



Elevating and Amusement Devices Safety Program	Ref. No.: 293 / 21
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Subject: Grounding of Transformers
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This advisory is intended to provide awareness to inspectors and contractors with respect to grounding of power transformers (that are located on the load side of the elevator system disconnect switch) as derived from section 10 of CSA 22.1 2018, Electrical Safety Code. This is further supplemented by Appendix B Section 10.

TSSA inspectors have noted installation deficiencies where some contractors installing a new elevator system have neglected to follow grounding requirements.

Power transformers grounding

Section 10-106 CSA 22.1 2018 states:

10-206 AC systems required to be solidly grounded

- 1) AC systems exceeding extra-low voltage shall be solidly grounded if
 - a) by doing so, their maximum voltage-to-ground does not exceed 150 V; or
 - b) the system incorporates a neutral conductor.
- 2) AC systems exceeding the value prescribed by Subrule 1) a) shall be permitted to be ungrounded or impedance grounded, provided that they meet the requirements for
 - a) ungrounded systems; or
 - b) impedance grounded systems

10-400 Ungrounded systems (see Appendix B)

- 1) DC or AC systems shall be permitted to be ungrounded, provided that the system is
 - a) equipped with suitable ground fault detection; and
 - b) maintained by qualified persons.
- 2) On the occurrence of a ground fault, the ground fault detection shall activate a visual or audible alarm to indicate the presence of the ground fault.
- 3) The alarm required by Subrule 2), and any extra (i.e., redundant) alarms if installed, shall
 - a) be clearly labelled as to their purpose.
 - b) clearly announce the status of the system to persons monitoring it; and
 - c) continue signalling until the condition has been corrected.
- 4) Extra-low-voltage dc or ac systems shall be permitted to be ungrounded without having to comply with the ground fault detection requirements specified in Subrules 1) to 3).

This advisory serves as a reminder regarding transformer grounding and compliance with OESC requirements.