

भारतीय मानक
Indian Standard

IS 302-2-26 : 2014
(Reaffirmed 2019)

घरेलू और समान विद्युत साधित्रों की सुरक्षा

भाग 2 विवरणात्मक अपेक्षाएँ
अनुभाग 26 घड़ियाँ
(पहला पुनरीक्षण)

Safety of Household and Similar Electrical Appliances

Part 2 Particular Requirements

Section 26 Clocks

(*First Revision*)

ICS 13.120; 97.100.10

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Price Group 2

Electrical Appliances Sectional Committee, ETD 32

FOREWORD

This Indian Standard (Part 2/Sec 26) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Electrical Appliances Sectional Committee had been approved by the Electrotechnical Division Council.

This standard was first published in 1994. This revision has been undertaken primarily to align the existing standard with latest international standard.

This standard covers the general and safety requirements for clocks. This standard however does not cover the performance requirements.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IS 732 : 1989 'Code of Practice for electrical wiring installations (*third revision*)' as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, in case of any deviation, wiring rules take precedence.

If an appliance within the scope of this standard also incorporates functions that are covered by another Part 2 of IS 302, the relevant Part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a Part 2 does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE — This means that in such a case, it has been decided that for the part 2 standards that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE — Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IS 302 series of standards.

An appliance that complies with the text of this standard shall not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features which impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

This Part 2 is to be read in conjunction with the latest edition of IS 302-1 'Safety of household and similar electrical appliances : Part 1 General requirements' and its amendments. This standard was formulated on the basis of IS 302-1 : 2008.

NOTE — When Part 1 is mentioned in this standard, it refers to IS 302-1.

When a particular sub-clause of Part 1 is not mentioned in this Part 2, that sub-clause applies as far as is reasonable. When this standard states addition, modification or replacement, the relevant text in Part 1 is to be adapted accordingly.

NOTE — The following numbering system is used:

- a) Sub-clauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

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Indian Standard
**SAFETY OF HOUSEHOLD AND SIMILAR
ELECTRICAL APPLIANCES**

PART 2 PARTICULAR REQUIREMENTS

Section 26 Clocks

(First Revision)

1 SCOPE

This clause of Part 1 is replaced by the following.

This standard deals with the safety of electric clocks having a rated voltage not more than 250 V.

NOTE 101 Examples of appliances that are within the scope of this standard are,

- a) alarm clocks;
- b) spring-driven clocks with an electrically operated winding mechanism; and
- c) clocks incorporating driving means other than motors.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

- a) persons (including children) whose,
 - i) physical, sensory or mental capabilities; or
 - ii) lack of experience and knowledge. prevents them from using the appliance safely without supervision or instruction; and
- b) children playing with the appliance.

NOTE 102 Attention is drawn to the fact that for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;

NOTE 103 This standard does not apply to,

- a) battery-operated clocks;
- b) appliances intended exclusively for industrial purposes;
- c) appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- d) clocks having other functions, whether or not in combination with time indication, such as master control clocks and timers for cooking ranges, washing machines and similar appliances;
- e) clocks for 'clocking-in' purposes; and
- f) clocks incorporating electronic circuits only (*see* IS 616).

2 REFERENCES

This clause of Part 1 is applicable.

3 TERMINOLOGY

This clause of Part 1 is applicable except as follows.

3.1.9 Replacement

Normal Operation — operation of the clock under the following conditions

Spring-driven clocks having an electrically operated winding mechanism are operated as in normal use.

Other clocks are operated with the rotor locked.

4 GENERAL REQUIREMENT

This clause of Part 1 is applicable.

5 GENERAL CONDITIONS FOR THE TESTS

This clause of Part 1 is applicable.

6 CLASSIFICATION

This clause of Part 1 is applicable.

7 MARKING AND INSTRUCTIONS

This clause of Part 1 is applicable.

7.101 BIS Certification Marking

The clocks may also be marked with the Standard Mark.

7.101.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of standard mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

8 PROTECTION AGAINST ACCESS TO LIVE PARTS

This clause of Part 1 is applicable.

9 STARTING OF MOTOR-OPERATED APPLIANCES

This clause of Part 1 is not applicable.

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10 POWER INPUT AND CURRENT

This clause of Part 1 is applicable.

11 HEATING

This clause of Part 1 is applicable.

12 VOID

13 LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE

This clause of Part 1 is applicable.

14 TRANSIENT OVERVOLTAGES

This clause of Part 1 is applicable.

15 MOISTURE RESISTANCE

This clause of Part 1 is applicable.

16 LEAKAGE CURRENT AND ELECTRIC STRENGTH

This clause of Part 1 is applicable.

17 OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS

This clause of Part 1 is applicable.

18 ENDURANCE

This clause of Part 1 is not applicable.

19 ABNORMAL OPERATION

This clause of Part 1 is applicable except as follows.

19.7 Addition

Spring-driven clocks, having an electrically operated winding mechanism incorporating capacitors or resistors to reduce the motor voltage, are operated with the rotor locked, capacitors or resistors being short-circuited one at a time.

20 STABILITY AND MECHANICAL HAZARDS

This clause of Part 1 is applicable.

21 MECHANICAL STRENGTH

This clause of Part 1 is applicable except as follows.

21.1 Modification

The impact energy is reduced to 0.20 J.

The blows are not applied to spindles for hands.

The blows are only applied to dial glasses, if the clock fails to comply with the requirements of 8.1 with the dial glass removed.

22 CONSTRUCTION

This clause of Part 1 is applicable except as follows.

22.35 Addition

NOTE 101 Hands are not considered as being actuated in normal use, unless they have to be touched to alter the time setting.

23 INTERNAL WIRING

This clause of Part 1 is applicable.

24 COMPONENTS

This clause of Part 1 is applicable.

25 SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS

This clause of Part 1 is applicable except as follows.

25.3 Modification

The connection to fixed wiring may be made before the clock has been fixed to its support unless the clock is classified at least IPX1.

25.5 Addition

Type Z attachment is allowed.

25.7 Addition

The supply cords may be flat non-sheathed cords.

25.19 Modification

Polyvinyl chloride insulated cord is allowed to be tied into a simple overhand knot around a smooth pin.

26 TERMINALS FOR EXTERNAL CONDUCTORS

This clause of Part 1 is applicable.

27 PROVISION FOR EARTHING

This clause of Part 1 is applicable.

28 SCREWS AND CONNECTIONS

This clause of Part 1 is applicable.

29 CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION

This clause of Part 1 is applicable.

30 RESISTANCE TO HEAT AND FIRE

This clause of Part 1 is applicable except as follows.

30.2.2 Not applicable.

31 RESISTANCE TO RUSTING

This clause of Part 1 is applicable.

32 RADIATION, TOXICITY AND SIMILAR HAZARDS

This clause of Part 1 is applicable.

101 TESTS

101.1 Type Tests

The tests specified in Table 101 shall constitute the type tests and shall be carried out on a sample selected preferably at random from regular production lot. Before commencement of the tests, the appliance shall be visually examined and inspected for obvious visual defects in respect of components, parts and their assembly, construction, mechanical hazards, marking, provision of suitable terminals for supply connections, earthing and the effectiveness of screws and connections. The external surface finish shall be even and free from finishing defects.

NOTE — Additional samples may be required for some tests, as mentioned in specific clauses.

101.1.1 Criteria of Acceptance

Sample shall successfully pass all the type tests for proving conformity with the requirements of the standard. If the sample fails in any of the type tests, the testing authority, at its discretion, may call for fresh samples not exceeding twice the original number and subject them again to all tests or to the test (s) in which

Table 101 Schedule of Type Tests
(Clause 101.1)

Sl No. (1)	Tests (2)	Ref to Clause (3)
i)	Protection against access to live parts	8
ii)	Power input and current	10
iii)	Heating	11
iv)	Leakage current and electric strength at operating temperature	13
v)	Transient overvoltages	14
vi)	Moisture resistance	15
vii)	Leakage current and electric strength	16
viii)	Overload protection of transformers and associated circuits	17
ix)	Endurance	18
x)	Abnormal operation	19
xi)	Stability and mechanical hazards	20
xii)	Mechanical Strength	21
xiii)	Construction	22
xiv)	Internal wiring	23
xv)	Components	24
xvi)	Supply connection and external flexible cords	25
xvii)	Terminals for external conductors	26
xviii)	Provision for earthing	27
xix)	Screw and connections	28
xx)	Clearances, creepage distances and solid insulation	29
xxi)	Resistance to heat and fire	30
xxii)	Resistance to rusting	31
xxiii)	Radiation, toxicity and similar hazards	32

failure (s) had occurred. No failure should be permitted in the repeat tests (s).

Annexes

The annexes of Part 1 are applicable.

(Continued from second cover)

- b) Unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause.

This standard is based on IEC 60335-2-26(2002), Edition 4.0 'Safety of household and similar electrical appliance: Particular requirements for clocks' and its Amendment 1 (2008), issued by the International Electrotechnical Commission with the following modifications:

Since this standard is to be read in conjunction with IS 302-1 'Safety of household and similar electrical appliances: Part 1 General requirements', the differences of IS 302-1 from IEC 60335-1 would apply.

The significant differences from the previous edition of IS 302-2-26 are as follows:

- a) Differences due to revision of 302-1,
- b) Scope is modified by so that the Standard does not take into account persons whose capabilities or lack of experience and knowledge prevents them from using the appliance safely without supervision or instruction, and children playing with the appliance,
- c) Standard clearly excludes battery-operated clocks; appliances intended exclusively for industrial purposes; and appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas),
- d) Clause pertaining to rating deleted,
- e) Clause pertaining to starting of motor operated appliance is not applicable (*see 9*),
- f) Impact energy for mechanical strength test changed to 0.20 J from 0.25 ± 0.05 Nm (*see 21*),
- g) Reference to coil formers and switching mechanism of clocks controlling radio receives deleted (*see 22*),
- h) Reference to switches incorporated in clocks deleted (*see 24*), and
- j) Glow wire test of **30.2.2** not applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

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Amendments Issued Since Publication

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