

Svenska Elektriska Kommissionen, SEK

Fastställt	Utgåva	Sida	Ingår i
2002-11-06	1	1 (1+21)	SEK Område 20

© Copyright SEK. Reproduction in any form without permission is prohibited.

**Järnvägsanläggningar –
Kablar med särskilda brandegenskaper
avsedda för rälsfordon –
Del 1: Allmänna fordringar**

*Railway applications –
Railway rolling stock cables having special fire performance –
Standard wall –
Part 1: General requirements*

Som svensk standard gäller europastandarden EN 50264-1:2002. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50264-1:2002.

ICS 13.220.20; 29.060.20; 45.060.01

Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK, som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: SEK, Box 1284, 164 29 KISTA
Telefon: 08 - 444 14 00. Telefax: 08 - 444 14 30
E-post: sek@sekom.se. Internet: www.sekom.se

English version

**Railway applications -
Railway rolling stock cables having special fire performance -
Standard wall
Part 1: General requirements**

Applications ferroviaires -
Câbles pour matériel roulant ferroviaire
ayant des performances particulières
de comportement au feu -
Câbles à isolation d'épaisseur normale
Partie 1: Prescriptions générales

Bahnanwendungen -
Kabel und Leitungen für Schienen-
fahrzeuge mit verbessertem Verhalten
im Brandfall -
Standard Isolierwanddicken
Teil 1: Allgemeine Anforderungen

This European Standard was approved by CENELEC on 2002-03-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared for Technical Committee CENELEC TC 20 “Electric cables” by Working Group 12 “Railway 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 formal vote and was approved by CENELEC as EN 50264-1 on 2002-03-01.

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

Contents

	Page
Introduction	4
1 Scope.....	5
2 Normative references.....	5
3 Definitions	6
4 Rated voltage.....	7
5 Marking	8
6 General requirements for the construction of cables.....	9
7 Electrical performance	13
8 Reaction to fire - Cables.....	13
9 Reaction to fire - Components	14
Bibliography	21
Figure 1 - Example of marking	9
Table 1 - Rated voltages.....	8
Table 2 - Requirements for the tests for non halogenated insulating compounds	16
Table 3 - Requirements for test for fillers, tapes and binders.....	18
Table 4 - Requirements for the tests for non halogenated sheathing compounds.....	19

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 may 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 EN 50264 specifies cables which, in the event of fire, will limit the risk to people and improve the safety on railways in general. It covers cables with standard wall thickness of insulation, both sheathed and unsheathed, based on halogen free materials, for use in railway rolling stock. In the event of a fire affecting cables to EN 50264 they will have a limited flame spread and limited emission of toxic gases. In addition these cables when burnt, produce limited amounts of smoke. This last characteristic will minimize loss of visibility in the event of a fire and will aid reduced evacuation times.

The objects of this standard are

- to standardize cables that are safe and reliable when properly used,
- to state the characteristics, performance, and construction requirements directly or indirectly bearing on safety,
- to specify methods for checking conformity with these requirements.

EN 50264, which covers a range of cables rated at up to 3,6/6 kV with conductor sizes 1,0 mm² up to 400 mm², is divided into 3 parts:

Part 1: General requirements;

Part 2: Single core cables;

Part 3: Multicore cables.

These cables are intended for a limited number of applications. Further information on these applications is given in the guide to use (EN 50355 – under development).

Special test methods referred to in EN 50264 are given in EN 50305.

A separate European Standard, EN 50306 covers cables for similar applications but with thin wall insulation, restricted to 300 V rating and a maximum conductor size of 2,5 mm².

1 Scope

Part 1 of EN 50264 specifies the general requirements applicable to the cables given in part 2 and part 3 of EN 50264. It includes the detailed requirements for the insulating and sheathing materials and other components called up in the separate parts. In particular EN 50264-1 specifies those requirements relating to fire safety which enable the cables to satisfy Hazard Levels 2, 3 and 4 of EN 45545-1.

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

NOTE 2 EN 45545-1 is still under development and should be consulted.

Based on proven experience and reliability over many years these cables are rated for occasional thermal stresses causing ageing equivalent to continuous operational life at a temperature of 90 °C. The maximum temperature for short circuit conditions is 200 °C based on a duration of 5 seconds.

This part 1 should be used in conjunction with the other parts of EN 50264.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of these references apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 10002-1	Tensile testing of metallic materials - Method of test at ambient temperature
EN 45545-1 ¹⁾	Railway applications - Fire protection of railway vehicles - Part 1: General
EN 50264-2	Railway applications - Railway rolling stock cables having special fire performance - Standard wall - Part 2: Single core cables
EN 50264-3	Railway rolling stock cables having special fire performance - Standard wall - Part 3: Multicore cables
EN 50265-2-1	Common test methods for cables under fire conditions - Test for resistance to vertical flame propagation for a single insulated conductor or cable - Part 2-1: Procedures - 1 kW pre-mixed flame
EN 50266-2-4	Common test methods for cables under fire conditions - Test for vertical flame spread of vertically-mounted bunched wires or cables - Part 2-4: Procedures - Category C
EN 50267-2-1	Common test methods for cables under fire conditions - Tests on gasses evolved during combustion of materials from cables - Part 2-1: Procedures - Determination of the amount of halogen acid gas

¹⁾ At draft stage.