



Roof Mitigation Requirements

The 2007 Florida Legislature has established new requirements for retrofitting buildings undergoing alterations. These new rules went into effect **October 1, 2007**. The law requires mitigation retrofits for site-built, single family residential structures to resist hurricane wind forces and indicates that the intent of these requirements is to apply to pre-**Florida Building Code** houses.

There are two options and one exception regarding the required installation of a secondary water barrier. Option "B" is in conflict with provisions contained in the High Velocity Hurricane Zone section of the Florida Building Code and may not be utilized. **Therefore, only Option "A" and the Exception are to be used in Palmetto Bay.**

Required Sequence:

1. Submit value of structure to determine if structure's value exceeds \$300,000. Provide a copy of a current insurance policy or the property valuation will be based on ad valorem taxation.
2. Roof decks shall be strengthened and corrected as required by Section 201.1- Roof sheathing fastening for site-built single family residential structures.

Section 201.1- Roof sheathing fastening for site-built single family residential structures.

For site-built single family residential structures the fasteners and spacing required in Table 201.1 are deemed to comply with the requirements of Section 507 .2.2, of the 2004 Florida Building Code Existing Building. Board roof decking secured with at least two 8d nails into roof framing members shall be deemed to be sufficiently connected. Board roof decking secured with smaller fasteners than 8d nails or with fewer than two 8d nails per board shall be deemed sufficiently connected if two 8d clipped head, round head, or ring shank nails are in place on each framing member.

Supplemental fasteners as required by Table 201.1 (shown below) shall be 8d ring shank nails with round heads and the following minimum dimensions:

1. 0.113 inch nominal shank diameter
 2. Ring diameter of 0.012 over shank diameter
 3. 16 to 20 rings per inch
 4. 0.280 inch full round head diameter
 5. 2 ¼ inch nail length
3. A secondary water barrier shall be provided as required by Section 201.2 (see below)

Supplement Fasteners at Panel Edges and Intermediate Framing

Table 201.1

Existing fasteners	Existing Spacing	Wind speed greater than 110 mph supplement fastening shall be no greater than
Staples or 6d	Any	6" o.c.
8d clipped head, round head, or ring shank	6" o.c. or less	None necessary
8d clipped head or round head	Greater than 6" o.c.	6" o.c. (b)
8d round head ring shank	Greater than 6" o.c.	6" o.c.(a)

- a. Maximum spacing determined based on existing fasteners and supplemental fasteners.
- b. Maximum spacing determined based on supplemental fasteners only.

201.2 Roof secondary water barrier for site-built single family residential structures.

A secondary water barrier shall be installed using one of the following methods for roofing replacement when re-roofing.

a) All joints in roof sheathing or decking shall be covered with a minimum 4 in. wide strip of self-adhering polymer modified bitumen tape applied directly to the sheathing or decking. The deck and self adhering polymer modified bitumen tape shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof.

Exceptions:

1. An asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier (this exception applies to tile or flat roofs only).
2. For structures with a valuation greater than \$ 300,000.00 (based on insured structure amount or assessed value) roof to wall connections shall be improved as required by Section 201.3 (see below)

201.3 Roof-to-wall connections for site-built single family residential structures.

Where required by Section 101.2, the intersection of roof framing with the wall below shall be strengthened by adding metal connectors, clips, straps, and fasteners such that the performance level equals or exceeds the uplift capacities as specified in Table 201.3. As an alternative to an engineered design, the prescriptive retrofit solutions provided in Sections 201.3.1 through 201-3.4 shall be accepted as meeting the mandated roof-to-wall retrofit requirements.

201.3.1 Prescriptive method for gable roofs on a wood frame wall.

Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing member measured from the corner, along the exterior wall on each side of each gable end. The anchorage of each of the exposed rafters or truss shall be inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with a minimum uplift capacity of 500 lbs. shall be installed that connect each rafter or truss to the top plate below. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs.

201.3.2 Prescriptive method for gable roofs on a masonry wall.

Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members measured from the corner, along the exterior wall on each side of each gable end. The anchorage of each of the exposed rafters or truss shall be inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with minimum uplift capacity of 500 Lbs shall be installed that connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing 1/4-inch diameter masonry screws, each with supplementary 1/4-inch washer, having sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4 inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter.

201.3.3 Prescriptive method for hip roofs on a wood frame wall.

Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters that are not anchored with a strap having at least four fasteners on each end, shall be connected to the top plate below using a strap or a right angle gusset bracket having a minimum uplift capacity of 500 Lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs.

201.3.4 Prescriptive method for hip roofs on a masonry wall.

Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters that are not anchored with a strap having at least four fasteners on each end, shall be connected to the concrete masonry wall below using approved straps or right angle gusset brackets with a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. The straps or right angle gusset brackets shall be installed such that they connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage

shall be accomplished by installing 1/4-inch diameter masonry screws, each with supplementary 1/4-inch washer, with sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter.

201.3.5 Priorities for mandated roof-to-wall retrofit expenditures.

For houses with both hip and gable roof ends, the priority shall be to retrofit the gable end roof-to-wall connections unless the width of the hip end is more than 1.5 times greater than the width of the gable end. Priority shall be given to connecting the corners of roofs to walls below where the spans of the roofing members are greatest

**Required Uplift Capacities for Roof-To-Wall Connections
(Pounds per Linear Foot)**

Table 201.3- *Shaded areas are loads within 6 feet of building corner*

Basic Wind Speed	ROOF SPAN (FEET)							Overhangs
	12	20	24	28	32	36	40	
85	-69.85	-116.42	-139.70	-162.99	-186.27	-209.55	-232.84	-27
90	-82.67	-137.78	-165.34	-192.90	-220.45	-248.01	-275.57	-30.3
100	-110.51	-184.18	-221.01	257.85	-294.68	-137.52	-368.36	-37.4
110	-141.27	-235.45	-282.55	-329.64	-376.73	-123.82	-470.91	-45.3
120	-174.97	-291.62	-349.94	-408.26	-466.59	-534.91	-583.23	-53.9
130	-211.60	-352.66	-423.19	-493.72	-564.26	-634.79	-705.32	-63.2
140	-251.15	-418.59	-502.31	-586.02	-669.74	-753.46	-837.18	-73.3
150	-293.04	-487.40	-587.28	-685.18	-783.04	-880.92	-978.80	-84.2
170	-387.40	-643.67	-774.81	-903.94	-	-	-	-108
					1030.08	1162.21	1291.35	
85	-39.10	-65.17	-78.30	-91.24	-104.27	-187.30	-130.34	-27
90	-48.20	-80.35	-96.39	-112.46	-326.52	-144.59	-160.66	-30.3
100	-67.95	-113.24	-135.89	-158.54	-181.19	-203.84	-226.40	-37.4
110	-89.78	-140.63	-179.55	-209.48	-239.40	-269.33	-299.25	-45.3
120	-113.68	-189.47	-227.37	-265.65	-303.16	-341.05	-378.94	-53.9
130	-139.67	-232.78	-279.34	-325.90	-372.45	-419.01	-465.57	-63.2
140	-167.74	-279.56	-335.47	-391.38	-447.29	-503.21	-559.12	-73.3
150	-197.88	-329.80	-395.76	-461.72	-527.68	-593.64	-659.60	-84.2
170	-264.41	-440.68	-528.81	-616.95	-703.	-793.22	-881.35	-108

- a) The required capacities are pounds per lineal foot of building length. For roof framing spaced at 16 inches on center multiply table values by 1.33. For roof framing spaced at 24 inches on center multiply table values by 2.
- b) The required capacities include an allowance for 10 pounds of dead load.
- c) The required capacities do not account for the effects of overhangs. The overhang loads given shall be multiplied by the overhang projection and added to the required Capacities in the table.

Required Procedure:

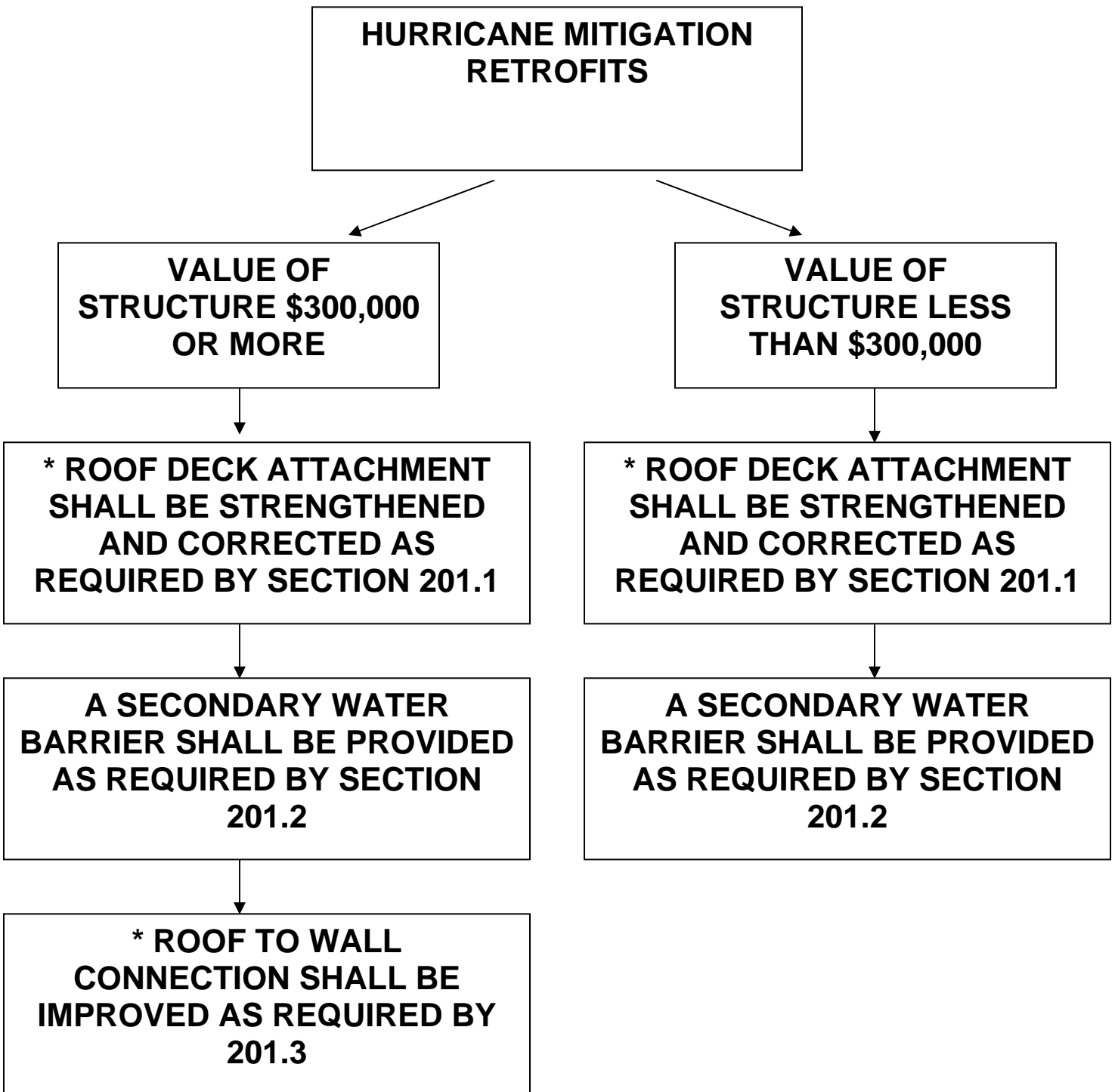
At the time of submitting the Re-Roofing permit application an assessment report must be submitted addressing existing and proposed metal connectors, clips, straps, fasteners to be used when using the Prescriptive Methods specified in Sections 201.3.1 to 201.3.4. This report must be prepared by, a Registered Architect, Professional Engineer, Licensed General Contractor, Building Contractor, Residential Contractor, or persons certified in the structural discipline under F.S. 468. Should the retrofits, as prescribed in the report, of all the roof-to-wall connections as per Section 201.3 exceed 15% of the cost of re-roofing project, the priorities outlined in Section 201.3.5 shall be used to limit the scope of work. The cost of preparing the report can be included in the 15% required expenditure.

A separate permit will be required for any installation of metal connectors, clips, straps, fasteners, and any additional structural elements. This permit can only be issued to a general contractor, building contractor, or a residential contractor.

The retrofit work for the connectors can either be inspected by the building inspector or as an acceptable alternative the architect or engineer who prepared and submitted the report for permit may certify the work in place as a "special inspector"; a letter and documenting pictures will be produced by the architect or engineer and turned in at time of tin cap inspection. The building inspector will bring this report back and upon approval the building permit for the connector retrofit will be closed.

Shingle and metal roofing must meet the requirements of Option "A". Tile and flat roofs can be done by complying with Option "A" or with the exception.

Houses built using the South Florida Building Code 1994 edition or later up to the inception of the Florida Building Code will not require an assessment report provided that proof of when the initial permit was issued which can clearly prove what code was the house built under is furnished at the time of submittal.



* For new residential structure permits issued, inspected and finalized under the 1994 South Florida Building Code or the 2001-2004 Florida Building Code this requirement is not required as the structure was originally built in compliance with this section.