



Hurricane/Typhoon

The terms **hurricane** and **typhoon** are regionally specific names for a strong tropical cyclone, a low-pressure system that originates in the tropics. These cyclones usually include intense thunderstorms and strong winds that can exceed 157 mph. Hurricanes/typhoons and tropical storms can further result in tornadoes and heavy flooding. They can cause extensive damage through both strong winds and high flood waters from rain and storm surges.

A hurricane is a tropical cyclone in the North Atlantic Ocean, the Northeast Pacific Ocean, east of the dateline, or the South Pacific Ocean east of 160E. The Atlantic hurricane season lasts from June 1 to November 30, with the peak season from mid-August to late October. The Eastern Pacific hurricane season begins May 15 and ends November 30.

A typhoon is a tropical cyclone in the Northwest Pacific Ocean west of the International Date Line with sustained winds of (or those that exceed) 74 mph. Typhoons can happen at any time of year, but the season typically runs from July 1 to September 30.

While the following content provides information on preparing for a tropical cyclone using the name hurricane, you would prepare for a typhoon in the same manner.

How to Prepare for a Hurricane

- 1 Stay informed:** Verify and update official contact information in the **Marine Corps Mass Notification System (MNS)**; register all cell phones, home phone, email addresses, etc. in MNS.
- 2 Know hurricane terminology:**
 - **Tropical depression**—A system of clouds and thunderstorms with a defined surface circulation and sustained winds that do not exceed 38 mph.
 - **Tropical storm**—A system of clouds and thunderstorms with a defined surface circulation and sustained winds 39-73 mph.
 - **Hurricane/Typhoon**—A system of clouds and thunderstorms with a defined surface circulation and sustained winds 74 mph or higher.
 - **Storm surge**—An abnormal rise of water pushed ashore by a storm, over and above the predicted astronomical tide. Storm surges, which are often the greatest threat to life and property, are affected by a number of complex factors and can vary in magnitude despite hurricane categories. For example, Hurricane Katrina, a category 3 hurricane, had a storm surge of 28 ft., while Hurricane Charley, a category 4 hurricane, had a storm surge of 6-8 ft.
 - **Storm tide**—A combination of storm surge with normal tide, increasing the amount of water (e.g., a 15-foot storm surge with a 2-foot normal tide creates a 17-foot storm tide).
 - **Hurricane/tropical storm warning**—Hurricane/tropical storm conditions are expected within 36 hours in specified areas.
 - **Hurricane/tropical storm watch**—Hurricane/tropical storm conditions are possible within 48 hours in specified areas. Stay tuned to radio or TV for further information.
 - **Short-term watches and warnings**—Provide detailed information about specific threats during hurricanes, such as flash flooding or tornadoes.
- 3 Understand the categorization of hurricanes** (*Categorization adapted from the Saffir-Simpson Hurricane Wind Scale courtesy of the National Hurricane Center*):

Set your own course through any hazard: stay informed, make a plan, build a kit. Live Ready Marine Corps.



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- **Category 1**—Winds 74–95 mph, 64-82 kt, 119-153 km/h, very dangerous winds will produce some damage.
- **Category 2**—Winds 96–110 mph, 83-95 kt, 154-177 km/h, extremely dangerous winds will cause extensive damage.
- **Category 3**—Winds 111–129 mph, 96-112 kt, 178-208 km/h, devastating damage will occur.
- **Category 4**—Winds 130–156 mph, 113-136 kt, 209-251 km/h, catastrophic damage will occur, well-built framed homes can sustain severe damage with loss of most of roof structure and/or some exterior walls.
- **Category 5**—Winds exceeding 157 mph, 137 kt, 252 km/h, catastrophic damage will occur, high percentage of framed homes will be destroyed with total roof failure and wall collapse.

*Category 3, 4, and 5 hurricanes are considered “**major hurricanes.**”

*In the western North Pacific, the term **super typhoon** is used for tropical cyclones with sustained winds exceeding 150 mph.

- 4 Understand Tropical Cyclone Conditions of Readiness. Tropical Cyclone Conditions of Readiness (TCCOR) are the Marine Corps’ guidelines for estimating how long a region has and the actions necessary before it will be hit by destructive winds. Destructive winds are defined as winds of 58 mph or greater. At each TCCOR level, installations and tenant commands have set actions or checklists to complete prior to the storms arrival. These checklists range

from verifying recall procedures to closing facilities and sandbagging. Essential supplies can quickly sell out when a major storm is forecasted to hit the region, so it is vital for personnel to prepare for damaging storms before they establish themselves in the news cycle.

- **TCCOR 5** - Indicates that we are in hurricane season. From June 1 to November 30, all vulnerable installations should maintain at a minimum TCCOR 5 levels of readiness (note except Guam/Marianas - which maintains TCCOR 4 year round). This is not the absence of threat; it just indicates that any storm/hurricane is greater than 72 hours away.
- **TCCOR 4** - Trend indicates possible threats of destructive winds are indicated within 72 hours.
- **TCCOR 3** - Destructive winds of force indicated are possible within 48 hours.
- **TCCOR 2** - Destructive winds of force indicated are anticipated within 24 hours.
- **TCCOR 1** - Destructive winds of force indicated are occurring or anticipated within 12 hours.
- **TCCOR-IC (Caution)** - Destructive winds of 50 knots or greater are anticipated with in six hours.
- **TCCOR-IE (Emergency)** - Destructive winds of 50 knots or greater are occurring.
- **TCCOR-SW (Storm Watch)** - Destructive winds are no longer being experienced but winds are still gale force. Damage assessment teams are deployed to develop damage assessment and proposed courses of

action for the Commanding Officer (CO).

- **TCCOR-R (Recovery)** - Winds are below 34 knots and the CO has ordered recovery operations to commence.
- 5 Determine whether your property is in danger from tidal floods, storm surges, or dam failures, and take flood precautions.
 - 6 Learn community evacuation routes and how to find higher ground.
 - 7 Make a written family **evacuation plan**.
 - 8 Make a written family **communication plan** in case you are separated. Keep in mind phone lines and cell phone towers may be down.
 - 9 Make plans to secure your property:
 - Cover all of your home’s windows with permanent storm shutters, which offer the best protection for windows, or with 5/8” marine plywood, cut to fit and ready to install.
 - Install straps or additional clips to securely fasten your roof to the frame structure to reduce roof damage.
 - Trim trees and shrubs around your home so they are more wind resistant.
 - Clear loose and clogged rain gutters and downspouts.
 - Reinforce your garage doors to prevent dangerous and expensive structural damage.
 - Bring in all outdoor furniture, decorations, garbage cans, and anything else that is not tied down.
 - 10 Build an **emergency kit**.



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What to Do If There Is a Hurricane

- Avoid using the phone, except for serious emergencies.
- Stay tuned to the radio, TV, and MNS alerts for more information and further instructions.
- Create a supply of water for sanitary and household purposes by filling bathtub and large containers.
- Turn your refrigerator to the coldest setting and keep the door closed.
- Turn off propane tanks and utilities, if told to do so.
- Moor your boat if time permits.
- You should evacuate under the following conditions:
 - » If you live in a mobile home or temporary structure—such shelters are particularly hazardous during a hurricane no matter how well fastened to the ground.
 - » If you live in a high-rise building—hurricane winds are stronger at higher elevations.
 - » If you live on the coast, on a floodplain, near a river, or on an island waterway.
 - » If told to do so by local authorities, following their instructions.
- If you are told to evacuate:
 - » NEVER ignore an evacuation order.
 - » Follow instructions and the guidelines given regarding times and routes.
 - » Take only essential items and your emergency kit.
 - » Turn off gas, electricity, and water if you have not already done so.
- » Disconnect all appliances.
- » Make sure your car's gas tank is full.
- » Do not walk in moving water.
- » Do not drive in high water. (As little as six inches of water can cause loss of control and stalling of a vehicle).
- » Follow the designated evacuation plan and expect a high volume of traffic.
- If you are NOT told to or cannot evacuate:
 - » Stay tuned to emergency stations on TV or radio.
 - » Listen for further instructions.
 - » Avoid elevators.
 - » Seek shelter in a small interior room on the lowest level such as a bathroom, closet, or basement.
 - » Stay away from glass, windows, and doors.
 - » Lie on the floor under a table or another sturdy object.
 - » Do not go outside until instructed to do so even if the storm is over and it seems calm. This could be the eye of the storm passing, and winds will pick up again.
 - » Once you are in a safe place, follow your command's protocols for personnel accountability and contact your command's designated Point of Contact to check-in and report your location and situation.
 - » When given the *all clear*, prepare to evacuate to a shelter or neighbor's home if your home is damaged.

What to Do After a Hurricane

- Listen to news reports to make sure water supplies are not contaminated.
- Stay clear of flood waters (standing and moving) as they may be contaminated or deeper than expected.
- Beware of downed power lines.
- Avoid any roads where flood waters have receded as they may have weakened and could collapse under the weight of a car.
- Be extremely cautious when entering buildings and homes as there may be unseen damage.
- Clean and disinfect everything that was touched by flood water, as it can contain sewage and other contaminants.

Where to Find Additional Information

- National Hurricane Center(NHC)—<http://www.nhc.noaa.gov/>
- National Hurricane Center(NHC) Saffir-Simpson Hurricane Wind Scale—<http://www.nhc.noaa.gov/aboutsshws.php>
- Centers for Disease Control and Prevention (CDC)—www.bt.cdc.gov/disasters/hurricanes/
- Department of Homeland Security (Ready.gov) & FEMA—www.ready.gov/hurricanes
- Marine Corps Base Hawaii Hurricane Awareness—<http://www.mcbhawaii.marines.mil/UnitHome/FeaturedInformation/DisasterPreparedness/HurricaneAwareness.aspx>