The Use of Electricity in Mines Regulations, 2004

Repealed
by Chapter E-6.3 Reg 16 (effective February 25, 2016).

Formerly
Chapter E-6.3 Reg 9 (effective September 29, 2004).

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CHAPTER E-6.3 REG 9

The Electrical Inspection Act, 1993

Title

1 These regulations may be cited as *The Use of Electricity in Mines Regulations, 2004*.

Interpretation

2 In these regulations:

(a) **"Act"** means *The Electrical Inspection Act, 1993*;

(b) **"CSA standard"** means the standard adopted by section 3, as amended by the Appendix.

1 Oct 2004 cE-6.3 Reg 9 s2.

CSA standard adopted with amendments

3 Subject to the Act and these regulations, the Canadian Standards Association standard CAN/CSA-M421-00 *Use of Electricity in Mines* is:

(a) adopted; and

(b) amended in the manner set forth in the Appendix.

1 Oct 2004 cE-6.3 Reg 9 s3.

Compliance required

4 Compliance with the CSA standard is required as though the provisions of that standard had been made pursuant to the Act.

1 Oct 2004 cE-6.3 Reg 9 s4.

Application

5 The CSA standard governs the workmanship and all other matters pertaining to electrical equipment and the installation of electrical equipment that operates or is intended to operate in mines and quarries.

1 Oct 2004 cE-6.3 Reg 9 s5.

R.R.S. c.E-6.3 Reg 4 repealed

6 *The Use of Electricity in Mines Regulations, 1996* are repealed.

1 Oct 2004 cE-6.3 Reg 9 s6.

Coming into force

7 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

1 Oct 2004 cE-6.3 Reg 9 s7.

Appendix

Amendments to the Canadian Standards Association standard CAN/CSA-M421-00 *Use of Electricity in Mines*

Clause 3.3.6 Overhead Supply Lines

Clause 3.3.6.3 is supplemented by adding the following note after clause 3.3.6.3(c):

[See Clause B2 of Appendix B for a reproduction of Table 2 of CAN/CSA C22.3 No.1 as referred to in this clause.]

Clause 4.5.2 Primary Connections to a Movable Switch House or Substation from Overhead Power Lines

Clause 4.5.2(a) is deleted and the following substituted:

(a) Cable connections to overhead stub lines shall be connected only to overhead stub lines having a lockable disconnecting device at the source of the stub line.

Clause 5.2.1 Conductors

Clause 5.2.1 is supplemented as follows:

5.2.1.1 Where portable power cables are used to supply power to fixed equipment, ground fault protection and ground conductor monitoring must be incorporated.

Appendix B Overhead Line Clearances for Haul-Road Crossings

Clause B2. is deleted and the following substituted:

B2. The minimum vertical clearances of wires and conductors above ground or rails shall be as specified in the table below (Table 2 of CSA Standard CAN/CSA-22.4 No. 1-01 *Overhead Systems*, Update No. 2, December 2003), except that

(a) the clearances over roadways or other areas where vehicles may be expected to be used are based on a combined vehicle and load height of 4.15 m; for provinces and territories that permit the combined height of vehicle and load to exceed 4.15 m, the applicable clearance specified in the table shall be increased by the amount by which the allowable combined vehicle and load height exceeds 4.15 m;

(b) for altitudes exceeding 1000 m and where voltages exceed 50 kV, the clearances specified in the table shall be increased by 1% for each 100 m in excess of 1000 m above mean sea level;

(c) the rail level of a railway where ballast is used is not fixed and, therefore, when clearances on any line that crosses a railway are constructed or altered, an additional 0.3 m of vertical clearance above rails shall be provided, unless a lesser amount is mutually agreed upon, to permit normal subsequent ballast adjustments without encroaching on the specified minimum clearance;

(d) when clearances on a line that crosses or will cross any public thoroughfare likely to be travelled by road vehicles are constructed or altered, an additional 0.225 m of vertical clearance shall be provided, to permit the road surface to be raised by this amount during subsequent road work operations without encroaching on the specified minimum clearance.

TABLE 2
[*Clauses 4.3.1.1 and 4.7.4.1*]

Minimum Vertical Design Clearances above Ground or Rails, Alternating Current

Location of wires or conductors	Guys; messengers; communication, span, and lightning protection wires; communication cables	Trolley contact conductors and associated span wires; trolley feeders 0-750 V when paralleled by trolley contact conductors	Open supply conductors and service conductors, alternating current*; minimum clearance, m								
			0 to 750 V	Over 0.75 to 22 kV	Over 22 to 50 kV	Over 50 to 90 kV	Over 90 to 120 kV	Over 120 to 150 kV	Over 150 to 250 kV	Over 250 to 350 kV	Over 350 kV
	Col. I	Col. II	Col. III	Col. IV	Col. V	Col. VI	Col. VII	Col. VIII	Col. IX	Col. X	Col. XI
Over land likely to be travelled by road vehicles including highways, streets, lanes, alleys and driveways (other than to residences or residence garages)	4.42†	4.42	4.42	4.15	5.2	5.5	5.8	6.1	6.1 + 0.01 m/kV over 150 kV	7.1 + 0.07 m/kV over 250 kV	10.6 + 0.025 m/kV over 350 kV
Over the right-of-way of underground pipelines	4.42	4.42	4.42	4.15	5.2	5.5	5.8	6.1	6.1 + 0.01 m/kV over 150 kV	7.1 + 0.04 m/kV over 250 kV	9.1 + 0.025 m/kV over 350 kV
Alongside and within the limits (with no overhang) of streets and highways in densely populated areas	4.42†	4.42	4.42	4.15	5.2	5.5	5.8	6.1	6.1 + 0.01 m/Kv over 150 kV	7.1 + 0.07 m/kV over 250 kV	10.6 + 0.025 m/kV over 350 kV
Over or alongside§ farmland likely to be travelled by vehicles	4.42**	NA	4.42§	4.15§	5.2	5.5	5.8	6.1	6.1 + 0.01 m/kV over 150 kV	7.1 + 0.04 m/kV over 250 kV	9.1 + 0.025 m/kV over 350 kV
Alongside land likely to be travelled by road vehicles§	—	NA	4.42	4.15	5.2	5.5	5.8	6.1	6.1 + 0.01 m/kV over 150 kV	7.1 + 0.07 m/kV over 250 kV	10.6 + 0.025 m/kV over 350 kV
Over driveways to residences and residence garages for vehicles not exceeding 2.4 m in height	3.7	NA	3.7	4.15	5.2	5.5	5.8	6.1	6.1 + 0.01 m/kV over 150 kV	7.1 + 0.07 m/kV over 250 kV	10.6 + 0.025 m/kV over 350 kV
△Alongside roads and highways in areas unlikely to be travelled by road vehicles (with no overhang) within 1.5 m of the limit of the right-of-way††	3.0	NA	3.4	4.15	4.6	4.9	5.2	5.5	5.5 + 0.01 m/kV over 150 kV	6.5 + 0.07 m/kV over 250 kV	10.0 + 0.025 m/kV over 350 kV
△Over land likely to be travelled by snowmobiles or personal small-terrain vehicles (based on maximum vehicle height of 2.4 m)††	2.5	NA	3.1	3.4	3.7	4.0	4.3	4.6	4.6 + 0.01 m/kV over 150 kV	5.6 + 0.01 m/kV over 250 kV	6.1 + 0.01 m/kV over 350 kV
△Over walkways or ground normally accessible to pedestrians only††	2.5	NA	3.1	3.4	3.7	4.0	4.3	4.6	4.6 + 0.01 m/kV over 150 kV	5.6 + 0.01 m/kV over 250 kV	6.1 + 0.01 m/kV over 350 kV
△Above top of rail at railway crossings	7.3§§	6.7	7.3	7.6	8.1	8.4	8.7	9.0	9.0 + 0.01 m/kV over 150 kV	10.0 + 0.01 m/kV over 250 kV	10.5 + 0.01 m/kV over 350 kV

* For dc voltages below 750 V, use Columns II and III of Table 2.

† See Clause 4.3.1.1(b).

‡ Where communication wires or communication cables run along alleys, this clearance may be reduced to 4 m.

§ Where a line runs parallel to land accessible to vehicles but is over land not requiring clearance for vehicles, the wire may swing out over the area accessible to vehicles or, at voltages of over 250 kV, vehicles may be subjected to a hazard from induced voltages. These vertical clearances apply where the conductor (in the swung condition where specified) is over the travelled way or within the following horizontal distances from the edge of the travelled way:

(a) 0 m for wires in Columns I to V inclusive;

(b) 1 m for wires in Column VI;

(c) 1.4 m for wires in column VII;

(d) 1.7 m for wires in Column VIII;

(e) 1.7 m + 0.01 m/kV over 150 kV for wires in Column IX;

(f) 12 m for wires at rest in Column X; and

(g) 18 m for wires at rest in Column XI.

These distances apply with the wire at the swing angle as calculated in Clause 4.2.7. Where the above horizontal distances are exceeded, minimum permissible vertical clearances are governed by the ground over which the line passes.

** On farmlands not likely to be travelled by high farm vehicles, these clearances may be reduced by 0.76 m. Examples of such ground are steep slopes, sidehills, and rocky ledges. This note does not apply to swamps or other areas that may be crossed by vehicles in winter.

†† This is ground generally adjacent to fences and accessible to small vehicles but not likely to be travelled by high road vehicles or high farm machinery.

‡‡ Seasonal conditions may dictate additional clearances (See Clause 4.3.1.1(e)).

§§ See Clause 4.3.1.1(c).

Notes:

(1) Voltages are rms line-to-ground.

(2) Above 250 kV the specified clearances are minimal and are based on horizontal configuration of conductors where induced electrostatic steady-state currents are low. Other types of installation with double-circuit vertical construction may require larger clearances to keep steady-state currents to the same safe minimum values.

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