IEC 62706

Edition 1.0 2012-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Radiation protection instrumentation – Environmental, electromagnetic and mechanical performance requirements

Instrumentation pour la radioprotection – Exigences de performances environnementales, électromagnétiques et mécaniques

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RADIATION PROTECTION INSTRUMENTATION – ENVIRONMENTAL, ELECTROMAGNETIC AND MECHANICAL PERFORMANCE REQUIREMENTS

FOREWORD

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International Standard IEC 62706 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

The text of this standard is based on the following documents:

FDIS	Report on voting
45B/744/FDIS	45B/753/RVD

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

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

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Radiation protection instrumentation including those instruments used for the detection and identification of radioactive material and radionuclides are used in many different environments. They are typically exposed to different temperatures, humidity levels, electromagnetic fields, and mechanical stresses such as shock and vibration during normal use. Radiation instrumentation may be worn, hand carried, mounted to a vehicle, transported from location to location, or installed. All of the conditions associated with these very different uses should be considered when developing instrument-specific requirements. In order to ensure consistency between standards, this environmental, electromagnetic, and mechanical performance requirements standard was established.

RADIATION PROTECTION INSTRUMENTATION – ENVIRONMENTAL, ELECTROMAGNETIC AND MECHANICAL PERFORMANCE REQUIREMENTS

1 Scope and object

This International Standard establishes the environmental, mechanical and electromagnetic performance requirements and methods of test for radiation protection instrumentation.

The object of this standard is to define, for design and test purposes, the environments in which radiation protection instrumentation may be exposed. The environments addressed by this standard are applicable to body-worn (e.g., personal radiation detectors, backpack, and dosemeters), hand carried, portable and transportable, mobile, or installed instrumentation.

2 Normative references

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

IEC 60050-393, *International Electrotechnical Vocabulary (IEV) – Part 393: Nuclear instrumentation – Physical phenomena and basic concepts*

IEC 60050-394:2007, *International Electrotechnical Vocabulary (IEV) – Part 394: Nuclear instrumentation – Instruments, systems, equipment and detectors*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

IEC 60721-3-5, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 5: Ground vehicle installations*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and masurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-5, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61000-4-12, *Electromagnetic compatibility (EMC) – Part 4-12: Testing and measurement techniques – Ring wave immunity test*