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Järnvägsanläggningar – Isolationskoordination – Del 1: Grundläggande fordringar – Kryp- och luftavstånd

Railway applications –

Insulation coordination –

Part 1: Basic requirements –

Clearances and creepage distances for all electrical and electronic equipment

Som svensk standard gäller europastandarden EN 50124-1:2001. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50124-1:2001.

**Railway applications - Insulation coordination
Part 1: Basic requirements -
Clearances and creepage distances
for all electrical and electronic equipment**

Applications ferroviaires -
Coordination de l'isolement
Partie 1: Prescriptions fondamentales -
Distances d'isolement dans l'air et lignes
de fuite pour tout matériel électrique et
électronique

Bahnanwendungen -
Isulationskoordination
Teil 1: Grundlegende Anforderungen -
Luft- und Kriechstrecken für alle
elektrischen und elektronischen
Betriebsmittel

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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.

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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 the Technical Committee CENELEC TC 9X, Electrical and electronic applications in railways.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50124-1 on 1999-10-01.

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) 2001-10-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2002-10-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, B, C and D are normative and annexes E and F are informative.

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Introduction

Special conditions occurring in railway applications and the fact that the equipment here concerned falls into the scope of both IEC 60071 (prepared by IEC/TC 28) and IEC 60664-1 (prepared by IEC/SC 28A), led to the decision to draw from these documents and from the draft IEC 60077-1 (prepared by IEC/TC 9), a single document of reference for all standards applicable to the whole railway field.

EN 50124 consists of two parts:

- EN 50124-1 Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment;
- EN 50124-2 Part 2: Overvoltages and related protection.

This Part 1 allows, in conjunction with EN 50124-2, to take into account advantages resulting from the presence of overvoltage protection when dimensioning clearances.

1 General

1.1 Scope

The whole document deals with insulation coordination in railways. It applies to equipment for use in signalling, rolling stock and fixed installations up to 2000 m above sea level.

Insulation coordination is concerned with the selection, dimensioning and correlation of insulation both within and between items of equipment. In dimensioning insulation, electrical stresses and environmental conditions are taken into account. For the same conditions and stresses these dimensions are the same.

An objective of insulation coordination is to avoid unnecessary overdimensioning of insulation.

This standard specifies:

- requirements for clearances and creepage distances for equipment;
- general requirements for tests pertaining to insulation coordination.

The term equipment relates to a section as defined in 1.3.1.3: it may apply to a system, a sub-system, an apparatus, a part of an apparatus, or a physical realisation of an equipotential line.

This standard does not deal with :

- distances through solid or liquid insulation;
- distances through gases other than air;
- distances through air not at atmospheric pressure;
- equipment used under extreme conditions.

Product standards have to align with this generic standard.

However, they may require, with justification, different requirements due to safety and/or reliability reasons, e.g. for signalling, and/or particular operating conditions of the equipment itself, e. g. overhead lines which have to comply to EN 50119.

This standard also gives provisions for dielectric tests (type tests or routine tests) on equipment (see annex B).

NOTE For safety critical systems, specific requirements are needed. These requirements will be resolved in the product specific signalling standard EN 50129 (in preparation).