

Severe Weather Safety

Resources to help weather the storm

Hurricanes: By the Basics

What:

A Hurricane is a severe weather system that brings high winds, torrential rain, storm surges, and flooding. Hurricanes can even produce tornadoes.



When:

Most hurricanes occur in late summer and early fall, when the ocean temperature exceeds 79 degrees.



Where:

Hurricanes are severe tropical storms that form in the southern Atlantic Ocean, Caribbean Sea, Gulf of Mexico, and in the eastern Pacific Ocean.



How:

Hurricanes are formed where heat and moisture from the surface of the ocean interact with a wind pattern that spirals air inward. The water vapor condenses into storm clouds which are further fueled by the heat and wind.

Hurricane Watch vs. Hurricane Warning

Hurricane Watch: A hurricane watch indicates the possibility that hurricane conditions could arise within 36 hours. During a hurricane watch, you should review your hurricane plans, keep informed and be ready to act if a warning is issued.

Hurricane Warning: A hurricane warning indicates that hurricane conditions are expected within 24 hours or less. When a hurricane warning is issued, you should complete your storm preparations and leave the area if authorities direct you to do so.

Before a Hurricane:

If a hurricane is approaching your area, you should take the following precautions:

- **Prepare a kit** for your family that includes food, water and other essentials that will last for at least **72 hours**.
- **Unplug your appliance power cords and cables** from outlets to protect them from power surges.
- **Cover all of your home's windows** with storm shutters or plywood.
- If you are in a high-rise building, **take shelter on or below the 10th floor**.



Tips to prepare:

Be prepared for hurricane season by properly maintaining and trimming trees. This will help mitigate uprooted trees, downed limbs and the need for clearing debris. Contact a tree service professional if you have:

- **Dead branches**
- **Damaged or cracked limbs of branches**
- **Branches that are heavy and hanging low**
- **Branches that hang over your house**

Never attempt to trim trees within 10 feet of power lines. If you think your trees are too close to power lines, contact your local utility.

During a Hurricane:

If a hurricane is in your area, you should:

- **Listen** to the radio or television for **information and updates**.
- **Secure** your home, close storm shutters and secure outdoor objects or bring them indoors.
- **Turn off utilities** if instructed to do so.
- **Turn off propane tanks**.
- Make sure all **appliances are unplugged**.
- **Use flashlights** as a source of light. Candles are a **fire hazard**.
- **Stay indoors** during the hurricane and away from windows and glass doors.
- **Close** all interior doors and **secure and brace** external doors.



6 If using a portable generator, refer to ESFI's Portable Generator Safety tips on Page 5.

After a Hurricane:

After the storm has passed, you should take the following precautions:

- Continue **listening** to the radio or the local news for the **latest updates**.
- **Stay alert** for extended rainfall and subsequent **flooding** even after the hurricane or tropical storm has ended.
- If you evacuated, return home **only when officials declare** that it is safe.
- Walk **carefully** around the outside your home and check for downed or loose power lines, gas leaks and structural damage before entering.
(Refer to *ESFI's Downed Power Line resources on page 6*)
- **Stay out** of any building if you **smell gas**.
- If your home **flooded** and water rose above the electrical outlets, contact a licensed electrician **before turning on the main circuit breaker**. Any appliances or equipment that may have been submerged will need to be **thoroughly dried** and checked by a **qualified repair person** prior to being turned on. (Source: FEMA)



Flood Safety:

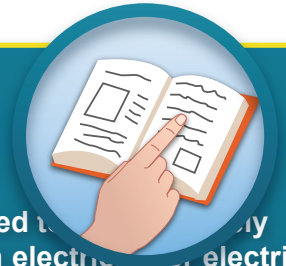
Flooding can occur from the coast to several hundreds of miles inland as a result of tropical downpours from hurricanes. Floodwater contaminants can create serious fire hazards if electrical wiring and equipment have been submerged in water. **Ocean water** and salt spray can be particularly **damaging** to electrical equipment due to the corrosive and conductive nature of the salt water residue. Even with professional cleaning and drying, sediments and toxins from floodwater are difficult to remove.

In the aftermath of a flood, there may be hidden electrical hazards. Before beginning the cleanup effort, have a qualified electrician check the house wiring, assess other damages and proceed with repair work. Then, follow these important safety tips:

- Take **care** when stepping into a **flooded** area. Be aware that **submerged outlets** or electrical cords may energize the water, posing a potentially **lethal trap**.
- **Have an electrician inspect electrical appliances that have been wet, and do not turn on** or plug in appliances unless an electrician tells you it is safe. Electrical equipment exposed to water can be **extremely dangerous** if reenergized without proper reconditioning or replacement.
- A **qualified service repair** dealer should **examine** all **electrical equipment** that has been wet. Certain equipment will require replacement, while a trained professional may be able to recondition other devices.
- Do not touch a circuit breaker or replace a fuse with wet hands or while standing on a wet surface. Use a dry plastic- or rubber-insulated tool to reset breakers and use only one hand.
- If using a wet-dry vacuum cleaner or pressure washer, **follow the manufacturer's instructions**.



6 Replace or Recondition?



After a serious flood, some items may be reconditioned, while others will need to be replaced to protect you and your family. It is recommended that you allow an electrical inspector to guide the restoration or replacement of any electrical wiring or equipment.

Corrosion and insulation damage can occur when water and silt get inside electrical devices and products. Water can also damage the motors in electrical appliances. Therefore, you should be prepared to replace:

- **Circuit breakers and fuses**



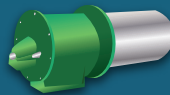
- **All electrical wiring systems**



- **Light switches, thermostats, outlets, light fixtures, electric heaters and ceiling fans**



- **Furnace burner and blower motors, ignition transformers, elements, and relays for furnaces and hot water tanks**



- **Hot water tanks**



- **Washing machines, dryers, furnaces, heat pumps, freezers, refrigerators, dehumidifiers, vacuums, power tools, exercise equipment and similar appliances**



- **Electronic equipment, including computers and**



Source: UL 

Portable Generator Safety:

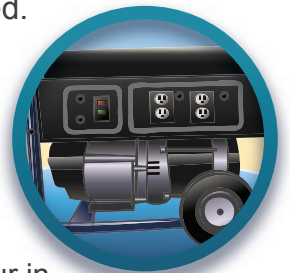
Portable generators can provide a good, temporary source of power during storm-induced electrical outages, but can become deadly if improperly installed or operated.

Facts and Statistics

(Source: Consumer Product Safety Commission (CPSC))



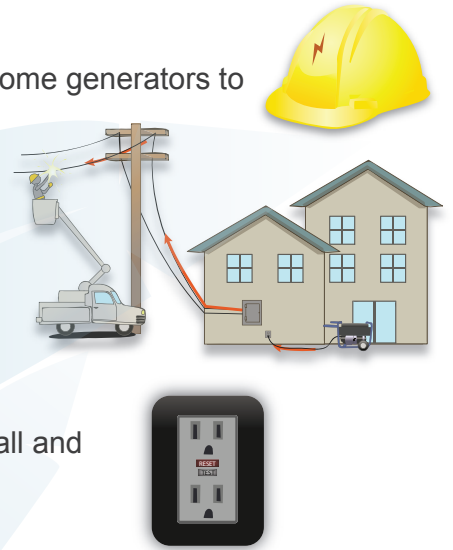
- From 1999 to 2010, nearly 600 generator-related **carbon monoxide (CO) deaths** have been reported to the CPSC.
- Over 80% of carbon monoxide deaths related to **portable generators** occur in the home, often resulting from operation of a portable generator within the living space of the home, including the basement, closets and doorways.
- One generator produces as much CO as **hundreds of cars**. CO from a generator is deadly and can **incapacitate and kill you within minutes**.
- 1/3 of all generator-related carbon monoxide deaths involved the use of generators **during a temporary power outage** stemming from a weather problem.



Taking a few simple precautions can keep you and your family safe from the dangers of carbon monoxide poisoning and electric shock resulting from the improper use of portable generators:

Generator Installation Safety Tips:

- ESFI strongly recommends that a **licensed electrician** install home generators to ensure they meet all local electrical codes.
- Do not connect generators directly to the household wiring without an appropriate **transfer switch** installed. Power from generators connected directly to household wiring can **backfeed** along power lines and **electrocute** anyone coming in contact with them, including utility lineworkers making repairs.
- Make sure your generator is properly grounded. Use a ground fault circuit interrupter (GFCI) to prevent electrocutions and electrical shock injuries. Portable GFCIs require no tools to install and are available at prices ranging from \$12 to \$30.



Using Your Generator Safely:

- Make sure your home is equipped with a battery-operated or battery back-up [carbon monoxide alarm](#).
- **Never operate a generator inside your home** or in other enclosed or partially-enclosed spaces. Generators can very quickly produce high levels of [carbon monoxide \(CO\)](#), which can be deadly.
- Opening doors and windows or operating fans to attempt to ventilate a generator **will not prevent carbon monoxide build-up** in the home. Even with a working CO alarm, you should never use a gasoline-powered generator inside your home or in a garage.
- ESFI recommends positioning the generator at least 25 feet **outside the home** and away from doors, windows and vents that can allow CO to enter.



- Warn those in your home not to open windows while a generator is operating outside.
- **Carbon Monoxide is the silent killer.** Don't take chances. Get to fresh air right away if you feel dizzy or weak.
- Do not **overload** the generator.
- Do not use a generator in **wet conditions**.
- Plug appliances **directly** into the generator or use a heavy-duty, outdoor rated extension cord.
- Make sure extension cords used with generators are **rated for the load** and have **three-pronged plugs**. They should be **inspected for damage**, such as cuts and/or worn insulation before use.
- **Turn off** all appliances powered by the generator **before** shutting down the generator.
- Make sure fuel for the generator is **stored safely**, away from living areas, in properly labeled containers, and away from fuel-burning appliances.



- Before re-fueling, always **turn the generator off** and let it cool down.
- **Keep children away** from portable generators at all times.
- A generator is a **temporary power source**. Use a generator only when necessary to power essential equipment or appliances.



Be sure to watch ESFI's [generator safety videos](#) for more information to help you power up safely during an outage.

Downed Power Lines:

In the aftermath of a major storm, be aware of hazards presented by downed power lines. Downed power lines can carry an electric current strong enough to cause serious injury or even death. If you come across a low or fallen line, adhere to the following safety tips:

Safety Tips

- If you see a downed power line, **move away from it** and anything touching it. The ground around power lines – up to 35 feet away - may be energized.
- You cannot tell whether or not a power line is energized just by looking at it. You should **assume that all downed power lines are live**.
- The proper way to move away from the power line is to **shuffle away with small steps**, keeping your feet together and on the ground at all times. This will minimize the potential for a strong electric shock.
- If you see someone who is in direct or indirect contact with the downed line, **do not touch the person**. You could become the next victim. Call 911 for help.
- **Do not attempt to move a downed power line** or anything else in contact with it by using an object such as a broom or stick. Even non-conductive materials like wood or cloth, can conduct electricity if even slightly wet.
- Be careful **not to touch or step in water** near where a downed power line is located.
- **Do not drive over** downed power lines.
- If your car comes in contact with a downed power line while you are inside, **stay in the car**. Honk your horn to summon help, but direct others to stay away from your car.
- If you must leave your car because it is on fire, jump out of the vehicle with both feet together and **avoid contact with both the car and the ground** at the same time. Shuffle away from the car.

