



Canadian Standards Association  
Mississauga, Ontario  
**To the Part I Committee**

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Subject No. 3099

Chair: R.E. Edwards

Date: November 19, 2003

Title: Identification of Neutrals, Rule 4-030

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**Submitted by:** A.Z. Tsisserev of City of Vancouver on December 7, 2002.

**Proposal:** Amend Rule 4-030 as follows:

To amend Rule 4-030 by adding wording "(b)" to the referenced Rule 4-028(1).

As the result of this amendment the reference made in Rule 4-030 will read:

"...mentioned in Rule 4-028(1)(b),..."

**Reasons for Request:**

Rule 4-028(1) states that all insulated neutral conductors which

a) are used as part of consumer's service conductors and which are installed in raceways to supply a service box rated at not more than 200 A; or

b) are sized not more than No. 2 AWG must be identified by a white or natural grey covering.

However, copper or aluminum insulated neutral conductors which are installed in raceways and which must have ampacity sufficient for a 200 A service box, will have to be sized larger than No. 2 AWG. (see Tables 2 and 4). A practical reality of the marketplace has demonstrated that such neutral conductors larger than No. 2 AWG (whether with a full white covering or with the newly developed tri-stripped covering) are not readily available. Therefore, electrical contractors have traditionally applied for a special permission to the inspection authorities - to allow use of alternate identification methods as provided by Rule 4-030 - for neutral conductors larger than No. 2 AWG installed in consumer's service raceways. However, a number of electrical safety regulators was reluctant to grant such a permission stating the fact that Rule 4-030 specifically excludes neutral conductors used under provisions of Rule 4-028(1).

Thus, the proposed amendment will assist the Code users in utilizing safe alternate identification methods (taping, painting, etc.) for all neutral conductors that are not readily available with a "white or natural grey covering", whether such conductors supply a service equipment and installed in raceways or whether they are used as a part of a multi-conductor cable.

The amended Rule will recognize availability of this product on the market for all neutral conductors up to and including No. 2 AWG and will allow a consistent approach to alternate identification methods for neutral conductors supplying consumer's services up to 200 A.

**Chair's Comments:**

After the first round of balloting, there were seven members in favour of the proposal and two against. In the review of the comments, the submitter decided that the end result was not as clear as it might have been, as it did not necessarily resolve the current confusion resulting from the present rule, regardless of whether or not there was a technical change. Consequently, there was a concern that the proposal might not gain the approval of the Part I Committee. Some of the responses from subcommittee members indicated support for clarification of the rules. A further attempt to resolve the issue has therefore been proposed, as shown below.

The stated purpose of the proposal for amendment remains the same; that is, the intent to recognise the option of identifying the ends of the neutral conductors of sizes larger than 2 AWG of circuits in raceways in residential services by means of painting or taping the colour white. This was more clearly recognised in the eighteenth edition of the code, and this became confused with changes approved in the nineteenth edition. The confusion arises in part by the limitations defined both by size and by ampacity.

The revised proposal now reads:-

**"4-028 Identification of Insulated Neutral Conductors Up To And Including 2 AWG Copper or Aluminum**

(1) Except as permitted in Subrules (2), (3), and (4), all insulated neutral conductors up to and including 2 AWG, copper or aluminum, and the conductors of flexible cords which are permanently connected to such neutral conductors, shall be identified by a white or natural grey covering.

(2) ....."

**Subcommittee Deliberation:** There were nine replies to the revised proposal of the second round of discussion. Eight of the replies were affirmative without comment. One member gave a qualified approval based on assurances that the original proposal had been withdrawn by the submitter (it had), and that there is no change to Rule 4-030 (there is not).

**Subcommittee Recommendation:** There is consensus in favour of the latest proposal, and the subject should proceed to Part I letter ballot.