

Railway applications — Electromagnetic compatibility —

Part 3.2: Rolling stock — Apparatus

ICS 29.020;29.280;45.060

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

Committees responsible for this Draft for Development

The preparation of this Draft for Development was entrusted to Technical Committee PEL/9, Railway electrotechnical applications, upon which the following bodies were represented:

- British Cable Makers Confederation
- Confederation of Passenger Transport UK
- Docklands Light Railway
- Federation of the Electronics Industry
- Health and Safety Executive
- London Underground Ltd.
- Power Supply Manufacturers' Association — PSMA (BEAMA Ltd.)
- Railtrack
- Railway Industry Association

This Draft for Development, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1996

© BSI 02-2000

The following BSI reference relates to the work on this Draft for Development:
Committee reference PEL/9

ISBN 0 580 25984 6

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text of ENV 50121-3-2	3
List of references	Inside back cover

National foreword

This Draft for Development has been prepared by Technical Committee PEL/9 and is the English language version of European Prestandard ENV 50121-3-2:1996 *Railway applications — Electromagnetic compatibility Part 3-2: Rolling stock — Apparatus*, published by the European Committee for Electrotechnical Standardization (CENELEC).

Cross-references

Publication referred to Corresponding British Standard

EN 50155	BS EN 50155:1996 <i>Railway applications — Electronic equipment used on rolling stock</i>
EN 55011	BS EN 55011:1991 <i>Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment</i>
EN 55022	BS EN 55022:1995 <i>Limits and methods of measurement of radio disturbance characteristics of information technology equipment</i> BS EN 61000 <i>Electromagnetic compatibility (EMC)</i> BS EN 61000-4 <i>Testing and measurement techniques</i>
EN 61000-4-2	BS EN 61000-4-2:1995 <i>Electrostatic discharge immunity test. Basic EMC publication</i>
EN 61000-4-4	BS EN 61000-4-4:1995 <i>Electrical fast transient/burst immunity test. Basic EMC publication</i>
EN 61000-4-5	BS EN 61000-4-5:1995 <i>Surge immunity test</i> DD ENV 50121 <i>Railway applications — Electromagnetic compatibility</i>
ENV 50121-1	DD ENV 50121-1:1996 <i>General</i>
ENV 50121-3-1	DD ENV 50121-3-1:1996 <i>Rolling stock — Train and complete vehicle</i>
ENV 50140	DD ENV 50140:1994 <i>Electromagnetic compatibility. Basic immunity standard. Radiated radio-frequency electromagnetic field. Immunity test</i>
ENV 50141	DD ENV 50141:1994 <i>Electromagnetic compatibility. Basic immunity standard. Conducted disturbances induced by radio-frequency fields. Immunity test.</i>
IEC 50(161)	BS 4727 <i>Glossary of electrotechnical, power telecommunication, electronics, lighting and colour terms</i> Part 1 <i>Terms common to power, telecommunications and electronics</i> Group 09:1991 <i>Electromagnetic compatibility</i>

This Document is being issued in the Draft for Development series of publications and is of a provisional nature. It should be applied on this provisional basis so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion to a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *BSI News*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee PEL/9 at 389 Chiswick High Road, London W4 4AL giving the document reference and clause number and proposing, where possible, an appropriate revision of the text. **This publication is not to be regarded as a British Standard.**

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, the ENV title page, pages 2 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

ICS 29.020;29.280;45.020

Descriptors: Railway rolling stock, rolling stock apparatus, electric equipment, radio disturbances, electromagnetic compatibility, tests, limits

English version

Railway applications — Electromagnetic compatibility Part 3-2: Rolling stock — Apparatus

Applications ferroviaires —
Compatibilité électromagnétique
Partie 3-2: Matériel roulant
Equipements

Bahnanwendungen —
Elektromagnetische Verträglichkeit
Teil 3-2: (To be completed)

This European Prestandard (ENV) was approved by CENELEC on 1995-12-11 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CENELEC will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard (EN).

CENELEC members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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

© 1996 Copyright reserved to CENELEC members

Ref. No. ENV 50121-3-2:1996 E
 **Documents**
Document Sharing Hub

Foreword

This European Prestandard was prepared by Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways, in accordance with the decision taken by CLC/TC 9X at its 11th meeting on 1995-05-12/13.

The text of the draft was submitted to the formal vote and was approved by CENELEC as ENV 50121-3-2 on 1995-12-11.

The following date was fixed:

- latest date by which the existence of the ENV has be to announced at national level (doa) 1996-01-15

This European Prestandard is to be used in conjunction with ENV 50121-1:1996 *Railway applications — Electromagnetic compatibility — Part 1: General*.

Annexes designated “normative” are part of the body of the Prestandard. Annexes designated “informative” are given only for information. In this Prestandard, Annex A and Annex B are informative.

Contents

	Page
Foreword	2
1 Scope	3
2 Normative references	3
3 Definitions	4
4 Locations	4
5 Performance criteria	4
6 Conditions during testing	4
7 Applicability	5
8 Emission tests and limits	5
9 Immunity tests and limits	7
Annex A (informative) Examples of apparatus and ports	10
Annex B (informative) Conducted disturbances generated by power converters in the range of 9 kHz-30 MHz	16
Figure 1 — Main categories of ports	4
Figure A.1	13
Figure A.2	13
Figure A.3	14
Figure A.4	14
Figure A.5	15
Figure B.1	17
Figure B.2	18
Table 1 — Traction a.c. power ports	5
Table 2 — Traction d.c. power ports	6
Table 3 — Auxiliary a.c. or d.c. power ports	6
Table 4 — Battery referenced ports	6
Table 5 — Signal & communication, process measurement & control ports	6
Table 6 — Enclosure port	7
Table 7 — Battery referenced ports (except energy sources), Auxiliary a.c. power input ports (rated voltage < or = 400 Vrms)	8
Table 8 — Signal & communication, process measurement & control ports	8
Table 9 — Enclosure port	9
Table A.1 — Typical examples of apparatus	11