



**National Standards Authority of Ireland**

IRISH STANDARD

**I.S. HD 448 S4:1999**

ICS 29.130.10

**COMMON CLAUSES FOR HIGH-VOLTAGE  
SWITCHGEAR AND CONTROLGEAR  
STANDARDS**

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**HARMONIZATION DOCUMENT**  
**DOCUMENT D'HARMONISATION**  
**HARMONISIERUNGSDOKUMENT**

**HD 448 S4**

January 1996

ICS 29.120.60

Supersedes HD 448 S3:1995

Descriptors: High-voltage switchgear and controlgear, requirements, testing

English version

**Common clauses for high-voltage switchgear and  
controlgear standards  
(IEC 694:1980 + A3:1995)**

**Clauses communes pour les normes  
de l'appareillage à haute tension  
(CEI 694:1980 + A3:1995)**

**Gemeinsame Bestimmungen für  
Hochspannungsschaltgeräte-Normen  
(IEC 694:1980 + A3:1995)**

This Harmonization Document 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 implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

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 the International Standard IEC 694:1980 and its amendments 1:1985 and 2:1993, prepared by SC 17A, High-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was approved by CENELEC as HD 448 S3 on 1994-12-06.

The text of document 17A/17C/454/FDIS, future amendment 3 to IEC 694:1980, was submitted to the IEC-CENELEC parallel vote.

The combined text was approved by CENELEC as HD 448 S4 on 1995-11-28.

The following dates were fixed:

- latest date by which the existence of the HD  
has to be announced at national level (doa) 1996-03-01
- latest date by which the HD has to be implemented  
at national level by publication of a harmonized  
national standard or by endorsement (dop) 1996-09-01
- latest date by which the national standards conflicting  
with the HD have to be withdrawn (dow) 1996-09-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annexes A, B, ZA and ZB are normative.  
Annexes ZA and ZB have been added by CENELEC.

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### **Endorsement notice**

The text of the International Standard IEC 694:1980 and its amendment 3:1994 (incorporating amendments 1:1985 and 2:1993) was approved by CENELEC as a Harmonization Document without any modification.

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**Annex ZA (normative)****Special national conditions**

**Special national condition:** National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

**Belgium**Rated voltages

There are appreciable discrepancies between actual network voltages and the next highest IEC rated voltages, two additional rated voltages are permitted, those being 41,5 kV and 82,5 kV.

The rated lightning impulse withstand voltage and the rated one minute power-frequency withstand voltage related to these values are given in the table below.

Rated voltage U (r.m.s. value)  (kV)	Rated lightning impulse withstand voltage (peak value)				Rated 1 min power-frequency withstand voltage  (r.m.s. value)	
	List 1		List 2		To earth, between poles and across open swit- ching device (kV)	Across the isolating distance
	to earth, between poles and across open swit- ching device (kV)	Across the isolating distance (kV)	To earth, between poles and across open swit- ching device (kV)	Across the isolating distance (kV)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
41,5	170	195	200	230	80	92
82,5	380	440	380	440	150	175

## Annex ZB (normative)

### Normative references to international publications with their corresponding European publications

This Harmonization document 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 Harmonization document 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 38	1975 <sup>1)</sup>	IEC standard voltages	-	-
IEC 50(441)	1974	International Electrotechnical Vocabulary (IEV) Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 59	1938	IEC standard current ratings	-	-
IEC 60-1	1989	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 71-1	1976 <sup>2)</sup>	Insulation co-ordination Part 1: Terms, definitions, principles and rules	-	-
IEC 71-2	1976	Part 2: Application guide	HD 540.2 S1	1991
IEC 71-3	1982	Phase-to-phase insulation co-ordination Principles, rules and application guide	HD 540.3 S1	1991
IEC 85	1957 <sup>3)</sup>	Recommendations for the classification of materials for the insulation of electrical machinery and apparatus in relation to their thermal stability in service	-	-
IEC 117-1	1960	Recommended graphical symbols Part 1: Kind of current, distribution, methods of connection and circuit elements	-	-

1) IEC 38:1983, mod., is harmonized as HD 472 S1:1989.

2) IEC 71-1:1993 is harmonized as EN 60071-1:1995.

3) IEC 85:1984, *Thermal evaluation and classification of electrical insulation*, is harmonized as HD 566 S1:1990.

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