

**Polüvinüülkloriidisolatsiooniga kaablid nimipingega  
kuni 450/750 V. Osa 2: Katsetusmeetodid**

Polyvinyl chloride insulated cables of rated voltages up to  
and including 450/750 V - Part 2: Test methods

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-HD 21.2 S3:2001 sisaldab Euroopa standardi HD 21.2 S3:1997 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 12.07.2001 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 26.09.1997.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-HD 21.2 S3:2001 consists of the English text of the European standard HD 21.2 S3:1997.

This standard is ratified with the order of Estonian Centre for Standardisation dated 12.07.2001 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 26.09.1997.

The standard is available from Estonian standardisation organisation.

ICS 29.060.20

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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, rated 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

English version

**Polyvinyl chloride insulated cables of rated voltages up to  
and including 450/750 V  
Part 2: Test methods**

Conducteurs et câbles isolés au  
polychlorure de vinyle, de tension  
assignée au plus égale à 450/750 V  
Partie 2: Méthodes d'essais

Polyvinylchlorid-isolierte Leitungen mit  
Nennspannungen bis 450/750 V  
Teil 2: Prüfverfahren

This Harmonization Document was approved by CENELEC on 1997-07-01. 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**

This edition 3 of HD 21.2 has been prepared by Technical Committee CLC/TC20, Electric cables.

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 and original parts amended. This new edition provides a full updating, and amalgamation of amendments since 1984.

HD 21.2 S3 is related to IEC 60227-2 (1979), but is not directly equivalent.

HD 21 now has the following parts:

HD 21.1 S3	-	General requirements
HD 21.2 S3	-	Test methods
HD 21.3 S3	-	Non sheathed cables for fixed wiring
HD 21.4 S2	-	Sheathed cables for fixed wiring (Reprint)
HD 21.5 S3	-	Flexible cables (cords)
HD 21.6	-	(Spare)
HD 21.7 S2	-	Single core non-sheathed cables for internal wiring for a conductor temperature of 90°C
HD 21.8 S1	-	Single core non-sheathed cables for decorative chains (with A1 inclusive)
HD 21.9 S2	-	Single core non-sheathed cables for installation at low temperatures
HD 21.10 S1	-	Extensible leads
HD 21.11 S1	-	Cables for luminaires
HD 21.12 S1	-	Heat resistant flexible cables (cords)
HD 21.13 S1	-	Oil resistant PVC sheathed cables with two or more conductors

In order that this revision of Part 2 of HD 21 does not introduce unnecessary changes to long-established clause numbers, the Normative References (which would otherwise be inserted as clause 2) are given in Annex A.

The draft Harmonisation Document was submitted to the Unique Acceptance Procedure and approved by CENELEC as HD 21.2 S3 on 1997-07-01.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level	(doa)	1997-12-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement	(dop)	1998-06-01
- latest date by which the national standards conflicting with the HD have to be withdrawn	(dow)	1998-06-01

For products which have complied with HD 21.2 S2:1990 and its amendments A2:1990, A3:1993, A4:1993, A6:1995, A11:1995 and A13:1995 before 1998-06-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-06-01.

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

Part 2 : Test Methods

1. General

1.1 Scope

HD 21 applies to rigid and flexible cables with insulation and sheath, if any, based on polyvinyl chloride, of rated voltages  $U_0/U$  up to and including 450/750V used in power installations of nominal voltage not exceeding 450/750V a.c.

This Part 2 specifies the methods of carrying out the tests specified in HD 21 in conjunction with HD 405.1 and EN 60811. General Requirements are specified in Part 1 of HD 21. Particular types of cable are specified in Part 3 onwards of HD 21, and are hereafter referred to as "the particular specifications".

1.2 Applicable tests

The tests applicable to the types of cables are given in the particular specifications.

1.3 Classification of tests according to the frequency with which they are carried out

The tests specified are type tests (Symbol T) and/or sample tests (Symbol S) and/or routine tests (Symbol R) as defined in Part 1, sub-clause 2.2. The Symbols T, S and R are used in the relevant tables of the particular specifications.

1.4 Sampling

If a marking is indented in the insulation or sheath, the samples used for the tests shall be taken so as to include such marking.

For multicore cables, except for the test specified in Part 2, sub-clause 1.9, not more than three cores (of different colours, if available) shall be tested unless otherwise specified.

1.5 Pre-conditioning

All the tests shall be carried out not less than 16 h after the extrusion of the insulation or sheathing compounds.

1.6 Test temperature

Unless otherwise specified, tests shall be made at ambient temperature.

1.7 Test voltage

Unless otherwise specified, the test voltages shall be a.c. 49 Hz to 61 Hz of approximately sine-wave form, the ratio peak value/r.m.s. value being equal to  $\sqrt{2}$  with a tolerance of  $\pm 7\%$ .

The values quoted are r.m.s. values.