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Electric cables - Charging cables for electric vehicles

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/17

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EUROPEAN STANDARD

EN 50620

NORME EUROPÉENNE

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English Version

**Electric cables - Charging cables for electric vehicles
(BT(DE/NOT)259)**

Câbles électriques - Câbles de charge pour véhicules
électriques
(BT(DE/NOT)259)

Kabel und Leitungen - Ladeleitung für Elektrofahrzeuge
(BT(DE/NOT)259)

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European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

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Contents	Page
European foreword.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	7
4 Rated voltage.....	8
5 Marking.....	8
5.1 Indication of origin	8
5.2 Continuity of marking.....	8
5.3 Use of the name CENELEC.....	9
5.4 Code designation.....	9
5.5 Additional voluntary marking.....	9
5.6 Additional requirements	10
5.6.1 Durability	10
5.6.2 Legibility	10
6 Requirements for the construction of cables	10
6.1 Conductors.....	10
6.1.1 Material	10
6.1.2 Electrical resistance	10
6.2 Sizes of cable	10
6.3 Insulation.....	10
6.3.1 Material	10
6.3.2 Application to the conductor.....	10
6.3.3 Thickness	11
6.3.4 Core identification	11
6.4 Assembly of cores.....	12
6.5 Other components.....	12
6.5.1 General.....	12
6.5.2 Interstitial fillers	12
6.6 Sheath.....	13
6.6.1 Material	13
6.6.2 Application	13
6.6.3 Thickness	13
6.6.4 Colour	14
7 Requirements	14
Annex A (normative) Requirements for compatibility test.....	25
A.1 Conditions	25
A.2 Requirements.....	25
Annex B (informative) Guide to use (future amendment EN 50565)	26
Annex C (normative) Cold impact test	27

Annex D (normative) Resistance against chemicals	28
Annex E (informative) Current ratings	29
Annex F (normative) Weathering/UV resistance test.....	30
Bibliography.....	31
Tables	
Table 1 - Examples of maximum permitted voltages against rated voltage of cable.....	8
Table 2 — Requirements for halogen free insulation compounds.....	15
Table 3 — Requirements for halogen free sheathing compounds.....	16
Table 4a — Dimensional and insulation resistance values of H05BZ5-F and H07BZ5-F ^a	18
Table 4b — Dimensional and insulation resistance values of H05BZ6-F and H07BZ6-F ^a	19
Table 5 — Tests for complete cable	20
Table A.1 — Requirements	25
Table B.1 - Constructional details and limiting conditions	26
Table C.1 — Parameter for cold impact	27
Table D.1 — List of test media	28
Table E.1 - Current rating for flexible cable for Mode 1 charging only (300/500 V).....	29
Table E.2 - Current rating for flexible cable for Mode 2 and 3 charging (450/750V).....	29
Figures	
Figure 1 — Example of marking.....	9

EN 50620:2017 (E)

European foreword

This document (EN 50620:2017) has been prepared by 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) 2017-11-12
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2020-05-12

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

1 Scope

This standard specifies design, dimensions and test requirements for halogen-free cables with extruded insulation and sheath having a voltage rating of up to and including 450/750 V for flexible applications under severe condition for the power supply between the electricity supply point or the charging station and the electric vehicle (EV).

The EV charging cable is intended to supply power and if needed communication (details see EN 61851-1 and the EN 62196 series) to an electric vehicle. The charging cables are applicable for charging modes 1-3 of EN 61851-1. The cables in this standard with rated voltage 300/500 V are only permitted for charging mode 1 of EN 61851-1.

The maximum conductor operating temperatures for the cables in this standard is 90 °C.

The cables may be:

- a) an integral part of the vehicle (case A of EN 61851-1); or
- b) a detachable cable assembly with a vehicle connector and AC supply connection to a socket outlet (case B of EN 61851-1); or
- c) permanently attached to a fixed charging point (case C of EN 61851-1).

This standard describes cables whose safety and reliability is ensured when they are installed and/or used in accordance to the guide to use EN 50565-1 and Annex B.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 228, *Automotive fuels — Unleaded petrol — Requirements and test methods*

EN 590, *Automotive fuels — Diesel — Requirements and test methods*

EN 50289-1-5:2001, *Communication cables — Specifications for test methods — Part 1-5: Electrical test methods - Capacitance*

EN 50289-4-17, *Communication cables — Specifications for test methods — Part 4-17: Test methods for UV resistance evaluation of the sheath of electrical and optical fibre cable*

EN 50334, *Marking by inscription for the identification of cores of electric cables*

EN 50395:2005, *Electrical test methods for low voltage energy cables*

EN 50396:2005, *Non electrical test methods for low voltage energy cables*

EN 50525-1:2011, *Electric cables — Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) — Part 1: General requirements*

EN 60228, *Conductors of insulated cables (IEC 60228)*

EN 60332-1-2:2004/A1:2015, *Tests on electric and optical fibre cables under fire conditions — Part 1-2: Test for vertical flame propagation for a single insulated wire or cable — Procedure for 1 kW pre-mixed flame (IEC 60332-1-2:2004/A1:2015)*

EN 50620:2017 (E)

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 450/750 V (IEC 60719)*

EN 60811-401, *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)*

EN 60811-403, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 403: Miscellaneous tests — Ozone resistance test on cross-linked compounds (IEC 60811-403)*

EN 60811-404, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 404: Miscellaneous tests — Mineral oil immersion tests for sheaths (IEC 60811-404)*

EN 60811-501, *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)*

EN 60811-503, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 503: Mechanical tests — Shrinkage test for sheaths (IEC 60811-503)*

EN 60811-504, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 504: Mechanical tests — Bending tests at low temperature for insulation and sheaths (IEC 60811-504)*

EN 60811-505, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 505: Mechanical tests — Elongation at low temperature for insulations and sheaths (IEC 60811-505)*

EN 60811-506, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 506: Mechanical tests — Impact test at low temperature for insulations and sheaths (IEC 60811-506)*

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, *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)*

EN 60811-509, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 509: Mechanical tests — Test for resistance of insulations and sheaths to cracking (heat shock test) (IEC 60811-509)*

EN 61851-1, *Electric vehicle conductive charging system — Part 1: General requirements (IEC 61851-1)*

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

HD 308 S2, *Identification of cores in cables and flexible cords*

HD 605 S2:2008, *Electric cables — Additional test methods*

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 14572:2011, *Road vehicles — Round, sheathed, 60 V and 600 V screened and unscreened single- or multi-core cables — Test methods and requirements for basic- and high-performance cables*

ISO 22241-1, *Diesel engines — NO_x reduction agent AUS 32 — Part 1: Quality requirements*

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