ICS 13.220.40, 29.060.20, 45.060.01

SLOVENSKÁ TECHNICKÁ NORMA

Júl 2020

STN	**Dráhové aplikácie Silnoprúdové káble pre dráhové vozidlá s osobitnou požiarnou charakteristikou Časť 2: Jednožilové vodiče**	**STN EN 50306-2 34 1565**

Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 2: Single core cables

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. 06/20

Obsahuje: EN 50306-2:2020

Oznámením tejto normy sa od 30.12.2022 ruší
STN EN 50306-2 (34 1565) z júna 2003

131021

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50306-2

March 2020

ICS 13.220.40; 29.060.20; 45.060.01

Supersedes EN 50306-2:2002 and all of its amendments and corrigenda (if any)

English Version

Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 2: Single core cables

Applications ferroviaires - Câbles pour matériel roulant ferroviaire ayant des performances particulières de comportement au feu - Isolation mince - Partie 2: Câbles monoconducteurs

Bahnanwendungen - Kabel und Leitungen für Schienenfahrzeuge mit verbessertem Verhalten im Brandfall - Reduzierte Isolierwanddicken - Teil 2: Einadrige Kabel und Leitungen

This European Standard was approved by CENELEC on 2019-12-30. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

Ref. No. EN 50306-2:2020 E

EN 50306-2:2020 (E)

Contents

Page

European foreword 3
Introduction 4
1 Scope 5
2 Normative references 5
3 Terms and definitions 6
4 Single-core cables 6
4.1 General 6
4.2 Marking and code designation 6
4.2.1 Marking of cable 6
4.2.2 Code Designation 6
4.3 Core identification 7
4.3.1 Single core cables 7
4.3.2 Multicore/multipair cables 7
4.4 Rated voltage 7
4.5 Construction 7
4.5.1 Conductor 7
4.5.2 Insulation system 7
5 Tests 8
5.1 Definitions relating to tests 8
5.2 Voltage test 8
5.3 Insulation resistance 9
5.4 Dielectric strength 9
5.5 Spark test 9
5.6 DC stability 9
5.7 Strippability and adhesion of insulation to the conductor 10
5.8 Hot set test 10
5.9 Long term ageing - Thermal endurance 11
5.10 Mineral oil resistance 11
5.11 Fuel resistance 11
5.12 Acid and alkali resistance 11
5.13 Pressure test at high temperature 12
5.14 Dynamic cut through 12
5.15 Notch propagation 12
5.16 Heat Shrinkage 12
5.17 Blocking of cores 13
5.18 Bending test at low temperature 13
5.19 Abrasion resistance 13
5.20 Pliability 13
5.21 Ozone resistance 14
5.22 Stress cracking test 15
5.23 Fire performance 15
Bibliography 17

European foreword

This document (EN 50306-2:2020) 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)	2020-12-30
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2022-12-30

This document supersedes EN 50306-2:2002 and all of its amendments and corrigenda (if any).

This edition includes the following significant technical changes with respect to the previous edition:

— The documents have been updated to reflect the changes in the test standard EN 50305;

— The range of the conductor cross sections has been extended;

— The reference to cited standards (e.g. 60811 series) has been updated.

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.

Introduction

The EN 50306 series covers a range of sheathed and unsheathed cables with thin wall thickness insulation, based on halogen-free materials, for use in railway rolling stock. It is divided into four parts:

Part 1: General requirements;

Part 2: Single core cables;

Part 3: Single core and multicore cables screened and thin wall sheathed;

Part 4: Multicore and multipair screened or not screened sheathed cables.

Special test methods referred to in the EN 50306 series are given in EN 50305. A guide to use is given in EN 50355 and rules for installation are given in EN 50343.

The cables in EN 50306-2:2020 are also required in other parts of this series of standards to build up cables with additional screening and sheathing and also in multicore and multipair combinations.

EN 50306-1:2020, General requirements, contains a more extensive introduction to the EN 50306 series and should be read in conjunction with this document.

1 Scope

This document specifies requirements for, and constructions and dimensions of, single core cables, rated voltage U_0 / U = 300 /300 V, of the following type:

Unscreened (0,5 mm^2 to 2,5 mm^2 single core)

These cables are rated for occasional thermal stresses causing ageing equivalent to continuous operational life at a temperature of 105 °C. For standard cables, this is determined by the acceptance test defined in EN 50305, using accelerated long-term (5 000 h) thermal ageing indicating a 125 °C/20 000 h temperature index. If the customer were to require lifetime predictions, this would be demonstrated based on the temperature index of the product as supplied by the manufacturer. The maximum temperature for short circuit conditions is 160 °C based on duration of 5 s.

Under fire conditions the cables exhibit special performance characteristics in respect of maximum permissible flame propagation (flame spread) and maximum permissible emission of smoke and toxic gases. These requirements are specified to permit the cables to satisfy Hazard Level 3 of EN 45545-1 and EN 45545-2.

EN 50306-2:2020 is expected to be used in conjunction with EN 50306-1:2020, General requirements.

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 10002-1, *Metallic materials - Tensile testing - Part 1: Method of test at ambient temperature*

EN 45545-1, *Railway applications - Fire protection on railway vehicles - Part 1: General*

EN 50305:2020, *Railway applications - Railway rolling stock cables having special fire performance - Test methods*

EN 50306-1:2020, *Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 1: General requirements*

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

EN 60332-1-2, *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*

EN 60811 (all parts), *Electric and optical fibre cables - Test methods for non-metallic materials*

EN 61034-2, *Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements*

EN 62230, *Electric cables - Spark-test method*