

## **Covered conductors for overhead lines and the related accessories for rated voltages above 1 kV a.c. and not exceeding 36 kV a.c. Part 1: Covered conductors**

Covered conductors for overhead lines and the related accessories for rated voltages above 1 kV a.c. and not exceeding 36 kV a.c. Part 1: Covered conductors

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50397-1:2007 sisaldab Euroopa standardi EN 50397-1:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 17.01.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50397-1:2007 consists of the English text of the European standard EN 50397-1:2006.</p> <p>This document is endorsed on 17.01.2007 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></p> <p>This Part 1 contains the requirements for covered conductors with or without integrated longitudinal watertightness and/or semi-conductive conductor screen for applications in overhead lines with rated voltages U above 1 kV a.c. and not exceeding 36 kV a.c.</p>	<p><b>Scope:</b></p> <p>This Part 1 contains the requirements for covered conductors with or without integrated longitudinal watertightness and/or semi-conductive conductor screen for applications in overhead lines with rated voltages U above 1 kV a.c. and not exceeding 36 kV a.c.</p>
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Võtmesõnad:

**Covered conductors for overhead lines  
and the related accessories for rated voltages  
above 1 kV a.c. and not exceeding 36 kV a.c.  
Part 1: Covered conductors**

Conducteurs gainés pour lignes aériennes  
et accessoires associés pour des tensions  
assignées supérieures à 1 kV c.a.  
et ne dépassant pas 36 kV c.a.  
Partie 1: Conducteurs gainés

Kunststoffumhüllte Leiter und zugehörige  
Armaturen für Freileitungen mit  
Nennspannungen über 1 kV und  
nicht mehr als 36 kV Wechselspannung  
Teil 1: Kunststoffumhüllte Freileitungsseile

This European Standard was approved by CENELEC on 2006-07-01. 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**

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 European Standard was prepared by TF "*Covered Overhead Line Conductors (COHL)*" of the Technical Committee CENELEC TC 20, Electric cables.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50397-1 on 2006-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2007-07-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2009-07-01

This European Standard consists of two parts:

- Part 1 "Covered conductors"; and
- Part 2 "Accessories for covered conductors: Tests and acceptance criteria".

This standard covers the construction, performance and test requirements for covered conductors for overhead lines having a nominal voltage  $U$  above 1 kV a.c. up to and including 36 kV a.c., and for the related accessories.

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## Introduction

Covered conductors consist of a conductor surrounded by a covering made of insulating material as protection against accidental contacts with other covered conductors and with grounded parts such as tree branches, etc. In comparison with insulated conductors, this covering has reduced properties, but is able to withstand the phase-to-earth voltage temporarily.

Since covered conductors are unscreened, they are not touch-proof, i.e. they must be treated as bare conductors with respect to electric shock.

This standard does not cover aspects related to the installation of overhead lines such as determination of clearances, spans, sags, etc.

## 1 Scope

This Part 1 contains the requirements for covered conductors with or without integrated longitudinal watertightness and/or semi-conductive conductor screen for applications in overhead lines with rated voltages  $U$  above 1 kV a.c. and not exceeding 36 kV a.c.

## 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 50182	Conductors for overhead lines – Round wire concentric lay stranded conductors
EN 50356	Method for spark testing of cables
EN 60811 series	Insulating and sheathing materials of electric and optical fibre cables – Common test methods (IEC 60811 series)
EN 61284	Overhead lines – Requirements and tests for fittings (IEC 61284)
HD 380	Test methods for evaluating resistance to tracking and erosion of electrical insulating materials used under severe ambient conditions (IEC 60587)
HD 605	Electric cables – Additional test methods

## 3 Definitions

For the purpose of this European Standard, the following definitions apply.

### 3.1 Definitions relating to tests

#### 3.1.1

##### **type tests (symbol T)**

tests required to be made before supplying a type of product covered by this European Standard on a general commercial basis in order to demonstrate satisfactory performance characteristics to meet the intended application. These tests are of such nature that, after they have been made, they need not be repeated unless changes are made in the material, design or manufacturing process which might change the performance characteristics

#### 3.1.2

##### **sample tests (symbol S)**

tests made on samples of completed product or components taken from the completed product adequate to verify that the finished product meets the design specifications

#### 3.1.3

##### **routine tests (symbol R)**

tests made on all production lengths to demonstrate their integrity

### 3.2

##### **rated voltage**

the reference voltage for which the conductor is designed and which serves to define the electrical tests.

The rated voltage is expressed by the value  $U$ , expressed in kilovolts, where  $U$  is the r.m.s. value between any two-phase conductors