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# Wind Mitigation

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William H. York  
WHYork Consulting, Inc.

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# William H. York

## Background and Experience

- President, WHYork Consulting, Inc.
- Teach Florida Building Code Classes (wind loading) with University of Florida
- Consultant and trainer for FLASH; Engineering and Construction
- Consultant and trainer for IBHS Fortified for Safer Living Program
- Director Building Evaluations Applied Research Associates, Inc., Orlando FL (4-2000 to 7-2006)
- BS Industrial Engineering Northeastern University
- State Certified Building Contractor, CBC 056072
- State Certified Residential Construction Mitigation Inspector
- State Certified Hurricane Shelter Inspector
- Certified Florida Windstorm Underwriting Surveyor/Trainer

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# Building Features that Control Damage

- Roof Coverings
  - Roof Sheathing Attachment
  - Roof to Wall Connections
  - Openings
    - Windows
    - Doors
    - Garage Doors
    - Sliding Glass Doors
    - Skylights
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# Florida Requirements

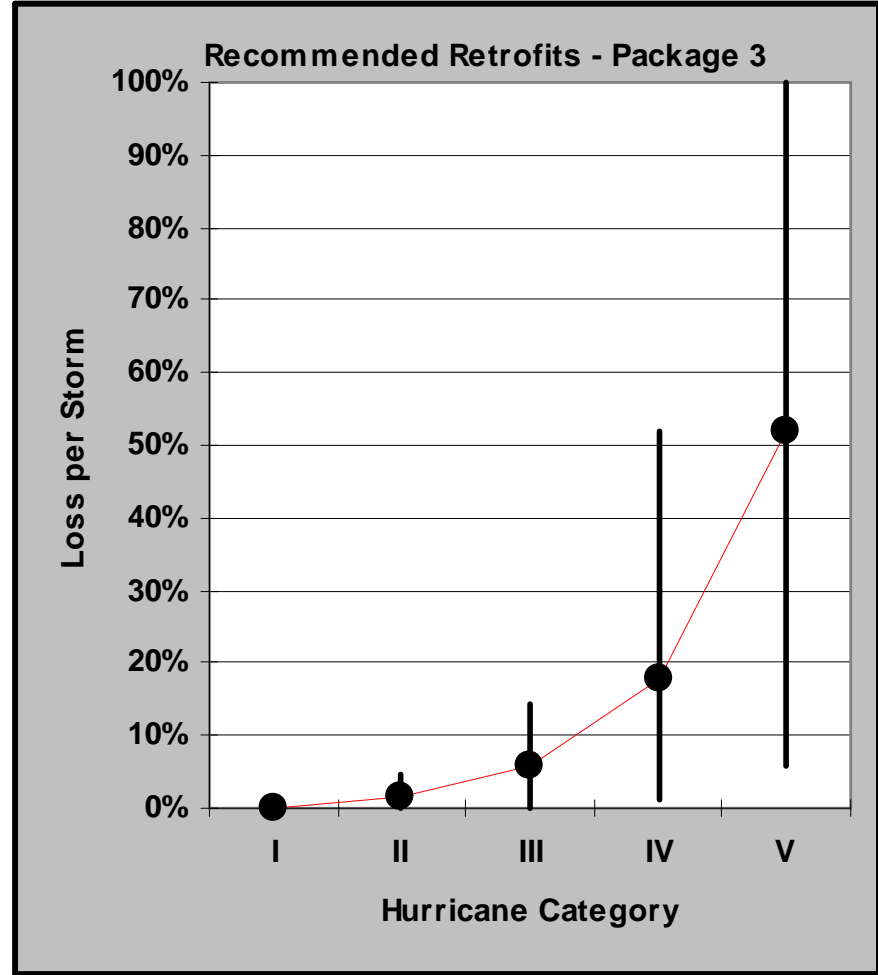
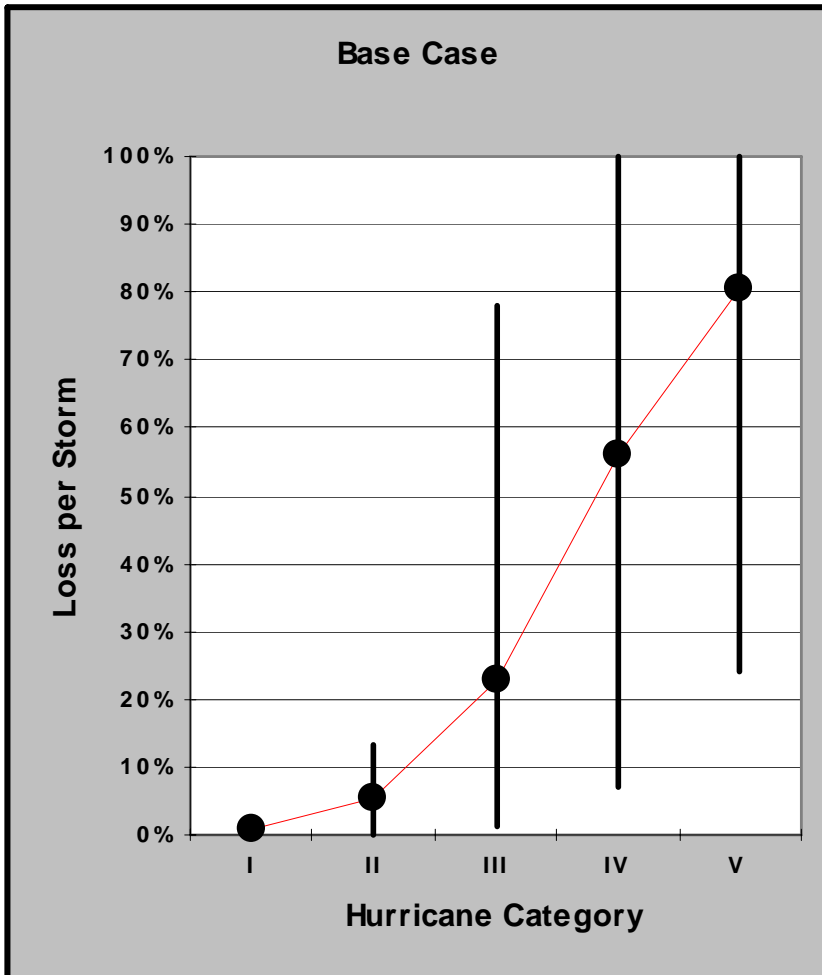
- Insurers are required to make a rate filing that includes rate differentials for wind-resistive features
  - Roof covering
  - Roof Strength
  - Roof-to-wall connections
  - Opening protection (Windows, doors, skylights, garage doors)
  - Wall to floor connection
  - Foundation

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# Florida Requirements

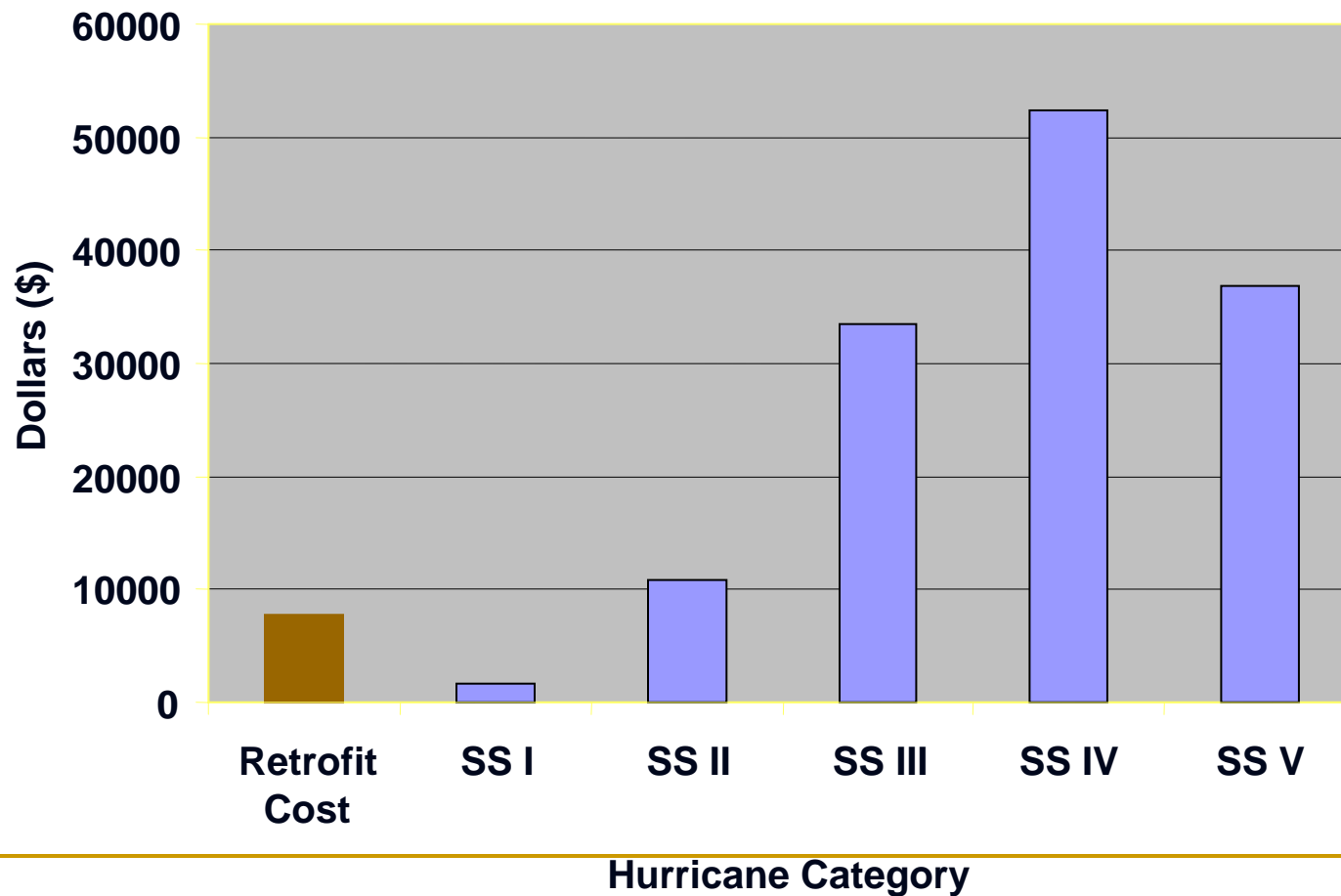
- This statute was part of the overall legislative package that included the new Florida Building Code, which went into effect on March 1, 2002
- The required rate differentials apply to existing and new construction for residential occupancies, except mobile homes

# Loss Estimates



# Average Reduction in Losses per House by Hurricane Category

(268 Mitigated Homes in SE Florida)



# Wind Insurance Discounts offered by Florida's top 10 Homeowners Insurance Companies

Insurance Companies	Hip Roof	Hurricane Shutters	Roof Deck Attachment 8d Nails 6" Apart	Roof To Wall Connection Single Wrap Straps	Florida Building Code Roof Shingles	Actual Discount For All Features
Allstate Floridian	21%	12%	18%	2%	11%	37%
Citizens Property	14%	19%	5%	10%	3%	42%
Clarendon	20%	22%	5%	18%	5%	41%
First Floridian	3%	3%	3%	3%	3%	22%
Florida Select	23%	22%	5%	18%	5%	41%
Hartford	3%	10%	3%	3%	3%	20%
Liberty Mutual	23%	22%	4%	18%	5%	41%
Nationwide	3%	10%	3%	3%	3%	20%
State Farm	21%	20%	5%	17%	5%	37%
USAA	25%	23%	6%	19%	9%	42%
<b>Average</b>	<b>16%</b>	<b>16%</b>	<b>6%</b>	<b>11%</b>	<b>5%</b>	<b>34%</b>

1. Discounts shown are for individual features one at a time.
2. When more than one feature is certified the total actual discount may be less than the sum of the individual discounts.
3. The "Actual discount for all features" column shows the results for all of the identified features on the house.
4. Wind insurance discounts only apply to the "wind portion" of the homeowner's insurance policy.
5. Discount examples are for an existing Single Story Home built prior to 2002.

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# MY SAFE FLORIDA HOME PROJECT RETROFITS

1. Protect Windows, Doors and Gable End Vents
2. Upgrade Garage Doors
3. Upgrade Roof to Wall Connections
4. Brace Gable End Walls
5. Upgrade Roof Covering
6. Upgrade Roof Deck Fastening
7. Add Secondary Water Barrier

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# Contractor Training For Retrofits

- Retrofit Work Is Not The Same As New Construction
- Contractors Are Required To Take FLASH Retrofit Training Class Which Covers:
  - Wind Basics And Background
  - Roof Deck Attachment
  - Roof Coverings
  - Roof To Wall Connections
  - Gable End Bracing Techniques
  - Secondary Water Barriers
  - Window And Door Requirements And Protection
  - Opening Protection (Impact) Standards

# Retrofit Pricing

Item-->	Garage Door each		Entrance Door Replacement				Opening Protection Per Square													
	Region County		Single		Double		Single Out Swing		Double Out Swing		Steel Storm		Aluminum Storm		Clear Storm Panels		Accordion		Bahama	
	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher
	<b>Region I</b>	\$ 800	\$ 900	\$ 850	\$ 1,000	\$ 550	\$ 750	\$ 825	\$ 1,000	\$ 5	\$ 8	\$ 7	\$ 9	\$ 7	\$ 9	\$ 44	\$ 52	\$ -	\$ 95	
	Bay	\$ 800	\$ 900	\$ 850	\$ 1,000	\$ 550	\$ 750	\$ 825	\$ 1,000	\$ 5	\$ 8	\$ 7	\$ 9	\$ 7	\$ 9	\$ 44	\$ 52	\$ -	\$ 95	
	Escambia																			
	Holmes																			
	Okaloosa																			
	Santa Rosa																			
	Walton																			
	Washington																			
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
	<b>Region II</b>	\$ 800	\$ 900	\$ 850	\$ 1,000	\$ 550	\$ 750	\$ 825	\$ 1,000	\$ 5	\$ 8	\$ 7	\$ 9	\$ 7	\$ 9	\$ 44	\$ 52	\$ -	\$ 95	
Calhoun																				
Franklin																				
Gadsden																				
Gulf	\$ 800	\$ 900	\$ 850	\$ 1,000	\$ 550	\$ 750	\$ 825	\$ 1,000	\$ 5	\$ 8	\$ 7	\$ 9	\$ 7	\$ 9	\$ 44	\$ 52	\$ -	\$ 95		
Jackson																				
Jefferson																				
Leon																				
Liberty																				
Wakulla																				
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	

Bare Foot				Roof Costs per Square (100 Square Ft.)														Gable End Bracing PER EACH END						Roof to Wall						
Colonial		Roll-Manual		Fixed Polycarbonate		Fabric Product		Foamseal		Replace shingles		Remove shingles		Upgrade 110 to 115		Secondary Water		Deck re-nail 8d		Wind resistant		< 4' head height		4' to 6' head height		> 6' head height		Replace old soffit		
Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Per Square	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher
\$ -	\$ 95	\$ -	\$ -	\$ -	\$ -	\$ 15	\$ 25	\$ 150	\$ 150	\$ 250	\$ 275	\$ 52	\$ 60	\$ 44	\$ 81	\$ 21	\$ 28	\$ 3	\$ 7	\$ 31	\$ 41	\$ 250	\$ 350	\$ 200	\$ 300	\$ 350	\$ 400	\$ 16	\$ 20	
	\$ 95					\$ 15	\$ 25	\$ 150	\$ 150	\$ 250	\$ 275	\$ 52	\$ 60	\$ 44	\$ 81	\$ 21	\$ 28	\$ 3	\$ 7	\$ 31	\$ 41	\$ 250	\$ 350	\$ 200	\$ 300	\$ 350	\$ 400	\$ 16	\$ 20	
0	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
\$ -	\$ 95	\$ -	\$ -	\$ -	\$ -	\$ 15	\$ 25	\$ 150	\$ 150	\$ 250	\$ 275	\$ 52	\$ 60	\$ 44	\$ 81	\$ 21	\$ 28	\$ 3	\$ 7	\$ 31	\$ 41	\$ 250	\$ 350	\$ 200	\$ 300	\$ 350	\$ 400	\$ 16	\$ 20	
	\$ 95					\$ 15	\$ 25	\$ 150	\$ 150	\$ 250	\$ 275	\$ 52	\$ 60	\$ 44	\$ 81	\$ 21	\$ 28	\$ 3	\$ 7	\$ 31	\$ 41	\$ 250	\$ 350	\$ 200	\$ 300	\$ 350	\$ 400	\$ 16	\$ 20	
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# Questions ?

