SVENSK STANDARD SS-EN 60071-2

Fastställd	Utgåva	Sida	Ansvarig kommitté
1997-06-27	1	1 (1+127)	SEK TK 28

Isolationskoordination – Del 2: Tillämpningsanvisningar

Insulation co-ordination – Part 2: Application guide

Som svensk standard gäller europastandarden EN 60071-2:1997. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60071-2:1997.

Nationellt förord

Europastandarden EN 60071-2:1997*)

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60071-2, Third edition, 1996 - Insulation co-ordination - Part 2: Application guide**

utarbetad inom International Electrotechnical Commission, IEC.

*) EN 60071-2:1997 ikraftsattes 1997-06-27 som SS-EN 60071-2 genom offentliggörande, d v s utan utgivning av något svenskt dokument.

ICS 29.080.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60071-2

January 1997

ICS 29.080.00

Supersedes HD 450.2 S1:1991 and partly supersedes HD 540.3 S1:1991

Descriptors: Insulation co-ordination, a.c. high-voltage network, voltage stress, insulation withstand, protective device, co-ordination between stresses and withstand

English version

Insulation co-ordination
Part 2: Application guide
(IEC 71-2:1996)

Coordination de l'isolement
Partie 2: Guide d'application
(CEI 71-2:1996)

Isolationskoordination
Teil 2: Anwendungsrichtlinie
(IEC 71-2:1996)

This European Standard was approved by CENELEC on 1996-10-01. 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, 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

Ref. No. EN 60071-2:1997 E

SEK Svensk Elstandard

Foreword

The text of document 28/115/FDIS, future edition 3 of IEC 71-2, prepared by IEC TC 28, Insulation co-ordination, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60071-2 on 1996-10-01.

This European Standard supersedes HD 540.2 S1:1991 and, together with EN 60071-1:1995, supersedes HD 540.3 S1:1991.

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) 1997-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-09-01

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

Endorsement notice

The text of the International Standard IEC 71-2:1996 was approved by CENELEC as a European Standard without any modification.

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.

Publication	Year	Title	EN/HD	Year
IEC 56 (mod)	1987	High-voltage alternating-current circuit-breakers	HD 348 S6[1)]	1995
IEC 60-1	1989	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 71-1	1993	Insulation co-ordination Part 1: Definitions, principles and rules	EN 60071-1	1995
IEC 99-1	1991	Surge arresters Part 1: Non-linear resistor type gapped surge arresters for a.c. systems	EN 60099-1	1994
IEC 99-4	1991	Part 4: Metal-oxide surge arresters without gaps for a.c. systems	EN 60099-4	1993
IEC 99-5 (mod)	1996	Part 5: Selection and application recommendations	EN 60099-5	1996
IEC 505	1975	Guide for the evaluation and identification of insulation systems of electrical equipment	-	-
IEC 507	1991	Artificial pollution tests on high-voltage insulators to be used on a.c. systems	EN 60507	1993
IEC 721-2-3	1987	Classification of environmental conditions Part 2: Environmental conditions appearing in nature - Air pressure	HD 478.2.3 S1	1990
IEC 815	1986	Guide for the selection of insulators in respect of polluted conditions	-	-

1) HD 348 S6 includes A1:1992 + A2:1995 to IEC 56.

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INSULATION CO-ORDINATION –

Part 2: Application guide

1 General

1.1 *Scope*

This part of IEC 71 constitutes an application guide and deals with the selection of insulation levels of equipment or installations for three-phase electrical systems. Its aim is to give guidance for the determination of the rated withstand voltages for ranges I and II of IEC 71-1 and to justify the association of these rated values with the standardized highest voltages for equipment.

This association is for insulation co-ordination purposes only. The requirements for human safety are not covered by this application guide.

It covers three-phase systems with nominal voltages above 1 kV. The values derived or proposed herein are generally applicable only to such systems. However, the concepts presented are also valid for two-phase or single-phase systems.

It covers phase-to-earth, phase-to-phase and longitudinal insulation.

This application guide is not intended to deal with routine tests. These are to be specified by the relevant product committees.

The content of this guide strictly follows the flow chart of the insulation co-ordination process presented in figure 1 of IEC 71-1. Clauses 2 to 5 correspond to the squares in this flow chart and give detailed information on the concepts governing the insulation co-ordination process which leads to the establishment of the required withstand levels.

The guide emphasizes the necessity of considering, at the very beginning, all origins, all classes and all types of voltage stresses in service irrespective of the range of highest voltage for equipment. Only at the end of the process, when the selection of the standard withstand voltages takes place, does the principle of covering a particular service voltage stress by a standard withstand voltage apply. Also, at this final step, the guide refers to the correlation made in IEC 71-1 between the standard insulation levels and the highest voltage for equipment.

The annexes contain examples and detailed information which explain or support the concepts described in the main text, and the basic analytical techniques used.

1.2 *Normative references*

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 71. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 71 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 56: 1987, *High-voltage alternating-current circuit-breakers*

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

IEC 71-1: 1993, *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 99-1: 1991, *Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems*

IEC 99-4: 1991, *Surge arresters – Part 4: Metal-oxide surge arresters without gaps for a.c. systems*

IEC 99-5: 1996, *Surge arresters – Part 5: Selection and application recommendations – Section 1: General*

IEC 505: 1975, *Guide for the evaluation and identification of insulation systems of electrical equipment*

IEC 507: 1991, *Artificial pollution test on high-voltage insulators to be used on a.c. systems*

IEC 721-2-3: 1987, *Classification of environmental conditions – Part 2: Environmental conditions appearing in nature – Air pressure*

IEC 815: 1986, *Guide for the selection of insulators in respect of polluted conditions*