

Windstorm Emergencies

OVERVIEW OF ISSUE

According to Public Safety Canada, “Thunderstorms, hail, blizzards, ice storms, high winds and heavy rain can develop quickly and threaten life and property. Severe storms occur in all regions of Canada and in all seasons.”

Severe windstorms cannot be prevented but costly windstorm damages and significant impact to services can be mitigated. A well-organized plan of action before, during and after a severe windstorm can minimize the damage.

KEY POINTS

- Studies of severe windstorms by FM Global show conclusively that windstorm-related damage can be prevented or at least minimized with an organized plan of action before, during and after a storm.

THINGS TO CONSIDER

Pre-Windstorm Planning

- Develop a windstorm emergency response plan. Create and train an emergency response team (ERT), whose members are willing to stay on site during a severe windstorm (if safe to do so). Notify local emergency preparedness authorities that personnel are on site.
- Designate a weather monitor, who will report weather conditions and keep the ERT leader up to date on conditions before, during and after a windstorm.
- Maintain an updated list of the telephone numbers and contacts for local offices of the emergency preparedness authorities and the property insurer’s local office.
- Arrange backup communications, such as two-way radios or cellular phones, and have spare batteries. Implement appropriate maintenance program for these equipment.
- Verify securement of yard storage, signs, cranes and roof-mounted equipment.
- Inspect and repair roof flashing, roof covering, roof drains and gutters as routine maintenance. There is limited time to perform these activities in the face of an impending storm.
- Prepare for windstorm-related flooding with sandbags and supplies of brooms, squeegees and absorbents.
- Verify sump pumps are operational.

- Identify and consider trimming or removal of large trees that could fall and damage buildings, fire pump houses or power and communication lines.
- If the facility is exposed to hurricanes (minimum wind speed of 120kph/75 mph):
 - Provide pre-fitted windstorm shutters and/or plywood for windows and doorways, where practical.
 - Perform a dry-run installation of windstorm shutters annually.

Impending Windstorm

- Map the windstorm front and stay updated on the storm’s progress. Begin implementing windstorm emergency action plan.
- Inspect and, if needed, make emergency repairs to drains, catch basins, gutters and flashing. Strap or anchor to the roof deck support assembly (e.g., the joists) all roof-mounted equipment such as HVAC units and exhaust vents.
- For new or ongoing construction projects, remove loose equipment and temporarily brace new construction (including new roofs).
- Check/maintain all necessary backup equipment, (e.g. emergency generators and communication devices).

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- Protect/relocate vital records such as printed health records and office records, as appropriate.
- If there is threat of hurricane:
 - Install windstorm shutters/plywood over windows and doors, where practical;
 - Remove all loose debris and anchor or relocate all nonessential equipment to a safe indoor location;
 - Anchor all portable buildings (e.g., trailers) to the ground; and
 - Secure large cranes and make sure outdoor signs are properly braced.
- Inspect all fire protection equipment, such as sprinkler control valves and fire pumps.
- Fill fuel tanks of generators, fire pumps, and all company-owned vehicles.
- Protect computers, machinery, and stock with tarpaulins and waterproof covers.
- Isolate, neutralize, or remove from the site any chemicals that can react violently with each other.

During the Windstorm

- Patrol the property continuously and watch for roof leaks, pipe breakage, fire or structural damage. During the height of a windstorm, building occupants should remain in a place identified as safe from wind and flood.
- Constantly monitor any boilers that must remain on line.
- During a power failure, turn off electrical switches to prevent reactivation before necessary checks are completed.
- If a fire starts, make sure sprinkler valves are opened immediately (unless the lines are already open).
- If it is safe to do so, immediately dispatch the

sprinkler valve operator(s) to the valve controlling the fire area; the valve operator's responsibility is to:

- Unlock the valve, test it to make sure it is fully open and then relock it;
- Stand by the valve during the fire and close it only at the direction of the Fire Chief (preventing premature closing);
- Stand by the valve after the fire until sprinklers have been replaced – doing so will allow time to restore the system quickly if the fire reignites;
- Reopen the valve(s), conduct drain test(s) and lock the valve(s) wide open.

After the Windstorm

- Secure the site and survey for damage. Survey for safety hazards such as live/exposed electrical wires, open electrical bus bars, leaking gas or ignitable liquids, poisonous gases, and damage to foundations or underground piping. Clean roof drains and remove debris from roof to prevent drainage problems.
- Repair any damage to the fire protection system and implement the fire protection impairment program.
- Call in key personnel and notify contractors to start necessary repairs. Make sure safety systems are fully implemented before work begins – including the No Smoking policy and using a hot work permit system.
- Begin salvage and drying operations as soon as possible to prevent further damage. Cover any damaged part of the building envelope and separate damaged goods/supplies, but beware of accumulating too much combustible debris inside the building
- Contact your property insurer for assistance in restoring fire protection and reporting the loss.



REFERENCES

- Public Safety Canada. (2018). [Get prepared campaign – severe storms.](#)
- Environment Canada. (2011). [Hurricanes and tropical storms.](#)
- FM Global. (2001). Severe windstorm checklist.
- FM Global (2002). Protecting your facility against major windstorms.