

## 2018 CANADIAN ELECTRICAL CODE

**SUBJECT: Section 12 – Wiring methods**

### Conductors general

#### Insulation thickness on conductors used in ungrounded or impedance grounded systems

With the change in the conductor standards, RW90 conductor is now available with a voltage rating of 600 V. The suitability of this conductor on 600 V ungrounded and impedance grounded systems, where past practice has been to use 1000 V conductors, has been questioned.

Electro-Federation Canada has issued a paper explaining that the insulation thickness on low voltage conductors is intended for mechanical strength as well as insulation value. Therefore, it is thicker than would be required for insulation value alone. Based on this, the wire and cable manufacturers have agreed that 600 V RW90 rated cable is suitable for use on 600 V ungrounded or impedance grounded systems.

#### **Rule 12-012 Underground installations**

##### Protection of conductors and cables

A review of Rule 12-012 5) indicates that it is intended to apply to cables other than armoured cable, mineral-insulated cable and aluminum-sheathed cable. Requirements for mechanical protection of these cables are stipulated in Rules 12-604 and 12-710 (see comments on Rule 12-604).

#### **Rule 12-306 Insulated conductor and cable supports**

When using wood poles to support overhead conductors, the following guidelines are recommended:

The poles should be treated with an acceptable preservative to prevent premature rotting and:

- (a) Be of sufficient length to provide the conductor clearances specified in Rule 6-112
- (b) Be guyed where necessary to maintain the specified clearances
- (c) Have a minimum circumference at the top of 430 mm
- (d) Have a minimum circumference measured at a point 1.8 m from the butt of:
  - (i) 700 mm - for poles not exceeding 7.7 m in length; or
  - (ii) 760 mm - for poles exceeding 7.7 m but not exceeding 9.2 m; or
  - (iii) 810 mm - for poles exceeding 9.2 m but not exceeding 11.0 m; or
  - (iv) 860 mm - for poles exceeding 11.0 m but not exceeding 12.2 m; and
- (e) Be set in the ground a minimum depth of:
  - (i) 1.5 m - for poles not exceeding 7.7 m in length; or
  - (ii) 1.6 m - for poles exceeding 7.7 m but not exceeding 9.2 m; or
  - (iii) 1.8 m - for poles exceeding 9.2 m but not exceeding 12.2 m;

Issue of this STANDATA is authorized by  
the Provincial Electrical Administrator

*[Original Signed]*

Clarence C. Cormier, P.Eng.



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except that for poles set in rock, concrete, or fabricated bases, this depth may be reduced.

**Rule 12-310 Clearance of insulated conductors and cables**

Although the Canadian Electrical Code, Part I does not specifically prescribe clearances for overhead conductors that are not service conductors, the clearance requirements of Rule 6-112 for service conductors are used. Farms are interpreted as commercial /industrial premises and the 5m clearance in 6-112 is recommended.

Clearances for conductors over buildings are required to be 2.5m over flat roofs and at least 1m over peaked roofs. Where metal roofing is involved, a 3m clearance is recommended. Buildings of this type may require a supporting mast so that at least a 3m clearance over the roof can be maintained.