



Canadian Standards Association
Mississauga, Ontario
To the Part I Committee

Subject No. 3087

Chair: R. Leduc

Date: March 11, 2003

Title: In-use Weatherproof Receptacle Covers, Rule 26-702(1)

Submitted by: David Kendall of Carlon, 25701 Science Park Drive, Cleveland, Ohio, 44122, (216) 766-6645 on September 16, 2002.

Proposal: Amend Rule 26-702(1) to read as follows:

26-702 Receptacles Exposed to the Weather

- (1) All 15 and 20 ampere Rreceptacles exposed to the weather shall be provided with weatherproof cover plates whether or not the attachment plug cap is inserted. All other unattended receptacles exposed to the weather shall be provided with weatherproof cover whether or not the attachment plug cap is inserted. All other attended receptacles shall be provided with a weatherproof cover plate, except that, when these receptacles are installed facing downward, at an angle of 45° or less from the horizontal, standard metallic cover plates may be used.

Reasons for Request: GFCI receptacle manufacturers have required that their devices have adequate protection from exposure to moisture to prevent the corrosion of internal components and state in their instruction sheets that a GFCI must be used with an in-use weatherproof cover when exposed to the weather. The result of prolonged exposure to moisture could compromise the ability of any receptacle to provide a safe application. It is safer to require an in-use weatherproof cover to be installed for all outdoor applications exposed to weather regardless if it is a GFCI or a standard receptacle.

This is a requirement of the 2002 National Electrical Code, Section 406.8(B).

Chair's Comments: For Information, the wording in the NEC regarding Section 406.8(B) is:

406.8 Receptacles in damp or Wet Locations.

(A)...

(B) Wet Locations.

(1) 15- and 20-Ampere Outdoor Receptacles. 15- and 20-ampere, 125- and 250-volt receptacles installed outdoors in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted.

(2) Other Receptacles. All other receptacles installed in a wet location shall comply with (a) or (b):

(a) A receptacle installed in a wet location where the product intended to be plugged into it is not attended while in use (e.g., sprinkler system controller, landscape lighting, holiday lights, and so forth) shall have an enclosure that is weatherproof with the attachment plug cap inserted or removed.

(b) A receptacle installed in a wet location where the product intended to be plugged into it will be attended while in use (e.g., portable tools, and so forth) shall have an enclosure that is weather proof when the attachment plug is removed.

The submitter's proposal does not meet formatting requirements of the CE Code. Without changing the intent of the proposal, wording with an acceptable format may be:

26-702 Receptacles Exposed to Weather.

(1) All 15 and 20 ampere receptacles exposed to the weather shall be provided with weatherproof cover plates whether or not the attachment plug cap is inserted

(2) All receptacles other than those in Subrule (1) exposed to the weather and unattended shall be provided with weatherproof cover whether or not the attachment plug cap is inserted.

(3) All receptacles other than those in Subrule (1) exposed to the weather and attended shall be provided with weatherproof cover except that when these receptacles are installed facing downward at an angle of 45 degrees or less from the horizontal, standard metallic cover plates may be used.

Renumber Subrules (2) and (3) to (4) and (5).

Note that the chair's rewording is only to bring the proposal in line with required CEC format. SC members are encouraged to submit suggestions for improvement.

Subcommittee Deliberations (1st Round)

Eight (8) of a possible 13 members responded, 1 agreeing with the Chair's original response without comment, 2 agreeing with the general concept of the submission and 5 disagreeing with the submission.

The members agreeing with the original concept offered the following:

I support the concept that for 15 and 20 ampere receptacles the receptacle should remain weatherproof whether or not a plug is inserted into the receptacle. This is especially important in light of the fact that outdoor receptacles require GFCI protection to comply with 26-714 (b). Although the GFCI may be a circuit breaker type that is located in the panelboard they are usually the receptacle type. When these devices are exposed to ingress of water when a cord is plugged in and the weatherproof cap is not engaged, there is bound to be corrosion. Although C22.2 No. 144 is being revised to strengthen the corrosion requirements, it is preferable to keep moisture from entering the device.

However, I do not support the clauses as proposed. They become needlessly complex with the introduction of the attended operation concept. Why do we need it? In addition, I

would not support the use of that term without a definition in Section 0. My suggested proposal would be as follows:

26-702 Receptacles Exposed to Weather

(1) All 15 and 20 ampere receptacles exposed to the weather shall be provided with cover plates that are weatherproof whether or not an attachment plug is inserted.

(2) Notwithstanding Rule 26-701 (1) all receptacles exposed to the weather shall be provided with weatherproof covers except when the receptacles are installed facing downward at an angle of 45 degrees or less from the horizontal, standard cover plates may be used.

The editorial revision has the following elements:

1) The word order in item (1) has been modified to indicate that the cover is weatherproof whether or not a plug cap is inserted.

2) The "attended" operation concept is deleted. It is difficult to enforce an intended use for a receptacle at the time of commissioning of a building, consequently it will be difficult to properly determine intent of a connected load before a building is occupied. In any event, the majority of connected loads used outdoors and exposed to the weather will be wired with 15 ampere cords.

3) the submitter has not provided a rationale as to the need for this protection on receptacles rated in excess of 20 ampere, other than it is in the NEC. If data were submitted to substantiate the need, then I would be flexible.

4) I have deleted the "metallic" in Subrule 26-702 (2). Although it is the present Subrule 26-702 (1), I do not believe that it is enforced. There are considerable number of non-metallic cover plates available that comply with a Part 2 standard that is listed in Appendix A.

The members disagreeing with the proposal were generally in agreement that the idea of "attended" and "unattended" would be unenforceable. Some of the comments are as follows:

- Not enforceable. Reject proposal and close the subject.
- We are not advised what is attended or unattended. WP covers are constantly breaking off and the real answer to the problem is to have outdoor receptacles installed at 45 degrees.
- Rule should apply to all outdoor receptacles (30A, etc.) The terms attended and unattended need to be explained
- Not necessary. "Attended" aspect would be impossible to determined. Aging of the WP cover will inevitably occur and expose the receptacle to the elements. Condensation could also affect the GFCI whether or not the cover plate is weather proof.
- Not enforceable. How does the AHJ monitor whether the receptacle is attended or not. What is an "in-use" WP cover? Is it one where the lid opens upward to protect the plug cap or is it a special type of cover? In any event, I cannot envision any WP cover capable of affording complete WP protection; seals leak, covers break off, and there's the issue of condensation generated as a result of the receptacle being expose to the warmth from the building and the colder outdoor weather (or vice versa).

Chair's Comments (1st Round)

The members agreeing with the submission provide an alternative that appears to address the question of enforceability. It also addresses a problem with the current rules around the use of the term "metallic" in existing Subrule (1).

The main objective of the submission is to protect outdoor receptacles exposed to the natural elements from moisture infiltrating into the receptacle. Based on the comments from those members disagreeing with the submission, neither the submission nor the alternative provides this protection. As one member put it "...seals leak, covers break off and ...condensation..." Perhaps the real answer is as one member suggested: "...outdoor receptacles installed at 45 degrees." However, this is non-germane to this submission and would require a new proposal.

I find neither the submission nor the alternate proposal to be persuasive in reaching the objective and therefore declare consensus for the following:

Subcommittee Recommendation: Reject the proposal and close the subject.