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## Elektriska friledningar över 45 kV (AC)

*Overhead electrical lines exceeding AC 45 kV*

Som svensk standard gäller europastandarden EN 50341-1:2001, EN 50341-2:2001 och EN 50341-3:2001. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50341-1:2001 med de delar av EN 50341-3 inarbetade i texten, vilka äger tillämpning i Sverige.

### Nationellt förord

Europastandarden EN 50341:2001

består av tre delar:

- EN 50341-1, som innehåller avsnitt gemensamma för hela CENELEC
- EN 50341-2, som är en innehållsförteckning till del 3, och
- EN 50341-3, som innehåller nationella normativa bilagor, vilka ger de fordringar som i respektive land gäller utöver eller istället för fordringarna i motsvarande avsnitt i del 1.

Denna utgåva 2 av standarden SS-EN 50341 innehåller den officiella engelska språkversionen av EN 50341-1 med den i EN 50341-3-18 ingående svenska normativa bilagan inarbetad i texten. **Den svenska normativa bilagan EN 50341-3-18 har uppdaterats t o m Corrigendum 2006.** På så sätt har ett sammanhängande dokument erhållits. Beteckningen EN 50341-1 har behållits i sidhuvudet.

De avsnitt som hämtats från den svenska normativa bilagan är markerade med en ram. Avsnitten är av tre slag:

- *A-dev*, A-avvikelse, till följd av nationell lag eller föreskrift
  - *snc*, särskilda nationella förhållanden, till följd av klimatförhållanden och liknande
  - *ncpt*, nationella tillägg, till följd av andra nationella regler eller förfaranden
- vilket markerats i texten.

Den kompletta europastandarden, dvs EN 50341-1:2001, EN 50341-2:2001 och EN 50341-3:2001 med de olika delarna och nationella bilagorna var för sig, kan beställas från SEK.

Tidigare fastställd svensk standard SS-EN 50341, utgåva 1, 2002, gäller ej fr o m 2007-04-23.

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ICS 29.240.20

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Denna standard är fastställd av SEK Svensk Elstandard, som också kan lämna upplysningar om **sakinnehållet** i standarden.  
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Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

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Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

**EN 50341-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2001

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ICS 29.240.20

English version

**Overhead electrical lines exceeding AC 45 kV  
Part 1: General requirements -  
Common specifications**

Lignes électriques aériennes dépassant  
AC 45 kV  
Partie 1: Règles générales - Spécifications  
communes

Freileitungen über AC 45 kV  
Teil 1: Allgemeine Anforderungen -  
Gemeinsame Festlegungen

This European Standard was approved by CENELEC on 2001-01-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 11, Overhead electrical lines exceeding AC 1 kV (DC 1,5 kV).

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50341-1 on 2001-01-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2002-05-01
  
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2004-01-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes E, G, J & K are normative and annexes A, B, C, D, F, H, L, M, N, P, Q & R are informative.

As far as the overhead lines towers are concerned, the designer may refer to prEN 1993-7-1, currently referred to as ENV 1993-3-1, as prepared by TC 250 of CEN, if considered appropriate.

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# Introduction

## Detailed structure of the standard

The standard comprises three parts:

### 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.

### Part 2: Index of National Normative Aspects

This index gives the list of all the National Normative Aspects (NNAs) - see signification and contents of NNAs hereafter under "Part 3: National Normative Aspects".

The index is available in English, French and German.

### Part 3: National Normative Aspects

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

#### 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 3.1.9.

#### 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 3.1.7/ 3.1.9.

**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.

**Rules for the numbering of NNAs:**

The NNAs are numbered as follows :

AT	Austria	EN 50341-3-1
BE	Belgium	EN 50341-3-2
CH	Switzerland	EN 50341-3-3
DE	Germany	EN 50341-3-4
DK	Denmark	EN 50341-3-5
ES	Spain	EN 50341-3-6
FI	Finland	EN 50341-3-7
FR	France	EN 50341-3-8
GB	Great Britain	EN 50341-3-9
GR	Greece	EN 50341-3-10
IE	Ireland	EN 50341-3-11
IS	Iceland	EN 50341-3-12
IT	Italy	EN 50341-3-13
LU	Luxembourg	EN 50341-3-14 (non existant)
NL	Netherlands	EN 50341-3-15
NO	Norway	EN 50341-3-16
PT	Portugal	EN 50341-3-17
SE	Sweden	EN 50341-3-18
CZ	Czech Republic	EN 50341-3-19
x	xxxx	EN 50341-3-xx, etc.

**Language:**

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

## 1 Scope

This standard applies to overhead electric lines with rated voltages exceeding 45 kV AC and with rated frequencies below 100 Hz.

This standard specifies the general requirements that shall be met for the design and construction of new overhead lines to ensure that the line is suitable for its purpose with regard to safety of persons, maintenance, operation and environmental considerations.

NOTE 1 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.

NOTE 2 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. All other requirements of the standard may be applied to overhead lines with insulated conductors. When necessary, requirements for clearances can be given in the NNAs.

NOTE 3 This part of the 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 (for example wraparound,...) 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 necessary, requirements can be given in the NNAs.

This standard does not apply to :

- overhead electric lines inside closed electrical areas as defined in HD 637;
- catenary systems of electrified railways.

*(ncpt) SE.1 Application to existing overhead lines*

This Part 3-18 is applicable for new overhead lines only and not for existing lines in Sweden. If some planning/design or execution work on existing lines in Sweden has to be performed, the degree of application of this Standard shall be agreed upon by the parties concerned.

*(ncpt) SE.2 Replacement*

This Part 3-18 replaces the Swedish Standards SS 436 01 01 to SS 436 01 06 and SS 421 07 10 for overhead lines with a nominal voltage greater than 45 kV. Consequently this Part only take into account the former Class A and the reinforced lines "ledning Klass A respektive Brottssäker ledning".

*(ncpt) SE.3 Optical ground wire (OPGW) and optical phase conductor (OPCON)*

This Part 3-18 is applicable for installation of OPGW and OPCON, also known as OPPC, in overhead lines in Sweden.

*(ncpt) SE.4 All dielectric self supporting optical cable (ADSS) and optical attached cable (OPAC)*

This Part 3-18 is applicable for installation of ADSS and OPAC in overhead lines in Sweden.

NOTE: The allowable electrical field for the ADSS cable should be taken into consideration when the conductor configuration is determined.