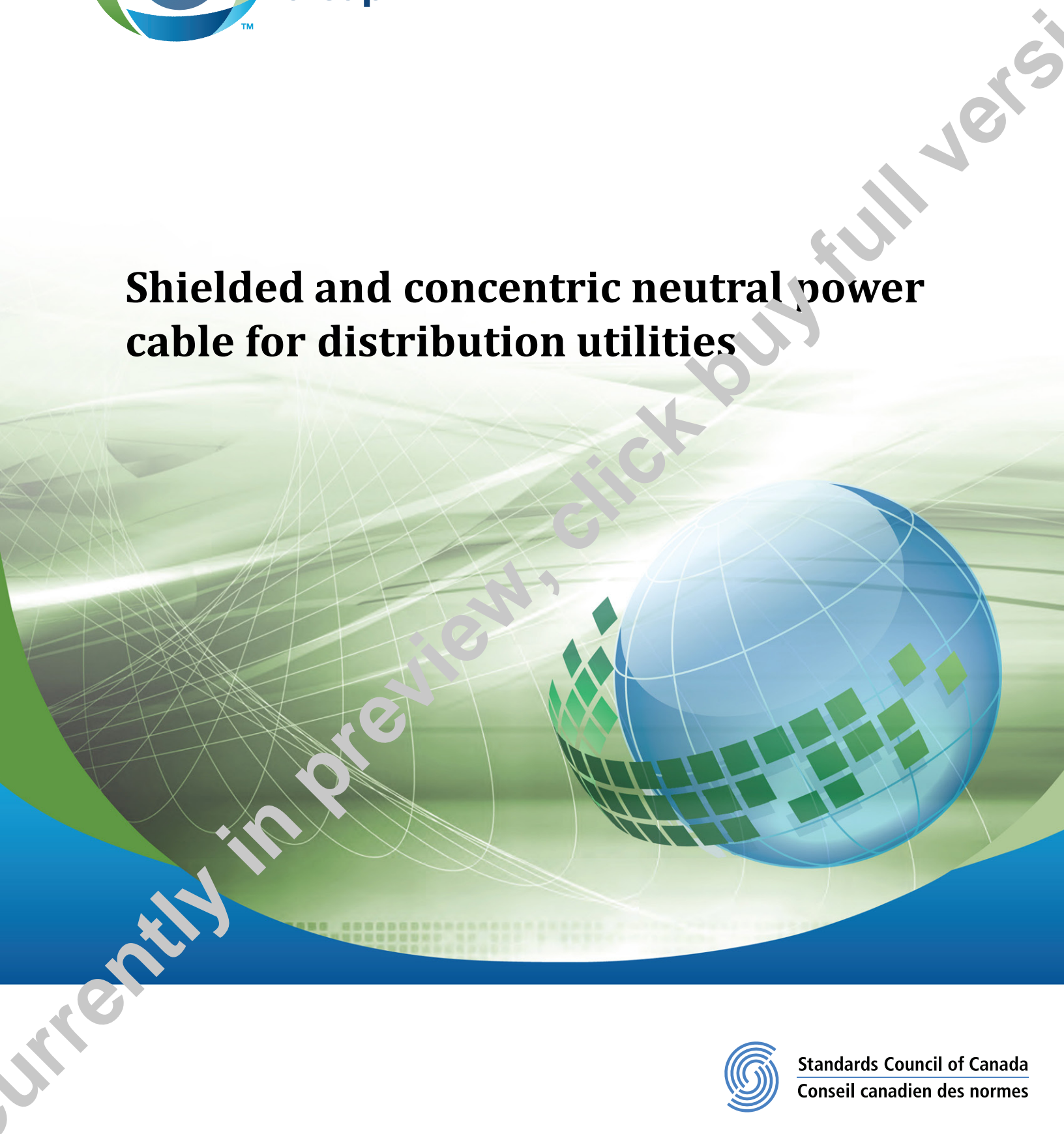




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CAN/CSA-C68.5-13
National Standard of Canada
(approved May 2014)

Shielded and concentric neutral power cable for distribution utilities



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(approved May 2014)*

CAN/CSA-C68.5-13

***Shielded and concentric neutral
power cable for distribution utilities***

Prepared by



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Preface

This is the second edition of CSA C68.5, *Primary shielded and concentric neutral cable for distribution utilities*. It supersedes the first edition published in 2007.

The first edition of CSA C68.5 adapted the requirements of the following documents:

- a) ANSI/ICEA S-94-649;
- b) ANSI/ICEA S-97-682;
- c) CEA Purchasing Specification WCWG-01 (95), *XLPE Primary Cable up to #4/0 AWG*; and
- d) CEA Purchasing Specification WCWG-02 (95), *XLPE Primary Feeder Cable*.

The main revisions incorporated in the second edition of CSA C68.5 include:

- The default diameter over insulation is now in accordance with ANSI/ICEA S-94-949 and S-97-682 (See Annex C). Diameters consistent with AEIC CS8 remain as a purchaser-specified option (see Annex B).
- Crosslinked polyethylene (XLPE) and High-density polyethylene (HDPE) are included as jacket materials
- Marking requirements for cable reels are streamlined.
- The cold bend test on finished cable as a production test is limited to No. 4/0 and smaller cable with extruded to fill jackets. The 3 m minimum sample length for the cold bend test is eliminated and the time to perform the bend is increased from 15 s to 1 min.
- CV extrusion qualification is now included in production tests and removed from qualification test.
- Deformation, weather resistance, and environmental stress cracking tests for jackets have been revised.
- Preferred cable constructions to be used for cold impact and cold bend qualification tests on finished cable are specified.
- The heat shock test has been moved from production tests to qualification tests.
- Insulation shield thickness for cables other than concentric neutral is revised.
- A new table that specifies jacket thickness and test voltages for lead sheath cables is included.

This Standard is arranged to allow for selection of the individual components, such as conductors, insulation type and thickness, metallic shield or concentric neutral, and jackets, that are required for specific installation and service conditions. Clauses 4 to 9 specify the materials, material characteristics, dimensions, and tests applicable to the major components of cables and, if applicable, to the design concept.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on Shielded and Concentric Neutral Power Cables Rated 5–46 kV, under the jurisdiction of the Technical Committee on Insulated Power Cable and the Strategic Steering Committee on Power Engineering and Electromagnetic Compatibility, and has been formally approved by the Technical Committee.

This Standard has been approved as a National Standard of Canada by the Standards Council of Canada.

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

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CAN/CSA-C68.5-13

Shielded and concentric neutral power cable for distribution utilities

1 Scope

1.1

The requirements of this Standard apply to materials, constructions, and testing of tree-retardant cross-linked polyethylene and ethylene propylene rubber-insulated single conductor or triplexed primary shielded and concentric neutral power cables rated 15 to 46 kV that are used for the transmission and distribution of electrical energy.

The products covered by this Standard are suitable for direct burial or installation in ducts in both wet and dry locations and where cable will be exposed to sunlight.

1.2

This Standard specifies the requirements for shielded and concentric neutral cable intended primarily for operation by electric utilities.

Note: *The operation of cables complying with this Standard by other than an electric utility can be subject to additional requirements by the electrical inspection authority having jurisdiction.*

1.3

In CSA Standards, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; “may” is used to express an option or that which is permissible within the limits of the standard; and “can” is used to express possibility or capability. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

1.4

The values given in SI (metric) units are the standard. The values given in parentheses are for information only.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below.

CSA Group

C22.2 No. 0.3-09

Test methods for electrical wires and cables