

## **Madalpingeliste jõukaablite mitteelektrilised katsetusmeetodid**

Non electrical test methods for low voltage energy  
cables

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50396:2005 sisaldab Euroopa standardi EN 50396:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.09.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50396:2005 consists of the English text of the European standard EN 50396:2005.</p> <p>This document is endorsed on 27.09.2005 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> EN 50396 contains non-electrical test methods required for the testing of harmonized low voltage energy cables, especially those rated at up to and including 450/750 V.</p>	<p><b>Scope:</b> EN 50396 contains non-electrical test methods required for the testing of harmonized low voltage energy cables, especially those rated at up to and including 450/750 V.</p>
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HD 22.2 S3:1997 + A1:2002

English version

## **Non electrical test methods for low voltage energy cables**

Méthodes d'essais non électriques  
pour les câbles d'énergie basse tension

Nicht-elektrische Prüfverfahren  
für Niederspannungskabel und -leitungen

This European Standard was approved by CENELEC on 2005-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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# **CENELEC**

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Europäisches Komitee für Elektrotechnische Normung

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 20, Electric cables. In accordance with the decision of TC 20 at its Setubal meeting (June 2004), the text of the draft was submitted to the formal vote. It was approved by CENELEC as EN 50396 on 2005-07-01.

This European Standard, together with EN 50395:2005, supersedes HD 21.2 S3:1997 + A1:2002 and HD 22.2 S3:1997 + A1:2002.

The following dates were fixed:

- latest date by which the EN has to be implemented  
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## Introduction

EN 50396 contains the non-electrical test methods that are used for harmonized low voltage energy cables. These non-electrical test methods include all those previously contained in HD 21 and HD 22. Annex A gives a comparison between the original location of each test method and its place in this new EN.

The content of EN 50396 is not, and will not be, restricted only to test methods for cables to HD 21 and HD 22. Other test methods for harmonized LV cables may be included. Furthermore, the use of test methods in EN 50396 for cables outside HD 21 and HD 22 is not prohibited, but it is strongly recommended that expert advice be taken before such use, or before any proposal for incorporation into another standard.

## 1 Scope

EN 50396 contains non-electrical test methods required for the testing of harmonized low voltage energy cables, especially those rated at up to and including 450/750 V.

NOTE 1 A description of the origin of these test methods and of the background to the EN are given in the Introduction and Annex A.

The particular cable standard dictates the tests which need to be performed on the relevant cable type. It also specifies whether the specific test is a type test (T), a sample test (S) or a routine test (R) for the particular cable type.

NOTE 2 T, S and R are defined in the relevant cable standard.

The requirements to be met during or after the test are specified for the particular cable type in the relevant cable standard. However, some test requirements are obvious and universal, such as the fact that no cracks shall occur during ozone test, and these are stated in the particular test method.

Test methods for use specifically in utility power cables are not covered by this EN. They can be found in HD 605.

Test methods for use specifically in communications cables are the responsibility of CENELEC TC 46X. At present such test methods are given in EN 50289 (series).

## 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>
EN 60332-1-2	2004	Tests on electric and optical fibre cables under fire conditions - Par1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame
EN 50395	2005	Electrical test methods for low voltage energy cables
EN 60695-11-5	2005	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance

EN 60811-1-1 A1	1995 2001	Insulating and sheathing materials of electric and optical cables - Common test methods - Part 1-1: General application - Measurement of thickness and overall dimensions - Tests for determining the mechanical properties
EN 60811-1-2 A2	1995 2000	Insulating and sheathing materials of electric and optical cables - Common test methods - Part 1-2: General application - Thermal ageing methods
EN 60811-2-1 A1	1998 2001	Insulating and sheathing materials of electric and optical cables - Common test methods - Part 2-1: Methods specific to elastomeric compounds - Ozone resistance test, hot set and mineral oil immersion test

### 3 General test requirements

#### 3.1 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 in 5.1, not more than three cores (of different colours, if available) shall be tested unless otherwise specified.

#### 3.2 Pre-conditioning

All the tests shall be carried out not less than 16 h after the extrusion or cross-linking, if any, of the insulating or sheathing compounds.

#### 3.3 Test temperature

Unless otherwise specified in the details for the particular test, tests shall be made at an ambient temperature of  $(20 \pm 15) ^\circ\text{C}$ .

#### 3.4 Test values

Full test conditions (such as temperatures, durations, etc.) and full test requirements are not specified in this standard; it is intended that they should be specified by the standard dealing with the relevant type of cable.

Any test requirements which are given in this standard may be modified by the relevant cable standard to suit the needs of a particular type of cable.

### 4 General test methods for dimensions

#### 4.1 Measurement of insulation thickness

##### 4.1.1 Procedure

The thickness of insulation shall be measured in accordance with 8.1 of EN 60811-1-1.

Three samples shall be taken from the cable; each sample shall be separated from the next by a distance of at least 1 m.

Conformity shall be checked on each core.