

AmTrust Property Zone

Protecting Commercial Roofs from Wind Damage

A strong wind can cause roof damage that puts your business at risk. Damaging winds can occur in many different regions, so all business owners need to be aware of the dangers.

Dangerous Wind Speeds

As the Beauford Wind Estimation Scale shows, it doesn't take a hurricane to cause significant damage – storms with lower wind speeds can also cause damage.

If any of the following storm types are possible in your region, you need to ensure your roof is built to withstand strong winds.

- **Hurricanes:** The Saffir-Simpson Hurricane Wind Scale classifies hurricanes based on wind speed. A Category 1 hurricane has sustained winds of 74 to 95 miles per hour. A Category 5 hurricane has winds of 157 miles per hour or higher.
- **Tropical Storms:** Tropical storms have winds of 39 to 74 miles per hour.
- **Tornadoes:** Tornadoes are highly destructive rotating columns of air. Although tornadoes are often associated with “Tornado Alley,” the region from central Texas through western Ohio, tornadoes have been observed in all 50 states.
- **Derechos:** Derechos can have a destructive strength similar to tornadoes, but these storms cover a larger area. Derechos form as fast-moving bands of thunderstorms that can occur in the Midwestern states of the U.S., and they cause straight-line wind damage.
- **Other Storms:** Other severe storms and thunderstorms can also produce strong enough winds to damage roofs. According to NOAA, wind damage from severe thunderstorms is more common than damage from tornadoes and accounts for half of all severe weather reports in the lower 48 states.

Weathering the Storm

Wind damage can impact businesses in many regions and a good roof can help you weather the storm. Some roof types are more resistant to high wind speeds than others.

- **Shape:** The shape of your roof can impact its ability to resist high winds. However, wind damage is possible for both flat and sloped roofs.
- **Material:** The material of your roof – such as asphalt, bitumen or metal – also makes a difference in its ability to resist wind damage. Material should be chosen based on its characteristics as related to your area's specific weather and climate.

Beauford Wind Estimation Scale

The Beauford Wind Estimation Scale, developed in 1805, is used to estimate wind speeds. It starts at 0 and goes up to 12.

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| 0 | calm winds of less than 1 mile per hour |
| 1 | A light air of 1 to 3 miles to hour |
| 2 | A light breeze of 4 to 7 miles per hour |
| 3 | A gentle breeze of 8 to 12 miles per hour |
| 4 | A moderate wind of 13 to 18 miles per hour |
| 5 | A fresh wind of 19 to 24 miles per hour |
| 6 | A strong wind of 25 to 31 miles per hour |
| 7 | A near gale of 32 to 38 miles per hour |
| 8 | A gale of 39 to 46 miles per hour |
| 9 | A strong gale of 47 to 54 miles per hour, possibly causing light structural damage |
| 10 | A storm with winds of 55 to 63 miles per hour, possibly uprooting small trees and causing minor to moderate structural damage |
| 11 | A violent storm with winds of 64 to 73 miles per hour, possibly uprooting moderately sized trees, breaking off large branches, bringing down power lines and causing structural damage |
| 12 | A hurricane with winds of 74 to 95 miles per hour, possibly downing large trees and causing roof damage |

- **Installation:** Proper installation of roofing materials, including flashing, is essential.
- **Maintenance:** Your roof will experience wear and tear over time. Maintaining the roof properly and repairing any damage as it occurs will help ensure that your roof is in tip-top shape.
- **Condition:** Replace or repair any previous damage, deterioration, undue wear, blistering areas, or loose flashing.



Metal Flashing – Proper Installation and Securement is Crucial

Metal flashing can prevent water from leaking into a building. It can also help protect the building and roof from wind damage.

Flashing is installed where the roof structures terminate and intersect, such as along edges and around vents, chimneys and skylights. A rust-resistant metal is typically used, although some flashing is made from other materials.

Roof failure in low-sloped roofs often begins at the edges or corners of a roof when flashing, fastening and coping are not given enough attention. Given this, it is vital to install perimeter metal edge flashing and secure it carefully.

Regular maintenance is also essential. Before a storm season begins, have the roof inspected and pay attention to the flashing to assess any needed repairs.

- Make sure the flashing hasn't peeled away.
- Check for signs of gaps, buckling, rust or corrosion.
- Check the caulk for signs of damage.
- Check fasteners to make sure they have not become loose or missing.
- Ensure fasteners are close together, less than 12 inches apart, at building corners.
- Inspect the flashing for missing sections, cracks, loose seams or other signs of damage.

After the Storm

After a storm with heavy winds, inspect the building for signs of roof damage. It's essential to act quickly to make any necessary repairs to prevent additional roof damage and water damage to your building.

- Some signs of roof damage may be obvious. For example, you may see a fallen tree on your roof or that parts of your roof are torn, broken or even missing.
- Other signs of roof damage may be less noticeable. For example, water stains on your ceiling may indicate roof damage.
- Pay attention to the metal flashing. Gaps or loose seams may allow wind or water to enter and increase the chance of additional damage in the next storm.

Roofs may need to be replaced due to age or damage. When re-roofing, select a roof covering designed to withstand the basic wind speed in the area, and when possible, even higher wind speeds. Replacement materials should be approved by Underwriters' Laboratories or a nationally recognized test laboratory.

Locations in areas prone to hailstorms should use replacement roofing materials that are listed or approved, by a recognized testing organization, as being impact resistant.

Sources

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www.amtrustfinancial.com/loss-control



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