

Railway applications — Railway rolling stock cables having special fire performance — Thin wall —

**Part 3: Single core and multicore cables
(pairs, triples and quads) screened and
thin wall sheathed**

The European Standard EN 50306-3:2002 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 50306-3:2002.

The UK participation in its preparation was entrusted by Technical Committee GEL/20, Electrical cables, to Subcommittee GEL/20/12, Railway cables, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 13 November 2002

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Applications ferroviaires -
Câbles pour matériel roulant ferroviaire
ayant des performances particulières
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Isolation mince
Partie 3: Conducteurs et câbles blindés
(paires, tierces et quarts) avec gaine
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Reduzierte Isolierwanddicken
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Leitungen (Paare, Dreier, Vierer)
geschirmt mit reduzierten
Mantelwanddicken

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CENELEC

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

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Foreword

This European Standard was prepared by Working Group 12, Railway cables, of Technical Committee CENELEC TC 20, Electric cables, as part of the overall programme of work in CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50306-3 on 2002-06-01.

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) 2003-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2008-07-01

Annexes designated “informative” are given for information only.
In this standard, annexes A and B are informative.

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Introduction

EN 50306 covers a range of sheathed and unsheathed cables with thin wall thickness insulation and 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 (pairs, triples and quads) screened and thin wall sheathed;

Part 4: Multicore and multipair cables standard wall sheathed.

Special test methods referred to in EN 50306 are given in EN 50305. A guide to use is given in EN 50355¹⁾.

EN 50306-1, General requirements, contains a more extensive introduction to EN 50306, and should be read in conjunction with this European Standard.

1 Scope

EN 50306-3 specifies requirements for, and constructions and dimensions of, multicore cables, rated 300 V to earth, of the following type:

Screened (0,5 mm² to 2,5 mm², number of cores from 1 to 4)

All cables have stranded tinned copper conductors, and thin wall thickness, halogen-free, insulation and sheath. They are for use in railway rolling stock as fixed wiring, or wiring where limited flexing in operation is encountered. The requirements provide for a continuous operational life at temperatures of 90 °C or 105 °C dependent upon the sheath system type.

NOTE 1 For cables with type S2 sheath a temperature of 105 °C is only allowed when specifically tested for the higher rating (i.e. by long-term thermal endurance testing to demonstrate a lifetime of at least 20 000 h at 125 °C).

The maximum temperature for short-circuit conditions is 160 °C based on a 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 Levels 2, 3 or 4 of EN 45545-1¹⁾.

NOTE 2 Requirements for the emission of smoke and gases are not specified for cables used for Hazard Level 1 of EN 45545-1.

NOTE 3 EN 45545-1 is still under development and should be consulted.

EN 50306-3 should be used in conjunction with EN 50306-1, General Requirements, and EN 50306-2, Single core cables.

¹⁾ At draft stage.