BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

Draft Indian Standard

Household and similar electrical appliances– Safety– Part 1: General requirements (Seventh Revision of IS 302-1: 2008)

Electrical Appliances Sectional Committee, ETD 32	Last date of receipt of comments**: 13/06/2023**

NATIONAL FOREWORD

This Indian Standard which is identical with IEC 60335-1 "Household and similar electrical appliances– Safety– Part 1: General requirements" issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendation of the Electrical Appliances Sectional Committee.

This standard was originally published in 1951 and revised in 1960, 1963, 1967, 1973, 1979 and 2008. This revision has been undertaken to harmonize with the latest version of IEC 60335-1: 2020.

This edition includes the following significant technical changes with respect to the previous edition (minor changes are not listed):
a) updated the text of this standard to align with the most recent editions of the dated normative references;
b) deleted some notes and converted many other notes, in whole or in part, to normative text;
c) changed some Annex designations from normative to informative;
d) introduced information on Guidance documents concerning the application of the safety requirements covered by IEC 60335 series and on how to retrieve them;
e) clarified requirements for PELV circuits;
f) clarification of requirements on measurement of power input and rated current when they vary throughout the operating cycle;
g) replaced normative Annex S with the informative Annex S Guidance for the application of this standard on measurement of power input and current based on the requirements of 10.1 and 10.2 concerning the representative period ;
h) introduced and clarified mechanical strength requirements for appliances with integral pins for insertion into socket-outlets;
i) revised requirements for battery-operated appliances;
j) introduced requirements for metal-ion batteries including a new Clause 12 Charging of metal-ion batteries;
k) introduced the application of test probe 18;
l) introduced requirements for appliances incorporating appliance outlets and socket-outlets accessible to the user;
m) revised and clarified requirements for appliances incorporating a functional earth;
n) introduced moisture resistance test requirements for appliances that incorporate an automatic

cord reel and that have a second numeral IP rating;
o) clarified the appliance test criteria for the moisture resistance for appliances and parts of appliances with integral pins for insertion into socket-outlets;
p) introduced limits on the output voltage of an accessible safety extra-low voltage outlet or connector or Universal Serial Bus (USB) under abnormal operation conditions;
q) introduced requirements to cover optical radiation hazards;
r) introduced external communication software management items into normative Annex R;
s) revised external communication requirements in Table R.1 and Table R.2;
t) introduced in new normative Annex U cyber security requirements to avoid unauthorized access and the effects of transmission failures via remote communication through public networks.

The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker, while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this standard, reference appears to International Standards for which Indian Standards also exists. The corresponding Indian Standards, which are to be substituted, are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
IEC 60034-1, Rotating electrical machines – Part 1: Rating and performance	IS 15999 (Part 1): 2021, Rotating electrical machines - Part 1 : Rating and performance	Identical with IEC 60034-1: 2017
IEC 60061-1, Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps	IS 9206 : 1979, Dimensions of caps for tungsten filament general service electric lamps	Indigenous
IEC 60065, Audio, video and similar electronic apparatus – Safety requirements	IS 616: 2017, Audio, Video and Similar Electronic Apparatus — Safety Requirements	Identical with IEC 60065 : 2014
IEC 60068-2-31, Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens	IS 9000 (Part 7/Sec 3): 2019, Environmental testing: Part 7 tests :: Sec 3 test Ec: rough handling shocks, primarily for equipment- Types specimens (First Revision)	Identical with IEC 60068-2-31 : 2008

IEC 60068-2-75, Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests	IS 9000 (Part 7/Sec 7): 2020, Environmental Testing Part 7 Tests Section 7 Test Eh: Hammer tests (First Revision)	Identical with IEC 60068-2-75: 2014
IEC 60068-2-78, Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state	IS 9000 (Part 4): 2020, Environmental Testing Part 4 Tests - Test Cab: Damp Heat, Steady State (Second Revision)	Identical with IEC 60068-2-78: 2012
IEC 60085, Electrical insulation – Thermal evaluation and designation	IS 1271: 2012, Electrical insulation - Thermal evaluation and designation (Second Revision)	Identical with IEC 60085: 2007
IEC 60112, Method for the determination of the proof and the comparative tracking indices of solid insulating materials	IS 2824: 2007, Method for the determination of the proof and the comparative tracking indices of solid insulating materials (Second Revision)	Identical with IEC 60112 :2003
IEC 60127-1, Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links	IS/IEC 60127-1: 2006, Miniature fuses: Part 1 definitions for miniature fuses and general requirements for miniature fuse - Links (First Revision)	Identical
IEC 60127-2, Miniature fuses - Part 2: Cartridge fuse-links	IS/IEC 60127-2: 2003, Miniature fuses: Part 2 cartridge fuse. - L1nks (First Revision)	Identical
IEC 60127-4, Miniature fuses - Part 4: Universal modular fuse-links (UMF) - Through-hole and surface mount types	IS/IEC 60127-4: 2005, Miniature fuses: Part 4 universal modular fuse - Links (Umf) - Through - Hole and surface mount types	Identical
IEC 60227 Part 1-5, Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	IS 694 : 2010, Polyvinyl chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 v (Fourth Revision)	Indigenous
IEC 60227 Part 6: 2001, Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 6: Lift cables and cables for flexible connections	IS 4289 (Part 2) : 2000, Flexible cables for lifts and other flexible connections - Specification: Part 2 pvc insulated circular cables	Indigenous

IEC 60245 (all parts) Rubber insulated cables – Rated voltages up to and including 450/750 V	IS 9968 (Part 1) : 1988 Specification for elastomer insulated cables: Part 1 for working voltages up to and including 1100 volts (First Revision)	Indigenous
IEC 60252-1:2010 AC motor capacitors – Part 1: General – Performance, testing and rating – Safety requirements – Guidance for installation and operation	IS 2993 : 1998 A.C. motor capacitors (Second Revision)	Identical with IEC 60252: 1993
IEC 60309-2, Plugs, socket-outlets and couplers for industrial purposes – Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories	IS/IEC 60309-2: 2002, Plugs, socket - Outlets and couplers or industrial purposes: Part 2 dimensional interchangeability requirements for pin and contact - Tube accessories (First Revision)	Identical
IEC 60320-1, Appliance couplers for household and similar general purposes - Part 1: General requirements	IS/IEC 60320-1: 2001, Appliance couplers for household and similar general purposes: Part 1 general requirements	Identical
IEC 60320-2-2, Appliance couplers for household and similar general purposes - Part 2-2: Interconnection couplers for household and similar equipment	IS/IEC 60320-2-2 : 1998, Appliance couplers for household and similar general purposes: Part 2: Sec 2 interconnection couplers for household and similar equipment	Identical
IEC 60320-2-3, Appliance couplers for household and similar general purposes - Part 2-3: Appliance couplers with a degree of protection higher than IPX0	IS/IEC 60320-2-3 : 1998, Appliance couplers for household and similar general purposes: Part 2 - 3 appliance couplers with a degree of protection higher than ipxo	Identical
IEC 60529:1989, Degrees of protection provided by enclosures (IP Code)	IS/IEC 60529: 2001, Degrees of protection provided by enclosures (IP Code)	Identical
IEC 60598-1, Luminaires – Part 1: General requirements and tests	IS 10322 (Part 1): 2014, Luminaires: Part 1 general requirements and tests (First Revision)	Modified/Technically Equivalent with IEC 60598-1: 2003

IEC 60603-11, Connectors for frequencies below 3 MHz for use with printed boards – Part 11: Detail specification for concentric connectors (dimensions for free connectors and fixed connectors)	IS/IEC 60603-11 : 1992, Connectors for frequencies below 3 MHz for use with printed boards Part 11: Detail specification for concentric connectors dimensions for free connectors and fixed connectors	Identical
IEC 60664-1, Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests	IS 15382 (Part 1): 2014, Insulation coordination for equipment within low - Voltage systems: Part 1 principles, requirements and tests (First Revision)	Identical with 60664-1:2020
IEC 60664-3, Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution	IS 15382 (Part 3) : 2019, Insulation coordination for equipment within low-voltage systems : Part 3 use of coating potting or moulding for protection against pollution	Identical with IEC 60664-3:2016
IEC 60664-4, Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress	IS 15382 (Part 4): 2017, Insulation Coordination for Equipment Within Low-voltage Systems Part 4 Consideration of High-frequency Voltage Stress (First Revision)	Identical with IEC 60664- 4: 2005
IEC 60691, Thermal-links – Requirements and application guide	IS/IEC 60691: 2018, Thermal Links- Requirements and Application Guide (First Revision)	Identical
IEC 60695-2-11, Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)	IS/IEC 60695-2-11: 2014, Fire Hazard Testing Part 2-11 Glowing / Hot-Wire Based Test Methods Glow-Wire Flammability Test Method for End-Products (GWEPT)	Identical
IEC 60695-2-12, Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glowwire flammability index (GWFI) test method for materials	IS/IEC 60695-2-12): 2014, Fire Hazard Testing Part 2 Glowing / Hot-Wire Based Test Methods Section 12 Glow-wire flammability index (GWFI) test method for materials	Identical
IEC 60695-2-13, Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods – Glowwire ignition temperature (GWIT) test method for materials	IS/IEC 60695-2-13): 2021, Fire Hazard Testing Part 2 GlowingHot wire based test methods Section 13 Glow-wire ignition temperature GWIT test method for	Identical

	materials	
IEC 60695-10-2, Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test	IS/IEC 60695-10-2 : 2014, Fire hazard testing: Part 10 Abnormal heat: Sec 2 ball pressure test method	Identical
IEC 60695-11-5, Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance	IS/IEC 60695-11-5) : 2016, Fire Hazard Testing Part 11 Test Flames Section 5 Needle - Flame test method - Apparatus, confirmatory test arrangement and guidance (First Revision)	Identical
IEC 60695-11-10, Fire hazard testing – Part 11-10: Test flames– 50 W horizontal and vertical flame test methods	IS/IEC 60695-11-10: 2013, Fire hazard testing: Part 11 test flames :: Sec 10 50 w horizontal and vertical flame test methods	Identical
IEC 60730-1, Automatic electrical controls – Part 1: General requirements	IS/IEC 60730-1 : 1999, Automatic electrical controls for household and similar use : part 1 General Requirements	Identical
IEC 60730-2-9, Automatic electrical controls – Part 2-9: Particular requirements for temperature sensing controls	IS/IEC 60730-2-9) : 2011, Automatic Electrical Controls for Household and Similar Use Part 2 Particular Requirements Section 9 Temperature Sensing Controls	Identical
IEC 60738-1, Thermistors – Directly heated positive temperature coefficient – Part 1: Generic specification	IS 11534 (Part 1): 1985, Specification for directly heated positive step - Function temperature coefficient thermistors: Part 1 general requirements and methods of tests	Modified/Technically Equivalent with IEC 60738-1: 1982
IEC 60990, Methods of measurement of touch current and protective conductor current	IS/IEC 60990 : 2016, Methods of measurement of touch current and protective conductor current (First Revision)	Identical

IEC 61000-4-2, Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test	IS 14700 (Part 4/Sec 2) : 2018, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 2 electrostatic discharge immunity test (Second Revision)	Identical with IEC 61000-4-2 : 2008
IEC 61000-4-3, Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test	IS 14700 (Part 4/Sec 3) : 2018, Electromagnetic Compatibility (EMC) Part 4 Testing and Measurement Techniques Section 24 Test methods for protective devices for HEMP conducted disturbance (First Revision)	Identical with IEC 61000-4-3: 2006
IEC 61000-4-4, Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test	IS 14700 (Part 4/Sec 4) : 2018, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 4 electrical fast transient / burst immunity test (Second Revision)	Identical with IEC 61000-4-4 : 2012
IEC 61000-4-5, Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test	IS 14700 (Part 4/Sec 5): 2019, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 5 surge immunity test (First Revision)	Identical with IEC TR 61000-4-5: 2017
IEC 61000-4-6, Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields	IS 14700 (Part 4/Sec 6) : 2016, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 6 immunity to conducted disturbances, induced by radio - Frequency fields	Identical with IEC 61000-4-6 : 2013
IEC 61000-4-11, Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase	IS 14700 (Part 4/Sec 11) : 2021, Electromagnetic compatibility EMC: Part 4 testing and measurement techniques: Sec 11 voltage dips short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase	Identical with IEC 61000-4-11 : 2020

IEC 61000-4-13, Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	IS 14700 (Part 4/Sec 13): 2016, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 13 harmonics and interharmonics including mains signaling at a.c. power port, low frequency immunity test	Identical with IEC 61000-4-13: 2009
IEC 61000-4-34:2005, Electromagnetic compatibility (EMC) – Part 4-34: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current more than 16 A per phase	IS 14700 (Part 4/Sec 34): 2017, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 34 voltage dips, short interruptions and voltage variations immunity tests for current more than 16 A per phase	Identical with IEC 61000-4-34 : 2009
IEC 61032, Protection of persons and equipment by enclosures – Probes for verification	IS 1401 : 2008, Protection of persons and equipment by enclosures - Probes for verification (Second Revision)	Identical with IEC 61032 : 1997
IEC 61058-1, Switches for appliances – Part 1: General requirements	IS/IEC 61058-1 : 2000, Switches for appliances: Part 1 general requirements	Identical
IEC 61180, High-voltage test techniques for low-voltage equipment – Definitions, test and procedure requirements, test equipment	IS 16826 : 2018, High - Voltage Test Techniques For Low-Voltage Equipment - Definitions, Test and Procedure Requirements, Test Equipment	Identical with IEC 61180 : 2016
IEC 61558-1, Safety of transformers, reactors, power supply units and combinations thereof – Part 1: General requirements and tests	IS/IEC 61558-1: 1997, Safety of power transformers, power supply units and similar: Part 1 general requirements and tests	Identical
IEC 61558-2-6, Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	IS/IEC 61558-2-6 : 1997, Safety of power transformers, power supply units and similar: Part 2 particular requirement: Sec 6 safety isolating transformers for general use	Identical

IEC 62133-1, Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 1: Nickel systems	IS 16046 (Part 1) : 2018, Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes â€" Safety Requirements for Portable Sealed Secondary Cells and for Batteries Made from Them for Use in Portable Applications Part 1 Nickel Systems (Second Revision)	Identical with IEC 62133-1 : 2017
IEC 62133-2, Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems	IS 16046 (Part 2) : 2018, Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes â€" Safety Requirements for Portable Sealed Secondary Cells and for Batteries Made from Them for Use in Portable Applications Part 2 Lithium Systems (Second Revision)	Identical with IEC 62133-2 : 2017
IEC 62471, Photobiological safety of lamps and lamp systems	IS 16108 : 2012, Photobiological safety of lamps and lamp systems	Identical with IEC 62471 : 2006
IEC 62821 (all parts) Electric cables – Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V	IS 17048 : 2018 Halogen Free Flame Retardant (HFFR) Cables for Working Voltages up to and including 1 100 Volts — Specification	Indigenous
ISO 178, Plastics – Determination of flexural properties	IS 13360 (Part 5/Sec 7) : 2022, Plastics - Methods of testing: Part 5 mechanical properties section 7 determination of flexural properties (First Revision)	Identical with ISO 178 : 2019
ISO 180, Plastics – Determination of Izod impact strength	IS 13360 (Part 5/Sec 4) : 2021, Plastics - Methods of Testing Part 5 : Mechanical Properties Sec 4 Determination of Izod Impact Strength	Identical with ISO 180 : 2019
ISO 527-1, Plastics — Determination of tensile properties — Part 1: General principles	IS 13360 (Part 5/Sec 1) : 2021, Plastics - Methods of testing: Part 5 Mechanical properties Section 1 Determination of tensile properties - General requirements Second	Identical with ISO 527-1 : 2019

	Revision	
ISO 527-2:2012 Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics	IS 13360 (Part 5/Sec 2) : 2017, Plastics - Methods of testing: Part 5 mechanical properties section 2 determination of tensile properties - Test conditions for moulding and extrusion plastics (First Revision)	Identical with ISO 527-2 : 2012
ISO 527-3, Plastics — Determination of tensile properties — Part 3: Test conditions for films and sheets	IS 13360 (Part 5/Sec 3) : 2022, Plastics Method Of Testing Part 5 Mechanical Properties Section 3 Determination Of Tensile Properties Test Conditions For Films And Sheets	Identical with ISO 527-3 : 2018
ISO 527-4:2021 Plastics — Determination of tensile properties — Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites	IS 13360 (Part 5/Sec 25) : 2004, Plastics - Methods of testing: Part 5 mechanical properties section 25 determination of tensile properties - Test conditions for isotropic and orthotropic fibre - Reinforced plastic composites	Identical with ISO 527-4 : 1997
ISO 2768-1, General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications	IS 2102 (Part 1) : 1993,General tolerances: Part 1 tolerances for linear and angular dimensions without individual tolerance indications (Third Revision)	Identical with IS0 2768-l : 1989
ISO 4892-1, Plastics – Methods of exposure to laboratory light sources – Part 1: General guidance	IS 17863 (Part 1) : 2022, Plastics Methods of Exposure to Laboratory Light Sources: Part 1 General Guidance	Identical with ISO 4892-1 : 2016
ISO 4892-2, Plastics – Methods of exposure to laboratory light sources – Part 2: Xenonarc lamps	IS 17863 (Part 2) : 2022, Plastics Methods of Exposure to Laboratory Light Sources: Part 2 Xenon-Arc Lamps	Identical with ISO 4892-2 : 2013
ISO 7000, Graphical symbols for use on equipment – Registered symbols	IS 16450 : 2017, Graphical symbols for use on equipment - Registered symbols	Identical with ISO 7000 : 2014

ISO 8256, Plastics – Determination of tensile-impact strength	IS 13360 (Part 5/Sec 27) : 2022, Plastics — Methods of Testing Part 5 Mechanical Properties Section 27 Determination of tensile-impact strength	Identical with ISO 8256 : 2004
ISO 9772, Cellular plastics – Determination of horizontal burning characteristics of small specimens subjected to a small flame	IS 13360 (Part 6/Sec 24) : 2018, Plastic - Method of testing: Part 6 thermal properties section 24 cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame of cellular plastic	Identical with ISO 9772 : 2012
ISO 9773, Plastics – Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source	IS 13360 (Part 6/Sec 23) : 2006, Plastics - Methods of testing: Part 6 thermal properties section 23 determination of burning behaviour of thin fiexibie verticai specimens in contact with smaii - Fiame ignition source	Identical with ISO 9773:1998

The technical committee has reviewed the provisions of the following international standards referred in this adopted standard and decided that they are acceptable for use in conjunction with this standard.

International Standard	*Title*
IEC 60068-2-2	*Environmental testing – Part 2-2: Tests – Test B: Dry heat*
IEC TR 60083	*Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*
IEC 60127-3:2015	*Miniature fuses - Part 3: Sub-miniature fuse-links*
IEC 60127-5:2016	*Miniature fuses - Part 5: Guidelines for quality assessment of miniature fuse-links*
IEC 60127-6:2014	*Miniature fuses - Part 6: Fuse-holders for miniature fuse-links*
IEC 60127-7:2015	*Miniature fuses - Part 7: Miniature fuse-links for special applications*
IEC 60127-8:2018	*Miniature fuses - Part 8: Fuse resistors with particular overcurrent protection*
IEC 60127-10:2001	*Miniature fuses - Part 10: User guide for miniature fuse*
IEC 60238	*Edison screw lampholders*
IEC 60320-2-1:2018	*Appliance couplers for household and similar general purposes - Part 2-1: Sewing machine couplers*
IEC 60320-2-4:2018	*Appliance couplers for household and similar general purposes - Part 2-4: Couplers dependent on appliance weight for engagement*
IEC 60320-3:2014	*Appliance couplers for household and similar general purposes - Part 3: Standard sheets and gauges*

IEC 60384-14:2013	*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	*Graphical symbols for use on equipment*
IEC 60445:2017	*Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals, conductor terminations and conductors*
IEC 60730-2-8:2018	*Automatic electrical controls – Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements*
IEC 60730-2-10	*Automatic electrical controls for household and similar use – Part 2-10: Particular requirements for motor-starting relays*
IEC 60799	*Electrical accessories – Cord sets and interconnection cord sets*
IEC 60906-1	*IEC system of plugs and socket-outlets for household and similar purposes – Part 1: Plugs and socket-outlets 16 A 250 V a.c.*
IEC 60934	*Circuit-breakers for equipment (CBE)*
IEC 60999-1:1999	*Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included)*
IEC 61058-1-1:2016	*Switches for appliances – Part 1-1: Requirements for mechanical switches*
IEC 61058-1-2:2016	*Switches for appliances – Part 1-2: Requirements for electronic switches*
IEC 61210	*Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*
IEC 61558-2-16:2009	*Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units*
IEC 61770	*Electric appliances connected to the water mains – Avoidance of backsiphonage and failure of hose-sets*
IEC 62151	*Safety of equipment electrically connected to a telecommunication network*
IEC 62477-1	*Safety requirements for power electronic converter systems and equipment – Part 1: General*
ISO 179-1	*Plastics – Determination of Charpy impact properties – Part 1: Non-instrumented impact test*
ISO 527-5:2021	*Plastics — Determination of tensile properties — Part 5: Test conditions for unidirectional fibre-reinforced plastic composites*
ISO 1463	*Metallic and oxide coatings – Measurement of coating thickness – Microscopical method*
ISO 2178	*Non-magnetic coatings on magnetic substrates – Measurement of coating thickness – Magnetic method*

Only the English language text has been retained while adopting it in this Indian Standard, and as such, the page numbers given here are not the same as in the IEC Publication.

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: 2022 'Rules for rounding of 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.

Please send your comments to our department email, in case you missed the deadline mentioned in the National Foreword. Comments received before the upcoming Sectional Committee meeting of ETD 32 Electrical Appliances will be considered for discussion.

Note: The technical content of the document is not available on website. For details, please refer the corresponding of IEC 60335-1: 2020 or kindly contact:

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