

**Environmental Health
& Engineering, Inc.**
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Newton, MA
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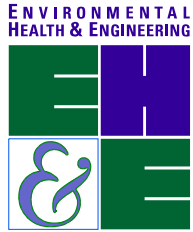
NATURAL DISASTER READINESS SELF-ASSESSMENT

Property Protection Checklist

This checklist is designed to assist in the identification of conditions that could jeopardize the safety of the building and to protect the building and its contents from damage. In addition to calling out steps for improving building safety, this checklist can be used to prioritize decisions regarding building upgrades and maintenance. Further, this checklist can be used in the qualification of new buildings under consideration for future leases.

This checklist should be used to identify existing conditions before and after major and minor wind storms. Failures can happen suddenly as upon contact with flying debris or gradually such as the tearing of rubber membranes due to the loss of ballast.

Roofing Conditions		Yes	No	Comment
<input type="checkbox"/>	Is all metal flashing secured to the structure and free of rust, preventing uplift and peeling off of roof coverings?			
<input type="checkbox"/>	Are all roof coverings secure and show no signs of weather damage (crackling, rust, punctures, etc.)?			
<input type="checkbox"/>	Are all vents and roof penetrations flashed and sealed, and all roof equipment is bolted down?			
<input type="checkbox"/>	Are the roof drains clear of debris and is the roof drainage system working properly, with no ponding of water?			
<input type="checkbox"/>	Do the roof drains direct water away from the foundation?			
<input type="checkbox"/>	Shingle roofs			
<input type="checkbox"/>	Are any shingles loose? Asphalt shingle tabs can be fixed by applying a dab of asphalt cement on their underside. Suggested products for particular weather conditions: Hail-prone areas: Shingles or metal tested to meet UL2218 Class 4 standard (asphalt or metal) or FM 4473 Class 4 standard (wood or tile) for impact resistance. Hurricane/high-wind: Shingles that meet ASTM D 3161 standard for wind resistance up to 110 mph.			

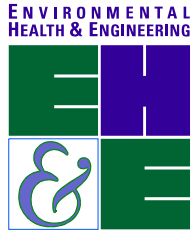


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Roofing and Envelope Conditions		Yes	No	Comment
<input type="checkbox"/>	Are roof-to-wall straps, brackets, or other connectors that attach each rafter or roof truss (whether wood or light frame steel) to the wall, to keep the roof from blowing off the building.			
<input type="checkbox"/>	Are carports, canopies, and/or overhangs secured to the structure with rust-free anchors and tightened bolts/nuts?			
<input type="checkbox"/>	Are tall signs, vent stacks, rooftop mechanical equipment and other vertical projections secured to the structure or the site foundation with rust-free anchors, tightened bolts/nuts, guy wires, or other secure methods? Note: Do not depend upon sheet metal screws alone to secure equipment.			
<input type="checkbox"/>	Do exterior windows and doors have a minimum design pressure rating of 50 pounds per square foot? Look for a label or sticker in the corner of the glazing or inside the frame itself or contact the window/door manufacturer or installer.			
<input type="checkbox"/>	Do exterior doors equipped with a deadbolt and supported by at least three hinges? In general, the more hinges, the more wind resistant.			
<input type="checkbox"/>	Do exterior double doors have head and foot bolts on the inactive door, or another method of securing the door, such as locking it into a mullion/center post?			
<input type="checkbox"/>	Are impact-resistant windows and doors installed? Check for a label or sticker indicating that it meets one or more of the following standards: ASTM E 1996 (9lb.), SSTD 12, Dade County PA201, or FBC TAS201.			
<input type="checkbox"/>	Is an exterior lightning protection system installed? Check the roof to see if there are metal rods or probes. The lightning protection system needs to be securely anchored to the roof.			
<input type="checkbox"/>	Are surge protectors installed on all computer systems, telephone lines, and other electronic systems, to protect against lightning damage that often occurs in windstorms.			

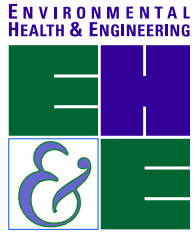


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In flood areas		Yes	No	Comment
<input type="checkbox"/>	Is the site in a Special Flood Hazard Zone (SFHZ)? Check at http://www.fema.gov/fema/csb.shtm to see if your community participates in the National Flood Insurance Program (NFIP). Consider having flood insurance if you are in the SPHZ. 25% of the NFIP loss claims are filed in low to moderate flood risk areas.			
<input type="checkbox"/>	Is the site located in a Special Flood Hazard Area—V Zone, Coastal A Zone or Non-Coastal A Zone? If so, what is the base flood elevation (BFE) or design flood elevation (DFE) at your location? The local building or planning department is a good resource for this information. The BFE is the elevation shown on the Flood Insurance Rae Map (FIRM) developed by FEMA. This elevation is the elevation that has a 1% chance of being equaled or exceeded in any given year (100-year flood). The DFE is the locally adopted regulatory flood elevation. The DFE is always greater than or equal to the BFE.			BFE _____ DFE _____
<input type="checkbox"/>	If sited within in a SFHZ, are all electrical, plumbing, and HVAC equipment installed above the flood elevation applicable at your building. Equipment installed above the BFE, or better yet, the DFE, is most likely to survive a flood.			
<input type="checkbox"/>	If you are in a Coastal A Zone or V Zone, is there an open foundation or breakaway wall system designed by a registered Professional Engineer for any portions of the building below the BFE?			
<input type="checkbox"/>	If sited in an A Zone, either coastal or non-coastal, is there a minimum of two openings on multiple walls of each enclosed area? This means that there should be two openings on one wall (minimum) and two openings on an opposite wall (minimum) for each enclosed area. The openings must be on exterior walls and not into another enclosed area. The flood vents should be located within 1 foot above grade and with at least a 1 sq. in. of opening for each square foot of enclosed area. Flood vents are openings in a wall that allow floodwaters to freely enter and exit the foundation.			
<input type="checkbox"/>	Are all utility shutoffs identified and marked so that electric power, gas or water can be shut off quickly by emergency personnel?			



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In Freezing Weather Areas		Yes	No	Comment
<input type="checkbox"/>	Is there heat-generating equipment in an attic or mechanical room directly under the roof? Heat sources can cause ice damming and water backups.			
<input type="checkbox"/>	Are all recessed light fixtures in the ceiling immediately below the attic space, sealed and insulated to prevent warming of the roof?			
<input type="checkbox"/>	Are attic penetrations properly sealed and insulated to prevent heat intrusion into the attic?			
<input type="checkbox"/>	Are access doors to the attic space or mechanical room properly insulated and sealed, weather-stripped or gasketed to prevent heat intrusion into the attic?			
<input type="checkbox"/>	Is insulation installed over the water or sprinkler supply piping located in exterior walls, unheated drop ceilings, or other unheated spaces, to prevent frozen or burst pipes?			
<input type="checkbox"/>	Are water shutoffs available and marked to ensure supply lines to washing machines, dishwashers, and water fountains are closed during extended absences, especially during the winter months?			
<input type="checkbox"/>	Are water alarms located in sensitive areas such as under water heaters and washing machines in a basement?			

- Resources: 1. FEMA, Emergency Management Guide for Business and Industry, FEMA 141, October 1993
2. Institute for Business and Home Safety, Open for Businesssm, 2005

EH&E can assist your staff in the completion of these checklists to identify weather-related vulnerabilities that may exist in your building and on your property. Contact us at (800) 825-5343 for additional information on our disaster mitigation and disaster recovery services.

Disclaimer

This information is intended to assist property owners in increasing their protection from disasters. It is intended to serve only as a guide. EH&E disclaims all warranties and guarantees with respect to the information and assume no liability or responsibility with respect to the information.