



ELECTRICAL MAINTENANCE IN RESIDENTIAL BUILDINGS

Disclaimer

HSC Disclaimer

This publication is provided for informational purposes only. Implementation of an electrical maintenance program may require the input of a number of professional consultants including licensed electricians and equipment manufacturers. HSC assumes no responsibility for any loss or damage sustained in reliance on this publication.

The information contained in this publication provides only a general overview of subjects covered, is not intended to be taken as advice regarding any individual situation and should not be relied upon as such. You should consult your insurance, legal experts and other advisors regarding specific risk issues.

Marsh Canada Disclaimer

This document and any recommendations, analysis, or advice provided by Marsh (collectively, the "Marsh Analysis") are not intended to be taken as advice regarding any individual situation and should not be relied upon as such. This document contains proprietary, confidential information of Marsh and may not be shared with any third party, including other insurance producers, without Marsh's prior written consent. Any statements concerning actuarial, tax, accounting, or legal matters are based solely on our experience as insurance brokers and risk consultants and are not to be relied upon as actuarial, accounting, tax, or legal advice, for which you should consult your own professional advisors. Any modelling, analytics, or projections are subject to inherent uncertainty, and the Marsh Analysis could be materially affected if any underlying assumptions, conditions, information, or factors are inaccurate or incomplete or should change. The information contained herein is based on sources we believe reliable, but we make no representation or warranty as to its accuracy. Except as may be set forth in an agreement between you and Marsh, Marsh shall have no obligation to update the Marsh Analysis and shall have no liability to you or any other party with regard to the Marsh Analysis or to any services provided by a third party to you or Marsh. Marsh makes no representation or warranty concerning the application of policy wordings or the financial condition or solvency of insurers or re-insurers. Marsh makes no assurances regarding the availability, cost, or terms of insurance coverage.

Introduction

While cooking fires are typically the most common type of fires in the community housing sector, electrical fires appear to be increasing in frequency as a result of aging infrastructure. These fires often result in much longer downtimes for housing providers, which affects residents, staff and a housing provider's financial position.

Developing formal electrical preventative maintenance and safety programs can help reduce the likelihood of electrical system failure and fires. This short guide will focus on best practices in electrical maintenance and how to recognize the early signs of problems.

Electrical Maintenance Program

Electrical preventative maintenance routines should be developed in consultation with licensed electrical contractors. They should include, as a minimum, the following:

- ▶ **Switches and Disconnects:** Switches and disconnects having a rating of 300 amps or over and equipment greater than 600V should have maintenance completed every 3 to 5 years. Equipment greater than 13.8 kV should be evaluated every 1 to 3 years.
- ▶ **All main switches should be maintained every 3 to 5 years:** Using a rotating schedule, switches and disconnects should be tested and calibrated, bolts tightened, and contact surfaces tested (Ductor).
- ▶ **Infrared thermography:** Surveys should be conducted every 1 to 3 years by a specialized contractor. The findings report with corrective actions should be maintained on site.
- ▶ **Circuit breakers:** These should be mechanically exercised on an annual basis to ensure they are not binding. If binding breakers are discovered, they will require cleaning, lubrication and possibly calibration (by a qualified electrical contractor). For higher voltage breakers (over 220 volts), a qualified electrician should be contracted to perform the mechanical exercising of the breakers.

Electrical Safety Authority (ESA)

Providers should implement a formal inspection program with the Electrical Safety Authority (ESA). This includes the regular inspections by the ESA and might also include the use of the Continuous Safety Service (CSS) program so that all electrical repair work is properly inspected by the ESA.

Inspections

Property managers should have basic electrical safety inspection checklists, which can be part of overall premises safety and tenant unit inspections. These checklists should flag:

- ▶ Excessive loading on circuits (e.g. numerous appliances plugged into a single receptacle)
- ▶ Power bar piggy backing (e.g. power bars plugged into one another)
- ▶ Inadequate grounding
- ▶ Extension cords used as permanent wiring (extension cords are designed for temporary use and should not be used under carpets or across doorways)
- ▶ Older wiring that may be frayed, cracked or damaged
- ▶ Broken outlets or switches (if hot, there is likely a problem)
- ▶ Combustible storage that is less than three feet away from electrical equipment including breaker panels and transformers

Any deficiencies should be addressed immediately and/or the circuit should be turned off. Only licensed electricians should perform electrical repair work.

Signs of Problems

The following are signs of problems with electrical systems:

- ▶ Fuses or circuits that trip frequently indicate overloading of the circuit or possibly faulty electrical wiring or equipment
- ▶ Dim or flickering lights can be a sign of a loose connection in a lighting circuit, fixture, or your electrical service.
- ▶ Missing third prongs, or two-to-three prong adaptors do not offer adequate grounding and represent a shock hazard

- ▶ Damaged cords can lead to exposed wiring and represent a shock and fire hazard
- ▶ Interior extension cords used outside or the use of extension cords as permanent wiring are a fire hazard

Main Electrical Rooms

Main electrical rooms should:

- ▶ Not contain any combustible storage
- ▶ Have monitored smoke detection to provide an early warning of fire
- ▶ Be equipped with CO² extinguishers designed for Class C electrical fires since they will prevent damage to sensitive equipment if there is a fire

Other Considerations

- ▶ **Ground Fault Circuit Interrupter (GFCI) outlets** should be installed in areas near water (i.e. bathrooms and kitchens) and in exterior areas to reduce the severity of electric shocks. GFCIs should be tested monthly by plugging in a device and pushing the test button; if the device does not turn off, then the GFCI is faulty and should be replaced.
- ▶ **Baseboard heaters** should be checked regularly for excessive dust and nearby combustibles.
- ▶ **Circuit breakers** should be exercised (switched on and off) annually to ensure they operate and are not binding.

For more information, please contact:

Brian Laur

Director, HSC Insurance & Risk Management

1.866.268.4451 ext. 314

blaur@hscorp.ca