National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 62022:2007

ICS 13.280

INSTALLED MONITORS FOR THE CONTROL AND DETECTION OF GAMMA RADIATIONS CONTAINED IN RECYCLABLE OR NON-RECYCLABLE MATERIALS TRANSPORTED BY VEHICLES (IEC 62022:2004 (MOD))

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 62022

July 2007

ICS 13.280

English version

Installed monitors for the control and detection of gamma radiations contained in recyclable or non-recyclable materials transported by vehicles

(IEC 62022:2004, modified)

Moniteurs fixes de contrôle et de détection d'émetteurs de rayonnements gamma contenus dans des matériaux recyclables ou non recyclables, transportés dans des véhicules
(CEI 62022:2004, modifiée)

Fest installierte Monitore für die Überwachung und den Nachweis von Gammastrahlen-Emittern in von Fahrzeugen transportierten, wiederverwertbaren oder nicht wiederverwertbaren Materialien
(IEC 62022:2004, modifiziert)

This European Standard was approved by CENELEC on 2007-07-01. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. EN 62022:2007 E

Foreword

The text of the International Standard IEC 62022:2004, prepared by SC 45B, Radiation protection instrumentation, of IEC TC 45, Nuclear instrumentation, together with the common modifications prepared by CENELEC BTTF 111-3, Nuclear instrumentation and radiation protection instrumentation, was submitted to the formal vote and was approved by CENELEC as EN 62022 on 2007-07-01.

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)	2008-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-07-01

Clauses, subclauses, notes, tables and figures which are additional to those in IEC 62022:2004 are prefixed “Z”.

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 62022:2004 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

Replace “operational setting” with “operating setting” all over the document.

2 Normative references

Replace the references to IEC 61000-4 series with their latest editions.

4 Design requirements

4.1 General characteristics

Add at the end of the first paragraph: “... threshold. The alarm threshold is not a fixed value, but an expected value depending on the measuring conditions, e.g. the material and energy ranges expected.”

Replace the last paragraph with:

In the case of the dynamic mode (the vehicle passing the equipment) alarm occurs when there is a statistically significant increase in the detected fluence rate of gamma photons when the vehicle is passing the detection system. This fluence may however be less than that due to normal background.

Add a new paragraph below the current text, reading:

In the case of the static mode (vehicle stationary within the equipment) an alarm occurs when the fluence rate of gamma photons detected is greater than a pre-established level.

4.2 Configuration

Replace the first paragraph with:

The equipment is composed of one or several radiation detection assemblies adjacent to the vehicle in the static mode and close to the vehicle whilst it passes in the dynamic mode, and an information treatment assembly, linked to an alarm assembly.

Replace the fifteenth paragraph with:

Sensors should indicate the approach of the vehicle to inhibit any further storage of background information. Further sensors should indicate the vehicle is in the monitoring position or passing through the monitoring area.

Replace the last paragraph with:

Equipment shall be provided with appropriate facilities for indicating faults, for example loss of detector voltage of failure of electronics. The number and type of faults to be indicated shall be by agreement between the manufacturer and purchaser.

4.3 Indication facilities

Begin the penultimate paragraph with “It should be possible to transfer these data to an additional …”

5 Test procedures

5.1 General test conditions

5.1.1 Nature of tests

In the last two bullets, **replace** “reference load” with “reference load (see 5.1.6)”.

5.1.3 Tests performed under standard test conditions

Replace the first sentence with “Tests which are performed under standard test conditions are listed in Table 2, the table indicates, for each characteristic under test …”

5.1.6 Test vehicle

Replace the fifth paragraph with:

Recommended vehicles and reference loads are given in Annex A.

In the last paragraph, **replace** “wood” with “wood (wood for non-metal applications only)”.

5.2 Radiation characteristics

5.2.2 Reference radioactive sources

In item a), **change** the order of second and third paragraphs.

In item b), **add** a further paragraph, reading:

These reference radioactive sources shall be used when the equipment is tested with a test vehicle.

5.2.4 Sensitivity of the radiation detection assembly for radioactive sources placed in free air

5.2.4.2 Testing method

In the second paragraph, **replace** “1 m” with “2 m”.

5.4 Electrical characteristics

5.4.1 Requirements for power supplies

In the last sentence, **replace** “indications of the quantities” with “indicated count rate” and “10 %” with “± 5 %”.

5.4.2 Method of test

In the last sentence of the third paragraph and in items a) and b), **replace** “10 %” with “± 5 %”.

5.5 Mechanical characteristics

5.5.1 Mechanical shocks

Add a further paragraph below the current text, reading:

The detection assemblies should be protected by physical barriers.