



SLOVENSKI STANDARD

SIST EN 61330:2001

01-marec-2001

High-voltage/low-voltage prefabricated substations

High-voltage/low-voltage prefabricated substations

Fabrikfertige Stationen für Hochspannung/Niederspannung

Postes préfabriqués haute tension/basse tension

Ta slovenski standard je istoveten z: EN 61330:1996

[SIST EN 61330:2001](https://standards.iteh.ai/catalog/standards/sist/bd41cdbe-0b52-46bc-957c-726cf6554311/sist-en-61330-2001)

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ICS:

29.240.10 Transformatorske postaje. Substations. Surge arresters
Prenapetostni odvodniki

SIST EN 61330:2001

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61330

January 1996

ICS 29.240.00

Descriptors: High-voltage, prefabricated substations, earthing, auxiliary equipment

English version

**High-voltage/low-voltage prefabricated substations
(IEC 1330:1995)**

Postes préfabriqués haute tension/
basse tension
(CEI 1330:1995)

Fabrikfertige Stationen für
Hochspannung/Niederspannung
(IEC 1330:1995)

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This European Standard was approved by CENELEC on 1995-11-28. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, 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

Foreword

The text of document 17C/168 + 168A/FDIS, future edition 1 of IEC 1330, prepared by SC 17C, High-voltage enclosed switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61330 on 1995-11-28.

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) 1996-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-09-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A, B, C and ZA are normative and annex D is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

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The text of the International Standard IEC 1330:1995 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 50(151)	1978	International electrotechnical vocabulary Chapter 151: Electrical and magnetic devices	-	-
IEC 50(441)	1984	Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 60-1	1989	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 68-2-62	1991	Environmental testing Part 2: Test methods - Test Ef: Impact, pendulum hammer		
+ A1	1993		EN 60068-2-62	1995
IEC 71-2	1976	Insulation co-ordination - Part 2: Application guide	HD 540.2 S1	1991
IEC 76-1	1993 ¹⁾	Power transformers - Part 1: General	-	-
IEC 76-2	1993 ²⁾	Part 2: Temperature rise	-	-
IEC 76-5 (mod)	1976	Part 5: Ability to withstand short-circuit	HD 398.5 S1	1983
IEC 243-1 (mod)	1988	Methods of test for electric strength of solid insulating materials - Part 1: Tests at power frequencies	HD 559.1 S1	1991
IEC 298	1990	A.C. metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	EN 60298	1996

1) IEC 76-1:1976 is harmonized as HD 398.1 S1:1980.

2) IEC 76-2:1976 is harmonized as HD 398.2 S1:1980.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 354	1991	Loading guide for oil-immersed power transformers (Corrigendum 1992)	-	-
IEC 364-4-41 (mod)	1992	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996
IEC 439-1	1992	Low-voltage switchgear and controlgear assemblies Part 1: Type-tested and partially type-tested assemblies	EN 60439-1 ³⁾ + corr. August + corr. February	1994 1994 1995
IEC 466	1987	A.C. insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 38 kV	-	-
IEC 529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 551 (mod)	1987	Determination of transformer and reactor sound levels	EN 60551	1992
IEC 664-1	1992	Insulation co-ordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	-	-
IEC 694	1980	Common clauses for high-voltage switchgear and controlgear standards	HD 448 S3 ⁴⁾	1995
IEC 726 (mod)	1982	Dry-type power transformers	HD 464 S1 ⁵⁾ + A2 + A3 + A4	1988 1991 1992 1995
IEC 905	1987	Loading guide for dry-type power transformers	-	-
IEC 947-1 (mod)	1988	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1 + corr. March A11	1991 1993 1994
IEC 1180-1	1992	High-voltage test techniques for low-voltage equipment Part 1: Definitions, test and procedure requirements	EN 61180-1	1994
ISO 1052	1982	Steels for general engineering purposes	-	-

3) EN 60439-1 includes corrigendum December 1993 to IEC 439-1.

4) HD 448 S3 includes A1:1985 + A2:1993 to IEC 694.

5) HD 464 S1 includes A1:1986 to IEC 726.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 1210	1992	Plastics Determination of burning behaviour of horizontal and vertical specimens in contact with a small-flame ignition source	-	-

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
1330

Première édition
First edition
1995-11

Postes préfabriqués
haute tension/basse tension

iTeh STANDARD PREVIEW
(standards.iteh.ai)
High-voltage/low-voltage
prefabricated substations

SIST EN 61330:2001

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE/LOW-VOLTAGE
PREFABRICATED SUBSTATIONS

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

International Standard IEC 1330 has been prepared by sub-committee 17C: High-voltage enclosed switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

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

DIS	Report on voting
17C/168/DIS	17C/174/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annexes A, B and C form an integral part of this standard.

Annex D is for information only.

INTRODUCTION

Prefabricated substations are defined as type-tested equipment comprising transformer, low-voltage and high-voltage switchgear, connections and auxiliary equipment in an enclosure to supply low-voltage energy from a high-voltage system. These substations are in locations accessible to the public and should ensure safety for persons according to the specified service conditions.

This means that in addition to specified characteristics, ratings and relevant test procedures, particular attention has been paid to specifications concerning the protection of persons. This protection is ensured by use of type-tested components and suitable design and construction of the enclosure.

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HIGH-VOLTAGE/LOW-VOLTAGE PREFABRICATED SUBSTATIONS

1 General

1.1 Scope

This International Standard specifies the service conditions, rated characteristics, general structural requirements and test methods of prefabricated substations, which are cable connected, to be operated from inside or outside for alternating current of primary rated voltages above 1 kV and up to and including 52 kV¹⁾, and for a transformer of maximum power 1 600 kVA, for service frequencies up to and including 60 Hz for outdoor installation in locations with public accessibility.

Prefabricated substations can be situated at ground level or partially or completely below ground level.

As no basic generally accepted IEC or ISO standards are available concerning ageing or corrosion, requirements covering these aspects are not included in this standard.

1.2 Normative references

The following normative documents contain provisions which, through reference in the text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 50(151): 1978, *International Electrotechnical Vocabulary (IEV) – Chapter 151: Electrical and magnetic devices*

IEC 50 (441): 1984, *International Electrotechnical Vocabulary (IEV) – Chapter 441: Switchgear, controlgear and fuses*

IEC 60-1: 1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 68-2-62: 1991, *Environmental testing – Part 2: Tests – Test Ef: Impact, pendulum hammer Amendment 1 (1993)*

IEC 71-2: 1976, *Insulation co-ordination – Part 2: Application guide*

IEC 76: *Power transformers*

IEC 76-1: 1993, *Power transformers – Part 1: General*

¹⁾ The rated voltage on the secondary side should not exceed 1 kV.

IEC 76-2: 1993, *Power transformers – Part 2: Temperature rise*

IEC 76-5: 1976, *Power transformers – Part 5: Ability to withstand short circuit*

IEC 243-1: 1988, *Methods of test for electric strength of solid insulating materials – Part 1: Tests at power frequencies*

IEC 298: 1990, *AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

IEC 354: 1991, *Loading guide for oil-immersed power transformers*

IEC 364-4-41: 1992, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 41: Protection against electric shock*

IEC 439-1:1992, *Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies*

IEC 466: 1987, *AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 38 kV*

IEC 529: 1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 551: 1987, *Determination of transformer and reactor sound levels*

IEC 664-1: 1992, *Insulation co-ordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 694: 1980, *Common clauses for high-voltage switchgear and controlgear standards*

IEC 726: 1982, *Dry-type power transformers*

IEC 905: 1987, *Loading guide for dry-type power transformers*

IEC 947-1: 1988, *Low-voltage switchgear and controlgear – Part 1: General rules*

IEC 1180-1: 1992, *High-voltage test techniques for low-voltage equipment – Part 1: Definitions, test and procedure requirements*

ISO 1052: 1982, *Steels for general engineering purposes*

ISO 1210: 1992, *Plastics – Determination of the burning behaviour of horizontal and vertical specimens in contact with a small-flame ignition source*

1.3 Definitions

For the purpose of this International Standard, the following definitions apply. For the definitions of general terms used in this International Standard, reference is made to IEC 50(441).