

**Mitmesoonelised ja mitmepaarilised
kaablid maapealseks ja maa-aluseks
paigaldamiseks**

Multicore and multipair cable for installation above
and below ground

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-HD 627 S1:2001 sisaldab Euroopa standardi HD 627 S1:1996 + A1:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.07.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-HD 627 S1:2001 consists of the English text of the European standard HD 627 S1:1996 + A1:2000.</p> <p>This document is endorsed on 12.07.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

ICS 29.060.20

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

HARMONIZATION DOCUMENT
DOCUMENT D'HARMONISATION
HARMONISIERUNGSDOKUMENT

HD 627 S1

October 1996

ICS 29.060.20

Descriptors: Underground electrical wiring system, overhead electrical line, electric cable

English version

**Multicore and multipair cable for installation above
and below ground**

Câbles multiconducteurs et multipaires
pour installation dans l'air et dans le sol

This Harmonization Document was approved by CENELEC on 1996-07-02. 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 two official versions (English, French).

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. It was agreed by TC20 at its Rotterdam meeting (March 1995) to be submitted for formal vote by National Committees.

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

- Part 1 General requirements
- Part 2 Special test methods
- Part 3 Multicore and multipair cables for use underground
- Part 4 Multicore and multipair halogenated cables complying with HD 405.1
- Part 5 Multicore and multipair halogenated cables complying with HD 405.3 or similar
- Part 6 Multicore and multipair halogen-free cables complying with HD 405.1
- Part 7 Multicore and multipair halogen-free cables complying with HD 405.3 or similar

Each of Parts 3-7 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 5-M-3 is page 3 of particular section M of Part 5.

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 January 1996 and was approved by CENELEC as HD 627 S1 on 1996-07-02. By decision of the Technical Board (D81/139) this HD exists only in English and French.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 1996-12-01
- latest date by which the HD has to be implemented at national level by publication of a harmonised national standard or by endorsement (dop) 1997-06-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 1997-06-01

CONTENTS

PART 1 General Requirements

PART 2 Special test methods

PART 3 Multicore and multipair cables for use underground

- 3-A1: Multicore cable with copper conductors, single wire armoured and PVC sheathed
- 3-A2: Multipair cable with copper conductors, single wire armoured and PVC sheathed
- 3-E: 450/750V multicore cable with polyethylene insulation and sheath
- 3-F1: 300V armoured XLPE insulated and PVC sheathed, screened instrumentation cables
- 3-F2: 250V armoured PVC insulated and PVC sheathed single and multipair screened signalling cables
- 3-F3: 1kV armoured multicore XLPE insulated and PVC sheathed cables

PART 4 Multicore and multipair halogenated cables complying with HD 405.1

- 4-B1: 500V multiquad cables with and without a metallic covering
- 4-B2: 750V multicore cables with and without a metallic covering
- 4-C1: 300/500V Cables with solid or stranded conductors and with or without a common screen
- 4-C2: Screened cables with stranded conductors and rated voltage 150/250V
- 4-D1: 450/750V multicore PVC insulated and sheathed cables
- 4-D2: 450/750V multicore PVC insulated and sheathed cables with concentric conductor
- 4-D3: 450/750V multicore PVC insulated and sheathed flexible cables
- 4-D4: 450/750V multicore PVC insulated and sheathed screened and armoured cables
- 4-E1: 450/750V multicore cable with a metallic covering
- 4-E2: Multipair cables with a metallic covering
- 4-E3: 450/750V multicore cable with a lead screen
- 4-F: 300V armoured and unarmoured XLPE insulated and PVC sheathed, screened instrumentation cables
- 4-H1: 0.6/1kV PVC insulated multicore cables with and without concentric conductor
- 4-H2: 0.6/1kV XLPE insulated multicore cables with and without concentric conductor
- 4-J1: PVC insulated and sheathed multicore and multipair cables
- 4-J2: 0.6/1kV multicore cables with a metallic screen

PART 5 Multicore and multipair halogenated cables complying with HD 405.3 or similar

- 5-A1: Multicore cables with copper conductors, single wire armoured and PVC sheathed
- 5-A2: Multipair cables with copper conductors, single wire and double steel tape armoured and PVC sheathed
- 5-F1: 1kV XLPE insulated and PVC sheathed multicore cables
- 5-F2: 250V PVC insulated and PVC sheathed multicore, single and multipair signalling cables
- 5-F3: 500V screened and unscreened PVC insulated and PVC sheathed multicore control cables
- 5-F4: 300V armoured and unarmoured XLPE insulated and PVC sheathed, screened instrumentation cables.
- 5-G1: Cables in pairs, triples and quads with copper conductors, PVC insulated and sheathed and metallic screen
- 5-G2: Cables in pairs, triples and quads with copper conductors, EPR insulation, CSP sheaths and metallic screen
- 5-M: PVC insulated and sheathed multicore cables and PVC or polyethylene insulated and PVC sheathed multipair cables

PART 6 Multicore and multipair halogen-free cables complying with HD 405.1

6-E: 450/750V multicore cables with common screen

PART 7 Multicore and multipair halogen-free cables complying with HD 405.3 or similar

- 7-A1: Multicore cables with copper conductors, single wire armoured and unarmoured with non-halogenated sheath
- 7-A2: Multipair cables with copper conductors single wire and double steel tape armoured with non-halogenated sheath
- 7-B1: 500V multiquad cables with a metallic covering
- 7-B2: 750V multicore cables with a metallic covering
- 7-D1: 450/750V multicore cables without screen
- 7-D2: 450/750V multicore cables with concentric conductor
- 7-F1: 1kV XLPE insulated and non-halogenated sheathed multicore cables
- 7-F2: 300V armoured and unarmoured XLPE insulated and non-halogenated sheathed and screened instrumentation cables
- 7-G: Cables in pairs, triples and quads with copper conductors, metallic screen and having halogen free all-non-metallic components
- 7-H: 0.6/1kV multicore cables with and without a concentric conductor
- 7-K: 150V multicore and multipair cables with and without a metallic covering
- 7-L1: Cables in pairs and triples and multicore cables with circular copper conductors and metallic covering
- 7-L2: Multipair and multicore cables with circular copper conductors for plug-in connections
- 7-M: EPR or XLPE insulated and ZH sheathed multicore cables and polyethylene insulated and ZH sheathed multipair cables

This document is a preview generated by EVS

HD 627 S1:1996

MULTICORE AND MULTIPAIR CABLE FOR INSTALLATION
ABOVE AND BELOW GROUND

PART 1 : GENERAL REQUIREMENTS

PART 1: GENERAL REQUIREMENTS

CONTENTS

	<u>Page</u>
1. General	
1.1 Scope	4
1.2 Object	4
2. Definitions	
2.1 Definitions relating to insulating and sheathing compounds	4
2.2 Definitions relating to the tests	5
2.3 Rated voltage	6
3. Marking	
3.1 Indication of origin	6
3.2 Additional marking	7
3.3 Durability	8
3.4 Legibility	8
3.5 Common marking	8
3.6 Use of the name CENELEC	8
4. Core identification	8
5. General requirements for the construction of the cables	
5.1 Conductors	8
5.2 Insulation	9
5.3 Fillers and tapes	10
5.4 Assembly of cores, pairs, triples or quads	10
5.5 Inner covering (bedding)	10
5.6 Rip cord	11
5.7 Inner sheath	11
5.8 Metallic coverings	12
5.9 Oversheath	12
5.10 Non metallic components of halogen free cables	13
6. Completed cables	13
7. (Spare)	13
8. (Spare)	13
9. Guide to use and selection of cable	13

REFERENCES

Part 1 of HD 627 incorporates by dated or undated reference, provisions from other publications. These 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 Part 1 of HD 627 only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 60811	Common test methods for insulating and sheathing materials of electric cables
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 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 189-1	Low frequency cables and wires with PVC insulation and PVC sheath - General test and measuring methods

MULTICORE AND MULTIPAIR CABLE FOR INSTALLATION ABOVE AND BELOW GROUND

PART 1 - GENERAL REQUIREMENTS

1. General

1.1 Scope

HD 627 applies to multicore and multipair rigid and flexible conductor cables for fixed installations having a rated voltage up to 1kV and operating at a voltage above 80V rms. The insulation and sheath may be either thermoplastic or thermosetting, halogenated or halogen free.

The cables are mainly intended for use in power generating plants and sub-stations and some for direct burial in conjunction with utility operations. Cables may have specific fire performance requirements. Cables designed to be installed within the containment area of nuclear power plants (LOCA cables), or cables specifically designed to be radiation resistant are not included in this HD.

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 given in EN 60811, HD 21, HD 22, HD 186, HD 383, HD 405, HD 602, HD 605, HD 606, IEC 189 and this HD.

The particular types of cables for each category of fire performance are specified in Parts 3 to 7.

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;
- 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 compound covered in this HD are listed below together with their abbreviated designations.

2.1.1.1 Thermoplastic polyvinyl chloride compound (PVC)

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