CREEK
TECHNICAL SERVICES, LLC

Registry No. 29824
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Tampa, FL 33647
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EVALUATION REPORT

FLORIDA BUILDING CODE, 7TH EDITION (2020)

Issued February 10, 2021

Manufacturer: TRI COUNTY METALS
301 SE 16th Street
Trenton, FL 32693
(877) 766-3309
www.tricountymetals.com

Manufacturing Locations: Trenton, FL

Quality Assurance: Keystone Certifications, Inc. (QUA1824)

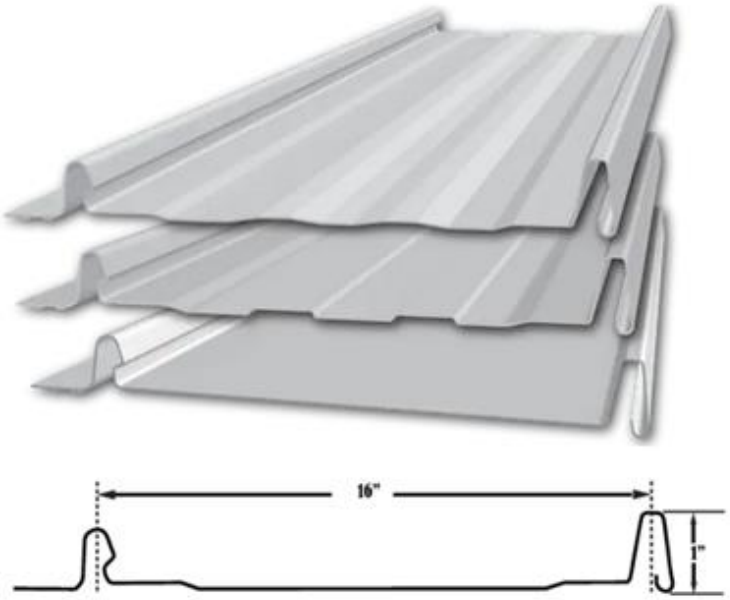
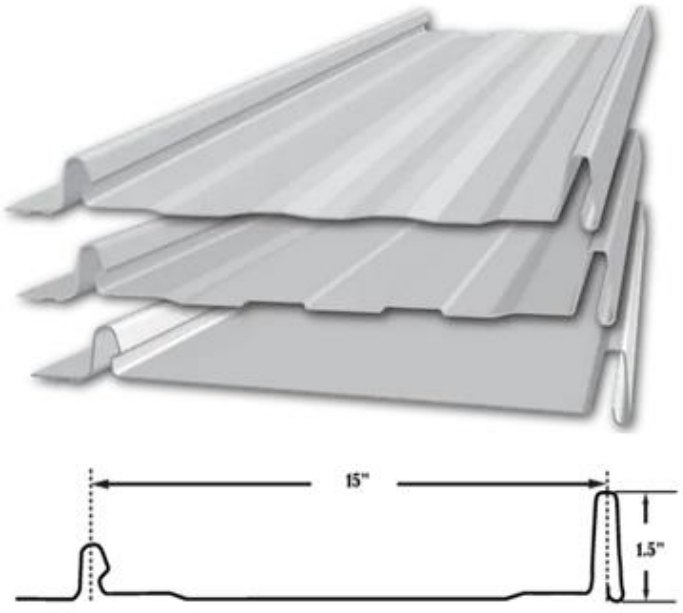
SCOPE

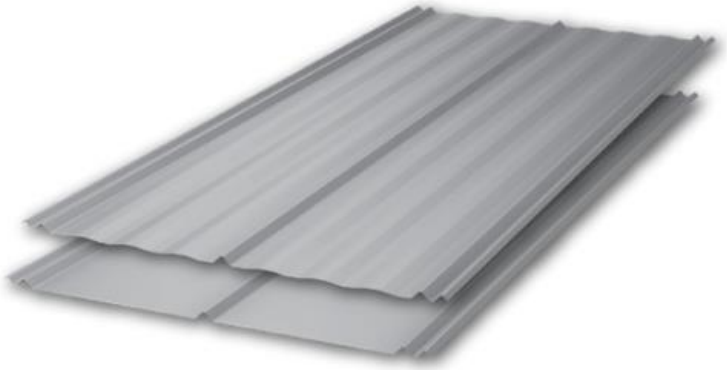
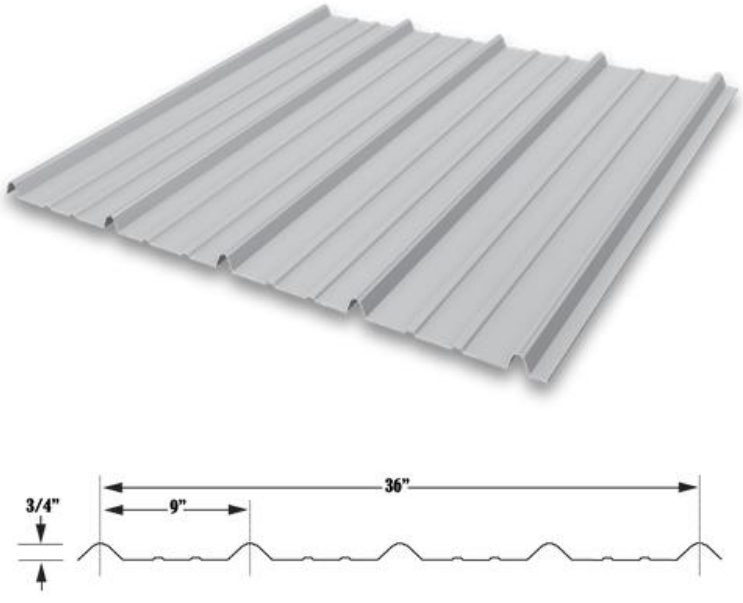
Category: Roofing
Subcategory: Metal Roofing
Code Edition: Florida Building Code, 7th Edition (2020) High-Velocity Hurricane Zones (HVHZ)
Code Sections: 1518.9.1, 1523.1.1, 1523.6.5, 1523.6.5.2.4, 1523.6.5.2.4.1
Properties: Wind Resistance

REFERENCES

Entity	Report No.	Standard	Year
PRI Construction Materials Technologies (TST5878)	945T0002	ASTM B 117	2016
PRI Construction Materials Technologies (TST5878)	945T0004	ASTM G 155	2013
PRI Construction Materials Technologies (TST5878)	1272T0002	ASTM B 117	2016
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1272T0003	ASTM B 117	2016
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1272T0005	ASTM G 155	2013
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1272T0006	ASTM G 155	2013
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1930T0001	TAS 125	2003
		UL 580	2006
		UL 1897	2012
PRI Construction Materials Technologies (TST5878)	1930T0002	TAS 125	2003
		UL 580	2006
		UL 1897	2012
PRI Construction Materials Technologies (TST5878)	1930T0003	TAS 125	2003
		UL 580	2006
		UL 1897	2012
PRI Construction Materials Technologies (TST5878)	1930T0004	TAS 125	2003
		UL 580	2006
		UL 1897	2012
PRI Construction Materials Technologies (TST5878)	1930T0005	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	1930T0006	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	1930T0007	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	1930T0008	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	1930T0010	ASTM B 117	2016
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1930T0011	ASTM G 155	2013
		TAS 110	2000

PRODUCT DESCRIPTION

TCM-LOK 1”	**Profile:**	1 in. snap lock seam; Max.16 in. coverage
	Description:	Non-structural, snap lock standing seam roof panel with 7/8 in. slotted nail strip
	Material:	Min. 0.032 in. ASTM B209, 3105 H22 aluminum coated with Fluropon®; F_y = min. 25 ksi; Shall conform with FBC Section 1507.4.3
		
TCM-LOK 1.5”	**Profile:**	1.5 in. snap lock seam; Max. 15 in. coverage
	Description:	Non-structural, snap lock standing seam roof panel with 7/8 in. slotted nail strip
	Material:	Min. 24 ga. ASTM A792 AZ50 steel coated with Fluropon® or WeatherXL or A792 AZ55 steel; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3
		

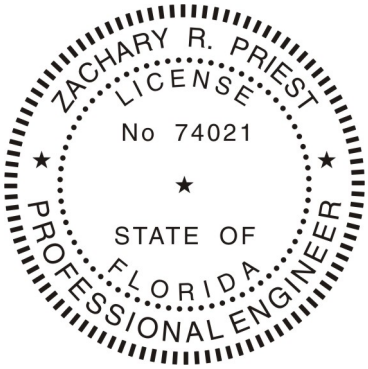
5V	**Profile:**	3/8 in. ribs at 12 in. o.c.; 24 in. coverage
	Description:	Non-structural, through fastened roof panel
	Material:	Min. 26 ga. ASTM A653 G90, ASTM A792 AZ50 steel coated with Fluropon® or WeatherXL or A792 AZ55 steel; F_y = min. 80 ksi; Shall conform with FBC Section 1507.4.3
		
Ultra Rib	**Profile:**	3/4 in. ribs at 9 in. o.c.; 36 in. coverage
	Description:	Non-structural, through fastened roof panel
	Material:	Min. 26 ga. ASTM A653 G90, ASTM A792 AZ50 steel coated with Fluropon® or WeatherXL or A792 AZ55 steel; F_y = min. 80 ksi; Shall conform with FBC Section 1507.4.3
		

LIMITATIONS

1. Fire classification is not within the scope of this evaluation.
2. The roof deck and the roof deck attachment information are provided based on testing. FBC requirements for the rational design of the roof deck, including the attachment, are not within the scope of this evaluation.
3. Roof slope shall be 2:12 or greater.
4. Reroofing shall be in accordance with Section 1521.
5. Installation of the evaluated products shall comply with this report, RAS 133, and the manufacturer's published application instructions. Where discrepancies exist between these sources, the more restrictive and FBC compliant installation detail shall prevail.
6. All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

COMPLIANCE STATEMENT

The products evaluated herein by Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 7th Edition (2020) High-Velocity Hurricane Zones (HVHZ) as evidenced in the referenced documents submitted by the named manufacturer.



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2021.02.10 12:39:17 -05'00'

Zachary R. Priest, P.E.
Florida Registration No. 74021
Organization No. ANE9641

CERTIFICATION OF INDEPENDENCE

CREEK Technical Services, LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

CREEK Technical Services, LLC is not owned, operated, or controlled by any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

APPENDICES

1) APPENDIX A – Installation (1 pages)
2) APPENDIX B – Approved Roof Systems (2 pages)
3) APPENDIX C – Design Wind Loads (3 pages)

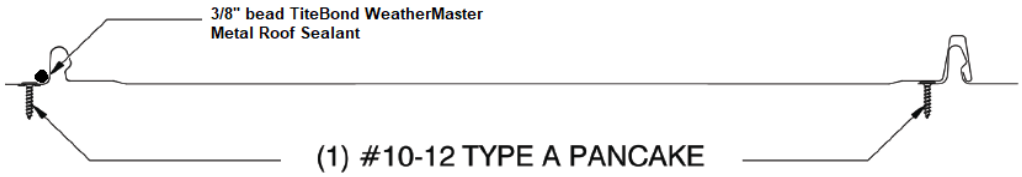
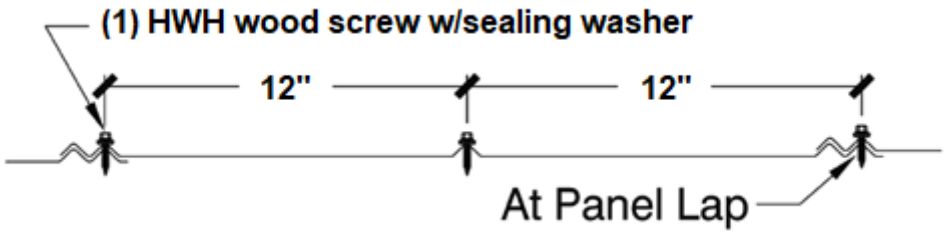
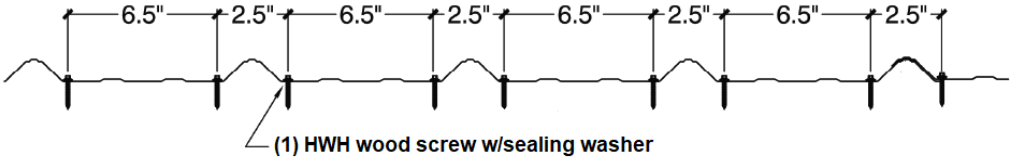
INSTALLATION

*Note - Refer to the **APPROVED ROOF SYSTEMS** section of this report for specific installation details of a selected system.*

Unless otherwise specified in this report the following installation details shall be met for the named products:

Component	Product	Installation Detail
Fasteners	#10-12 Pancake Type A screw	Shall penetrate through the sheathing a minimum 3/8 in. Shall be corrosion resistant in accordance with FBC section 1507.4.4.
	#9-15 Woodgrip HWH wood screw with sealing washer	
	#12-8 Woodgrip XG HWH wood screw with sealing washer	
Sealants	TiteBond Weathermaster Metal Roof Sealant	Shall be applied in 1/4"- 5/16" continuous beads on the male rib along the seam

Fastening Details

Nomenclature	Attachment
TCM-LOK	
5V	
Ultra Rib	

APPROVED ROOF SYSTEMS

The following notes shall be observed when using the assembly tables below.

1. Maximum Design Pressure (*MDP*) was calculated using a 2:1 margin of safety per FBC Section 1523.4.
2. Refer to **LIMITATIONS** and sections of this evaluation when using the table(s) below.
3. Refer to **INSTALLATION** section of this report for installation detail when the information is not explicitly stated for the selected assembly.
4. The on-center (o.c.) spacing given is the maximum allowable attachment spacing for the rated system.
5. Underlayment shall be installed in accordance with FBC requirements. The minimum underlayment shall be ASTM D 226, Type II installed as described in FBC Section 1518.2.1 with nails and tin caps per 1517.5.
6. Wood Deck shall be designed by others in accordance with FBC requirements and shall be minimum 19/32-inch thick APA Span-Rated plywood sheathing or wood plank at maximum 24-inch span for new construction. Existing construction shall be the minimum plywood sheathing or wood plank thickness at maximum 24-inch span as stated in the approval tables on following pages. In no case shall the attachment be less than 8d ring shank nails spaced 6-inch o.c.

Roof System Numbers and Definitions	
LOK-W#	TCM-LOK over Wood Deck (New or Existing)
5V-W#	5V over Wood Deck (New or Existing)
RIB-W#	Ultra Rib over Wood Deck (New or Existing)

Approved Systems for TCM-LOK over Wood Deck (New or Existing)

System No.	Deck	Fire Barrier	Underlayment	Roof Panel	Panel Attachment	*MDP* (psf)
LOK-W-1	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 0.032 Al TCM-LOK 1" 16-inch coverage	*TCM-LOK* attachment with #10-12 Pancake Type A screws spaced 5-1/4 in. o.c. Titebond Weathermaster Metal Roof Sealant applied to male rib.	**-110**
LOK-W-2	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 24 ga. TCM-LOK 1.5" 15-inch coverage	*TCM-LOK* attachment with #10-12 Pancake Type A screws spaced 5-1/4 in. o.c. Titebond Weathermaster Metal Roof Sealant applied to male rib.	**-122.5**

Approved Systems for 5V Crimp over Wood Deck (New or Existing)						
System No.	Deck	Fire Barrier	Underlayment	Roof Panel	Panel Attachment	*MDP* (psf)
5V-W-1	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 26 ga. 5V Crimp 24-inch coverage	*5V* attachment with #12-8 Woodgrip XG screws with sealing washers spaced 16 in. o.c.	**-86.25**
5V-W-2	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 26 ga. 5V Crimp 24-inch coverage	*5V* attachment with #9-15 Woodgrip or #12-8 Woodgrip XG screws with sealing washers spaced 12 in. o.c.	**-90**
5V-W-3	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 26 ga. 5V Crimp 24-inch coverage	*5V* attachment with #12-8 Woodgrip XG screws with sealing washers spaced 9 in. o.c.	**-120**
5V-W-4	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 26 ga. 5V Crimp 24-inch coverage	*5V* attachment with #9-15 Woodgrip or #12-8 Woodgrip XG screws with sealing washers spaced 6 in. o.c.	**-135**

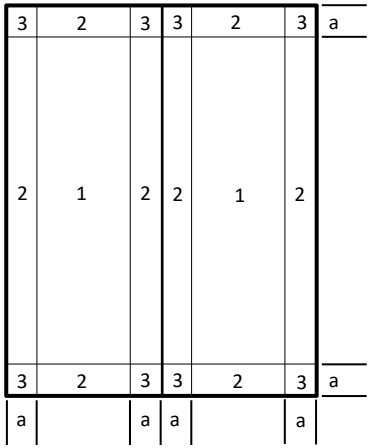
Approved Systems for Ultra Rib over Wood Deck (New or Existing)						
System No.	Deck	Fire Barrier	Underlayment	Roof Panel	Panel Attachment	*MDP* (psf)
RIB-W-1	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 26 ga. Ultra Rib 36-inch coverage	*Ultra Rib* attachment with #12-8 Woodgrip XG screws spaced 24 in. o.c	**-116.25**
RIB-W-2	Min. 15/32 CDX plywood	OPTIONAL *Approved* fire barrier	As required per FBC	Min. 26 ga. Ultra Rib 36-inch coverage	*Ultra Rib* attachment with #9-15 Woodgrip screws spaced 12 in. o.c	**-135**

DESIGN WIND LOADS

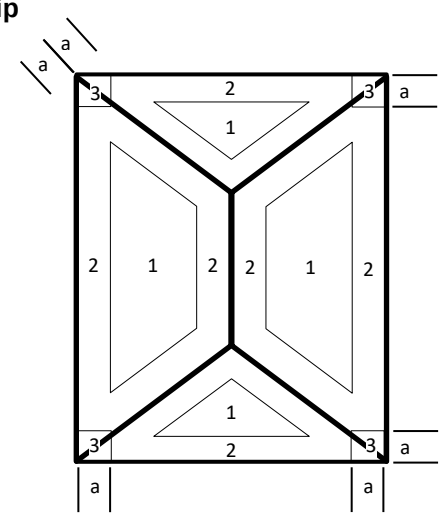
The following tables provide design wind loads for components and cladding in accordance with Section 1620 of the FBC and ASCE 7-16 under the following provisions:

1. Wind speeds for risk category I, II, III, and IV buildings shall be as defined in Section 1620 of the FBC.
2. Exposure C and D shall be as defined in section 1620 of the FBC.
3. Design wind load provided only for gable/hip roofs with roof slopes between 2:12 and 6.1:12
4. All calculations are based on an effective wind area of 10-ft^2 or less.
5. Topographic factors such as escarpments or hills have been excluded from the analysis
6. Overhangs have been excluded from the analysis.
7. Wind directionality factor, K_d = 0.85
8. Design wind loads are calculated using $P_{asd} = 0.6P_{ult}$.
9. Zone 2 is inclusive of Zone 2e, Zone 2n, and Zone 2r
10. Zone 3 is inclusive of Zone 3e and Zone 3r
11. Projects with mean roof heights greater than 60-ft shall be evaluated by a licensed design professional
12. Zones 1, 2, and 3 shall be defined as shown below. Dimension "a" shall be 10% of the least horizontal dimension or (0.4 x *Mean Roof Height)*, whichever is smaller, but not less than either 4% of the least horizontal dimension or 3ft

Gable



Hip



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Gable/Hip Roofs in **Exposure C in Miami-Dade & Broward County** (Roof slopes between 2:12 and 12:12)								
Building Type	Zone	Mean Roof Height (ft)	Basic Wind Speed (mph)					
			Risk Cat I	Risk Cat I	Risk Cat II	Risk Cat II	Risk Cat III, IV	Risk Cat III,IV
			156	165	170	175	180	186
Enclosed/ Partially Open	1	20	-62.3	-69.7	-74.0	-78.5	-83.0	-88.6
		25	-65.1	-72.8	-77.3	-81.9	-86.7	-92.6
		30	-67.9	-75.9	-80.6	-85.4	-90.4	-96.5
		40	-72.0	-80.6	-85.6	-90.7	-95.9	-102.4
		50	-75.5	-84.5	-89.7	-95.0	-100.5	-107.3
		60	-78.3	-87.6	-93.0	-98.5	-104.2	-111.3
	2	20	-90.9	-101.7	-108.0	-114.4	-121.1	-129.3
		25	-95.0	-106.3	-112.8	-119.5	-126.5	-135.0
		30	-99.0	-110.8	-117.6	-124.6	-131.8	-140.8
		40	-105.1	-117.6	-124.8	-132.2	-139.9	-149.4
		50	-110.1	-123.2	-130.8	-138.6	-146.6	-156.6
		60	-114.2	-127.7	-135.6	-143.7	-152.0	-162.3
	3	20	-108.1	-120.9	-128.4	-136.0	-143.9	-153.7
		25	-112.9	-126.3	-134.1	-142.1	-150.3	-160.5
		30	-117.7	-131.7	-139.8	-148.1	-156.7	-167.3
		40	-124.9	-139.7	-148.3	-157.2	-166.3	-177.6
		50	-130.9	-146.5	-155.5	-164.7	-174.3	-186.1
		60	-135.7	-151.8	-161.2	-170.8	-180.7	-192.9
Partially Enclosed	1	20	-72.9	-81.6	-86.6	-91.8	-97.1	-103.7
		25	-76.2	-85.2	-90.4	-95.8	-101.4	-108.3
		30	-79.4	-88.8	-94.3	-99.9	-105.7	-112.9
		40	-84.3	-94.3	-100.1	-106.0	-112.2	-119.8
		50	-88.3	-98.8	-104.9	-111.1	-117.6	-125.5
		60	-91.6	-102.4	-108.7	-115.2	-121.9	-130.2
	2	20	-101.5	-113.6	-120.6	-127.8	-135.2	-144.3
		25	-106.0	-118.6	-125.9	-133.4	-141.2	-150.7
		30	-110.5	-123.7	-131.3	-139.1	-147.2	-157.1
		40	-117.3	-131.2	-139.3	-147.6	-156.2	-166.8
		50	-123.0	-137.5	-146.0	-154.7	-163.7	-174.8
		60	-127.5	-142.6	-151.4	-160.4	-169.7	-181.2
	3	20	-118.7	-132.8	-140.9	-149.3	-158.0	-168.7
		25	-124.0	-138.7	-147.2	-156.0	-165.0	-176.2
		30	-129.2	-144.6	-153.5	-162.6	-172.0	-183.7
		40	-137.1	-153.4	-162.9	-172.6	-182.6	-195.0
		50	-143.7	-160.8	-170.7	-180.9	-191.4	-204.3
		60	-149.0	-166.7	-177.0	-187.5	-198.4	-211.8

Gable/Hip Roofs in **Exposure D in Miami-Dade & Broward County** (Roof slopes between 2:12 and 12:12)								
Building Type	Zone	Mean Roof Height (ft)	Basic Wind Speed (mph)					
			Risk Cat I	Risk Cat I	Risk Cat II	Risk Cat II	Risk Cat III, IV	Risk Cat III,IV
			156	165	170	175	180	186
Enclosed/ Partially Open	1	20	-74.8	-83.7	-88.8	-94.1	-99.6	-106.3
		25	-77.6	-86.8	-92.1	-97.6	-103.3	-110.3
		30	-80.4	-89.9	-95.4	-101.1	-107.0	-114.2
		40	-84.5	-94.5	-100.4	-106.3	-112.5	-120.1
		50	-88.0	-98.4	-104.5	-110.7	-117.1	-125.1
		60	-90.7	-101.5	-107.8	-114.2	-120.8	-129.0
	2	20	-109.1	-122.1	-129.6	-137.3	-145.3	-155.1
		25	-113.2	-126.6	-134.4	-142.4	-150.7	-160.9
		30	-117.2	-131.1	-139.2	-147.5	-156.0	-166.6
		40	-123.3	-137.9	-146.4	-155.1	-164.1	-175.2
		50	-128.3	-143.6	-152.4	-161.5	-170.8	-182.4
		60	-132.4	-148.1	-157.2	-166.6	-176.2	-188.2
	3	20	-129.7	-145.1	-154.0	-163.2	-172.7	-184.4
		25	-134.5	-150.5	-159.7	-169.3	-179.1	-191.2
		30	-139.3	-155.9	-165.4	-175.3	-185.5	-198.1
		40	-146.5	-163.9	-174.0	-184.4	-195.1	-208.3
		50	-152.5	-170.6	-181.1	-192.0	-203.1	-216.8
		60	-157.3	-176.0	-186.8	-198.0	-209.5	-223.7
Partially Enclosed	1	20	-87.5	-97.9	-103.9	-110.1	-116.5	-124.4
		25	-90.7	-101.5	-107.8	-114.2	-120.8	-129.0
		30	-94.0	-105.1	-111.6	-118.3	-125.1	-133.6
		40	-98.8	-110.6	-117.4	-124.4	-131.6	-140.5
		50	-102.9	-115.1	-122.2	-129.5	-137.0	-146.3
		60	-106.1	-118.7	-126.0	-133.6	-141.3	-150.9
	2	20	-121.8	-136.3	-144.7	-153.3	-162.2	-173.2
		25	-126.3	-141.3	-150.0	-159.0	-168.2	-179.6
		30	-130.8	-146.4	-155.4	-164.7	-174.2	-186.0
		40	-137.6	-154.0	-163.4	-173.2	-183.2	-195.6
		50	-143.3	-160.3	-170.1	-180.3	-190.7	-203.6
		60	-147.8	-165.3	-175.5	-186.0	-196.7	-210.1
	3	20	-142.4	-159.3	-169.1	-179.2	-189.6	-202.5
		25	-147.7	-165.2	-175.4	-185.8	-196.6	-210.0
		30	-153.0	-171.1	-181.6	-192.5	-203.6	-217.4
		40	-160.9	-180.0	-191.0	-202.4	-214.2	-228.7
		50	-167.5	-187.3	-198.9	-210.7	-223.0	-238.1
		60	-172.7	-193.2	-205.1	-217.4	-230.0	-245.6