



**CSA
Group**

CSA C22.3 No. 60826:19
(IEC 60826:2017, MOD)
National Standard of Canada



CSA C22.3 No. 60826:19
Overhead transmission lines — Design criteria
(IEC 60826:2017, MOD)



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CSA C22.3 No. 60826:19
January 2019

Title: *Overhead transmission lines — Design criteria*

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CSA C22.3 No. 60826:19
Overhead transmission lines —
Design criteria
(IEC 60826:2017, MOD)

Prepared by
International Electrotechnical Commission



Reviewed by



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Published in January 2019 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

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ICS 29.240.20
ISBN 978-1-4883-1770-5

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CSA C22.3 No. 60826:19

Overhead transmission lines — Design criteria

(IEC 60826:2017, MOD)

CSA Preface

This is the third edition of CSA C22.3 No. 60826, *Overhead transmission lines — Design criteria*, which is an adoption, with Canadian deviations, of the identically titled IEC (International Electrotechnical Commission) Standard 60826 (fourth edition, 2017-02). It supersedes the previous edition published in 2010 as CAN/CSA-C22.3 No. 60826, *Design criteria of overhead transmission lines* (adopted IEC 60826:2003). It is one in a series of Standards issued by CSA Group under Part III of the *Canadian Electrical Code*. At the time of publication, IEC 60826:2017 is available from IEC in English only. CSA Group will publish the French version when it becomes available from IEC.

For brevity, this Standard will be referred to as “CSA C22.3 No. 60826” throughout.

The Standard deals with the reliability-based design of overhead electrical transmission lines. This Standard is intended to be used in conjunction with CSA C22.3 No. 1-15, *Overhead systems*.

This Standard was reviewed for Canadian adoption by the CSA Subcommittee on Reliability-Based Design of Overhead Lines, under the jurisdiction of the CSA Technical Committee on Overhead Systems and the CSA Strategic Steering Committee on Power Engineering and Electromagnetic Compatibility, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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INTERNATIONAL STANDARD



Overhead transmission lines – Design criteria



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Overhead transmission lines – Design criteria

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OVERHEAD TRANSMISSION LINES – DESIGN CRITERIA

FOREWORD

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International Standard IEC 60826 has been prepared by IEC technical committee 11: Overhead lines.

This fourth edition cancels and replaces the third edition published in 2003. It constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

This standard has been further simplified by removing many informative annexes and theoretical details that can now be found in CIGRE Technical Brochure 178 and referred to as needed in the text of the standard. Many revisions have also been made that reflect the users experience in the application of this standard, together with information about amplification of wind speed due to escarpments. The annexes dealing with icing data have also been updated using new work by CIGRE.

The text of this standard is based on the following documents:

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OVERHEAD TRANSMISSION LINES – DESIGN CRITERIA

1 Scope

This International Standard specifies the loading and strength requirements of overhead lines derived from reliability-based design principles. These requirements apply to lines 45 kV and above, but can also be applied to lines with a lower nominal voltage.

This document also provides a framework for the preparation of national standards dealing with overhead transmission lines, using reliability concepts and employing probabilistic or semi-probabilistic methods. These national standards will need to establish the local climatic data for the use and application of this standard, in addition to other data that are country-specific.

Although the design criteria in this standard apply to new lines, many concepts can be used to address the design and reliability requirements for refurbishment, upgrading and uprating of existing lines.

This document does not cover the detailed design of line components such as supports, foundations, conductors or insulators strings.

2 Normative references

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IEC 60652, *Loading tests on overhead line structures*

IEC 61089, *Round wire concentric lay overhead electrical stranded conductors*

IEC 61773, *Overhead lines – Testing of foundations for structures*

IEC 61774, *Overhead lines – Meteorological data for assessing climatic loads*

IEC 61284, *Overhead lines – Requirements and tests for fittings*

3 Terms, definitions, symbols and abbreviations

For the purposes of this document, the following terms, definitions, symbols and abbreviations apply.

3.1 Terms and definitions

3.1.1

characteristic strength

guaranteed strength, minimum strength, minimum failing load

R_c

strength value guaranteed in appropriate standards

Note 1 to entry: This value usually corresponds to an exclusion limit, from 2 % to 5 %, with 10 % being an upper practical (and conservative) limit.