SLOVENSKI STANDARD
SIST EN 60068-2-74:2001

01-september-2001

Environmental testing - Part 2: Tests - Test Xc: Fluid contamination

Environmental testing -- Part 2: Tests - Test Xc: Fluid contamination

Umweltprüfungen -- Teil 2: Prüfverfahren - Prüfung Xc: Verunreinigung durch Flüssigkeiten

Essais d'environnement -- Partie 2: Essais - Essai Xc: Contamination par des fluides

Ta slovenski standard je istoveten z: **EN 60068-2-74:1999**

ICS:

19.040	Preskušanje v zvezi z okoljem	Environmental testing

SIST EN 60068-2-74:2001 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60068-2-74

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ICS 19.040

English version

Environmental testing
Part 2: Tests - Test Xc: Fluid contamination
(IEC 60068-2-74:1999)

Essais d'environnement
Partie 2: Essais - Essai Xc:
Contamination par des fluides
(CEI 60068-2-74:1999)

Umweltprüfungen
Teil 2: Prüfverfahren - Prüfung Xc:
Verunreinigung durch Flüssigkeiten
(IEC 60068-2-74:1999)

This European Standard was approved by CENELEC on 1999-10-01. 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, Czech Republic, 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

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Foreword

The text of document 104/124/FDIS, future edition 1 of IEC 60068-2-74, prepared by IEC TC 104 Environmental conditions, classification and methods of test, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60068-2-74 on 1999-10-01.

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) 2000-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-10-01

Endorsement notice

The text of the International Standard IEC 60068-2-74:1999 was approved by CENELEC as a European Standard without any modification.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
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60068-2-74

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Essais d'environnement –

Partie 2:
Essais –
Essai Xc: Contamination par des fluides

Environmental testing –

Part 2:
Tests –
Test Xc: Fluid contamination

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60068-2-74 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test*.

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

FDIS	Report on voting
104/124/FDIS	104/129/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 3.

Annex A is for information only.

* IEC technical committee 50: Environmental testing, has been transformed into IEC technical committee 104.

ENVIRONMENTAL TESTING –

Part 2: Tests – Test Xc: Fluid contamination

1 Scope

This part of IEC 60068 gives a method of test which provides a standard procedure to determine the ability of components, equipments or their constituent materials, hereinafter referred to as specimen, to withstand accidental contact with fluids, without being unacceptably affected.

The fluids listed in this part of IEC 60068 are representative of those commonly encountered in operational applications. It is not intended that a specimen should be exposed to all, or even any of them. Nor is the list intended to be complete; fluids not listed and for which a test is appropriate should be included in the relevant specification. Guidance is given in annex A on the choice of test fluids, specimens and severities.

These tests are not intended to demonstrate the suitability of components or equipments to perform in continuous contact with a fluid, e.g. an immersed fuel pump. Nor are they a test to demonstrate immunity from electrolytic corrosion.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60068. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60068 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1817:1985, *Rubber, vulcanized – Determination of the effect of liquids*

3 Test fluid

3.1 Specification of test fluid

The relevant specification (see clause 12) shall specify the required test fluids which shall wherever possible be selected from the list given in table 1. Each fluid has been specified as being representative of a group of fluids. (See clause A.2.)

The relevant specification shall also specify any additional fluids not listed in table 1 for which a test is required.

3.2 Precaution

Since many fluids may have flash points within the test temperature range, care should be taken to ensure that adequate safety measures are taken to limit the possibility of fire or explosion.

Some fluids may themselves, or in combination with other fluids or the specimen, be toxic. Due consideration should be given to this possibility before commencing the tests. Consultation of a health and safety expert is strongly advised.

Table 1 – Major contaminant fluid groups and test fluids

Contaminant fluid group		Test fluid reference	Test fluid [1)]	Test temperature [2)] ±2 °C
Fuels	Kerosene (turbine)	(a)	ISO 1817 test liquid F	70 [3)]
	Gasoline (piston engine)	(b)	ISO 1817 test liquid B	40 [3)]
Hydraulic fluids	Mineral oil based	(c)	NATO H-520; (OM18) [4)]	70
	Phosphate ester based (synthetic)	(d)	ISO 1817 test liquid 103	70
	Silicone based	(e)	Dimethyl silicone, 10 mm^2/s (cSt) at 25 °C (ZX42; NATO S1714)	70
Lubricating oils	Mineral based	(f)	NATO 0-1176 (OMD 80)	70
	Ester based (synthetic)	(g)	ISO 1817 test liquid 101	150
Solvents and cleaning fluids		(h)	Propan-2-ol (isopropyl alcohol)	50 [3)]
		(i)	De-natured alcohol	23
		(j)	Detergent	23
De-icing and anti-freeze fluids		(k)	Inhibited ethanediol (ethylene glycol) with a volume fraction of 80 % in water	23
		(l)	Inhibited ethanediol (ethylene glycol) with a volume fraction of 50 % in water	23
Runway de-icers		(m)	25 % urea/25 % ethanediol (ethylene glycol) in water [4)]	23
		(n)	50 % inhibited potassium acetate in water [4)]	23
Insecticides		(o)	Dichlorvos (DDVP) pyrethrum based, 2 % solution in kerosene	23
		(p)	D-phenothrin 2 % solution in kerosene	23
Coolant dielectric fluid (see A.2.9)		(q)	Coolanol 25R	70
Fire extinguishants		(r)	Fluorochemical foam (rapid intervention)	23
		(s)	Fluoroprotein foam	23

1) Wherever possible the fluid given is specified in an International Standard or is described by its constituent chemicals. In some cases a NATO identification has been used in preference to a commercial identification. Reference to relevant commercial literature can correlate the NATO number with commercially available fluid(s).

2) See clauses 8, 9, 10 and A.7.

3) This temperature exceeds the critical flash point temperature. Expert advice should be taken on the conduct of the test.

4) NATO H-515 may be used as an alternative if desired.