

Alarm systems - Part 5: Environmental test methods

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50130-5:2011 sisaldab Euroopa standardi FprEN 50130-5:2011 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 29.07.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 17.06.2011.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 50130-5:2011 consists of the English text of the European standard FprEN 50130-5:2011.

This standard is ratified with the order of Estonian Centre for Standardisation dated 29.07.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 17.06.2011.

The standard is available from Estonian standardisation organisation.

ICS 13.320, 29.020

Inglisekeelsed võtmesõnad: accident prevention, alarm systems, classification, definitions, electromagnetic compatibility, emergency call, environment, fire detection systems, intruder detection, tests,

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: 605 5050; E-mail: info@evs.ee

English version

**Alarm systems -
Part 5: Environmental test methods**

Systèmes d'alarme -
Partie 5: Méthodes d'essai
d'environnement

Alarmanlagen -
Teil 5: Methoden für Umweltprüfungen

This European Standard was approved by CENELEC on 2011-06-13. 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, Croatia, 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 79, Alarm systems.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50130-5 on 2011-06-13.

This document supersedes EN 50130-5:1998.

The main changes with respect to EN 50130-5:1998 are listed below:

- 1) updating of the referenced base standards to the latest editions, this updating has caused changes therefore in the test methods used in several clauses.
- 2) Clauses 8 and 9 have had changes made to the requirements in class IV limits.
- 3) Clause 27 was removed.

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) | 2012-06-13 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2014-06-13 |

This European Standard is part of the EN 50130 series of standards. This series is intended to give the requirements applicable to alarm systems in general (e.g. the environmental test methods, in this case, and EMC immunity requirements in the case of EN 50130-4). The following associated series of European standards are intended to give the other requirements (e.g. performance requirements), which are applicable to the specific types of alarm systems:

- EN 50131 Alarm systems – Intrusion and hold-up systems;
- EN 50132 Alarm systems – CCTV surveillance systems for use in security applications;
- EN 50133 Alarm systems – Access control systems for use in security applications;
- EN 50134 Alarm systems – Social alarm systems;
- EN 50136 Alarm systems – Alarm transmission systems and equipment;
- CLC/TS 50398 Alarm systems – Combined and integrated alarm systems – General requirements.

Contents

1	Scope	6
2	Normative references	7
3	Terms and definitions	8
4	Environmental classes	9
5	Standard laboratory conditions	9
6	Tolerances	9
7	Information to be included in the relevant product standard	9
8	Dry heat (operational).....	10
8.1	Object of the test	10
8.2	Principle	10
8.3	Test procedure	10
9	Dry heat (endurance).....	11
9.1	Object of the test	11
9.2	Principle	11
9.3	Test procedure	12
10	Cold (operational)	13
10.1	Object of the test	13
10.2	Principle	13
10.3	Test procedure	13
11	Temperature change (operational).....	14
11.1	Object of the test	14
11.2	Principle	14
11.3	Test procedure	14
12	Damp heat, steady state (operational).....	15
12.1	Object of the test	15
12.2	Principle	15
12.3	Test procedure	15
13	Damp heat, steady state (endurance).....	16
13.1	Object of the test	16
13.2	Principle	16
13.3	Test procedure	16
14	Damp heat, cyclic (operational).....	17
14.1	Object of the test	17
14.2	Principle	17
14.3	Test procedure	17
15	Damp heat, cyclic (endurance).....	18
15.1	Object of the test	18
15.2	Principle	18
15.3	Test procedure	19
16	Water ingress (operational).....	19
16.1	Object of the test	19
16.2	Principle	20
16.3	Test procedure	20
17	Sulphur dioxide (SO₂) (endurance)	23
17.1	Object of the test	23
17.2	Principle	23
17.3	Test procedure	23

18	Salt mist, cyclic (endurance)	24
18.1	Object of the test	24
18.2	Principle	24
18.3	Test procedure	24
19	Shock (operational)	25
19.1	Object of the test	25
19.2	Principle	25
19.3	Test procedure	26
20	Impact (operational)	27
20.1	Object of the test	27
20.2	Principle	27
20.3	Test procedure	27
21	Free fall (operational)	28
21.1	Object of the test	28
21.2	Principle	28
21.3	Test procedure	29
22	Vibration, sinusoidal (operational)	29
22.1	Object of the test	29
22.2	Principle	30
22.3	Test procedure	30
23	Vibration, sinusoidal (endurance)	31
23.1	Object of the test	31
23.2	Principle	31
23.3	Test procedure	31
24	Simulated solar radiation, temperature rise (operational)	32
24.1	Object of the test	32
24.2	Principle	32
24.3	Test procedure	32
25	Simulated solar radiation, surface degradation (endurance)	33
25.1	Object of the test	33
25.2	Principle	33
25.3	Test procedure	34
26	Dust tightness (endurance)	34
26.1	Object of the test	34
26.2	Principle	35
26.3	Test procedure	35
	Bibliography	37

Figure

Figure 1 – Graph showing peak acceleration vs. specimen mass	27
--	----

Tables

Table 1 – Dry heat (operational) – Conditioning	11
Table 2 – Dry heat (endurance) – Conditioning	12
Table 3 – Cold (operational) – Conditioning	13
Table 4 – Temperature change (operational) – Conditioning	14
Table 5 – Damp heat, steady state (operational) – Conditioning	16
Table 6 – Damp heat, steady state (endurance) – Conditioning	17
Table 7 – Damp heat, cyclic (operational) – Conditioning	18
Table 8 – Damp heat, cyclic (endurance) – Conditioning	19
Table 9 – Water ingress (operational) – Conditioning for fixed and movable equipment class	21
Table 10 – Water ingress (operational) – Conditioning for portable equipment class	22
Table 11 – Sulphur dioxide (SO ₂) (endurance) – Conditioning	23
Table 12 – Salt mist, cyclic (endurance) – Conditioning	25
Table 13 – Shock (operational) – Conditioning	26
Table 14 – Impact (operational) – Conditioning	28
Table 15 – Free fall (operational) – Conditioning	29
Table 16 – Vibration, sinusoidal (operational) – Conditioning	30
Table 17 – Vibration, sinusoidal (endurance) – Conditioning	32
Table 18 – Simulated solar radiation, Temperature rise (operational) – Conditioning	33
Table 19 – Simulated solar radiation, surface degradation (endurance) – Conditioning	34
Table 20 – Dust tightness (endurance) – Conditioning for Category 1	36
Table 21 – Dust tightness (endurance) – Conditioning for Category 2	36

1 Scope

This European Standard specifies environmental test methods to be used for testing the system components of the following alarm systems, intended for use in and around buildings:

- intruder alarm systems;
- hold-up alarm systems;
- social alarm systems;
- CCTV systems, for security applications;
- access control systems, for security applications;
- alarm transmission systems ¹⁾.

This European Standard specifies three equipment classes (fixed, movable & portable equipment) and four environmental classes.

The environmental classes only include the general service environments envisaged for equipment installed in typical residential, commercial and industrial environments. It may be necessary for the product standard to require additional or different environmental tests or severities where

- a) there could be specific environmental problems (e.g. some different severities may be required for break glass detectors stuck to glass windows, due to the local extremes of temperature and humidity),
- b) the test exposure falls within the intended detection phenomenon of the detector (e.g. during a vibration test on a seismic detector).

In order to provide reproducible test methods and to avoid the proliferation of technically similar test methods, the test procedures have been chosen, where possible, from internationally accepted standards (e.g. IEC publications). For specific guidance on these tests, reference should be made to the appropriate document, which is indicated in the relevant sub-section. For more general guidance and background information on environmental testing, reference should be made to EN 60068-1 and to the EN 60068-3 series.

This European Standard does not specify

- a) the requirements or performance criteria to be applied, which should be specified in the relevant product standard,
- b) special tests only applicable to a particular device (e.g. the effects of turbulent air draughts on ultrasonic movement detectors),
- c) basic safety requirements, such as protection against electrical shocks, unsafe operation, insulation coordination and related dielectric tests,
- d) tests relating to deliberate acts of damage or tampering.

¹⁾ Apart from equipment which is part of a public communication network.

2 Normative references

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

EN 60068-1:1994	Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + corr. Oct. 1988 + A1:1992)
EN 60068-2-1:2007	Environmental testing – Part 2-1: Tests – Test A: Cold (IEC 60068-2-1:2007)
EN 60068-2-2:2007	Environmental testing – Part 2-2: Tests – Test B: Dry heat (IEC 60068-2-2:2007)
EN 60068-2-5:1999	Environmental testing – Part 2-5: Tests – Test Sa: Simulated solar radiation at ground level (IEC 60068-2-5:1975)
EN 60068-2-6:2008	Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:2007)
EN 60068-2-14:2009	Environmental testing – Part 2-14: Tests – Test N: Change of temperature (IEC 60068-2-14:2009)
EN 60068-2-18:2001	Environmental testing – Part 2-18: Tests – Tests R and guidance: Water (IEC 60068-2-18:2000)
EN 60068-2-27:2009	Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock (IEC 60068-2-27:2008)
EN 60068-2-30:2005	Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle) (IEC 60068-2-30:2005)
EN 60068-2-31:2008	Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens (IEC 60068-2-31:2008)
EN 60068-2-42:2003	Environmental testing – Part 2-42: Tests – Test Kc: Sulphur dioxide test for contacts and connections (IEC 60068-2-42:2003)
EN 60068-2-52:1996	Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution) (IEC 60068-2-52:1996)
EN 60068-2-75:1997	Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests (IEC 60068-2-75:1997)
EN 60068-2-78:2001	Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state (IEC 60068-2-78:2001)
EN 60529:1991 + corr. May. 1993 + A1:2000	Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989 + A1:1999)
EN 62262:2002	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) (IEC 62262:2002)