

Mobile Homes and Floods: What You Need To Know

Flooding can damage mobile and manufactured home in the following ways:

1. Lateral displacement of walls and floors.
2. Cracking of wall finishes.
3. Saturation of soils may cause footings to become unstable and fail.
4. Flotation may cause support system to become unstable or anchoring system to fail.

A Federal Emergency Management Agency (FEMA) Report from 1985 stated that a two foot depth of flood water on a manufactured home may result in damages up to about 80% of the value of the manufactured home. This would include items of non-structural nature not previously mentioned.

Some of the non-structural items affected by flood waters could be;

- Floor and Wall Insulation
- Siding and Sheathing
- Mechanical duct work located in the belly area of the home
- Gas line connections in and under the home
- Plumbing systems connections or drain/waste slope
- Electrical connections under home (receptacle from heat tape, and electrical in floor and walls)
- Furnace and Water Heater

All manufactured home residents which have had their manufactured homes in flood areas need to check the following after a flood:

1. Have gas line system retested for leakage in accordance with 2006 International Mechanical Code and the 2006 International Fuel Gas Code.
2. Remove skirting around home to allow drying.
3. Have a Registered Installer check soils around footings for washout or scouring, check shims and piers for stability, check anchors (if installed) for stability from withdrawal. A Building Permit may be required for repair to structural damage.
4. Check drain/waste lines for proper slope and leaks
5. Remove bottom board (belly paper) to allow drying of insulation, decking, structural lumber. If necessary replace insulation and belly paper with materials of like kind.
6. Loosen siding or sheathing to allow for drying of construction materials and insulation in order to avoid decay and bacterial growth.
7. Check for water in ductwork and remove if has water. After duct work is cleaned and repaired, re-insulate with the proper r-value insulation.
8. Have an electrical contractor check all affected electrical system items for damage. Electronic equipment should be cleaned by a competent person. The cleaning of electronic equipment should conform with ASTM and IEEE standards. Electrical Systems: Electrical wire, equipment, apparatus, devices, fixtures, etc., when exposed to water, flooding, humidity or sewage, should be cleaned and reconditioned per the "Guidelines for Handling Water Damaged Electrical Equipment" set forth by the National Electrical Manufacturers Association (NEMA). While the age of the equipment, type of equipment and exposure time to water or moisture, and degree of flooding should be considered when reconditioning electrical wiring, equipment, apparatus, devices, fixtures, etc. Devices: Receptacles and switches (i.e., GFCI) shall be replaced when submerged in water. Fixtures: Only light fixtures rated as submersible should be cleaned for re-use when submerged in water, while all others shall be replaced. Insulation cleaning: Wiring (cable) insulation could be cleaned using an approved solvent or water and

detergents, while cable or wire containing polypropylene, paper, etc., such as; type NM-B cable, or cables listed for dry locations should be replaced when submerged in water. In addition, cables or wire with metallic components can corrode and fail prematurely after water submersion. Terminations: Electrical terminations, wire nuts, lugs, bugs, strips, etc. could fail or cause shock hazard when exposed to corrosion, silt, etc. Fuses and Breakers: Fuses and circuit breakers when submerged in flood water shall be replaced. Before mitigation or restoration procedures are attempted or performed on electrical equipment, apparatus, etc. the electrical power should be turned off and lock out and tagging procedures set forth by OSHA should apply. Electrical System Testing: Electrical equipment, wiring and apparatus should be tested by a state licensed electrician and testing should conform with ASTM, IEEE and NEMA standards before being put back into service after suffering flood, water or moisture damage.

9. Check and clean water lines.
10. Check Furnace and Water Heater.
11. Remove wet paneling or sheet rock on all walls to keep the water from wicking up and ruining additional material. The material that is wet is hazardous and needs to be removed.
12. When necessary, baseboards and casing should be removed.
13. Special care should be taken on the direction of joists for cross ventilation. Ceiling joist and floor joist patterns can be determined by pre-inspecting the basement floor joists and/or attic ceiling trusses.
14. Excess water within cavities should be drained before using air-moving systems.
15. Cabinet Access Holes: Water and moisture can become trapped under cabinets, between cabinet backs and walls, creating microbiological growth and rotting. Some base cabinets have toe kicks, which could be vinyl or wood. After the cabinetry baseboard is removed, access holes could be drilled into the toe kick and airmovers with mini-turbovents or injection drying can be used to dry the cabinets cavity. When the integrity of the cabinetry is jeopardized due to swelling or warping, or when mold (fungi) had formed on particle board, the cabinet should be replaced. Minor mold formation on plywood or solid wood based cabinets can be cleaned and sanded-out (underside and backside), and the non-finished areas can be coated with a microbial inhibitor paint. External and internal drying is the two basic methods available. Vacuum (internal) drying chambers is the most efficient and thorough method. When drying electrical equipment, the drying procedures recommended by ASTM and IEEE should apply.
16. Thermal Imaging: used to determine hot spots or weakness in insulation, and moisture vapor within insulation, conduits, etc.
17. Modular Homes: Due to the construction make-up of modular homes, vapor barriers on the underside of the sub-floor can trap water from above.
18. When water or secondary damage has jeopardized the insulations R-value or fire rating, it needs to be replaced.
19. HVAC Systems: HVAC systems have passageways that distribute clean air; be it fresh, makeup, cooled or heated, to spaces that are generally occupied by persons, pets, belongs, etc., while bacteria, mold (fungi) and contaminates foil the passageways intention. The remediation of HVAC systems after a water loss should conform with information found earlier in this document that was developed by the National Air Duct Cleaning Association (NADCA).