"-2.5"-6.5"-2.5"-6.5"-2.5"-6.5" @12" o.c.	3/4" tall rib @9" o.c. thru fastened	Corrosion Resistant: #9-15 x 1 1/2" Woodgrip w/ sealing washing or approved equal. 1/4" min penetration through plywood. Valspar Fluropon paint coating (optional) Installation: Per manufacturer's recommended details. Use RAS 133 for HVHZ. Fire Barrier: 1/4" "Dens Deck" or approved equal. 2:12. Min. slope shall comply w/ FBC 2014. For slopes less than 3:12, lap sealant must be used in panel side laps.
.4	3/4" Rib Panel 26GA 36" width 80.0 ksi Non Structural HVHZ	Min. 1x4 No. 2 SYP wood purlins over min. 15/32" APA Plywood over maximum 24" o.c. supports spacing, 1x4 wood purlins fastened to plywood w/ 8DX2 1/2" Ring Shank nails at maximum 4" o.c.	-106.75psf fastening pattern 9"-9"-9"-9" spacing @ 24" o.c. -164.25 psf fastening pattern 9"-9"-9"-9" spacing @ 12" o.c.	3/4" tall rib @ 9" o.c. thru fastened	Corrosion Resistant: #9-15 x 1-1/2" Woodgrip w/ sealing washing or approved equal. 1/4" min. penetration through plywood. Valspar Fluropon paint coating (optional) Installation: Per manufacturer's recommended details. Use RAS 133 for HVHZ. Fire Barrier: 1/4" "Dens Deck" or approved equal. 2:12. Min. slope shall comply w/ FBC 2014. For slopes less than 3:12, lap sealant must be used in panel side laps.
.5	PBR 26GA 36" width 80.0 ksi Non Structural HVHZ	Min. 1 x4 No. 2 SYP over 15/32" plywood existing construction over 24" o.c. supports spacing, 1x4 wood purlins fastened to plywood w/ 8DX2 1/2" Ring Shank nails at maximum 4" o.c. For HVHZ 19/32" APA Plywood new construction	-100.5psf fastening pattern 12"-12"-12" spacing @ 24" o.c. -151.75psf fastening pattern 7"-5"-7"-5"-7" spacing @ 12" o.c.	1 1/4" tall rib @ 12" o.c. thru fastened	Corrosion resistant: #9-15 x 1-1/2" Woodgrip w/ sealing washer, or approved equal, 1/4"-14 x 7/8" Lap screw w/ sealing washer @ 24" o.c. in panel side lap. 1/4" min penetration through plywood. Valspar Fluropon paint coating (optional) Installation: Per manufacturer's recommended details. Use RAS 133 for HVHZ. Fire Barrier: 1/4" "Dens Deck" or approved equal. 2:12. Min. Slope shall comply with FBC 2014. For slopes less than 3:12, sealant must be used in side laps.
.6	PBR 26GA 36" width 80.0 ksi Non Structural HVHZ	Min. 15/32" APA plywood existing construction over one layer of asphalt shingle (optional) over 24" o.c. supports spacing For HVHZ 19/32" APA Plywood new construction	-60.5psf fastening pattern 12"-12"-12" spacing @24" o.c. -154.75psf fastening pattern 7"-5"-7"-5"-7" @12" o.c.	1 1/4" tall rib @ 12" o.c. thru fastened	Corrosion resistant: #9-15 x 1-1/2" Woodgrip w/ sealing washer, or approved equal, 1/4"-14 x 7/8" Lap screw w/ sealing washer @24" o.c. in panel side lap. 1/4" min penetration through plywood. Valspar Fluropon paint coating (optional). Installation: Per manufacturer's recommended details. Use RAS 133 for HVHZ. Fire Barrier: 1/4" "Dens Deck" or approved equal. 2:12 Min. Slope shall comply with FBC 2014. For slopes less than 3:12, sealant must be used in side laps

.7	Tuff Rib min. 29GA over min. 15/32" APA plywood Min 80 ksi Non-Structural Non HVHZ	Min. 15/32" APA Plywood over 24" o.c. supports spacing	-84.25psf fastening pattern 9"-9"-9"-9" spacing @ 24" o.c. -146.0psf fastening pattern 6.5"-2.5"6.5"- 2.5"-6.5"-2.5"-6.5" spacing @ 12" o.c.	¾" rib thru fastened	Corrosion resistant: #9-15 x 1-1/2" HWH Woodgrip w/ sealing washing or approved equal. ¼" min penetration through plywood. Min. Slope shall comply with FBC 2014. For slopes less than 3:12, sealant must be used in side laps
	Tuff Rib min. 29GA over 1x 4 SYP wood purlins Min 80 ksi Non-structural Non HVHZ	Over 1x4 SYP wood purlins over one layer of asphalt shingles (optional) over min 7/16" OSB or min 15/32" APA plywood over supports 24" o.c. max. spacing	-45 psf @ 24" o.c. -157.5 psf @12" o.c.	¾" rib thru fastened	Corrosion resistant: #10-16 x 1.5" HWH wood screw w/sealing washer Additional fastening for Rib w/1x4's: Decking to be attached w/ 8D x 2-1/5" nails spaced 6" o.c. along perimeter and 12" o.c. at intermediate supports. Min. slope shall comply with FBC 2014.

*Design Pressures includes safety factor=2.0

References

Entity	Report #	Standard	Year
Force Engineering & Testing (TST-5328)	#72-0314T-06	UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Farabaugh Engineering & Testing (TST-1654)	# T158-07	TAS 100-95	
Force Engineering & Testing (TST-5328)	#72-0108T-07	TAS 125-03 UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Farabaugh Engineering & Testing (TST-1654)	#T107-07	TAS 100-95	
PRI Construction Material Technologies (TST-5878)	#VLS-004-02-01 /#VLS-005-02-01	TAS 110-00 (ASTM G 155/ASTM B 117)	
Force Engineering & Testing (TST-5328)	#84-0239T-06A-C	TAS 125-03 UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Farabaugh Engineering & Testing (TST-1654)	#T126-07	TAS 100-95	
Farabaugh Engineering & Testing (TST-1654)	#T270-08	TAS 100-95	
PRI Construction Material Technologies (TST-5878)	#VLS-004-02-01/#VLS-005-02-01	TAS 110-00(ASTM G 155/ASTM B 117)	
Force Engineering & Testing (TST-5328)	#84-0239T-06D-F	TAS 125-03 UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Farabaugh Engineering & Testing (TST-1654)	# T128-07	TAS 100-95	
Farabaugh Engineering & Testing (TST-1654)	# T272-08	TAS 100-95	
PRI Construction Material Technologies (TST-5878)	#VLS-004-02-01/#VLS-005-02-01	TAS 110-00 (ASTM G 155/ASTM B 117)	
Force Engineering & Testing (TST-5328)	#84-0239T-06J-L	TAS 125-03 UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Farabaugh Engineering & Testing (TST-1654)	#T129-07	TAS 100-95	
Farabaugh Engineering & Testing (TST-1654)	#T273-08	TAS 100-95	
PRI Construction Material Technologies (TST-5878)	#VLS-004-02-01/#VLS-005-02-01	TAS 110-00 (ASTM G 155/ASTM B 117)	
Force Engineering & Testing (TST-5328)	#84-0239T-06G-I	TAS 125-03 UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Farabaugh Engineering & Testing (TST-1654)	#T132-07	TAS 100-95	
Farabaugh Engineering & Testing (TST-1654)	#T271-08	TAS 100-95	
PRI Construction Material Technologies (TST-5878)	#VLS-004-02-01/#VLS-005-02-01	TAS 110-00 (ASTM G 155/ASTM B 117)	
Force Engineering & Testing (TST-5328)	#84-0239T-06M & N	UL 580-94 ¹ /1897-98 ²	(2006 ¹ /2004 ²)
Force Engineering & Testing (TST-5328)	#84-0237T-09C	FM 4471-95	
PRI Construction Material Technologies (TST-5878)	#FAE-019-02-01	UL 580-06/UL 1897-04	

1. The UL580-94 test standards are equivalent to the UL580-06 test standard.
2. The UL1897-98 test standards are equivalent to the UL1897-04 test standard.
3. The FM 4471-95 test standards are equivalent to the FM 4471-1992 test standard.

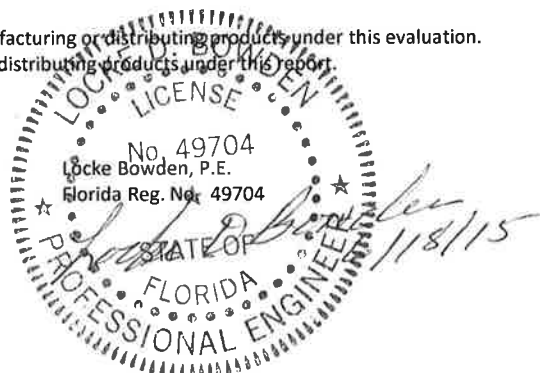
Limitations:

1. Underlayment to be compliance with current Florida Building Code.
2. Minimum slope to be in compliance with Florida Building Code 2014, and in accordance with Manufacturer's installation reference.
3. Products are compliant for State of Florida product approval per Rule 61G20-3
4. Fire classification is not part of this acceptance.
5. Shear diaphragm values are outside this report.
6. All support framing to be in compliance with Florida Building Code 2014, Chapter 22 Steel, Chapter 23 Wood and Chapter 16 Structural Loading.
7. This report does not imply warranty, installation, recommended product use outside of this report.

Compliance Statement: These products herein evaluated by Locke Bowden, P.E. have demonstrated compliance with the Florida Building Code 2014 with referenced documents submitted.

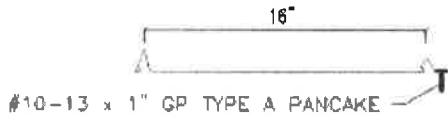
Certificate of Independence

Locke Bowden, P.E. does not have, not will acquire a financial interest in any company manufacturing or distributing products under this evaluation.
Locke Bowden, P.E. is not owned, operated or controlled by any company manufacturing or distributing products under this report.

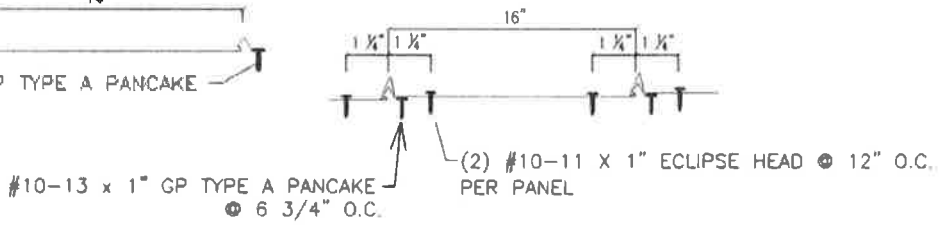


1.0 Nail Strip-Non-HVHZ¹

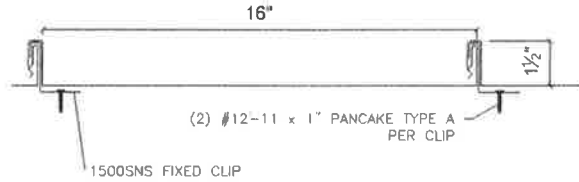
TYPE 1 FASTENER PATTERN



TYPE 2 FASTENER PATTERN

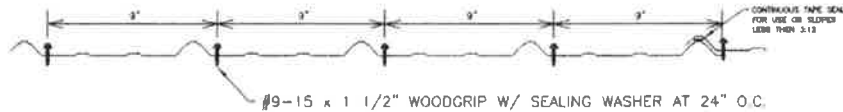


1.5 Snap Lock-HVHZ¹

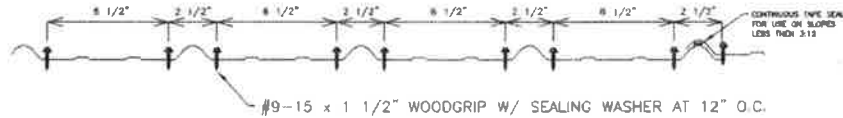


26GA Rib-HVHZ¹

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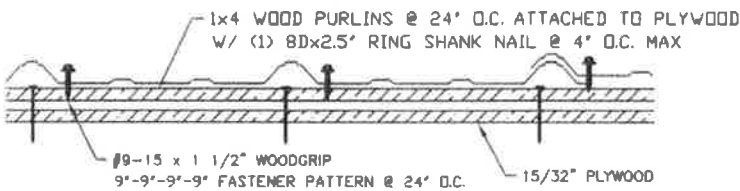


TYPE 2 FASTENER PATTERN

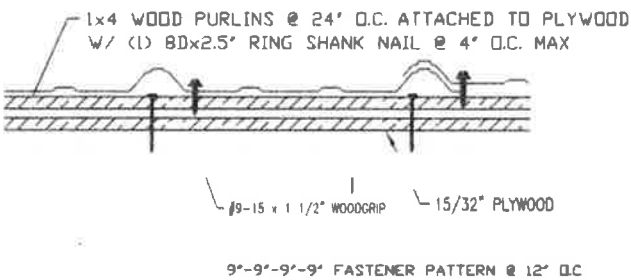


26GA Rib over 1x4 SYP wood purlins-HVHZ¹

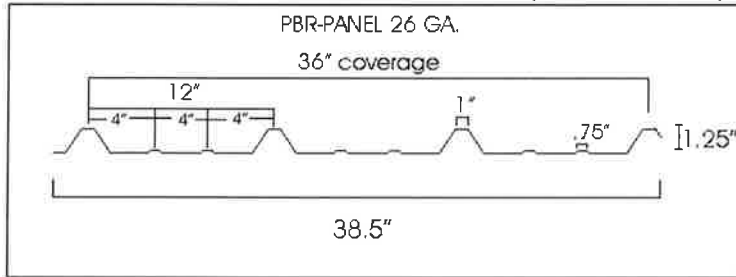
TYPE 1 FASTENER PATTERN



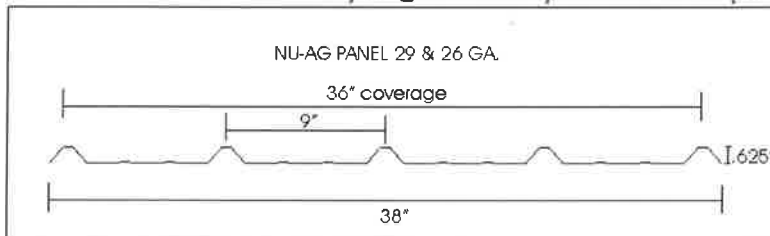
TYPE 2 FASTENER PATTERN



26 GA PBR-HVHZ¹ Type 1 fastening 12"-12"-12" @24" o.c.
 Type 2 fastening 7"-5"-7"-5"-7" @ 12" o.c.
 1/4"x14x7/8" @24" o.c. lap tek screws in panel laps



29 GA Rib-HVHZ¹ Type 1 fastening 9"-9"-9"-9" @24" o.c.
 Type 2 fastening 6- 1/2"-2-1/2"- 6- 1/2"-2-1/2"- 6- 1/2"-2-1/2"- 6- 1/2"-2-1/2" @12" o.c.
 1/4"x14x7/8" @24" o.c. lap tek screws in panel laps

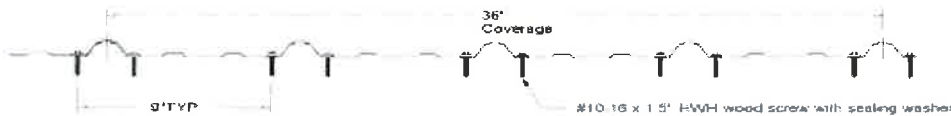


1) Drawings above provided by Force Engineering and Testing

29 GA Rib over SYP 1x4's-Non-HVHZ²



Fastening pattern for specimen #1 (24" o.c. battens)



Fastening pattern for specimen #2 (12" o.c. battens)

2) Drawing provided by PRI Construction Materials Technologies

