



WEATHER RELATED LOSSES

Water Damage Prevention – Best Practices

Source: Keenan & Associates

Water damage from weather-related events is one of the most common property losses reported. Prevent water damage results from exterior water intrusion with proper and scheduled preventative maintenance and a routine inspection program, which can eliminate many or most claims. The following are recommended solutions to minimize or prevent water intrusion into buildings and structures.

TEND TO YOUR BUILDING ENVELOPE – WINDOWS, DOORS, VENTS

Windows:

- Secure all windows in the closed position, especially those at grade level, during storm events.
- Repair windows with poor seals or cracked caulking prior to storm season, to prevent water intrusion.
- Ensure nearby drainage is **unblocked** and fully functional. Seal all below-grade windows with flashing, silicone sealants designed for long-term application and for reinforcing framework to sustain hydraulic (water) pressure, as needed.

Doors:

- Before or during storm events, prevent or reduce water damage by sandbagging subgrade doors and doors that are flush with grade entrances.
- Use boards or “floodgate door guards” (commercially available and designed for this purpose) as a more permanent solution for subgrade building openings.
- Reinforce doors by installing water-tight seals, which can withstand any anticipated water pressure.

Vents:

- For exterior vents at the grade level, place suitable covering into position just prior to storm impact. Check all equipment that might need to be operated continuously or used upon emergency demand, such as fire pumps and generators, to be sure there are no blocked intakes.
- Always install watertight seals, particularly around the vent opening and the foundation wall.
- Extend the vent ‘snorkel’ up and well above the bottom of any dry well to prevent backfilling into the basement.

This information on the RiskAdvisor website is intended to assist AP Keenan’s clients in identifying and reducing certain loss exposures. It is not possible for us to identify all potential sources of liability or to offer a fail-safe mechanism for dealing with them. AP Keenan offers no guarantee that clients will recognize any financial savings or improved loss experience as a result of the information and suggestions presented here.

Date Posted: **9/23/20, Updated 12/17/21**

© 2021 Keenan & Associates | CA License No. 0451271

Drains and Pumps:

Another source for water damage is water backup, usually caused by blocked drains or malfunctioning pumps.

- Prevent storm drain backups by routinely checking and removing debris in the drain prior to and during the rainy season.
- Consider the installation of pumps, diverters and alternate discharge locations wherever storm drains have historically presented a problem.
- Larger districts or facilities should obtain portable pumps and place them strategically to have adequate capacity for significant storms.
- Permanent pumps for storm water are typical for internal roof drains and for drain discharge.
- When the municipal storm and sewage drainage system is full and backing up, there is no place to ‘push’ the water out of the building. This is where the installation of diverters to send non-sewage water to a different location can help limit the severity of the event.
- A backflow preventer valve arrangement should be installed with access for clean-out and maintenance. Such a backflow preventer arrangement is essential, even if it needs to be installed under a sidewalk to facilitate clean-out. It is the most cost-effective form of water infiltration prevention. See **Appendix A** of this Bulletin for technical backflow-prevention techniques intended for district tradesmen (plumbers).

Roof Issues:

- Although weather events cannot be predicted, general seasonal needs can be addressed. Prime examples of early mitigation are gutters and downspouts. During the fall when leaves drop, gutters and downspouts become blocked with debris, which can lead to water intrusion and ultimately roof collapse. Prior to the rainy season, be sure to clear roof-mounted drains, gutters and downspouts of all debris. Trim trees that are near buildings and determine if they are a safe distance from the building and roof. Also ensure completed roofing maintenance or re-roofing work does not block or cover roof-mounted drains.
- Ice can dam a roof and cause collapse. One hailstorm formed an ice dam at the edges of more than 70 portables. As the hail melted in the center, initially due to rising heat from the rooms, the water had nowhere to go except down in the rooms. Virtually flat roofs may not be an acceptable design in certain climates. There are no pumps that will work in ice and snow conditions.

Parking Lots:

Parking lots collect a great deal of runoff water and are designed to deliver this water to a drainage system. However, this does not always happen. Leaf litter, debris, ice, and garbage can clog or obstruct these drains and cause the water to collect or travel toward a building. The best practices described above are also applicable in these cases.

WATER DAMAGE STATISTICS TO CONSIDER NOW

- Water damage and freezing damage is the second most frequently filed insurance claim in the United States.
- Water damage claims filed in the U.S. account for an average of \$13 billion dollars in damages annually.
- The average cost of a water damage claim is \$10,000, but costs soar even higher in commercial and school buildings.
- Up to 93% of the cost of water damage can be prevented by the use of a shut-off system or water leak detection system.
- 8% of all water damage to buildings is due to weather.

APPENDIX A

TECHNICAL BACKFLOW-PREVENTION TECHNIQUES

Apply the pipe blocking techniques below, which are quite technical and intended for tradesmen:

1. Use an inflatable sewer line “test plug,” which matches the size of the sewer pipe (commonly 3, 4 or 6-inches in diameter).
2. Make sure you have a hand-operated pump designed to inflate the plug. Look for the single-diameter models to match your pipe size and with no bypass ports (they are more reliable than the multi-sized or bypass models). These use a standard hand-operated pump to inflate for ease of use in the field.
3. Locate the main cleanout. Make sure there are no drains after the cleanout or you will need to plug those too.
4. Notify all building occupants that you will be plugging the drain and explain the ramifications of the procedure. Note: a limited amount of sewage internally generated is better than the entire municipal system back-flowing inside.
5. Tie a line to the sewer plug bracket so you can later retrieve the plug from the pipe.
6. Insert the plug past the connecting pipes toward the direction from which the liquid normally flows. Inflate the plug with the hand pump.