



Monthly News & Updates

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PMKCA President
Joe Clarkson

President's Message

Hurricane Preparedness

Hurricane season just ended about a month ago (the season is June through November) so it may seem strange that I am bringing up the topic now, but my recent experience with purchasing and installing the materials needed for hurricane shutters showed me that it can take several months to get the job done. Now is the time to

The next cheapest option is to utilize hurricane fabric covers. These use a very strong woven fabric, heavy plastic clips and permanently installed hardware to attach the fabric around an opening. The fabric can be used to cover just about any size window or door, but since the fabric is flexible it may not protect larger windows or doors as well as rigid panels. However, even if the window or door glazing is broken the fabric will stay in place to keep out most wind and rain. The photo below shows fabric panels installed over windows.



Heavy plastic clips are permanently attached to the fabric. Permanently installed fasteners around the opening go through the clips.

start planning for the next hurricane season.

It's true that we rarely have hurricanes hitting the Hawaiian Islands, but when they do arrive on our shores the consequences can be devastating. The following excerpt from a FEMA publication explains why:

In coastal environments, numerous post-disaster investigations conducted by FEMA have shown that windows and glazed portions of doors are vulnerable to impact from windborne debris. This impact force is the principal failure mode for these systems. Debris from the natural environment (e.g., tree limbs) and from the built environment (e.g., roofing material, siding material, sawn lumber, etc.) can become windborne debris and break window and door glazing.

Once broken, windows and glazed portions of doors can allow wind, windborne debris, and rain into the interior of the building. This can result in the following: Large amounts of water may enter a building and damage its contents and finishes. There is also the possibility that the water could compromise certain structural members. If water intrusion occurs, action will not only be needed to eliminate the water-induced damages on appurtenances (such as carpets, cabinets, and floors), but also to mitigate all potential long-term moisture problems associated with certain construction materials.

Wind forces or pressures inside a building are dramatically increased when the building's envelope is breached. It is not uncommon to observe significant damage to structural and nonstructural building elements from this internal pressurization. Such damage may remain isolated to a

The permanently installed hardware allows the panels to be installed securely and relatively quickly, although it can take several hours to complete an installation for an entire house. This means that all types of removable panels must be installed well before strong winds arrive. Trying to manipulate large flat objects in heavy winds is almost impossible and can be dangerous, especially if ladders must be used to put them in place.

Polycarbonate panels and corrugated aluminum panels are somewhat more expensive than fabric, but far less costly than permanently installed moveable shutters. Polycarbonate panels have the advantage of allowing light into the home after installation. When opaque coverings, like plywood are used, the interior of the home is very dark, requiring lights to be used around the clock. I found living in a house with all the windows and doors covered with plywood to be slightly claustrophobic, so I was attracted to using polycarbonate panels for shutters.

In the end, I chose to use polycarbonate and corrugated aluminum panels to cover my window and door openings. I needed to use the aluminum panels over several doors because the polycarbonate was not available in large enough sizes. The panels are light and easy to install. Permanent anchors are installed into the house framing around every opening and the panels are attached using either wing nuts on projecting studs or sidewalk bolts into threaded inserts that are flush with the surface of the wall.

The photo below shows some hardware that is typical for fabric

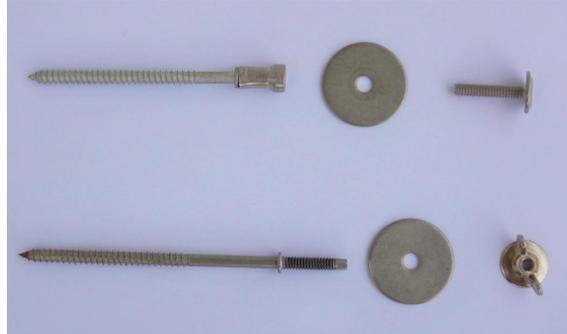
small area or room or it may result in damage severe enough to initiate the complete structural failure of the building.

A house with a broken window or door acts like a balloon. Hurricane force winds can blow into the opening and build pressure throughout the interior of the house. A balloon is flexible and can expand greatly, but too much pressure will pop it. Similarly, if the pressure from wind entering an opening is strong enough it can blow a house apart. And even if the house remains intact, the wind and rain that enter through the broken window or door can ruin a lot of valuable possessions.

The best way to protect the glass in windows and doors is to build them with laminated, hurricane-proof glass, but the vast majority of homes don't use this special glass because it is so expensive. The next best way to protect windows and doors is with permanently installed rolling shutters or accordion shutters. These can be operated quickly to cover vulnerable openings, but they are also very expensive to install. Permanently installed shutters also add a bulky structure to the top or sides of every window and door. Many people don't like the appearance of them.

The least expensive option for protecting openings is to use removeable panels and the least expensive panel is plywood. But plywood can be very heavy and difficult to install. I have used plywood panels to cover my windows and doors three times in the last thirty-three years, but I found that now that I am in my 70s, I no longer have the strength to safely lift the biggest panels into position and secure them to the wall.

and rigid panel installation. The lag screws are 1/4 inch diameter by 4 1/2 inches long (insertion depth). The upper hardware is a sidewalk bolt set and the lower set is for stud and wingnut installation. The lag-screw part of the set is installed in the wall permanently.



Polycarbonate storm panel installed with wingnuts and washer attached to permanently installed threaded studs.



Corrugated aluminum storm panels in tracks. They can also be installed with individual hardware permanently

It is also difficult to install plywood properly. Every kind of window or door covering must use a minimum of ¼ inch lag screws with at least two inches of insertion into the structural frame of a house. This usually means screwing the panel through window and door trim into the studs and headers behind the trim. The picture below shows a plywood panel being put into place.



Rather than use fasteners, this homeowner is using wooden braces to keep the panels in place.



installed along two sides of the glazed area.

Hardware installation and the fitting of plywood, fabric, polycarbonate or aluminum hurricane panels is a feasible do-it-yourself project, but it took me several days to install all the hardware. While plywood and fabric panel materials are available locally almost all the time, it can take several months to get polycarbonate or aluminum panels, especially if larger sizes are needed. Hurricane season is only five months away. The time to get started on hurricane protection for your home is now.

Upcoming PMKCA Meetings

The next PMKCA board meeting is scheduled for Thursday, January 9, 7 pm at the [Hawaiian Vanilla Company](#) and the next General Membership meeting is scheduled for Tuesday, January 28, 7 pm at [Pa`auilo School](#) cafeteria. All members of the public are welcome to attend both meetings.

The General Membership meeting will include election of officers, officer and committee reports and also include guest speakers from Kamehameha Schools, the police department and local political representatives. Our guests prefer advance knowledge of questions and topics of interest if possible, so if you have any urgent questions for them please let a PMKCA board member or officer know your question as soon as possible. Contact information for board members and officers is available at [PMKCA.org](#).



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