

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

Sound signalling devices for household and similar purposes

Dispositifs de signalisation sonore pour usage domestique et analogue

IEC 62080:2001+AMD1:2008 CSV

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## SOUND SIGNALLING DEVICES FOR HOUSEHOLD AND SIMILAR PURPOSES

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International Standard IEC 62080 has been prepared by Technical Committee 23: Electrical accessories.

This consolidated version of IEC 62080 consists of the first edition (2001) [documents 23/287/FDIS and 23/293/RVD] and its amendment 1 (2008) [documents 23/450/FDIS and 23/457/RVD].

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience.

It bears the edition number 1.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

Annexes A, B and C form an integral part of this standard.

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Words in **bold** are defined in clause 3.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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# SOUND SIGNALLING DEVICES FOR HOUSEHOLD AND SIMILAR PURPOSES

## 1 Scope

This International Standard applies to **sound signalling devices** with integral enclosures or to **sound signalling devices** intended to be fitted into or supplied with enclosures according to IEC 60670 intended for household and similar purposes with **rated voltages** not exceeding 250 V a.c. or 250 V d.c. and with rated power inputs not exceeding 100 VA. In these **sound signalling devices** an indicating light having a rated input power not exceeding 10 VA may also be incorporated.

These products are designated as "devices" throughout the remainder of the text.

This standard applies to **fixed, portable and plug-in devices** for indoor or outdoor use.

In locations where special conditions prevail, special constructions may be required.

NOTE 1 This standard or parts of it may be used as a guide for **sound signalling devices** having a voltage less than 50 V a.c. or 75 V d.c. Additional requirements for **sound signalling devices** having a voltage less than 50 V a.c. or 75 V d.c. are under consideration.

NOTE 2 This standard does not cover the radio transmitting or receiving functions.

## 2 Normative references

[IEC 62080:2001+AMD1:2008 CSV](https://standards.iteh.ai/standards/iec/62080-2001+amd1-2008-csv)

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.

IEC 60065:1998, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-2-32:1975, *Environmental testing – Part 2: Tests. Test Ed: Free fall (Procedure 1)*

IEC 60068-2-75:1997, *Environmental testing – Part 2-75: Tests. Test Eh: Hammer tests*

IEC 60083:1997, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*

IEC 60085:1984, *Thermal evaluation and classification of electrical insulation*

IEC 60112:1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions*

IEC 60127 (all parts), *Miniature fuses*

IEC 60212:1971, *Standard conditions for use prior to and during the testing of solid electrical insulating materials*

IEC 60216 (all parts), *Guide for the determination of thermal endurance properties of electrical insulating materials*

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*



IEC 60317 (all parts), *Specifications for particular types of winding wires*

IEC 60320 (all parts), *Appliance couplers for household and similar general purposes*

IEC 60384-14:1993, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60417 (all parts), *Graphical symbols for use on equipment*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coatings to achieve insulation coordination of printed board assemblies*

IEC 60670, *General requirements for enclosures for accessories for household and similar fixed-electrical installations*

IEC 60695-2-1 (all sheets) *Fire hazard testing – Part 2: Test methods – Section 1: Glow-wire test and guidance*

IEC 60730 (all parts), *Automatic electrical controls for household and similar use*

IEC 60998 (all parts), *Connecting devices for low-voltage circuits for household and similar purposes*

IEC 61000-2-2:1990, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 2: Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuation and flicker in low-voltage supply systems for equipment with rated current  $\leq 16$  A*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test. Basic EMC Publication*

IEC 61000-4-3:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test. Basic EMC Publication*

IEC 61000-4-5:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

IEC 61000-4-6:1996, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-11:1994, *Electromagnetic compatibility (EMC) – Part 4: Testing and measuring techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61558-1:1997, *Safety of power transformers, power supply units and similar – Part 1: General requirements and tests*

CISPR 14 (all parts), *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus*

ISO 1456:1988, *Metallic coatings – Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium*

ISO 2081:1986, *Metallic coatings – Electroplated coatings of zinc on iron or steel*

ISO 2093:1986, *Electroplated coatings of tin – Specification and test methods*

### 3 Definitions

For the purpose of this International Standard, the following definitions apply.

NOTE Where the terms “voltage” and “current” are used, they imply r.m.s. values unless otherwise specified.

#### 3.1

##### **sound signalling device**

electromechanical or electronic device which emits an audible sound when activated

NOTE The activation may be produced by manual or automatic means, and where transmission or the activation signal may be through conductors or by radio or any other transmission means.

#### 3.2

##### **type D device**

device where the sound output continues in proportion to the duration of operation of the control

#### 3.3

##### **type R device**

##### 3.3.1

##### **type R1 device**

device where the first sound note is created by the initial operation of the control and a second note is created on the release of the control

##### 3.3.2

##### **type R2 device**

device where the sound output is created by the initial operation of the control and where the period of sound output continues for the designed duration irrespective of the condition of the control

#### 3.4

##### **enclosure**

part providing protection of equipment against certain external influences, and in any direction, protection against direct contact

[3.1 of IEC 60529]

#### 3.5

##### **fixed device**

device which is intended to be permanently connected to a power supply, and to be used when fastened to a support

NOTE A support may be a permanent part of a building, an appliance, etc.

#### 3.6

##### **portable device**

device intended to be connected to, or integral with, flexible cable(s), and which can easily be moved from one place to another while connected to the power supply

**3.7****plug-in device**

device provided with plug pins and which relies upon insertion into a socket-outlet for its power supply

**3.8****intermittent operation**

sequence of cycles of operation with a specified ON period and specified OFF period

**3.9****continuous operation**

operation for an unlimited period

**3.10****rated voltage**

voltage assigned to the device by the manufacturer

**3.11****rated voltage range**

range of voltages assigned to the device by the manufacturer, expressed by its upper and lower limits

**3.12****ELV (extra low voltage)**

voltage supplied from a source within the device which does not exceed 50 V a.c. or 120 V ripple free d.c. between conductors or between conductors or earth when the device is supplied at **rated voltage**

**3.13****SELV (safety extra-low voltage)**

voltage not exceeding 50 V a.c. or 120 V ripple free d.c. between conductors or between conductors or earth in a circuit which is isolated from the supply by means such as a safety isolating transformer

NOTE 1 Maximum voltages lower than 50 V a.c. or 120 V ripple free d.c. may be specified in particular situations especially when direct contact with live parts is allowed.

NOTE 2 The voltage limit should not be exceeded at any load between full load and no load when the source is a safety isolating transformer.

NOTE 3 "Ripple free" is an r.m.s ripple voltage of not more than 10 % of the d.c. component.

**3.14****rated power input**

power input under normal conditions at normal operating temperature assigned to the device by the manufacturer

**3.15****rated current**

current assigned to the device by the manufacturer

**3.16****rated frequency**

frequency assigned to the device by the manufacturer

**3.17****rated frequency range**

range of frequencies assigned to the device by the manufacturer, expressed by its upper and lower limits

**3.18****normal use**

use of the device for the purpose for which it was made and/or declared by the manufacturer

**3.19****terminal**

conductive part of one pole comprising one or more clamping units and insulation if necessary

[3.5 of IEC 60998-1]

**3.20****screw-type terminal**

terminal for the connection of two or more conductors by means of screw-type clamping units

[3.101 of IEC 60998-2-1]

**3.21****pillar terminal**

terminal in which the conductors are inserted into a hole or cavity, where they are clamped under the shank of a screw or screws

NOTE The clamping pressure may be applied directly by the shank of the screw or through an intermediate part to which pressure is applied by the shank of the screw.

[3.101.1 of IEC 60998-2-1]

**3.22****screw terminal**

terminal in which the conductors are clamped under the head of one or more screws

NOTE The clamping pressure may be applied directly by the head of a screw or through an intermediate part, such as a washer, a clamping plate or an anti-spread device.

[3.101.2 of IEC 60998-2-1]

**3.23****thread-forming screw**

tapping screw having an uninterrupted thread, which by screwing in, forms a thread by displacing material

NOTE An example is shown in figure 1a.

**3.24****thread-cutting screw**

tapping screw having an interrupted thread, which by screwing in, forms a thread by removing material.

NOTE An example is shown in figure 1b.

**3.25****mantle terminal**

terminal in which the conductors are clamped against the base of a slot in a threaded stud by means of a nut, by a suitably shaped washer placed under the nut, by a central peg if the nut is a cap nut, or by an equally effective means for transmitting the pressure from the nut to the conductors within the slot

[3.101.5 of IEC 60998-2-1]

**3.26****screwless terminal**

connecting device for the connection and subsequent disconnection of a rigid (solid or stranded) or flexible conductor or the interconnection of two conductors capable of being dismantled the connection being made directly or indirectly, by means of springs, parts of angled eccentric or conical form, etc., without special preparation of the conductor concerned, other than removal of insulation

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**3.27****base**

part of the device retaining current-carrying parts and, in general, the mechanism in position

**3.28****creepage distance**

shortest distance along the surface of the insulating material between two conductive parts

**3.29****clearance**

shortest distance in air between two conductive parts

**3.30****accessible parts or surfaces**

parts which can be touched by means of the standard test finger shown in figure 2

**3.31****basic insulation**

insulation applied to live parts to provide basic protection against electric shock

NOTE **Basic insulation** does not necessarily include insulation used exclusively for functional purposes.

**3.32****supplementary insulation**

independent insulation applied in addition to the **basic insulation** in order to provide protection against electric shock in the event of a failure of the **basic insulation**

**3.33****double insulation**

insulation comprising both **basic insulation** and **supplementary insulation**

**3.34****reinforced insulation**

single insulation system applied to live parts which provides a degree of protection against electric shock equivalent to **double insulation**

NOTE The term "insulation system" does not imply that the insulation should be one homogeneous piece. It may comprise several layers which cannot be tested singly as **supplementary** or **basic insulation**.

**3.35****earth protected device**

device in which protection against electric shock does not rely on **basic insulation** only but which includes an additional safety precaution such as exposed conductive parts connected to the protective earthing conductor in the fixed wiring of the installation in such a way that exposed conductive parts cannot become live in the event of a failure of the **basic insulation**

NOTE This provision includes a protective conductor in the supply cable.

**3.36****additive insulation protected device**

device in which protection against electric shock does not rely on **basic insulation** only, but in which additional safety precautions such as **double insulation** or **reinforced insulation** are provided, there being no provision for protective earthing or reliance upon installation conditions

**3.37****installation protected device**

device in which the protection against electric shock does not rely on **basic insulation** only, but in which additional safety precautions are provided during the installation according to the installation rules

NOTE This definition is in accordance with 7.2.3 of IEC 61140.

**3.38****rated operating time**

time during which the device is operating

**3.39****temperature-limiting device**

device which during abnormal operation limits the temperature of the controlled part by automatically opening the circuit or by reducing the current and which is constructed so that its setting cannot be altered by the user

**3.40****type X rewirable attachment**

method of attachment of the supply flexible cable such that it can easily be rewired

NOTE 1 The supply flexible cable may be specially prepared and only available from the manufacturer or its service agents.

NOTE 2 A specially prepared flexible cable may also include a part of the device.

**3.41****type Z non-rewirable attachment**

method of attachment of the supply flexible cable such that it cannot be replaced without breaking or destroying a part of the device

**4 General requirements**

Devices and **enclosures** shall be so designed and constructed that, in **normal use**, they are reliable and operate without danger to the user or the surroundings.

*Compliance is checked by fulfilling all the requirements and tests specified.*

**5 General notes on tests**

**5.1** The tests according to this standard are type tests.

**5.2** Unless otherwise specified, the tests shall be carried out on a single specimen as delivered under normal conditions of use, which shall satisfy all the tests applicable to the device.

If the device is intended for several supply voltages, for both a.c. and d.c., more than one specimen may be required.

NOTE If it is necessary to dismantle a device for certain tests, an additional specimen is necessary.

The test on constituent parts may require the provision of additional specimens of these parts. If it is necessary to submit such specimens, they shall be presented at the same time as the device.

**5.3** Unless otherwise specified, the tests shall be carried out in the order of the clauses. Before starting the tests, the device shall be supplied at **rated voltage** to verify that it is in operating condition.

**5.4** The tests shall be carried out with the device or any removable parts placed in the most unfavourable position which can occur in **normal use**.

**5.5** Unless otherwise specified, the tests are carried out at an ambient temperature between 15 °C and 35 °C. In case of doubt, the tests are made at an ambient temperature of 20 °C ± 5 °C.

**5.6** Devices for a.c. only shall be tested with a.c. at the **rated frequency**, if marked, and those for a.c. and d.c. shall be tested at the more unfavourable supply.

Devices for a.c. which are not marked with a frequency range of 50 Hz to 60 Hz shall be tested with either 50 Hz or 60 Hz, whichever is the more unfavourable.

Devices carrying an indication of the range of rated frequencies other than 50 Hz to 60 Hz shall be tested at the most unfavourable frequency of the **rated frequency range**.

**5.7** Devices designed for more than one **rated voltage** shall be tested on the basis of the most unfavourable voltage as declared by the manufacturer.

**5.8** Devices provided with adjustment means shall be tested with the adjustment set to the most unfavourable position if the adjustment can be modified by the user.

Appropriate sealing is considered not to allow any modification of the adjustment means by the user.

**5.9** Devices are tested installed according to the manufacturer's instructions:

- flush type devices are tested mounted in their appropriate **enclosures**;
- surface mounted devices are tested mounted as intended for **normal use**;
- **portable devices** intended to be supplied by means of a flexible supply cable are tested with the appropriate cable attached to the device;
- **plug-in devices** intended to be inserted into a socket-outlet are tested with the device mounted in an appropriate socket-outlet.

**5.10** For devices having characteristics of both type D and type R (see clause 6), the tests shall be carried out for both.

**5.11** For devices incorporating electronic circuits, see annex A.

## 6 Classification

Devices are classified as follows:

**6.1** According to the type of sound signal:

- **type D device**;
- **type R1 device**;
- **type R2 device**.

NOTE The three types of devices may be incorporated in a single "**sound signalling device**".

**6.2** According to the duration of operation:

- **intermittent operation**;
- **continuous operation**.