

Water and moisture damage to elevated floor structures across the United States results in costly insurance premiums due to claims, flood insurance, and individual out of pocket repair costs.

To reduce the exposure of water and moisture damage in flood prone areas, contractors and builders are erecting structures with elevated floors. These elevated floors are constructed on a variety of piers, which include concrete block, stone, solid concrete forms, pressure treated timber, solid brick and other solid materials. The floors are constructed of wood joists with two layers of plywood, planking or other wood materials. These raised floors provide flood resistance, allowing waters to flow under the structure, and limiting and impacting the stability of the structure.



Photo courtesy of the Federal Emergency Management Agency (FEMA)

These elevated wood joisted floors can be damaged from a variety of exposures, including:

- Hurricane/tropical storm coastal flooding;
- Storm surges;
- Flash flooding from heavy rain and rising waters from nearby rivers and lakes;
- Hot and humid environments;
- Wood fungi; and
- Insects including termites.

To reduce the chances of damage to elevated floor structures, consider the following guidelines:

- Structures should have open crawl spaces to reduce surge water resistance and allow for venting of moisture.
- Buildings with an enclosed crawl space (skirting) should have flood vents to allow flood water or surge water to flow freely under the structure and proper venting.
- The ground under the structure can be treated for insects.
- Protective moisture barriers can be installed, and the wood floor joists can be protected, with a variety of wood barrier products.
- The elevated area should be inspected periodically for signs of wood moisture content, wood fungi, wood decay, insects and pier conditions.



This photo shows an elevated floor that has decayed from inadequate ventilation below the floor surface. Note the collapsing of the floor.

These are a few steps that your organization can take to reduce potential water damage with elevated structures. For further information on coastal construction, please visit the [FEMA website](#).