RISK CONTROL AND CLAIM ADVOCACY PRACTICE

Willis

TECHNICAL ADVISORY BULLETIN

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TORNADO SAFETY

Tornadoes have caused massive devastation and loss of life in recent years. Due diligence prompts us to prepare ourselves and our businesses as much as possible to limit losses of any kind in future events. Although there are more tornadoes in the Midwest, Southeast and South areas of the United States they can occur anywhere, with wind speeds of up to 300 mph.

TORNADO DANGER SIGNS

- Strong, persistent rotation in the cloud base.
- Whirling dust or debris on the ground under a cloud base – Sometimes tornadoes have no funnel!
- Hail or heavy rain followed by either dead calm or a fast, intense wind shift. Many tornadoes are wrapped in heavy precipitation and can't be seen.
- Loud, continuous roar or rumble which doesn't fade in a few seconds.
- Small, bright blue-green to white flashes at ground level near a thunderstorm (as opposed to silvery lightning up in the clouds). These mean power lines are being snapped by very strong winds or a tornado.
- *Persistent* lowering from the cloud base, illuminated or silhouetted by lightning, especially if it is on the ground or there is a blue-green-white power flash underneath.

WHAT TO DO PRIOR TO A TORNADO

PREPLANNING

- Identify the safest areas in a building so employees know where to go.
- The safest shelter areas typically include basements, hallways, interior stairwells and small internal first floor rooms. For businesses in tornado-prone areas, consider constructing a tornado-hardened safe room.
- Post signs to direct employees and visitors to safe areas.
- Designate the roles and responsibilities of supervisors and employees.
- Practice tornado drills.
- Most injuries and much of the damage are caused by debris hurled by the storm rather than direct damage from high winds.
  1. Secure outdoor equipment and outbuildings to prevent them from becoming airborne missiles.
  2. Reinforce vulnerable areas of a building, such as adding supports to garage doors, attaching walls securely to the foundation, and bracing and strapping the roof.
  3. House servers and other vital equipment in protected areas of a building, preferably in tornado-resistant server rooms.
  4. For new construction, work with an architect or contractor to incorporate wind mitigation techniques and high wind-rated products.

MONITORING THREATENING WEATHER

Sometimes we know days in advance that severe weather will occur. If severe weather is expected, monitor weather forecasts to stay abreast of changing weather conditions via NOAA, weather radios, smart phones, TV or radio. Complete optional errands prior to severe weather arriving or defer them until after the severe weather passes. Know the difference between weather warnings and watches.

A **TORNADO WATCH** IS ISSUED WHEN TORNADOES AND OTHER KINDS OF SEVERE WEATHER ARE POSSIBLE IN THE NEXT SEVERAL HOURS. IT DOES NOT MEAN TORNADOES ARE IMMINENT, JUST THAT YOU NEED TO BE ALERT, AND TO BE PREPARED TO GO TO SAFE SHELTER IF TORNADOES DO HAPPEN OR A WARNING IS ISSUED.

PARTICULARLY DANGEROUS SITUATION (PDS) TORNADO WATCH IS ISSUED WHEN IT IS LIKELY THAT MULTIPLE STRONG OR VIOLENT TORNADOES WILL OCCUR IN THE WATCH AREA.

A **TORNADO WARNING** MEANS THAT A TORNADO HAS BEEN SPOTTED, OR THAT DOPPLER RADAR INDICATES A THUNDERSTORM CIRCULATION WHICH CAN SPAWN A TORNADO. WHEN A TORNADO WARNING IS ISSUED FOR YOUR TOWN OR COUNTY, TAKE IMMEDIATE SAFETY PRECAUTIONS.

WHAT TO DO DURING A TORNADO

IF IN A HOUSE WITH A BASEMENT

Avoid windows. Get in the basement and under some kind of sturdy protection (heavy table or work bench), or cover yourself with a mattress or sleeping bag. Know where very heavy objects rest on the floor above (pianos, refrigerators, waterbeds, etc.) and do not go under them. They may fall down through a weakened floor and crush you. A helmet can offer some protection against head injury.

IF IN A HOUSE WITH NO BASEMENT, A DORM OR AN APARTMENT

Avoid windows. Go to the lowest floor, small center room (like a bathroom or closet), under a stairwell, or in an interior hallway with no windows. Crouch as low as possible to the floor, facing down and cover your head with your hands. A bath tub may offer partial protection. Even in an interior room, you should cover yourself with some sort of thick padding (mattress, blankets, etc.) to protect against falling debris in case the roof and ceiling fail. A helmet can offer some protection against head injury.

IF IN COMMERCIAL OR INDUSTRIAL BUILDING

Go directly to an enclosed, windowless area in the center of the building – *away from glass* and on the lowest floor possible. Then, crouch down and cover your head. Interior stairwells are usually good places to take shelter, and if not crowded, allow you to get to a lower level quickly. Stay off the elevators; you could be trapped in them if the power is lost.

IF IN A MOBILE HOME

Get out! Even if your home is tied down, it is not as safe as an underground shelter or permanent, sturdy building. Go to one of those shelters, or to a nearby permanent structure, using your tornado evacuation plan. Most tornadoes can destroy even tied-down mobile homes; and it is best not to play the low odds that yours will make it.

IF OUTDOORS

If possible, seek shelter in a sturdy building. If not, lie flat and face-down on low ground, protecting the back of your head with your arms. Get as far away from trees and cars as you can; they may be blown onto you in a tornado. Be aware of the potential for flooding.

IF IN A CAR

Vehicles are extremely risky in a tornado. There is no safe option when caught in a tornado in a car, just slightly less dangerous ones. Tornadoes may move at speeds of up to 70 mph (112 kph). If the tornado is visible, far away, and traffic is light, you may be able to drive out of its path by moving at right angles to the tornado. Seek shelter in a sturdy building or underground if possible. If you are caught by extreme winds or flying debris, park the car as quickly and

safely as possible out of the traffic lanes. Stay in the car with the seat belt on. Put your head down below the windows; cover your head with your hands and a blanket, coat or other cushion if possible. If you can safely get noticeably lower than the level of the roadway, leave your car and lie in that area, covering your head with your hands. Avoid seeking shelter under bridges, which can create deadly traffic hazards while offering little protection against flying debris.

AVOIDING INJURY AFTER A TORNADO

- **Remain calm** and alert, and listen for information and instructions from emergency crews or local officials. Monitor your battery-powered phone, radio or television for emergency information.
- **Be careful** when entering any structure that has been damaged.
- **Wear** sturdy shoes or boots, long sleeves and gloves when handling or walking on or near debris.
- **Do not** use matches or lighters in case of nearby leaking gas pipes or fuel tanks.
- **Be aware** of hazards from exposed nails and broken glass.
- **Do not touch** downed power lines or objects in contact with downed lines. Report electrical hazards to the police and the utility company.
- **Use battery-powered** lanterns, if possible, rather than candles to light homes without electrical power. If you use candles, make sure they are in safe holders away from curtains, paper, wood or other flammable items.
- **Hang up** telephone receivers that may have been knocked off during the tornado, but stay off the telephone, except to report an emergency.
- **Cooperate with public safety officials**. Respond to requests for volunteer assistance by police, fire fighters, emergency management and relief organizations.

Additional Resources Are Available At:

Storm Prediction Center: **http://www.spc.noaa.gov/faq/tornado/#Safety**

Selecting Best Available Storm Shelters: **https://dps.mn.gov/divisions/hsem/weather-awareness-preparedness/Documents/TornadoShelterAreaDetermination.pdf**

FEMA P-431: Tornado Protection – Selecting Refuge Areas in Buildings:
http://www.fema.gov/media-library/assets/documents/2246?id=1563

The July 13, 2004 Roanoke, IL Tornado Event: **http://www.crh.noaa.gov/Image/ilx/pdf/Miller_Abstract.pdf**

For additional information contact your Willis Client Advocate®, a Willis Property Risk Control consultant or

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