SLOVENSKI STANDARD
SIST EN 50125-2:2003

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Železniške naprave – Okoljski pogoji za opremo – 2. del: Stabilne električne inštalacije

Railway applications - Environmental conditions for equipment -- Part 2: Fixed electrical installations

Bahnanwendungen - Umweltbedingungen für Betriebsmittel -- Teil 2: Ortsfeste elektrische Anlagen

Applications ferroviaires - Conditions d'environnement pour le matériel -- Partie 2: Installations électriques fixes

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ICS:

13.020.99	Drugi standardi v zvezi z varstvom okolja	Other standards related to environmental protection
29.280	Električna vlečna oprema	Electric traction equipment
45.060.01	Železniška vozila na splošno	Railway rolling stock in general

SIST EN 50125-2:2003 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50125-2

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ICS 29.280

English version

Railway applications - Environmental conditions for equipment Part 2: Fixed electrical installations

Applications ferroviaires -
Conditions d'environnement
pour le matériel
Partie 2: Installations électriques fixes

Bahnanwendungen -
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Teil 2: Ortsfeste elektrische Anlagen

This European Standard was approved by CENELEC on 2002-07-01. 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.

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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

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Foreword

This European Standard was prepared by SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (fixed installations), of Technical Committee 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 50125-2 on 2002-07-01.

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) 2005-07-01

Annexes designated "informative" are given for information only.
In this standard, Annex A is informative.

Contents

1 Scope

This European Standard takes into account environmental conditions within Europe.

This European Standard deals with the environmental influences on fixed electrical installations for traction power supply and equipment essential to operate a railway

- in open air;
- in covered areas;
- in tunnels;
- within enclosures placed in above areas.

Escalators, lifts, fire protection, lighting in tunnels and on platforms, ticket machines, ventilation systems and non-essential functions are not included.

Such influences include altitude, temperature and humidity, air movement, rain, snow, hail, ice, sand, solar radiation, lightning, pollution, vibration, shocks and EMC.

This standard does not specify the test requirements for equipment.

In case of environmental conditions not covered by the standard the data to be adopted for a specific project should be clearly stipulated when preparing a specification.

This standard is not intended to apply to cranes, installations in underground mines, suspended cable cars and funicular railways.

Nuclear radiation is excluded.

Signalling and telecommunications systems are not considered in this standard.

Fixed installed signalling and telecommunication equipment shall comply with EN 50125-3.

2 Normative references

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

EN 50121-5	Railway applications – Electromagnetic compatibility Part 5: Emission and immunity of fixed power supply installations and apparatus
EN 50124-1	Railway applications - Insulation coordination Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
EN 50124-2	Railway applications - Insulation coordination Part 2: Overvoltages and related protection

EN 50125-3	Railway applications – Environmental conditions for equipment Part 3: Equipment for signalling and telecommunications
EN 60529	Degrees of protection provided by enclosures (IP code) (IEC 60529)
EN 60721-3-3	Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations (IEC 60721-3-3)
EN 60721-3-4	Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities – Section 4: Stationary use at non-weatherprotected locations (IEC 60721-3-4)
ENV 1991-2-4	Eurocode 1: Basis of design and actions on structures – Part 2-4: Actions on structures – Wind actions
HD 478.2.1	Classification of environmental conditions Part 2: Environmental conditions appearing in nature - Temperature and humidity (IEC 60721-2-1)
HD 478.2.2	Classification of environmental conditions Part 2: Environmental conditions appearing in nature - Precipitation and wind (IEC 60721-2-2)
HD 478.2.3	Classification of environmental conditions Part 2: Environmental conditions appearing in nature - Air pressure (IEC 60721-2-3)

3 Definitions

For the purpose of this standard the following definitions apply.

3.1
covered area
protected from precipitation, but open to the effects of humidity and wind

NOTE 1 Some constructions may be affected by solar radiation.

NOTE 2 Tunnels are excluded from this definition.

3.2
cubicle
closed space where the direct open air influences are excluded

3.3
environment
the surrounding objects, region or circumstances which may influence the behaviour of the system and/or may be influenced by the system

3.4
environmental conditions
conditions which are brought about because of the environment

3.5
environmental protection
provisions to avoid the interaction of the system with the environment

3.6
open air
not protected from direct environmental influences

3.7
tunnel
artificial underground passage through a hill or below the normal ground level or under sea level

4 Environmental conditions

4.1 General

The purchaser shall specify clearly in his specification the class to consider. Otherwise the class mentioned in the product standard shall apply where available. Where no other specifications are specified, the normal requirements in this standard shall be used. Installations shall function, or be capable of functioning, under all specified conditions.

The environmental conditions are considered for normal operation. More severe conditions may be specified for the equipment to withstand, when not operating, without suffering damage. An example of such a condition is wind velocity high enough to cause dewirements but not tearing down the overhead contact line.

Microclimates surrounding components may need special requirements which are covered by product standards.

Special conditions are classified with a suffix X.

The severities specified are those which have a low probability of being exceeded. All specified values are either maximum or minimum limits. These values can be reached, but do not occur permanently. Depending on the situation there are different frequencies of occurrence related to a certain period of time. Such frequencies of occurrence have not been included in this standard, but should be considered for any environmental parameter, if relevant. In this case they shall be specified.

4.2 Altitude

Altitude related to sea level is relevant for air pressure. Air pressure shall be considered in accordance with HD 478.2.3.

The different classes of altitude above sea level in open air at which the equipment shall perform as specified are given in Table 1.

Table 1 - Altitude relative to sea level

Class	Altitude range relative to sea level m
A 1	up to 1 400
A 2	up to 1 000
A X	above 1 400
NOTE In class A 2 installations under sea level are included.	

Using A X class, the maximum altitude shall be specified by the purchaser.

4.3 Air temperature and humidity

4.3.1 General

For air temperature and humidity in open air, the climates according to Table 2 of HD 478.2.1 shall be used, excluding the first and the last two climates.

These values are illustrated in Figure 2 to Figure 7 of HD 478.2.1.

For weather-protected areas, information is given in EN 60721-3-3.

Different values depending on national requirements are possible. These values are to be agreed separately between purchaser and supplier, as appropriate to the local conditions.

In principle, air temperatures are measured in the shade.

The values of humidity can be 100 %.

4.3.2 Special conditions

When considering the temperature of an object, the effects of thermal radiation from the ground, or due to the proximity of other large objects, has to be taken into account.

In open air

The temperatures in railway surroundings, e.g. during summer on large expanses of ballast such as are to be found in large stations, can be higher than outside the area itself.

In covered areas

Maximum temperatures in covered areas should be not less than those specified for open air.

Special attention should be given to installations under transparent roofs which are subject to solar radiation. Conditions depend on the cover material.

In cubicles

Depending on the cubicle, the maximum ambient temperature should be specified up to 30 K higher than those specified in open air .