



FEMA/Steven Zumwalt

## Wind rating for individual commercial buildings

**Another industry-first from Verisk**

The first ten months of 2011 saw more than \$24 billion in insured losses due to wind and thunderstorm events and an additional \$4.3 billion in insured property losses from Hurricane Irene. Across the country, commercial property insurers that deal with wind exposure need wind-specific building information to analyze and price insurance coverage accurately.

With an increasing percentage of total property losses caused by the peril of wind, insurers are looking for more detail to use in their rating procedures. Verisk is delivering what you need — enhanced wind rating. Verisk has developed the Enhanced Wind Rating Program, which considers detailed building-specific characteristics, building condition, and a building's ability to withstand potential wind damage. Our field-verified data includes the wind-resistant characteristics of individual commercial buildings and the potential for damage caused by wind-borne debris from neighboring properties. The program quantifies each building's unique exposure to wind damage and its ability to resist damage from that exposure.

Through the program, we'll be offering wind-specific information in several of our commercial property underwriting reports. The wind-specific information will help you make informed decisions about the potential damage that wind can cause to your insured buildings and how to mitigate the exposure. In addition, we're making changes to the rating algorithm in the commercial property manual so that ISO's published loss costs will reflect those building-specific characteristics.

### **PROGRAM BENEFITS**

The Enhanced Wind Rating Program offers value to underwriting, loss control, and catastrophe management staff. The program:

- identifies and prices building-specific wind exposure
- enhances Basic Group II (BGII) rating by matching the premium charged more directly to the loss exposure
- provides building data to feed into underwriting processes, catastrophe models, and insurer systems

## DETAILED BUILDING CHARACTERISTICS

The Enhanced Wind Rating Program adds a detailed review of building characteristics and geographic and environmental factors that may improve — or worsen — the building's wind resistance or damage-ability. For example, the rougher the terrain, the more quickly wind speeds dissipate, lessening the potential for damage. Building characteristics data comes from Verisk's ProMetrix® database — a comprehensive source of underwriting and rating data for more than 3 million commercial buildings in the United States.

Trained Verisk field representatives identify and capture building characteristics that affect loss potential from wind — such as the condition and type of roof covering and other features they can't determine from the ground. Field representatives capture those new characteristics for all surveys performed in high wind-exposure areas — adding hundreds of thousands of new buildings to the database each year.

Here are just a few of the characteristics we'll be collecting for display in ProMetrix underwriting reports and/or for use in rating:

### Building characteristics

- BGII wind symbols
- roof covering type, pitch, and geometry
- hurricane shutters or window protection
- number of stories
- construction classification
- year built
- total square footage

### Geographic and environmental features

- distance to coast
- windpool eligibility
- windstorm loss history
- terrain type

## ENHANCED BASIC GROUP II LOSS COST QUOTES

For properties that meet established eligibility criteria, Verisk will provide building-specific BGII loss cost quotes. Wind is the predominant peril in BGII. In addition to reflecting the specific building's expected wind performance, our analytics provide a benchmark for comparison against other structures.

Our building engineers, professional actuaries, and catastrophe modeling experts analyzed and evaluated the key drivers of the risk of wind damage and applied those analyses to individual buildings.

## UNDERWRITING REPORTS

Verisk includes wind-specific information in the Building Underwriting Report and Underwriters Advantage Report.

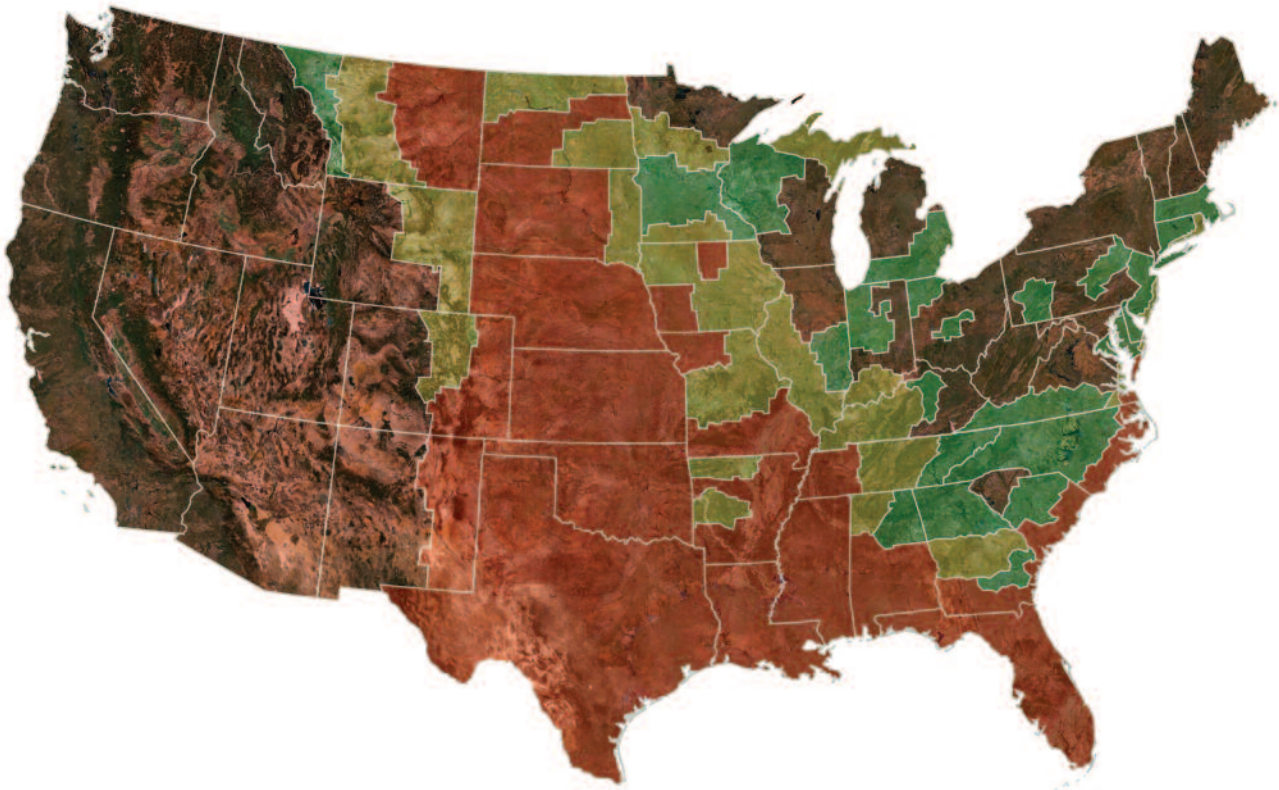
Here are examples of some of the key data elements in the wind-specific information section. The section includes:

- enhanced BGII rating
- BCEGS® (Building Code Effectiveness Grading Schedule) scoring and classification information
- RCB (rating basis, BGII construction class, BCEGS classification) code
- building construction and usage characteristics
- detailed roof, wall, and framework information
- environment and exposure information
- distance to ocean or gulf and nearest body of water
- wind loss history

## LOCATION AND BUILDING SIZE DETERMINE EXPOSURE TO WIND DAMAGE





To prioritize specific properties with higher levels of wind exposure, we've grouped the United States into four wind hazard zones: low, medium, high, and severe. Those zones, combined with the building size, affect a building's wind resistance and vulnerability.

Program eligibility is based on the relationship between the geographic wind hazard and the building floor area.



A building is eligible for Enhanced Wind Rating if it's in the wind exposure hazard zone...

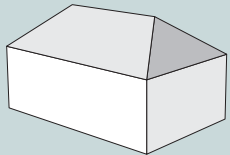
...and meets the applicable building size eligibility requirement

	Low	Not eligible
	Medium	>50,000 square feet
	High	>25,000 square feet
	Severe	≥10,000 square feet

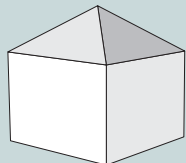
# Building characteristics affect resistance to wind

## ROOF GEOMETRY

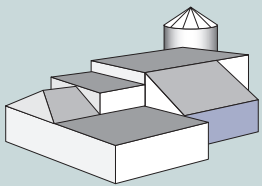
Roof geometry, or shape, affects how wind pressures, uplifts, and vortices will move over the roof surface.



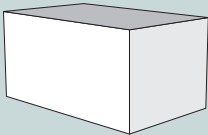
Hip roofs perform better in wind than most other roof shapes. There's no gable end to catch the wind directly, and the roof isn't flat enough for the wind to create an uplift as it passes over.



Pyramid roofs have four equal sides that rise to a single peak. Depending on the pitch of the roof, a pyramid roof is a good design to deflect wind.




Complex roofs offer a variety of roof geometries and can create unusual wind loading. They often cause wind eddies and vortices on vulnerable parts of the building.




Hurricane-force winds passing over flat roofs create negative pressure on the roof surface, potentially pulling the roofing away from the decking.

## ROOF PITCH

Roof pitch, or slope, is an important variable when predicting how wind events will affect a building.




A low-slope roof is relatively flat with a slight pitch (a rise of up to two inches for every running foot). Low-slope roofs have a tendency to lift up as wind crosses the roof surface. Wind damage is evident here.



A steep-slope roof has a rise of eight inches or greater for every running foot. Steep-slope roofs experience higher wind pressures because of their steeper faces.

## WALL MATERIAL

Wall cladding is the outermost wall material, or the material that faces the weather. Windstorm concerns include peeling of that layer, wall stability, and penetration.




Here's a nonbearing masonry veneer wall, with brick placed in front of a wood bearing wall.



Masonry walls consist of individual building units, such as hollow block or brick. This type of wall is rarely reinforced vertically with steel.



Reinforced masonry walls resist wind much better than unreinforced masonry walls. This type of wall is reinforced both horizontally and vertically with steel encased in the concrete.



Buildings with large glass areas are more vulnerable to flying debris damage and more likely to suffer a breach of the building's envelope. The type and strength of the glazing won't necessarily stop breakage, but may keep the weather from breaching the envelope.

## EXPOSURES

The surrounding terrain, property exposures, and debris potential from nearby buildings all play a role in how a wind event will affect a building.



Building structures within 300 feet of the property — with potential wind-borne debris not securely fastened — can pose significant dangers. Debris can include outdoor furniture, playground equipment, signage, and canopies.



Surrounding terrain is a key consideration. The closer a building is to water, the more direct and energetic the wind will be. This building can be subject to high-wind forces as the wind comes off the water.



This is a dramatic example of an unsecured 18,000-pound air conditioning unit that fell off the roof onto the ground. Although the wind speeds were only 85 to 95 miles per hour, the unit blew off the building.

## WIND-BORNE DEBRIS PROTECTION

Wind-borne debris protection refers to the type of protection on the building windows.



Hurricane shutters protect the windows from wind-borne objects and damaging hurricane winds. They're permanently attached to the building's exterior and deployed over the window opening as needed.



This building didn't have impact-resistant glazing, and much of the glass broke because of wind-borne debris impact during a wind event.

# Our field representatives go on-site so you don't have to

Our highly trained field representatives identify and record specific building characteristics affected by wind events.

Here's just a sampling of what our field representatives look for on the job:

- type of roof covering
- pitch, geometry, and condition of roof
- hurricane shutters or other protection on windows
- equipment on roof and how it's secured
- awnings or canopies

- wall material that faces the weather
- roof-to-wall connections
- span of roof system
- surrounding terrain
- property exposures and wind-borne debris
- construction class and other details
- wall area covered by glass
- glass type



**A** A field representative is gathering information about the parapet height and its construction. He's also examining the roof/wall flashing for detachment, corrosion, or other damage that could be the weak link in the tear-off of the roofing.

**B** A strong, stable connection between the roof supports and wall supports helps keep the building together during wind events. Here, the field representative is inspecting the welding and bolted elements of the steel and examining the connection for corrosion — often found in coastal environments.

**C** Unsecured or poorly secured roof equipment is a major cause of weather barrier failure. Hurricane-force winds push the improperly secured roof equipment across the roof surface, tearing into the membrane.

**D** Accurately determining the type of roof construction is more challenging in buildings with interior finishes. The field representative is looking at the construction of the roof above the ceiling to determine the type of decking, primary and secondary roof supports, and the type of attachment used to secure the components to one another. He's also looking for evidence of corrosion or leakage.

**E** A field representative is using a glass reflection technique to determine the thickness of the glazing and the likelihood of double-paned glazing. A building with double panes offers more resistance to the impact of missiles that might breach the building's envelope.

**F** A field representative is scrutinizing the overhead door hardware to determine the reinforcement of the door against blow-in from a wind event. Unreinforced overhead doors represent a weakness in the building's resistance to wind.

**G** Potential wind-borne debris can come from neighboring buildings and includes any material or equipment not securely fastened to the building or anchored to the ground. A building's yard property that's stored in the open also poses dangers.



## THE FIRST PROGRAM OF ITS KIND

BGI loss costs, which emphasize fire, are a critical component of your rating plan. But you also need wind information to assess your complete risk exposure. It's time that the wind peril gets the recognition it deserves.

Verisk's Enhanced Wind Rating Program fills a void in the insurance industry by quantifying a building's resistance and exposure to wind damage. Using wind-related building and exposure characteristics, you can now identify, measure, and price exposures specific to the wind peril — reducing your reliance on current methodology rooted in fire rating.

The enhanced BGI loss cost and report information will improve your underwriting process and let you evaluate individual exposures or your entire book of business.

### For more information about Verisk's Enhanced Wind Rating Program

Contact Verisk Customer Support at 1-855-859-4476 or send e-mail to [info@verisk.com](mailto:info@verisk.com). Or call your Verisk representative.



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