Railway applications - Railway rolling stock cables having special fire performance - Test methods

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NATIONAL FOREWORD

See Eesti standard EVS-EN 50305:2020 sisaldab Euroopa standardi EN 50305:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 50305:2020 consists of the English text of the European standard EN 50305:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.03.2020.	Date of Availability of the European standard is 20.03.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.060.20, 45.060.01

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 50305

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Supersedes EN 50305:2002 and all of its amendments and corrigenda (if any)

English Version

Railway applications - Railway rolling stock cables having special fire performance - Test methods

Applications ferroviaires - Câbles pour matériel roulant ferroviaire ayant des performances particulières de comportement au feu - Méthodes d'essais

Bahnanwendungen - Kabel und Leitungen für Schienenfahrzeuge mit verbessertem Verhalten im Brandfall - Prüfverfahren

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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 50305:2020) 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 50305:2002 and all of its amendments and corrigenda (if any).

EN 50305:2020 includes the following significant technical changes with respect to EN 50305:2002:

— a new cable standard EN 50382 series has been added to EN 50305;

— the long term ageing test part is improved and adapted to the whole range of products;

— the requirements are now clearly described and give more information for the test laboratories;

— the definition of “halogen free” in Annex F and the determination of halogens element test in Annex G are moved from the product standard (EN 50306 series) to EN 50305.

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 railway industry is generally concerned with the movement of people as well as goods. It is therefore essential that a high level of safety is achieved, even when failures occur which could involve fire, howsoever caused, affecting railway rolling stock.

Hence, it is necessary to provide cables for use in railway environments which minimize the hazard to people when a fire may damage the cable, irrespective of whether the fire is caused by an external source or from within the electrical system.

European Standard series EN 50264, EN 50306 and EN 50382 specify cables, which, in the event of fire, will limit risk to people and improve the safety on railways in general. They cover cables based on halogen free materials, for use in railway rolling stock.

A separate European Standard, the EN 50264 series covers cables for similar applications up to 3,6/6 kV rating with a conductor temperature at 90 °C, but with standard wall and medium wall thicknesses of both insulation and sheath, and provides for a maximum conductor size of 400 mm^2.

A separate European Standard, the EN 50382 series covers cables for similar applications up to 3,6/6 kV rating with a conductor temperature at 120°C and 150°C, and provides for a maximum conductor size of 400 mm^2.

The EN 50306 series covers a range of sheathed and unsheathed cables with thin wall insulation, and is restricted to a rating of 300 V to earth and a maximum conductor size of 2,5 mm^2.

This document gives particular test methods applicable to the cables at present covered by the EN 50264 series, EN 50306 series and EN 50382 series.

1 Scope

This document specifies special test methods applicable to cables, and their constituent insulating and sheathing materials, for use in railway rolling stock. Such cables are specified in the various parts of the EN 50264 series, EN 50306 series and EN 50382 series.

Other test methods required for railway rolling stock cables and their insulating and sheathing materials are listed in Annex A.

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 50264-1, *Railway applications - Railway rolling stock power and control cables having special fire performance - Part 1: General requirements*

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

EN 50382-1, *Railway applications - Railway rolling stock high temperature power cables having special fire performance - Part 1: General requirements*

EN 60216-1, *Electrical insulating materials - Thermal endurance properties - Part 1: Ageing procedures and evaluation of test results*

EN 60228, *Conductors of insulated cables*

EN 60332-3-25, *Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D*

EN 60754-1, *Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content*

EN 60754-2:2014, *Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity*

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

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

ISO 6349:1979, *Gas analysis - Preparation of calibration gas mixtures - Permeation method*

ISO 8458-2, *Steel wire for mechanical springs — Part 2: Patented cold-drawn non-alloy steel wire*