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Responsible committee: NCE/2 Radiation protection and measurement

Interested committees:

Title: BS IEC 62523 Radiation protection instrumentation - Cargo/vehicle radiographic inspection system

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- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



45B/1079/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:

IEC 62523 ED2

DATE OF CIRCULATION:

2024-12-27

CLOSING DATE FOR COMMENTS:

2025-02-21

SUPERSEDES DOCUMENTS:

45B/1077/RR

IEC SC 45B : RADIATION PROTECTION INSTRUMENTATION

SECRETARIAT:

France

SECRETARY:

Mr Miroslav Voytchev

OF INTEREST TO THE FOLLOWING COMMITTEES:

HORIZONTAL FUNCTION(S):

ASPECTS CONCERNED:

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Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (SEE [AC/22/2007](#) OR [NEW GUIDANCE DOC](#)).

TITLE:

Radiation protection instrumentation - Cargo/vehicle radiographic inspection system

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIATION PROTECTION INSTRUMENTATION –
CARGO/VEHICLE RADIOGRAPHIC INSPECTION SYSTEM**

FOREWORD

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International Standard IEC 62523 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

This XXX edition cancels and replaces the XXX edition published in [publication_date], Amendment 1:[publication_date] and Amendment 2:[publication_date]. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The scope expanded to include systems in the 200 kV to 500 kV range
- b) Several changes were made to the test object designs
- c) Addition and revision of normative reference documents.
- d) Modified the definitions of terms 3.5 and 3.6 according to the new version of IAEA No. GSR Part 3.
- e) Eased the lower limit of the humidity range of the standard test conditions to 25%.
- f) Modified the test method for material discrimination capability.
- g) Modified the test method for ambient dose equivalent rate on the system boundary.

- 141 h) Removed the requirement and test method for ambient dose equivalent rate isodose contour.
142 i) Changed the vehicle occupant dose requirements to harmonize with IEC 62463
143 The text of this standard is based on the following documents:

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

144 Full information on the voting for the approval of this standard can be found in the report on
145 voting indicated in the above table.

146 This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

147 The committee has decided that the contents of this amendment and the base publication will
148 remain unchanged until the stability date indicated on the IEC web site under
149 "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the
150 publication will be

- 151 • reconfirmed,
- 152 • withdrawn,
- 153 • replaced by a revised edition, or
- 154 • amended.

155

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RADIATION PROTECTION INSTRUMENTATION – CARGO/VEHICLE RADIOGRAPHIC INSPECTION SYSTEM

1 Scope and object

This International Standard applies to radiographic inspection systems with photon radiation energy of at least 200 keV for inspection of cargo, vehicles and cargo containers.

This revision expands the scope of the standard to lower energy systems. We are seeking comments on this change. We particularly want comments on whether the change is generally desirable and whether it will necessitate changes to other sections of the standard.

Such inspection systems generally consist of radiation source(s), detectors, control system, image processing system, radiation safety system and other auxiliary devices/facilities.

The object of this standard is to define the tests and the relevant testing methods for determining the performance characteristics of the radiographic inspection systems.

This standard is not applicable to those cargo/vehicle inspection systems using neutron source radiography, computed tomography or backscatter technology.

We are seeking comments on whether and how the standard should apply to hybrid systems, for example, systems that collect both transmission and backscatter images.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-395:2014, *International Electrotechnical Vocabulary (IEV) - Part 395: Nuclear instrumentation - Physical phenomena, basic concepts, instruments, systems, equipment and detectors*

IEC 60204-1:2016+AMD1:2021 CSV, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 61000-6-2:2016 RLV, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61000-6-4, *Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments*

IEC 61010-1:2010+AMD1:2016 CSV, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*

IEC 62463:2024, *Radiation protection instrumentation - X-ray systems for the security screening of persons.*

ISO 4948-1, *Steels – Classification – Part 1: Classification of steels into unalloyed and alloy steels based on chemical composition*

ISO 9978:2020, *Radiation protection – Sealed sources – Leakage test methods*

IAEA Safety Guide No.RS-G-1.10, *Safety of Radiation Generator and Sealed Radioactive Sources*

IAEA Safety Guide No.TS-R-1, *Regulations for the Safe Transport of Radioactive Material*