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Starkströmsanläggningar med nominell spänning överstigande 1 kV AC – Jordning

Earthing of power installations exceeding 1 kV a.c.

Som svensk standard gäller europastandarden EN 50522:2010. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50522:2010.

Nationellt förord

I bilaga Q redovisas svenska avvikelser, vilka av CENELEC accepterats till följd av speciella nationella förhållanden.

SS-EN 50522, utgåva 1, 2011 ersätter avsnitt 9 i tidigare fastställd svensk standard SS 421 01 01, utgåva 2, 2004, som ej gäller fr o m 2013-11-01. Övriga delar av SS 421 01 01 ersätts av SS-EN 61936-1, utgåva 1, 2011.

Standarder underlättar utvecklingen och höjer elsäkerheten

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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Earthing of power installations exceeding 1 kV a.c.

Prises de terre des installations
électriques en courant alternatif de
puissance supérieure à 1 kV

Erdung von Starkstromanlagen mit
Nennwechselspannungen über 1 kV

This European Standard was approved by CENELEC on 2010-11-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 99X, Power installations exceeding 1 kV a.c. (1,5 kV d.c.). It was submitted to formal vote and was accepted by CENELEC as EN 50522 on 2010-11-01.

Together with EN 61936-1:2010 this document supersedes HD 637 S1:1999.

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

The following dates were fixed:

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| – latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement | (dop) | 2011-11-01 |
| – latest date by which the national standards conflicting
with the EN have to be withdrawn | (dow) | 2013-11-01 |

NOTE *The text identical with IEC 61936-1 is written in italics.*

Contents

1	Scope	6
2	Normative references	7
3	Terms and definitions	8
3.1	General definitions	8
3.2	Definitions concerning installations	8
3.3	Definitions concerning safety measures against electric shock	9
3.4	Definitions concerning earthing	9
4	Fundamental requirements	18
4.1	General requirements	18
4.2	Electrical requirements	18
4.3	Safety criteria	19
4.4	Functional requirements	20
5	Design of earthing systems	20
5.1	General	20
5.2	Dimensioning with respect to corrosion and mechanical strength	20
5.3	Dimensioning with respect to thermal strength	21
5.4	Dimensioning with regard to touch voltages	23
6	Measures to avoid transferred potential	27
6.1	Transferred potential from High voltage systems to Low voltage systems	27
6.2	Transferred potentials to telecommunication and other systems	28
7	Construction of earthing systems	29
7.1	Installation of earth electrodes and earthing conductors	29
7.2	Lightning and transients	29
7.3	Measures for earthing on equipment and installations	30
8	Measurements	30
9	Maintainability	30
9.1	Inspections	30
9.2	Measurements	30
	Annex A (normative) Method of calculating permissible touch voltages	31
	Annex B (normative) Touch voltage and body current	32
	B.1 Calculation of permissible touch voltage	32
	B.2 Calculation of prospective permissible touch voltage	33
	Annex C (normative) Type and minimum dimensions of earth electrode materials ensuring mechanical strength and corrosion resistance	36
	Annex D (normative) Current rating calculation of earthing conductors and earth electrodes	37
	Annex E (normative) Description of the recognized specified measures M	41
	Annex F (normative) Measures on earthing systems to reduce the effects of high frequency interference	44
	Annex G (normative) Detailed measures for earthing of equipment and installations	45
	G.1 Fences around substation installations	45
	G.2 Pipes	45
	G.3 Traction rails	45
	G.4 Pole mounted transforming and/or switching installations	45
	G.5 Secondary circuits of instrument transformers	46

Annex H (normative) Measuring touch voltages	47
Annex I (informative) Reduction factors related to earth wires of overhead lines and metal sheaths of underground cables	48
I.1 General	48
I.2 Typical values of reduction factors of overhead lines and cables (50 Hz)	48
Annex J (informative) Basis for the design of earthing systems	50
J.1 Soil resistivity	50
J.2 Resistance to earth	50
Annex K (informative) Installing the earth electrodes and earthing conductors	54
K.1 Installation of earth electrodes	54
K.2 Installation of earthing conductors	54
Annex L (informative) Measurements for and on earthing systems	56
L.1 Measurement of soil resistivities	56
L.2 Measurement of resistances to earth and impedances to earth	56
L.3 Determination of the earth potential rise	57
L.4 Elimination of interference and disturbance voltages for earthing measurements	58
Annex M (normative) Details on site inspection and documentation of earthing systems	61
Annex N (informative) The use of reinforcing bars in concrete for earthing purpose	62
Annex O (informative) Global Earthing System	63
Annex P (normative) Special national conditions	64
Annex Q (informative) A-deviations	65
Figure 1 - Example for the surface potential profile and for the voltages in case of current carrying earth electrodes	14
Figure 2 - Example for currents, voltages and resistances for an earth fault in a transformer substation with low impedance neutral earthing	15
Figure 3 - Essential components of earth fault currents in high voltage systems	17
Figure 4 - Permissible touch voltage	25
Figure 5 - Design of earthing systems, if not part of a global earthing system (C1 of 5.4.2), with regard to permissible touch voltage U_{Tp} by checking the earth potential rise U_E or the touch voltage U_T	26
Figure B.1 - Scheme of the touching circuit	34
Figure B.2 - Examples for curves $U_{Vtp} = f(t_f)$ for different additional resistances $R_F = R_{F1} + R_{F2}$	35
Figure D.1 - Short circuit current density G for earthing conductors and earth electrodes relative to the duration of the fault current t_F	38
Figure D.2 - Continuous current I_D for earthing conductors	40
Figure J.1 - Resistance to earth of horizontal earth electrodes (made from strip, round material or stranded conductor) for straight or ring arrangement in homogeneous soil	51
Figure J.2 - Resistance to earth of earth rods, vertically buried in homogeneous soil	52
Figure J.3 - Typical values for the resistance to earth of a cable with earth electrode effect depending on the length of the cable and the soil resistivity	53
Figure L.1 - Example for the determination of the impedance to earth by the heavy-current injection method	60

Table 1 - Relevant currents for the design of earthing systems	22
Table 2 - Minimum requirements for interconnection of low voltage and high voltage earthing systems based on EPR limits	28
Table B.1 - Permissible body current I_B depending on the fault duration t_f	32
Table B.2 - Total human body impedance Z_B related to the touch voltage U_T for a current path hand to hand.....	32
Table B.3 - Calculated values of the permissible touch voltage U_{Tp} as a function of the fault duration t_f	33
Table B.4 - Assumption for calculations with additional resistances	33
Table D.1 - Material constants.....	37
Table D.2 - Factors for conversion of continuous current from 300 °C final temperature to another final temperature.....	38
Table E.1 - Conditions for the use of recognized specified measures M to ensure permissible touch voltages U_{Tp} (see Figure 4).....	41
Table J.1 - Soil resistivities for frequencies of alternating currents (Range of values, which were frequently measured).....	50

1 Scope

This European Standard is applicable to specify the requirements for the design and erection of earthing systems of electrical installations, in systems with nominal voltage above 1 kV a.c. and nominal frequency up to and including 60 Hz, so as to provide safety and proper functioning for the use intended.

For the purpose of interpreting this standard, an electrical power installation is considered to be one of the following:

- a) substation, including substation for railway power supply;
- b) electrical installations on mast, pole and tower;
switchgear and/or transformers located outside a closed electrical operating area;
- c) one (or more) power station(s) located on a single site;
the installation includes generators and transformers with all associated switchgear and all electrical auxiliary systems. Connections between generating stations located on different sites are excluded;
- d) the electrical system of a factory, industrial plant or other industrial, agricultural, commercial or public premises.

The electrical power installation includes, among others, the following equipment:

- rotating electrical machines;
- switchgear;
- transformers and reactors;
- converters;
- cables;
- wiring systems;
- batteries;
- capacitors;
- earthing systems;
- buildings and fences which are part of a closed electrical operating area;
- associated protection, control and auxiliary systems;
- large air core reactor.

NOTE In general, a standard for an item of equipment takes precedence over this standard.

This European Standard does not apply to the design and erection of earthing systems of any of the following:

- overhead and underground lines between separate installations;
- electric railways;
- mining equipment and installations;
- fluorescent lamp installations;
- installations on ships and off-shore installations;
- electrostatic equipment (e.g. electrostatic precipitators, spray-painting units);
- test sites;
- medical equipment, e.g. medical X-ray equipment.

This European Standard does not apply to the requirements for carrying out live working on electrical installations.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 60529, *Degrees of protection provided by enclosures (IP Code)* (IEC 60529)

EN 60909, *Short-circuit currents in three-phase a.c. systems* (IEC 60909)

HD 60364-1, *Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions* (IEC 60364-1, modified)

HD 60364-4-41, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock* (IEC 60364-4-41, modified)

IEC 60050(151):2001, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60050(195):1998, *International Electrotechnical Vocabulary (IEV) – Part 195: Earthing and protection against electric shock*

IEC 60050(601):1985, *International Electrotechnical Vocabulary (IEV) – Part 601: Generation, transmission and distribution of electricity – General*

IEC 60050(602):1983, *International Electrotechnical Vocabulary (IEV) – Part 602: Generation, transmission and distribution of electricity – Generation*

IEC 60050(604):1987, *International Electrotechnical Vocabulary (IEV) – Part 604: Generation, transmission and distribution of electricity – Operation*

IEC 60050(605):1983, *International Electrotechnical Vocabulary (IEV) – Part 605: Generation, transmission and distribution of electricity – Substations*

IEC 60050(826):2004, *International Electrotechnical Vocabulary (IEV) – Part 826: Electrical installations*

IEC 60287-3-1, *Electric cables – Calculation of the current rating – Part 3-1: Sections on operating conditions – Reference operating conditions and selection of cable type*

IEC/TS 60479-1:2005, *Effects of current on human beings and livestock – Part 1: General aspects*

IEC 60949:1988, *Calculation of thermally permissible short-circuit currents, taking into account non-adiabatic heating effects*

IEC/TS 61000-5-2, *Electromagnetic compatibility (EMC) – Part 5: Installation and mitigation guidelines – Section 2: Earthing and cabling*