

The OESC 28th Edition Proposals for Ontario Amendments

Proposal Number: 2021-OA-002

Rule 4-004 26)

Description of Change: Service and feeder conductors size for single dwelling units

Submitted by: Electrical Safety Authority

Background

Rule 4-004 22) and Table 39 in the CE Code 2018 has been deleted. Rule 4-004 22) permits service conductors for single dwellings and feeder conductors supplying single dwelling units of row housing, apartment, or similar buildings to be sized in accordance with Table 39. This represented an easement to the industry by permitting smaller sized conductors for the above prescribed services and feeders compared to other occupancies required to follow Tables 1 to 4.

The provided rationale for the change explains that Table 39 “*creates unwarranted confusion to the Code users*” and that “*some ampacities of conductors listed in Table 39 are lower than the calculated load*” and “*some ampacities are lower than permitted by Table 13*”. The rationale did not provide any evidence that service or feeder conductors were overloaded or presented any safety hazard when sized in accordance with Table 39. There was no rationale provided explaining why larger conductors are now required compared with smaller conductors permitted and used for decades. This proposed deletion of Table 39 can add unjustified burden to the industry.

Rationale

The proposed Ontario amendment to add new subrule Rule 4-004 26) and keep Table 39, intends to continue permitting the smaller size of service conductors for single dwellings and feeder conductors supplying single dwelling units of row housing, apartment, or similar buildings. In order to avoid confusion, it will no longer require additional marking and will not be in contradiction with Table 13 since conductors are required to have 90 °C insulation rating.

This permission and the intent has been largely harmonized with National Electrical Code. (NEC).

The OESC 28th Edition Proposals for Ontario Amendments

Proposed Change:

Add new Subrule Rule 4-004 26) and Table 39

26) Notwithstanding Rules 4-006 and 8-200 1) b), 3-wire 120/240 V and 120/208 V service conductors **or cables** for single dwellings and feeder conductors **or cables** supplying single dwelling units of row housing, apartment, or similar buildings shall be permitted to be sized in accordance with Table 39, if **conductors they** have a 90 °C insulation rating and the maximum calculated load or demonstrated load does not exceed the 75°C ampacity of the conductor in accordance with Rule 8-104 and 8-106.

Table 39 Minimum permitted size for 3-wire 120/240 V and 120/208 V service conductors or cables for single dwellings and feeder conductors or cables supplying single dwelling units of row housing, apartment, or similar buildings [See Rule 4-004 26).]				
Overcurrent device rating, A	Conductor size, AWG or kcmil, Copper 90 °C	Maximum load (A)*	Conductor size, AWG or kcmil, Aluminum 90 °C	Maximum load (A)*
100	3	100	2	9590
125	2	115	1/0	120
200	2/0	175	4/0	180
225	3/0	200	250	205
400	500	380	700	375
400	2 x 2/0	350	2 x 4/0	360

*Loads calculated in accordance with **the applicable Rules in** Section 8 are permitted to exceed these values by 5%.