Bulletin 12-2-23
Underground cable installations and cables for submarine use
Rule 12-012 a*nd 12-114*

Issued May 2026
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Scope

1) Adequate marking for underground cable installations
2) Buried wiring separation from gas service
3) *Underground splices*
4) Submarine cable for low voltage installations

1) Adequate marking for underground cable installations

Rule 12-012 12) requires marking for underground installations in a way of “suitable marking tape” or “adequate marking in a conspicuous location”. Suitable marking tape shall be permitted as follows:

Continuous coloured (red or yellow) plastic marker tape marked “danger buried cable” or similar to identify the presence of underground power lines installation,

i) placed approximately halfway between the uppermost cable/duct and grade level,
ii) installed covering the width of the installation, and
iii) where multiple marker tapes are required to cover the width of the installation, marker tapes shall be permitted to be placed a maximum of 600 mm apart

Other permitted examples of adequate marking in a conspicuous location are:

a) Permanent above ground markers indicating the installation location at intervals of not more that 15 m or at any change in direction, or
b) Suitable markers installed above grade at each riser location and at any location the buried installation enters a building or similar structure to indicate the presence of buried cables; with the installation of a layout drawing(s) at a conspicuous location such as the service box or distribution panel will also be considered as complying with the intent of the Rule.

2) Buried wiring separation from gas service

Rule 12-012 is silent on the clearance requirements between a gas line and an electrical cable or conduit when buried in the same trench. Rule 12-012 16) states "For installations not covered by the foregoing requirements of this Rule, the requirements of CSA 22.3 No. 7, or the applicable standard, whichever is more stringent shall apply."

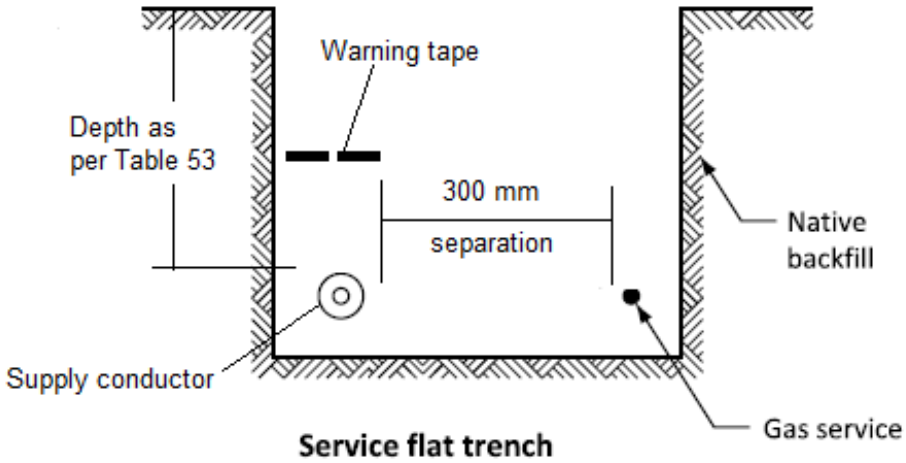
Question:
Does the Ontario Electrical Safety Code (OESC) prevent the installation of underground wiring in the same trench as the gas service?

Answer:
No.

Rationale:
The OESC does not contain any rules to prevent the installation. Rule 12-012 16) refers to CSA 22.3 No.7 for such installations, which permits electrical wiring and gas services to be installed in the same trench provided they are separated horizontally by a minimum of 300 mm with the trench as shown in diagram B1.

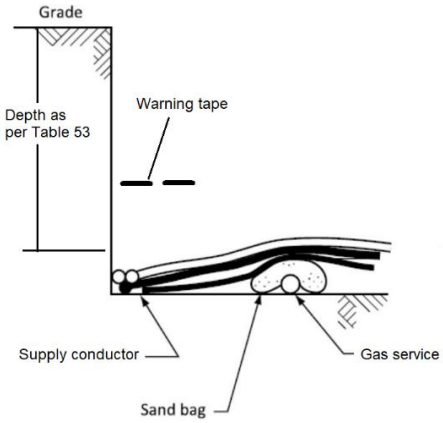
The standard does not permit the underground systems to be installed in the same vertical plane unless the other parties mutually agree.

Diagram B1-Trench detail



Where the electrical wiring and gas cross each other, they shall be separated vertically by a minimum of 300 mm at right angles or close to at the point of crossing. Where it is not possible to achieve this clearance, mechanical protection is required such as using a sandbag as shown in diagram B2.

Diagram B2-Example of electrical wiring and gas cross over



3) Underground Splices

Underground splices are often necessary in events such as an underground cable or conductor becoming damaged. Rule 12-112 4) requires all joints and splices to be accessible with the use of grade level in-ground enclosures. Rule 12-012 7) provides a possibility for a deviation to be considered for those places where a grade level in-ground enclosure is not feasible.

Notwithstanding Rule 12-112 4), it will be permitted to install an underground splice for the purpose of repairing a damaged cable or conductor without the need for a formal deviation provided the following are met:

- *The splice used is approved for direct burial and marked on the product or package with a "DB" or "Direct Burial";*
- *The cable or conductors are not part of a parallel wiring branch circuit, feeder or service as per Rule 12-108 1); and*
- *Inspection of the splice prior to concealing the repair.*

4) Submarine cable for low voltage installations

Questions have arisen about the types of cable that are acceptable for submersible low voltage installations.

As there is no CSA certified low voltage cable for use underwater, cables complying with the following are suitable for submarine applications:

- TECK90 cable*; and
- NEMA WC 70/ICEA S-95-658-2021 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.

Note:
The use of TECK90 cable is not to be used where it is subjected to constant movement.