

Wind Speed Ratings of Newer Local Communities

Development	Wind Speed Design
• Siena I (original build-WCI)	120 MPH
• Calabria at Renaissance (original build-WCI)	120 MPH
• Valencia Lakes (original build)	120 MPH
• Valencia Del Sol	141 MPH
• Valencia Lakes (newer build)	145 MPH
• Sereno (off 674 in Wimauma)	145 MPH
• Palm Vista (off 301 in Wimauma)	145 MPH
• La Paloma (off Upper Creek Drive)	145 MPH
• Medley at Southshore Bay (lagoon area)	145 MPH
• Siena I (newer – Minto)	150 MPH
• Siena II (Minto)	150 MPH
• Calabria at Renaissance (newer-Minto)	150 MPH
• Verona at Renaissance (Minto)	150 MPH

Looking at this list of wind speeds that the newest homes in Sun City Center and neighboring areas are designed to withstand, we should give Minto credit for apparently going above and beyond the Florida Building Codes. Homes and villas built by Minto between 2012 and 2019 have the highest hurricane wind resistance around. They even supplied W5-rated garage doors that can withstand 150 mph winds in Exposure C regions (defined as “open terrain with scattered obstructions including flat open ground and grasslands”). A W5 door is designed to withstand 170 mph winds in Exposure B regions (defined as “urban and suburban

areas, wooded areas or other terrain with numerous closely spaced obstructions”).

Minto’s selection of “Exposure C” doesn’t necessarily set them apart from other builders in the area because almost all of them designed for Exposure C as well. What Minto did differently was to design for the top wind speed in the 140 to 150 mph range for our area of the state. As the only builder to do this, Minto-built homes from 2012 to 2019 actually meet the 2023 standard of 150 to 160 mph for Risk Category III buildings. Risk Category II are standard occupancy buildings with a lower wind requirement and Category III are buildings with a large number of occupants such as schools and hospitals and are built to stricter wind requirements.

So, rest assured that homes and villas built by Minto in the Sun City Center area are some of the safest around when it comes to hurricane safety. That is apparently the main reason why our homeowner insurance rates are generally 1/3 as high as older homes in our area.

Timeline of Florida Building Codes

- 1974 Minimum building code law passed requiring local governments to adopt and enforce a building code.
- 1992 Hurricane Andrew hit South Florida revealing deficiencies in the existing code system.
- 1996 Florida Building Code Commission appointed to study codes.

- 1998 Florida's Legislature adopted the Study Commission's recommendations and amended Chapter 553 of the Florida Statutes to create a statewide minimum standard building code.
- 2001 On March 1st the first version of the Florida Building Code (2001 FBC) was established and set to be updated every 3 years. The effective date of 1st version, FBC 2001 was 3/1/2002.
- 2004 2nd version, FBC 2004 adopted with an effective date of 10/1/2005.
- 2007 3rd version, FBC 2007 adopted with an effective date of 3/1/2009.
- 2010** **Significant changes introduced to wind load design** including the presentation of wind speed maps for the state, changes to the Wind-borne Debris Region, and introduction to Exposure Category D for water surfaces in hurricane-prone regions.
- 2010 4th version, FBC 2010 adopted with an effective date of 3/15/2012.
- 2014 5th Edition (2014) Florida Building Code adopted with an effective date of June 30, 2015
- 2017 Adoption process established to sync the Florida Building code with other international codes representing building, mechanical, plumbing, energy and flood programs, etc.
- 2017 6th Edition (2017) Florida Building Code adopted with an effective date of 12/31/2017.
- 2020 7th Edition (2020) Florida Building Code adopted with an effective date of 12/31/2020.
- 2023 8th Edition (2023) Florida Building Code scheduled to be effective on 12/31/23.

Medley at Southshore Bay

WIND DESIGN COMPARISON BETWEEN LOCAL COMMUNITIES

Sereno

WIND DESIGN :

ULTIMATE WIND SPEED	<u>145 MPH</u>
IMPORTANCE FACTOR	1.0
EXPOSURE	C
RISK CATEGORY	II
METHOD OF DESIGN	FBC RESIDENTIAL 2010 R301 FBC 2010 1609
MEAN ROOF HEIGHT	14'-6"±

Palm Vista

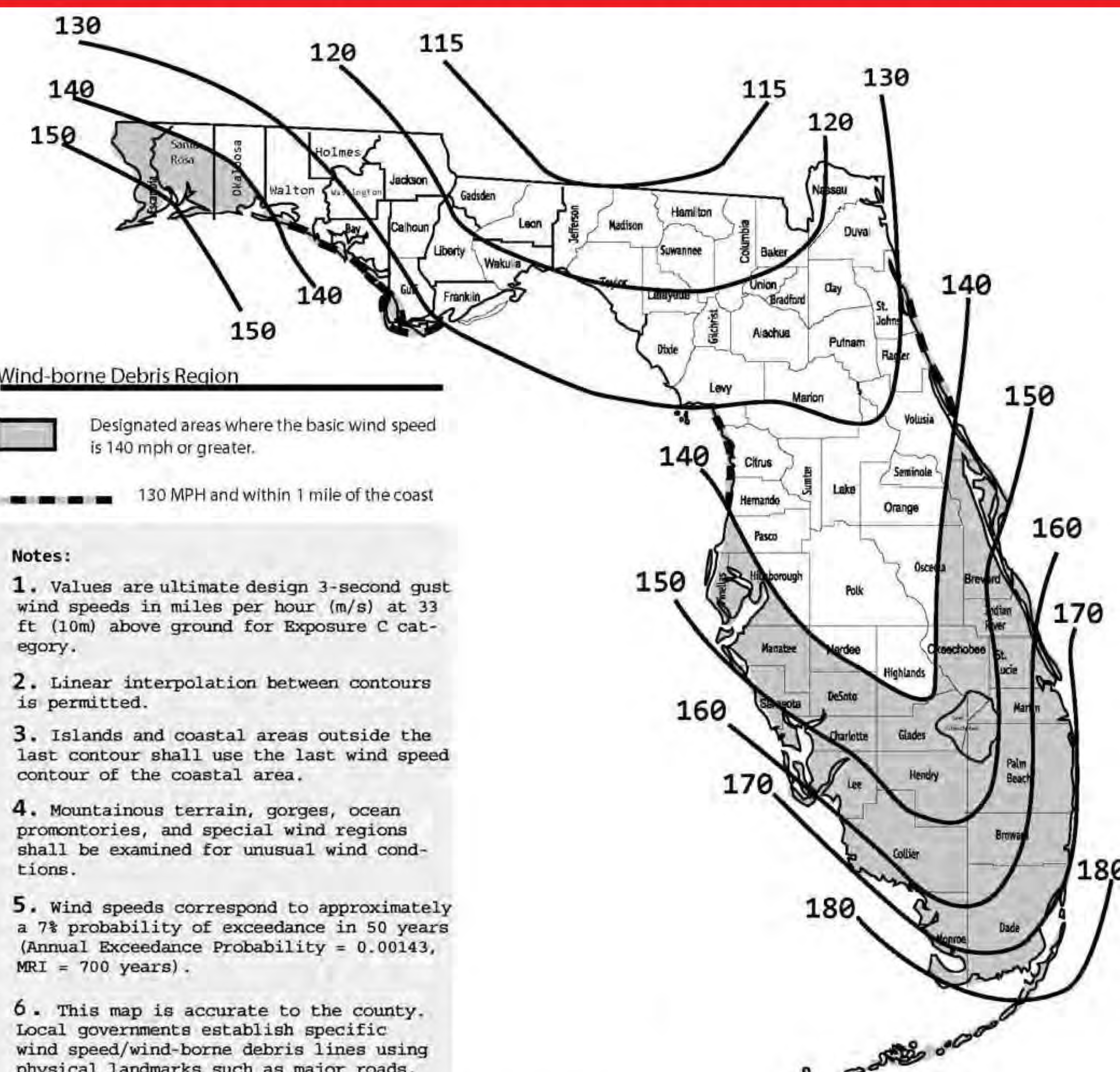
BUILDING CODE : FLORIDA BUILDING CODE RESIDENTIAL, 5TH ED. (2014)
FLORIDA BUILDING CODE, BUILDING 5TH ED. (2014)

WIND DESIGN :

ULTIMATE WIND SPEED	<u>145 MPH</u>
IMPORTANCE FACTOR	1.0
EXPOSURE	C
RISK CATEGORY	II
METHOD OF DESIGN	FBC RESIDENTIAL 5TH ED. (2014) R301 FBC 5TH ED. (2014) 1609
MEAN ROOF HEIGHT	24'-0"±

Newer Valencia Lakes

1.1.2 WIND LOADS:
F.B.C. 2010 PER CHAPTER 16, SECTION 1609.
ULTIMATE DESIGN WIND SPEED: $V_{ult} = 150$ MPH.
NOMINAL DESIGN WIND SPEED: $V_{ASD} = 116$ MPH.
EXPOSURE CATEGORY = "C" BUILDING ENCLOSED
RISK CATEGORY II STRUCTURE
INTERNAL PRESSURE COEFFICIENT: 0.18



Wind-borne Debris Region

Designated areas where the basic wind speed is 140 mph or greater.

130 MPH and within 1 mile of the coast

Notes:

- Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10m) above ground for Exposure C category.
- Linear interpolation between contours is permitted.
- Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
- Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
- Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (Annual Exceedance Probability = 0.00143, MRI = 700 years).
- This map is accurate to the county. Local governments establish specific wind speed/wind-borne debris lines using physical landmarks such as major roads, canals, rivers and shorelines.

FIGURE R301.2(4)
ULTIMATE DESIGN WIND SPEEDS V_{ult}
FLORIDA BUILDING CODE — RESIDENTIAL, 5TH EDITION (2014)

Original Valencia Lakes

GENERAL STRUCTURAL SPECIFICATIONS

1.0 GENERAL:

1.1 THE STRUCTURAL SYSTEM FOR THIS BUILDING IS DESIGNED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE 2001 FLORIDA BUILDING CODE W/ 2009 SUPPLEMENT. THE DESIGN LOADS FOR THE STRUCTURE ARE AS FOLLOWS:

1.1.1 ROOF:

DEAD LOAD: 25 PSF.
LIVE LOAD: 30 PSF. (ROOF TRUSS BOTTOM CHORD = 10 PSF. LIVE LOAD)
(ROOF TRUSS TOP CHORD = 20 PSF. LIVE LOAD)

1.1.2 WIND LOADS:

F.B.C. 2001 PER CHAPTER 16, SECTION 1609.
BASIC WIND SPEED = 120 MPH.
WIND IMPORTANCE FACTOR = 1.0
EXPOSURE CATEGORY = "C"
BUILDING ENCLOSED
THE INTERNAL PRESSURE COEFFICIENT IS +/- .18.

Original (WCI) Calabria at Renaissance

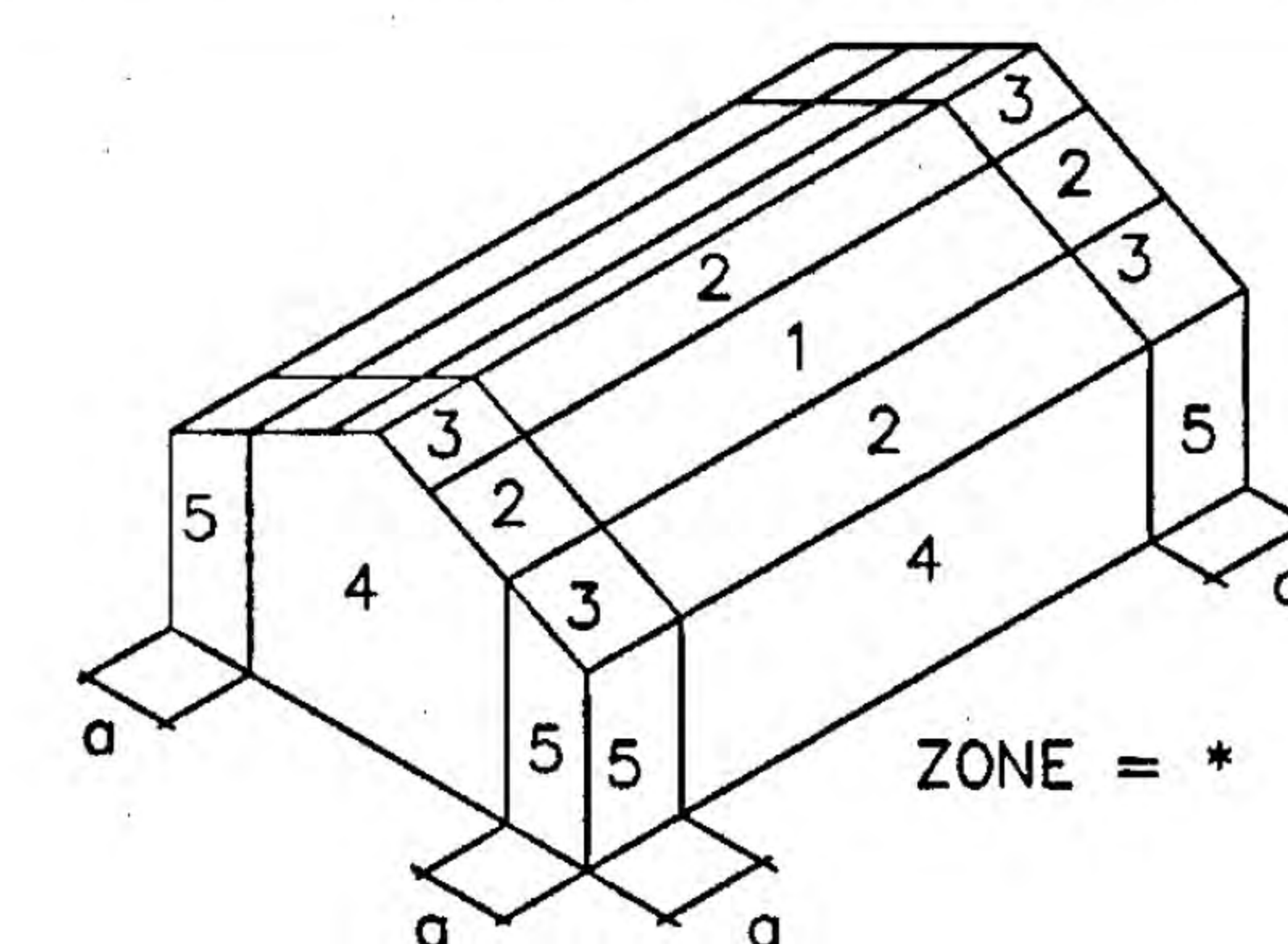
BASIC WIND SPEED	<u>120 MPH</u>
WIND IMPORTANCE FACTOR	1.0
BUILDING CATEGORY	II
WIND EXPOSURE	C
INT. PRESSURE COEFF.	+/- 0.18 ENCLOSED

*THIS BUILDING WAS DESIGNED USING THE FLORIDA BUILDING CODE 2001 (ICC) RESIDENTIAL REQUIREMENTS W/ 2009 REVISIONS
*GROUP R-3 OCCUPANCY / TYPE V-B CONSTRUCTION

La Paloma

WIND LOADS — DESIGN PRESSURES Florida Building Code 6th Edition (2017) and ASCE 7-10 Methods

ULTIMATE WIND SPEED (MPH)	<u>145</u>
EXPOSURE CATEGORY	C
BUILDING RISK CATEGORY	II
ROOF SLOPE	Roof > 7 to 27 degrees
INTERNAL PRESSURE COEFFICIENT	0.18 ENCLOSED
TOPOGRAPHICAL FACTOR	1.0 FLAT
MAXIMUM BUILDING HEIGHT	60 FT
WIDTH OF EDGE STRIPS (a)	8 FT
OPENING PROTECTION REQUIRED	



Newer (Minto) Calabria at Renaissance

ULTIMATE DESIGN WIND SPEED	<u>150 MPH</u>
NOMINAL DESIGN WIND SPEED	116 MPH
BUILDING RISK CATEGORY	II
WIND EXPOSURE	C
INT. PRESSURE COEFF. (ENCLOSED)	+/- 0.18 ENCLOSED

WORST CASE DESIGN PRESSURE TABLE

BUILDING DATA

WIND SPEED (ULTIMATE)	<u>145 MPH</u>
WIND SPEED (ALLOWABLE)	112 MPH
WIND EXPOSURE --	"C" (FBC-R R301)
INTERNAL PRESSURE COEFFICIENT=	+/- 0.18 ENCLOSED BLDG)
BUILDING CATEGORY =	II

DESIGN WIND PRESSURE:

(COMPONENT AND CLADDING)	WORST CASE (10 SF - END ZONE) # END ZONE IS ONLY WITHIN 5'-0" OF ALL EXTERIOR BUILDING CORNERS
WINDOWS AND DOORS	+ 32.5 PSF / - 43.5 PSF (END) U.N.O. + 32.5 PSF / - 35.3 PSF (INTERIOR) U.N.O.

GARAGE DOORS (V = 145 MPH)	
SINGLE 9x7	+ 27.3 PSF / - 30.9 PSF
DOUBLE 16x7	+ 26.1 PSF / - 29.1 PSF

CONSTRUCTION TYPE: 5B

NOTE: THE WIND PRESSURES LISTED ABOVE ARE ALLOWABLE PRESSURES.

Valencia Del Sol

GENERAL STRUCTURAL SPECIFICATIONS

1.0 GENERAL:

1.1 THE STRUCTURAL SYSTEM FOR THIS BUILDING IS DESIGNED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE FLORIDA BUILDING CODE, 6TH EDITION (2017). THE DESIGN LOADS FOR THE STRUCTURE ARE AS FOLLOWS:

1.1.1 ROOF:

DEAD LOAD: 25 PSF.
LIVE LOAD: 30 PSF.
(ROOF TRUSS BOTTOM CHORD = 10 PSF. LIVE LOAD) (NON-CONCURRENT WITH OTHER LIVE LOADS)
(ROOF TRUSS TOP CHORD = 20 PSF. LIVE LOAD)

1.1.2 WIND LOADS:

F.B.C. 6th EDITION (2017) PER CHAPTER 16, SECTION 1609.
ULTIMATE DESIGN WIND SPEED: $V_{ult} = 141$ MPH.
NOMINAL DESIGN WIND SPEED: $V_{ASD} = 109$ MPH.
EXPOSURE CATEGORY = "C" BUILDING ENCLOSED
RISK CATEGORY II STRUCTURE
INTERNAL PRESSURE COEFFICIENT: 0.18

Verona at Renaissance

ULTIMATE WIND SPEED (V_{ult})	<u>150 MPH</u>
NOMINAL WIND SPEED (V_{ASD})	116 MPH
RISK CATEGORY	II
WIND EXPOSURE	C
INT. PRESSURE COEFF.	+/- 0.18 ENCLOSED
MAX. MEAN ROOF HEIGHT	35.0'

COMPONENTS AND CLADDING (ULTIMATE)

ROOF		
10 SQFT	+33.8 / -138.3 PSF	
20 SQFT	+30.9 / -129.3 PSF	
50 SQFT	+26.8 / -117.5 PSF	
100 SQFT	+23.9 / -108.5 PSF	

WALL		
10 SQFT	+58.7 / -78.6 PSF	
20 SQFT	+56.1 / -73.2 PSF	
50 SQFT	+52.5 / -66.3 PSF	
100 SQFT	+49.9 / -61.0 PSF	
500 SQFT	+43.8 / -48.7 PSF	

GARAGE DOOR 8' WIDTH	+52.2 / -65.6 PSF
10' WIDTH	+51.4 / -64.2 PSF
12' WIDTH	+50.7 / -62.7 PSF
16'+ WIDTH	+49.9 / -61.0 PSF

CHART IS IN 'ULTIMATE' PRESSURES.
'ALLOWABLE' = 0.6 X 'ULTIMATE' FOR COMPARISON
CHART MAY BE INTERPOLATED FOR INTERMEDIATE PRESSURES