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Electrical Shock Hazards associated with older fuse panels

Electrical installation methods, codes and product standards have evolved significantly over the past 100 years in Ontario and across North America. Over time, the standards for electrical products and installations have been updated to address safety issues that have arisen.

Ontario Electrical Safety Code (OESC) Rule 14-206 and product standards (CSA Standard C22.2 No.29, “*Low Voltage Distribution and Control*”) require panelboards containing breakers or plug fuses to have barriers and/ or covers that eliminate exposure to energized parts where these panelboards are readily accessible to unauthorized persons for operation of the breakers or changing of fuses.

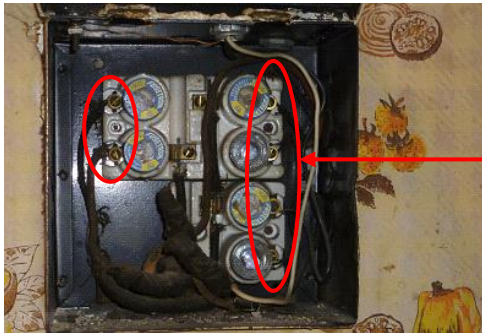
OESC Rule 14-206 states:

Fuseholders for plug fuses

Fuseholders for plug fuses shall be of the so-called “covered” type where readily accessible to unauthorized persons.

Some homes, apartments and other buildings across Ontario still have old electrical fuse panels that were installed prior to 1940. These panels complied with the codes and standards at the time of installation. If maintained properly, complete with the correct size and type of fuses, these panels will still be adequate to protect electrical circuits and equipment. However, it has been identified that opening the panelboard cover of some of these fuse panels gives access to bare and exposed energized terminals, which may pose electrical shock hazards to unqualified persons (See Photo F1).

Photo F1 – Panelboard with the cover opened shows bare energized terminals in old fuse panel



Many of these older electrical fuse panels may not provide adequate shock protection for persons replacing fuses. Persons are exposed to energized connections and conductors when accessing the fuses.

Due to the potential shock hazard associated with these open type panels in residential dwellings, the Electrical Safety Authority (ESA) will be mandating the following when the dwellings are Rental/Tenant occupied (**not** owner occupied):

- Fuse panels shall be provided with covers that are only capable of being opened with the use of a key/tool; and
- a warning label shall be placed on the cover of each panel stating:
“**Danger Exposed Energized Parts, Consult Landlord for Service**” (or equivalent wording).

This will meet the intent of the current Code and standards by rendering the internal parts of the panelboards not readily accessible.

Additional ESA Recommendations

If a property owner wishes to upgrade their older electrical panels to provide a higher level of electrical safety than the minimum mandated above, other available options could be:

- 1) Replace the fuse panels and panel enclosure with new breaker panels.
- 2) Retro-fit new breaker panel interiors into the existing fuse panel enclosures (contact breaker panel manufacturer to see if breaker panel retrofit kits are available for existing enclosure dimensions).