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BS EN 50341-1:2012



BSI Standards Publication

Overhead electrical lines exceeding AC 1 kV -

Part 1: General requirements — Common specifications

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**Overhead electrical lines exceeding AC 1 kV -
Part 1: General requirements -
Common specifications**

Lignes électriques aériennes dépassant
AC 1 kV -
Partie 1: Règles générales -
Spécifications communes

Freileitungen über AC 1 kV -
Teil 1: Allgemeine Anforderungen -
Gemeinsame Festlegungen

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

This document (EN 50341-1:2012) has been prepared by CLC/TC 11 "Overhead electrical lines exceeding 1 kV a.c. (1,5 kV d.c.)".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-11-19
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-11-19

This document supersedes EN 50341-1:2001 + A1:2009 and EN 50423-1:2005.

The most significant technical changes that have been made are:

- EN 50341-1 takes into account distribution and transmission overhead lines by merging EN 50341-1:2001 + A1:2009 and EN 50423-1;
- EN 50341-1 is consistent with recent editions of Eurocodes;
- one unique method is described concerning the determination of actions on line;
- new design methods and new developments are included.

EN 50341 is divided into the following parts:

- EN 50341-1, Overhead electrical lines exceeding AC 1 kV — Part 1: General requirements — Common specifications
- EN 50341-2, Overhead electrical lines exceeding AC 1 kV — Part 2: National Normative Aspects

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

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0 Introduction

0.1 Detailed structure of the standard

The standard comprises two parts, numbered Part 1 and Part 2.

0.2 Part 1: General requirements - Common specifications

This part, also referred to as the Main Body, includes clauses common to all countries. These clauses have been prepared by Working Groups and approved by CLC/TC 11.

The Main Body is available in English, French and German.

0.3 Part 2: National Normative Aspects

The index lists the existing National Normative Aspects (NNAs) related to the different countries; a NNA for a country is normative in that country and informative in other countries.

The National Normative Aspects (NNAs) reflect national practices. They generally include A-deviations, special national conditions and national complements.

0.4 A-deviations

A-deviations are required by existing national laws or regulations, which cannot be altered at the time of preparation of the standard.

Reference is made to CENELEC Internal Regulations Part 2, definition 2.17.

0.5 Special national conditions (snc)

Special national conditions are national characteristics or practices that cannot be changed even over a long period, e.g. those due to climatic conditions, earth resistivity, etc.

Reference is made to CENELEC Internal Regulations, Part 2, definition 2.15.

0.6 National complements (NCPTs)

National complements reflect national practices, which are neither A-deviations, nor special national conditions. It has been agreed within CLC/TC 11 that NCPTs should be gradually adapted to the Main Body, aiming at the usual EN standard structure including only a Main Body, A-deviations and special national conditions.

0.7 Language

The NNAs are published in English and may be published additionally in the national language(s) of the respective country.

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1 Scope

1.1 General

This European Standard applies to new overhead electric lines with nominal system voltages exceeding AC 1 kV and with rated frequencies below 100 Hz.

The extent of the application of this standard by each country in respect of existing overhead lines is subject to the requirements of the National Normative Aspects (NNA) applicable to that country.

The specific definition as to the meaning and extent of a "new overhead line" is to be identified by each National Committee (NC) within their own NNA. At the least, it shall mean a totally new line between two points, A and B.

1.2 Field of application

This European Standard also applies to covered conductor overhead lines and overhead insulated cable systems with nominal system voltage exceeding AC 1 kV up to and including AC 45 kV and with rated frequencies below 100 Hz. Additional requirements and simplifications are specified that apply only for this voltage range.

Design and construction of overhead lines with insulated conductors, where internal and external clearances can be smaller than specified in the standard, are not included for lines exceeding 45 kV. Other requirements of the Standard may be applicable, and where necessary NNAs should be consulted.

This European Standard is applicable for optical Ground Wires (OPGWs) and optical Conductors (OPCONs). However the standard is not applicable to telecommunication systems which are used on overhead transmission lines either attached to the transmission line conductor/earth wire system (e.g. wraparound, etc.) or as separate cables supported by the transmission supports for example All Dielectric Self Supporting (ADSS) or for telecommunication equipment mounted on individual transmission line structures. When such cases are necessary, requirements can be given in the NNAs.

This European Standard does not apply to:

- overhead electric lines inside closed electrical areas as defined in EN 61936-1;
- catenary systems of electrified railways, unless explicitly required by another standard.

1.3 Structure of the European Standard EN 50341-1

Normative references, definitions and symbols with their significations are listed in Clause 2 below.

In Clause 3, the basis of design according to this standard is given.

The standard specifies in Clauses 4 to 6 the general requirements that shall be met for the structural and electrical design of overhead lines to ensure that the line is suitable for its purpose with due consideration given to safety of public, construction, operation, maintenance and environmental issues.

Clauses 7 to 11 of this standard consider the structural and electrical requirements that shall be met for the design, installation and testing of overhead line components including supports, foundations, conductors, insulator strings and hardware as determined by the relevant design parameters of the line.

Finally, Clause 12 considers the quality assurance requirements during design, manufacturing and construction.

Flowchart 1.1 summarises the structure of the European Standard EN 50341-1, its Clauses 1 to 12 and its Annexes A to R.