
**Železniške naprave – Uskladitev izolacije – 1. del: Osnovne zahteve –
Izolacijske in plazilne razdalje za vso električno in elektronsko opremo –
Dopolnilo A2**

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

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[SIST EN 50124-1:2002/A2:2005](https://standards.iteh.ai/catalog/standards/sist/970c68b4-9a8d-47dc-8a82-408ad7550e40/sist-en-50124-1-2002-a2-2005)

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EUROPEAN STANDARD

EN 50124-1/A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2005

ICS 29.080.00; 45.020

English version

**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 -
Isolationskoordination
Teil 1: Grundlegende Anforderungen -
Luft- und Kriechstrecken
für alle elektrischen und elektronischen
Betriebsmittel

(standards.iteh.ai)

This amendment A2 modifies the European Standard EN 50124-1:2001; it was approved by CENELEC on 2005-05-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration. <https://standards.iteh.ai/catalog/standards/cen/cenelec/sist-en-50124-1-2002-a2-2005>

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 amendment 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 amendment to the European Standard EN 50124-1:2001 was prepared by the Technical Committee 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 amendment A2 to EN 50124-1:2001 on 2005-05-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2006-05-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2008-05-01

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Annex A (normative) Tables

Replace Table A.2 by:

Table A.2 - Rated impulse voltages (U_{Ni}) for circuits powered by the contact line

Not to be used in Method 2.

Rated insulation voltage a.c. or d.c. U_{Nm} kV	Rated impulse voltage U_{Ni} kV			
	OV1	OV2	OV3	OV4
Up to (\leq)				
0,9	4	5	6	8
1,2	5	6	8	12
1,8	6	8	10	15
2,3	8	10	12	18
3	10	12	15	20
3,7 ^a / 3,6 ^b	12	15	20 ^a / 25 ^b	30
4,8	15	18	25 ^a / 30 ^b	40
6,5	20	25	30 ^a / 40 ^b	50
8,3	25	30	35 ^a / 45 ^b	60 ^a
10	30	35		
17,25 ^a			75	95
17,25 ^{a,c}			95	125
17,25 ^b			95	125
17,25 ^{b,c}			145	170
27,5 ^a			125	170
27,5 ^b			170	200
27,5 ^{b,c}			200 / 250	250 / 325

NOTE 1 If equipment for standardised three-phase a. c. systems according to IEC 60071-1 is used (e. g. 24/36/52 kV), devices have to be selected in accordance with U_{Ni} and U_a - relevant for fixed installation only (see Table B.1).

NOTE 2 This table is cited in 2.2.2.1 and 6.3.1.

^a For rolling stock only.
^b For fixed installations only.
^c Higher values for special requirements only.

Annex B (normative) Provisions for type and routine dielectric tests for equipment

Replace Table B.1 by:

Table B.1 – Dielectric test for electromechanical equipment connected to the contact line - Short-duration power-frequency (a.c.) test levels U_a (kV r.m.s.) based on the rated insulation voltage U_{Nm} (kV r.m.s.) and on the rated impulse voltage U_{Ni} (kV_{crest})

Rated impulse voltage U_{Ni} kV _{crest}	Test voltage for rolling stock U_a kV	Test voltage for fixed installations U_a kV
0,33	0,2	0,2
0,5	0,3	0,3
0,8	0,42	0,42
1,5	0,7	0,7
2,5	1,2	1,2
3	1,4	1,4
3,5	1,6	1,6
4	2	1,9
4,5	2,3	2,3
5	2,5	2,3
6	3,3	2,8
8	3,9	3,6
10	5,2	4,6
12	6,6	5,5
15	8	6,9
18	9	8,3
20	9,4	9,2
25	11,6	11,5
30	15	14
35	17	17
40	20	18,5
50	25	23
60		27,5
75	34,5	34,5
95	44	44
125	50	50
145	70	70
170	80	80
200	95	95
250	95	95
325		140

NOTE If equipment for standardised three-phase a. c. systems according to IEC 60071-1 is used, devices have to be selected in accordance with U_{Ni} and U_a .

NOTE After the test described in 9.3.3.4 the component shall be able to withstand the dielectric tests required as a routine test in 9.3.3.3 of EN 60077-1, but with the test voltage values reduced to 75%.

Annex D (normative) Correlation between U_n and U_{Nm}

Replace Table D.1 by:

Table D.1 - Correlation between nominal voltages of the railway power distribution system and the required insulation voltages for circuits of equipment which are intended to be connected to these systems

Nominal voltage U_n		Minimum values of the rated insulation voltage U_{Nm}
Power supply systems according to EN 50163	Battery supply systems	
d.c. kV	a.c. kV	V
		24 / 36
		48 / 72
		110 / 120
0,6		0,72
0,75		0,9
1,5		1,8
3,0		3,6
	15	17,25
	25	27,5 (36 ^a / 52 ^a)

NOTE This table is cited in 2.2.2.1. <https://standards.iteh.ai/catalog/standards/sist/en-50124-1-2002-a2-2005>

^a For fixed installations only. For 25 kV a. c. traction supply systems, the choice (by purchaser or by agreement) of the different values of U_{Nm} for the same U_n depends upon the maximum non-permanent or transient voltages actually appearing in the system and upon the special circuital configuration used.