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**Kummiisolatsiooniga kaablid  
nimipingega kuni 450/750 V. Osa 13:  
Ühe- ja mitmesoonelised,  
võrkstruktuurisolatsiooni ja -mantliga  
paindkaablid madala suitsu ja  
korrodeerivate gaaside emissiooniga**

Cables of rated voltages up to and including 450/750 V and having cross-linked insulation Part 13:  
Halogen-free flexible cables having low emission of smoke

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-HD 22.13 S2:2007 sisaldab Euroopa standardi HD 22.13 S2:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.04.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-HD 22.13 S2:2007 consists of the English text of the European standard HD 22.13 S2:2007.</p> <p>This document is endorsed on 27.04.2007 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>
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<p><b>Käsitlusala:</b> This part (Part 13) of the HD details the particular specifications for single and multicore halogen-free flexible cables of rated voltage 450/750 V, insulated and sheathed with cross-linked compound, and having low emission of smoke.</p>	<p><b>Scope:</b> This part (Part 13) of the HD details the particular specifications for single and multicore halogen-free flexible cables of rated voltage 450/750 V, insulated and sheathed with cross-linked compound, and having low emission of smoke.</p>
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**ICS** 29.060.20

**Võtmesõnad:** color code, constitution, designation, dimension, fire resistance, flexible cable, insulated cable, insulated conductor, insulation, marking, polymer, protective sheath, rubber, specification, test

English version

**Cables of rated voltages up to and including 450/750 V  
and having cross-linked insulation -  
Part 13: Halogen-free flexible cables having low emission of smoke**

Conducteurs et câbles isolés avec  
des matériaux réticulés de tension  
assignée au plus égale à 450/750 V -  
Partie 13: Câbles souples  
à faible émission de fumées

Starkstromleitungen mit vernetzter  
Isolierhülle für Nennspannungen  
bis 450/750 V -  
Teil 13: Halogenfreie flexible Leitungen  
mit geringer Entwicklung von Rauch

This Harmonization Document was approved by CENELEC on 2006-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document at national level.

Up-to-date lists and bibliographical references concerning such national implementations 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 Harmonization Document was prepared by the Technical Committee CENELEC TC 20, Electric cables.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as HD 22.13 S2 on 2006-12-01.

This Harmonization Document supersedes HD 22.13 S1:1996 + A1:2000.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 2007-06-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 2007-12-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 2008-12-01

HD 22, *Cables of rated voltages up to and including 450/750 V and having cross-linked insulation*, now has the following parts:

HD 22.1 S4	General requirements
HD 22.2 S3 <sup>1)</sup>	Test methods
HD 22.3 S4	Heat resistant silicone rubber insulated cables
HD 22.4 S4	Cords and flexible cables
HD 22.5	(Spare)
HD 22.6 S2	Arc welding cables
HD 22.7 S2	Cables with increased heat resistance for internal wiring for a conductor temperature of 110°C
HD 22.8 S2	Polychloroprene or equivalent synthetic elastomer sheathed cable for decorative chains
HD 22.9 S3	Single core halogen-free non-sheathed cables for fixed wiring having low emission of smoke
HD 22.10 S2	EPR insulated and polyurethane sheathed flexible cables
HD 22.11 S2	EVA cords and flexible cables
HD 22.12 S2	Heat resistant EPR cords and flexible cables
HD 22.13 S2	Halogen-free flexible cables having low emission of smoke
HD 22.14 S3	Cords for applications requiring high flexibility
HD 22.15 S2	Multicore cables insulated and sheathed with heat resistant silicone rubber
HD 22.16 S2	Water resistant polychloroprene or equivalent synthetic elastomer sheathed cables

<sup>1)</sup> HD 22.2 has been superseded by EN 50395 and EN 50396

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## 1 Scope

This part (Part 13) of the HD details the particular specifications for single and multicore halogen-free flexible cables of rated voltage 450/750 V, insulated and sheathed with cross-linked compound, and having low emission of smoke.

Each cable shall comply with the appropriate requirements given in Part 1 of this HD and the particular requirements of this part.

NOTE The overall dimensions of the cables in this part of HD 22 have been calculated in accordance with EN 60719.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50266-2-4	Common test methods for cables under fire conditions – Test for vertical flame spread of vertically-mounted bunched wires or cables – Part 2-4: Procedures – Category C
EN 50267-2-1	Common test methods for cables under fire conditions – Tests on gases evolved during combustion of material from cables – Part 2-1: Procedures – Determination of the amount of halogen acid gas
EN 50267-2-2	Common test methods for cables under fire conditions – Tests on gases evolved during combustion of materials from cables – Part 2-2: Procedures – Determination of degree of acidity of gases for materials by measuring pH and conductivity
EN 50334	Marking by inscription for the identification of cores of electric cables
EN 50363-5	Insulating, sheathing and covering materials for low voltage energy cables – Part 5: Halogen-free, cross-linked insulating compounds
EN 50363-6	Insulating, sheathing and covering materials for low voltage energy cables – Part 6: Halogen-free, cross-linked sheathing compounds
EN 50395	Electrical test methods for low voltage energy cables
EN 50396	Non electrical test methods for low voltage energy cables
EN 60228	Conductors of insulated cables (IEC 60228)
EN 60332-1-2	Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame (IEC 60332-1-2)
EN 60684-2	Flexible insulating sleeving – Part 2: Methods of test (IEC 60684-2)
EN 60811 (series)	Insulating and sheathing materials of electric and optical fibre cables – Common test methods (IEC 60811 series)
EN 61034-2	Measurement of smoke density of cables burning under defined conditions – Part 2: Test procedure and requirements (IEC 61034-2)