

**TULEKAHJUOLUDELE VASTAVATE ERIOMADUSTEGA
0,6/1 KV JA 1,9/3,3 KV JÕUKAABLID KASUTAMISEKS
ELEKTRIAAMADES**

**0,6/1 kV and 1,9/3,3 kV power cables with special fire
performance for use in power stations**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-HD 604 S1:2001 sisaldab Euroopa standardi HD 604 S1:1994 + A1:1997 ingliskeelset teksti.	This Estonian standard EVS-HD 604 S1:2001 consists of the English text of the European standard HD 604 S1:1994 + A1:1997.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.08.1994.	Date of Availability of the European standard is 19.08.1994.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 13.220.40, 29.060.20

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UDC 621.315.2:621.039.53

Descriptors: Electric cable, electric power station, fire behaviour,
specification, characteristics, dimension, test, marking

ENGLISH VERSION

0.6/1 kV power cables with special fire
performance for use in power stations

Câbles d'énergie 0,6/1 kV
ayant un comportement au feu
particulier et destinés aux
centrales électriques

Starkstromkabel mit besonderen
Eigenschaften im Falle eines
Brandes für Kraftwerke und
einer Nennspannung von 0,6/1 kV

This Harmonization Document was approved by CENELEC on 1993-12-08.
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 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

This Harmonisation Document was prepared by WG10 of CENELEC Technical Committee TC20, Electric Cables.

The document contains the following Parts, arranged according to the main constructional features of the cables covered:

- Part 1 - General requirements
- Part 3 - Single core and multicore PVC insulated and sheathed cables
- Part 4 - Single core and multicore XLPE and EPR insulated, PVC or chlorinated elastomer sheathed cables
- Part 5 - Single core and multicore halogen-free cables

There is no Part 2, which was to have covered Additional Test Methods. These have been combined with the corresponding Part from HD 603 (Distribution cables of rated voltages 0.6/1kV) to form a separate document, HD 605.

Each of Parts 3-5 inclusive are further divided into particular sections and, by decision of the Technical Board (D68/047) National Committees need at present only implement in their national language those sections having national applicability. The obligation remains however to announce the full HD in public by titles and numbers, and also to withdraw any conflicting national standards.

Page numbering reflects the arrangement into Parts and particular sections, e.g. Page 4-C-3 is page 3 of particular section C of Part 4.

A proposed Part 6, relating to cables for specific use within the containment area of Nuclear Power Stations has not been progressed.

References to other HDs, ENs and international standards are given in the particular parts or sections.

The draft was submitted to the CENELEC members for formal vote in March 1993 and was approved by CENELEC as HD 604 S1 on 8th December 1993.

The following dates were fixed:

- latest date of announcement
of the HD at national level (doa) 1994-06-01
- latest date of publication of
a harmonised national standard (dop) 1994-12-01
- latest date of withdrawal of
conflicting national standards (dow) 1994-12-01

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PART 1 General requirements

PART 3 Single core and multicore PVC insulated and sheathed cables

- 3-A Cables with copper and aluminium concentric conductors
- 3-B Cables with copper or aluminium conductors, with or without metallic armour or screen
- 3-C Cables with circular copper conductors, with or without metallic covering
- 3-D Cables with copper or aluminium round or sector-shaped conductors and a concentric conductor
- 3-E Cables with copper or aluminium conductors and wire or strip armour
- 3-F Cables with additional or amended requirements for oxygen index testing of materials

PART 4 Single core and multicore XLPE or EPR insulated, PVC or chlorinated elastomer sheathed cables

- 4-A Cables with copper and aluminium solid or stranded conductors
- 4-B Cables with copper or aluminium conductors and tape armour
- 4-C Cables without metallic covering, having circular copper conductors
- 4-D Cables with copper and aluminium conductors; unarmoured, armoured or double-screened
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- 4-F Cables with additional or amended requirements for oxygen index testing of materials

PART 5 Single core and multicore halogen free cables

- 5-A Cables with copper or aluminium conductors with or without metallic covering or screen
- 5-B Unarmoured cables with copper conductors
- 5-C Cables with copper or aluminium conductors: unarmoured, armoured or double screened
- 5-D Cables with copper and aluminium conductors and a metallic covering
- 5-E Cables with copper or aluminium conductors and wire armour
- 5-F Cables with copper or aluminium conductors either solid or stranded
- 5-G Cables with copper conductors and optional copper concentric conductor
- 5-H Cables with copper conductors, with and without concentric copper conductors, and with optional armouring
- 5-I One to four core cables having aluminium or copper conductors
- 5-J Cables with additional or amended requirements for oxygen index testing of materials

'B L A N K P A G E'

HD 604 S1:1994
0.6/1KV POWER CABLES WITH SPECIAL FIRE PERFORMANCE
FOR USE IN POWER STATIONS

PART 1 : GENERAL REQUIREMENTS

REFERENCES

References are made in this Part 1 to other Parts of HD 604, and to other Harmonisation Documents and International Standards as follows:

HD 21	:	PVC insulated cables of rated voltages up to and including 450/750V
HD 22	:	Rubber insulated cables of rated voltages up to and including 450/750V
HD 186	:	Marking by inscription for the identification of cores of electric cables having more than five cores
HD 383	:	Conductors of insulated cables
HD 405	:	Tests on electric cables under fire conditions
HD 505	:	Common test methods for insulating and sheathing materials of electric cables
HD 602	:	Test on gases evolved during the combustion of materials from cables: Determination of degree of acidity (corrosivity) of gases by measuring pH and conductivity
HD 605	:	Electric cables: Additional test methods
HD 606	:	Measurement of smoke density of electric cables burning under defined conditions
IEC 96-1	:	Radio frequency cables Part 1: General requirements and measuring methods

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0.6/1.KV CABLES WITH SPECIAL FIRE
PERFORMANCE FOR USE IN POWER STATIONS

Part 1 - General Requirements

1. General

1.1 Scope

HD 604 applies to rigid and flexible conductor cables for fixed installations having a rated voltage U_0/U of 0.6/1kV. The insulation and sheaths may be either thermoplastic or thermosetting, halogenated or halogen free. The cables are mainly intended for use in power generating plants and sub-stations. All cables have special fire requirements or special requirements for nuclear power stations, excluding cables used in and around the containment area.

Control cables having a minimum conductor size of 1mm² up to 61 cores are included in addition to the range of power supply cables.

This Part 1 specifies the General Requirements applicable to these cables; additional or deviating requirements are given in the particular sections of this HD.

Test Methods are specified in HD 21, HD 22, HD 383, HD 405, HD 505, HD 602, HD 605, HD 606 and IEC 96-1

The particular types of cables are specified in Parts 3, 4 and 5.

1.2 Object

The objects of this Harmonisation Document are:

- to standardise cables that are safe and reliable when properly used, in relation to the technical requirements of the system of which they form a part;
- to state the characteristics and manufacturing requirements directly or indirectly bearing on safety,
- and to specify methods for checking conformity with those requirements.

2. Definitions

2.1 Definitions relating to insulating and sheathing compounds

2.1.1 Insulating and sheathing compounds

The types of insulating and sheathing compounds covered in this HD are listed below, together with their abbreviated designations.

2.1.1.1 Thermoplastic Polyvinyl Chloride compound (PVC)

Combinations of materials suitable selected, proportioned and treated, of which the characteristic constituent is polyvinyl chloride or one of its copolymers. The same term also designates compounds containing both polyvinyl chloride and certain of its copolymers.

2.1.1.2 Cross-linked Ethylene Propylene Rubber (EPR)

A compound based on ethylene propylene rubber or similar (EPM or EPDM) which when cross-linked complies with the requirements given in the particular sections.