



National Standards Authority of Ireland
Údarás um Chaighdeán Náisiúnta na hÉireann

IRISH STANDARD

I.S. EN 60861:2008

ICS 13.280

**EQUIPMENT FOR MONITORING OF
RADIONUCLIDES IN LIQUID EFFLUENTS
AND SURFACE WATERS (IEC 60861:2006
(MOD))**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60861

March 2008

ICS 13.280

English version

**Equipment for monitoring of radionuclides
in liquid effluents and surface waters
(IEC 60861:2006, modified)**

Equipements pour la surveillance
des radionucléides dans les effluents
liquides et les eaux de surface
(CEI 60861:2006, modifiée)

Einrichtungen zur Überwachung von
Radionukliden in flüssigen Ableitungen
und Oberflächengewässern
(IEC 60861:2006, modifiziert)

This European Standard was approved by CENELEC on 2008-02-01. 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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Foreword

The text of the International Standard IEC 60861:2006, prepared by SC 45B, Radiation protection instrumentation, of IEC TC 45, Nuclear instrumentation, together with the common modifications prepared by the Technical Committee CENELEC TC 45B, Radiation protection instrumentation, was submitted to the formal vote and was approved by CENELEC as EN 60861 on 2008-02-01.

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) 2009-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-02-01

Clauses, subclauses, notes, tables and figures which are additional to those in IEC 60861 are prefixed “Z”.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of International Standard IEC 60861:2006 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

1 Scope

In the first sentence of the fourth paragraph **replace** “continuous monitoring” with “continuous monitoring (including discrete sequential measurement)”.

In the last sentence of the fourth paragraph **replace** “extraction and laboratory analysis” with “extraction followed by laboratory analysis”.

2 Normative references

Add the following:

ISO 11929 (Series) Determination of the detection limit and decision threshold for ionizing radiation measurements

3 Terms and definitions

3.1 water monitor

Replace the definition with “equipment intended for monitoring of radionuclides in liquid effluents and surface waters”.

3.3 continuous measurement

Delete the whole definition.

3.5 discrete sequential measurement

Add the following note:

NOTE Z Immediately after collection of the sample the activity of the sample will be measured, during the time the next sample is collected. The time between taking each sample should be as short as possible.

3.11 total equivalent window thickness (density thickness)

Replace “medium measured” with “surface of the medium of deposition to be measured”.

Add at the end of the NOTE “... and the sample container (if any).”

3.16 decision threshold

Replace the first sentence of NOTE 1 with “The decision threshold is the critical value of a statistical test designed in such a way that the probability of wrongly rejecting the null hypothesis (H_0 : the physical effect is not present) (error of the first kind) is equal to a given value α .”.

3.25 sensitivity

Replace the first sentence with “for a given value of the measured quantity, the ratio of the observed indication to the corresponding conventionally true value of the measured quantity”.

Add the following note:

NOTE Z This definition is specific to this standard.

5 Equipment design

5.1 Measurement and indication characteristics

5.1.1 Measurement characteristics

Add the following note below the current text:

NOTE Z The decision threshold is calculated according to ISO 11929 series.

5.3 Sampling assembly

5.3.1 Sampling and exhaust pipes

Add “radioactive contamination” between “minimize” and “particle traps”.

6 Test procedures

6.5 Test sources

6.5.1 Reference sources

In the second paragraph **delete** “²⁰⁴Tl, or ¹³⁷Cs,”.

7 Radiation performance tests

7.3 Linearity

7.3.2 Requirements

In the last sentence **replace** “reference curve” with “reference straight line”.

7.12 Influence of materials in suspension in liquid on activity measurement

7.12.2 Test method

In the second sentence of the first paragraph **replace** “conductivity of the used solution shall” with “conductivity of the used solution should”.

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