

(Effective 06/02/2005)

Electrical equipment may be exposed to water damage through flooding, hurricanes, firefighting or other natural disasters. When submerged or exposed to water the integrity of electrical insulation can be compromised by moisture, metals can rust, trip units in some moulded case circuit breakers can be impaired, and damaged filler material in fuses can degrade their insulation and interruption capabilities. Not only electrical distribution equipment, but motor circuits, power equipment, transformers, wire, cable, flexible cord, ground fault circuit interrupters, arc fault circuit breakers and other electronic devices can all be affected.

The following provides guidelines related to water damage equipment.

Equipment

It is recommend that all electrical components and equipment below the flood line be replaced, with the possible exception of submersible pumps and cables suitable for direct burial or wet locations. In limited situations, some equipment may be reconditioned, however for common household loads like electric furnaces, electric baseboard heaters, ceiling fans, lamp fixtures, etc all should be replaced. The result of water damage does not always occur right away. It may cause a problem or a situation later on that may result in a potential injury, shock or fire hazard. Water damage to electrical equipment will result in many opinions as to what should be done, the easiest motto to remember is **when in doubt -- throw it out**. Below is a general guide of different electrical equipment products and the recommended actions for both flood & hydrant water damage.

Wire, Cables and Flexible Cords

When any wire or cable product is exposed to water, the metallic component is subject to corrosion that can damage the component itself and/or cause termination failures. Failures can result in fire and shock hazards.

In the case of water damage from floods, the manufacturer should be consulted before any decision is made to continue using any wire or cable products. The cable may not only be subjected to water and moisture but to other contaminants such as oil, gasoline or corrosive liquids. In most cases the wire or cable requires replacement.

For hydrant water damage any wire that is approved for dry locations should be completely replaced, also any cable that contains fillers, such as polypropylene, paper, etc., should be replaced if the ends of the product have been exposed to water. Items that may be reconditioned include any wire or cable that is suitable for wet locations and whose ends have not been exposed to water. A qualified person should make the determination of the product's suitability for wet locations.

Wire and cable that do not containing fibres which are approved for wet locations and whose ends have been exposed to water may be considered for purging (using an inert gas under pressure to remove water contained in the product) under engineering supervision.

All conductors and cables shall be meggered to confirm the insulation integrity is intact. Replace where failure is present. Replace all wire nuts at all wire connections. The conductor splices are to be taken apart, cleaned and re-joined

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Distribution Equipment

Panel boards, switchboards and switches that have been exposed to water damage from hydrants may be reused if they are cleaned and dried by qualified personnel before equipment is energized. If the panel was submerged under flood water should be replaced entirely.

Stand-by generators, UPS or transfer switches are required to be tested by the manufacturer's representative to ensure proper operation.

In addition any smoke residue shall also be removed by cleaning to prevent tracking and equipment failure.

Breakers and Receptacles

For flood and hydrant water damages, all breakers, fuses, fuse holders, switches, receptacles and thermostats must be replaced. In particular breakers and receptacles should be destroyed, so that they are not mistakenly reused, ex: by hammer. The Inspector may ask for confirmation that this has taken place or ask for evidence.

Common Household Items

Where electrical appliances have been exposed to water damage, the customer should consult with their electrician or a service technician to determine if the equipment needs to be replaced or what would be required in order to make the equipment usable before energizing.

Normally items such as toasters, toaster ovens, TVs, stereos, DVD/VCR, hair dryers, computers etc. should be replaced.

Life Safety Items

If any lifesaving equipment, such as smoke alarms, receives water damage where water has been running through/in or on top off, shall be replaced. Any smoke alarms or emergency lights must be reviewed and tested by a qualified person prior to being installed back in service. Fire alarm systems that are replaced or have parts replaced are required to be retested by qualified personal.

Note: The homeowner should always consult with their insurance company prior to disposing of equipment.

General

The customer should have an electrical contractor check all electrical equipment that has received water damage before equipment is re- energized, i.e. panel boards, breakers, fuses, lighting fixtures, receptacles, cables and appliances.

Electrical contractors shall ensure that electrical equipment which has been exposed to water damage is either replaced or has been cleaned and dried before equipment is energized. Note: fuses, breakers and receptacles that have been subjected to water damage must be replaced.

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Wiring Permits

Where electrical equipment has been replaced, such as panel boards, main switch, circuit breakers or branch circuit wiring, the Nova Scotia Electrical Code Regulations requires that the Electrical Contractor obtain a Wiring Permit from Nova Scotia Power and an inspection must be completed prior to equipment being energized.

In cases where the Provincial or Municipal Government officials declare “a state of emergency”, Wiring Permit fees will be based on normal working hour’s charges. After hour emergency fees will not apply. However, in regards to water damage due to hydrant water, the Wiring Permit fees shall be as per NSPI schedule of fees and all other applicable fees apply