

Covered conductors for overhead lines and the related accessories for rated voltages above 1 kV AC and not exceeding 36 kV AC - Part 1: Covered conductors

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

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

Conducteurs gainés pour lignes aériennes et accessoires
associés pour des tensions assignées supérieures à 1 kV
en courant alternatif et ne dépassant pas 36 kV en courant
alternatif - 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 2020-10-26. 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 CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 50397-1:2020) has been prepared by WG 13 “Covered Overhead Line Conductors” of CLC/TC 20 “Electric cables”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-10-26
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2023-10-26

This document supersedes EN 50397-1:2006 and all of its amendments and corrigenda (if any).

EN 50397-1:2020 includes the following significant technical changes with respect to EN 50397-1:2006:

— new references to HD 605 S3 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

The EN 50397 series consists of three parts:

- Part 1, “Covered conductors”;
- Part 2, “Accessories for covered conductors: Tests and acceptance criteria”; and
- Part 3, “Guide to use”

Introduction

The EN 50397 series covers the construction, performance and test requirements for covered conductors for overhead lines having a nominal voltage U above 1 kV AC up to and including 36 kV AC, and for the related accessories.

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 should be treated as bare conductors with respect to electric shock.

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

1 Scope

This document contains the requirements for covered conductors with or without integrated longitudinal water tightness 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 documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 50182:2001, *Conductors for overhead lines - Round wire concentric lay stranded conductors*

EN 60811-201, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness (IEC 60811-201)*

EN 60811-401:2012,¹ *Electric and optical fibre cables - Test methods for non-metallic materials - Part 401: Miscellaneous tests - Thermal ageing methods - Ageing in an air oven (IEC 60811-401:2012)*

EN 60811-402, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 402: Miscellaneous tests - Water absorption tests (IEC 60811-402)*

EN 60811-501:2012,² *Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds (IEC 60811-501:2012)*

EN 60811-502, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 502: Mechanical tests - Shrinkage test for insulations (IEC 60811-502)*

EN 60811-507, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 507: Mechanical tests - Hot set test for cross-linked materials (IEC 60811-507)*

EN 60811-508:2012,³ *Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths (IEC 60811-508:2012)*

EN 60811-605:2012, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 605: Physical tests - Measurement of carbon black and/or mineral filler in polyethylene compounds (IEC 60811-605:2012)*

EN 62219, *Overhead electrical conductors - Formed wire, concentric lay, stranded conductors (IEC 62219)*

EN 62230, *Electric cables - Spark-test method (IEC 62230)*

HD 605 S3:2019, *Electric cables - Additional test methods*

IEC 60502-2:2014, *Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m = 1,2$ kV) up to 30 kV ($U_m = 36$ kV) - Part 2: Cables for rated voltages from 6 kV ($U_m = 7,2$ kV) up to 30 kV ($U_m = 36$ kV)*

¹ As impacted by EN 60811-401:2012/A1:2017.

² As impacted by EN 60811-501:2012/A1:2018.

³ As impacted by EN 60811-508:2012/A1:2017.