

**Polüvinüülkloriidisolatsiooniga kaablid  
nimipingega kuni 450/750 V. Osa 3:  
Kaitsekestata kaablid kohtkindlaks  
paigalduseks**

Polyvinyl chloride insulated cables of rated voltages  
up to and including 450/750 V - Part 3: Non-  
sheathed cables for fixed wiring

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<p>Käesolev Eesti standard EVS-HD 21.3 S3:2001 sisaldab Euroopa standardi HD 21.3 S3:1995+A1:1999 ingliskeelset teksti.</p>	<p>This Estonian standard EVS-HD 21.3 S3:2001 consists of the English text of the European standard HD 21.3 S3:1995+A1:1999.</p>
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ICS 29.060.20

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Supersedes HD 21.3 S2:1990

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Descriptors: Conductor, cable, flexible cable, rigid cable, single core cable, multicore cable, conductor material, flat cable, tinsel cord, compound, polyvinyl chloride, insulation compound, type test, sample test, routine test, nominal voltage, mark, common marking, identification, colour scheme, construction, insulation, filler, sheath, covering, internal covering, extruded covering, thickness, mean value, specified value, electrical resistance, test, tensile strength, elongation at break, ageing, loss of mass, non contamination, heat shock, pressure, high temperature, low temperature, elongation at low temperature, complete cable, overall dimensions, bending, flexing, voltage test, insulation resistance, absence of short circuits, spark (test), snatch (test), separation of cores, test (under) fire (conditions), guide to use, test method, frequency of test, fixed installation, solid conductor, rigid conductor, stranded conductor, general purposes, internal wiring

English version

## **Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V**

### **Part 3: Non-sheathed cables for fixed wiring (IEC 227-3:1993, modified)**

Conducteurs et câbles isolés au  
polychlorure de vinyle, de tension  
nominale au plus égale à 450/750 V  
Partie 3: Conducteurs pour installations  
fixes  
(CEI 227-3:1993, modifiée)

Polyvinylchlorid-isolierte Leitungen mit  
Nennspannungen bis 450/750 V  
Teil 3: Aderleitungen für feste  
Verlegung  
(IEC 227-3:1993, modifiziert)

This Harmonization Document was approved by CENELEC on 1994-12-06. 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

HD 21 was originally adopted by CENELEC on 9th July 1975.

Edition 2 of HD 21 was implemented on 1st January 1984, and at that time contained five parts.

Since 1984, new parts have been published, original parts amended, and in addition HD 505 has superseded HD 385 as the cross-reference for test methods.

This edition 3 of HD 21.3 has been introduced to cover the complete revision of the overall dimensions, in line with EN 60719, and was approved by TC 20 at its London meeting in October 1993 to go forward to UAP.

HD 21 now has the following parts:

HD 21.1 S2	-	General requirements
HD 21.2 S2	-	Test methods
HD 21.3 S3	-	Non sheathed cables for fixed wiring
HD 21.4 S3	-	Sheathed cables for fixed wiring
HD 21.5 S3	-	Flexible cables (Cords)
HD 21.6	-	(Spare)
HD 21.7 S2	-	Single core non-sheathed cables for internal wiring (90 °C conductor temperature)
HD 21.8 S1	-	Single core non-sheathed cables for decorative chains
HD 21.9 S2	-	Single core non-sheathed cables for installations at low temperatures
HD 21.10 S1	-	Extensible leads

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 21.3 S3 on 1994-12-06.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 1995-06-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 1995-12-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 1995-12-01

For products which have complied with HD 21.3 S2:1990 before 1995-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1996-12-01.

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## NORMATIVE REFERENCES

References are made, in this Part 3 of HD 21, to other parts of this HD and to other ENs or HDs.

HD 383	Conductors of insulated cables (Endorsing IEC 228 and 228A)
HD 405.1	Tests on electric cables under fire conditions. Part 1: Test on a single vertical cable (Endorsing IEC 332-1)
HD 505	Common test methods for insulating and sheathing materials of Electric Cables (Endorsing IEC 811)
EN 60719	Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750V

## INFORMATIVE REFERENCE

Reference is made, in this Part 3 of HD 21, to the following other HD:

HD 516	Guide to the use of low voltage harmonised cables.
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In all cases a reference to another EN or HD implies the latest edition of that document.

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**POLYVINYL CHLORIDE INSULATED CABLES  
OF RATED VOLTAGES UP TO AND INCLUDING 450/750V**

**Part 3 : Single core non-sheathed cables for fixed wiring**

1. **Scope**

This particular part (Part 3) of the HD details the particular specifications for polyvinyl chloride insulated single-core non-sheathed cables for fixed wiring of rated voltages up to and including 450/750V.

All cables shall comply with the appropriate requirements given in Part 1 and the individual types of cable shall each comply with the particular requirements of this Part 3.

NOTE: The overall dimensions of the cables of this Part of HD 21 have been calculated in accordance with EN 60719.

2. **Single-core non-sheathed cable with rigid conductor for general purposes(\*)**

2.1 **Code designation**

H07V-U, for cables with solid conductors;  
H07V-R, for cables with stranded rigid conductors.

2.2 **Rated voltage**

450/750V.

Note: 600/1000V when this cable is used in fixed installations, with mechanical protection, within switchgear and controlgear : see HD 516.

2.3 **Construction**

2.3.1 **Conductor**

Number of conductors : 1

The conductors shall comply with the requirements of HD 383:

Class 1 for solid conductors;  
Class 2 for stranded conductors.

2.3.2 **Insulation**

The insulation shall be polyvinyl chloride compound of Type TI 1, applied around the conductor.

The insulation thickness shall comply with the specified value given in Part 3, Table I, column 3.

The insulation resistance shall be not less than the value given in Part 3, Table I, column 6.

(\*) This cable type is similar to type 227 IEC 01 but has modified requirements.