



**NSAI**  
Standards

Irish Standard  
I.S. EN 50491-2:2010&A1:2015

# General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 2: Environmental conditions

**I.S. EN 50491-2:2010&A1:2015**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN 50491-2:2010/A1:2015

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN 50491-2:2010

*Published:*

2010-03-26

*This document was published under the authority of the NSAI and comes into effect on:*

2015-04-21

ICS number:

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

**EN 50491-2:2010/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2015

---

ICS 97.120

English Version

## General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 2: Environmental conditions

Exigences générales pour systèmes électroniques pour les foyers domestiques et les bâtiments (HBES) et pour systèmes de gestion technique du bâtiment (SGTB) - Partie 2: Exigences d'environnement

Allgemeine Anforderungen an die Elektrische Systemtechnik für Heim und Gebäude (ESHG) und an Systeme der Gebäudeautomation (GA) - Teil 2: Umgebungsbedingungen

This amendment A1 modifies the European Standard EN 50491-2:2010; it was approved by CENELEC on 2015-02-23. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 CEN-CENELEC Management Centre or to any CENELEC member.

This amendment 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 CEN-CENELEC Management Centre 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

---

## Foreword

This document (EN 50491-2:2010/A1:2015) has been prepared by CLC/TC 205 "Home and Building Electronic Systems (HBES)".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-02-23
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-02-23

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 50491-2**

March 2010

ICS 97.120

English version

**General requirements for Home and Building Electronic Systems (HBES)  
and Building Automation and Control Systems (BACS) -  
Part 2: Environmental conditions**

Exigences générales pour systèmes  
électroniques pour les foyers domestiques  
et les bâtiments (HBES) et pour systèmes  
de gestion technique du bâtiment (SGTB) -  
Partie 2: Exigences d'environnement

Allgemeine Anforderungen an die  
Elektrische Systemtechnik für Heim  
und Gebäude (ESHG) und an Systeme  
der Gebäudeautomation (GA) -  
Teil 2: Umgebungsbedingungen

This European Standard was approved by CENELEC on 2010-03-01. 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, 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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

This European Standard was prepared by a joint working group of CLC/TC 205, Home and Building Electronic Systems (HBES) and CEN/TC 247, Building Automation, Controls and Building Management (BACS).

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50491-2 on 2010-03-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 2011-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2013-03-01

As a result of the discussions at the CLC/TC 205 meeting on 2004-10-5/6 concerning the structuring of their standards in general parts and open system parts (see CLC/TC 205/Sec0413/INF) the following new parts of EN 50491 under the generic title “*General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)*” under the task of the JWG CEN/TC 247-CLC/TC 205 are proposed:

- Part 2 Environmental conditions;
- Part 3 Electrical safety requirements;
- Part 4-1 <sup>1)</sup> Functional safety requirements (for non safety related systems);
- Part 4-2 <sup>1)</sup> Functional safety requirements (for safety related systems);
- Part 5-1 <sup>2)</sup> EMC requirements, conditions and test set-up;
- Part 5-2 <sup>2)</sup> EMC requirements for HBES/BACS used in residential, commercial and light industry environment;
- Part 5-3 <sup>2)</sup> EMC requirements for HBES/BACS used in industry environment.

---

<sup>1)</sup> Under consideration.

<sup>2)</sup> To be ratified.

## Contents

<b>Introduction</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>4</b>
<b>2 Normative references</b> .....	<b>4</b>
<b>3 Terms and definitions</b> .....	<b>5</b>
<b>4 General explanation for all tests</b> .....	<b>6</b>
<b>5 Environmental conditions</b> .....	<b>6</b>
5.1 General test conditions .....	6
5.2 General performance criteria .....	6
<b>6 Environmental requirements</b> .....	<b>8</b>
6.1 Climatic .....	8
6.2 Chemical .....	9
6.3 Mechanical .....	10
6.4 Biological.....	11
<b>Annex A (informative) Sets of environmental class combinations</b> .....	<b>12</b>
A.1 Description of the classes .....	12
<b>Bibliography</b> .....	<b>15</b>
<b>Tables</b>	
Table 1 - Details of climatic tests.....	8
Table 2 - Details of chemical tests .....	9
Table 3 - Details of mechanical tests .....	10
Table 4 - Details of biological tests.....	11
Table A.1 - Summary of classes .....	12

## Introduction

The EN 50491 series deals with developing and testing Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS).

The expression HBES/BACS covers any combination of HBES and/or BACS devices including their separate connected/detachable devices linked together via one or more networks.

Part 2 of this series applies to HBES/BACS devices and defines the environmental conditions for these devices.

## 1 Scope

This European Standard provides the environmental conditions for all devices connected to HBES/BACS.

This European Standard is applicable (but not limited) to

- operator stations and other human system interface devices,
- devices for management functions,
- control devices, automation stations and application specific controllers,
- field devices and their interfaces,
- cabling and interconnection of devices,
- dedicated devices for engineering and commissioning tools for HBES/BACS.

The standard defines the general requirements for devices operating in weather protected and non-weather protected locations, ship environments, portable use and also for storage and transport.

## 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 60068-2-1	Environmental testing - Part 2-1: Tests - Test A: Cold (IEC 60068-2-1)
EN 60068-2-6	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:1995 + corrigendum March 1995)
EN 60068-2-10	Environmental testing - Part 2-10: Tests - Test J and guidance: Mould growth (IEC 60068-2-10)
EN 60068-2-11	Environmental testing - Part 2: Tests - Test Ka: Salt mist (IEC 60068-2-11)
EN 60068-2-14:1999	Environmental testing - Part 2: Tests - Test N: Change of temperature (IEC 60068-2-14:1984 + A1:1986)
EN 60068-2-27	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock (IEC 60068-2-27)
EN 60068-2-30	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) (IEC 60068-2-30)
EN 60068-2-32	Basic environmental testing procedures - Part 2: Tests - Test Ed: Free fall (IEC 60068-2-32)



This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-