

भारतीय मानक
Indian Standard

IS 17681 : 2022

बोतलबंद जल वितरक — विशिष्टि

**Bottled Water
Dispensers — Specification**

ICS 27.200; 97.130.20

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Price Group 6

Refrigeration and Air Conditioning Sectional Committee, MED 03

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Refrigeration and Air Conditioning Sectional Committee had been approved by the Mechanical Engineering Division Council.

A water dispenser is commonly known as bottled water dispenser. The machine cools and/or heats up and dispenses water with an optional refrigeration unit.

The standard specifies suitable material for the storage tank which are non-toxic, corrosion resistant, non-absorbent, and durable.

The classification of the various types of bottled water dispensers has been aligned with the practices prevailing in other countries.

This standard specifies two climate classes, namely Normal (N) and Tropical (T) class suitable for operating at a wide temperature range of 16 °C to 43 °C.

The outlet water temperature specified in this standard is based on international data.

In view of the prevailing energy scenario in the country, the Government of India is laying emphasis on the energy conservation through various means by emphasizing the use of energy efficient products. The bottled water dispenser market in india is anticipated to show considerable growth in coming years and hence specific requirements of energy consumption has been incorporated in this standard.

The composition of the Committee responsible for the formulation of this standard is given at Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the results 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.

Indian Standard

BOTTLED WATER DISPENSERS — SPECIFICATION

1 SCOPE

1.1 This standard specifies the safety and performance requirements of bottled water dispensers based on a vapor compression refrigeration system for dispensing cold and hot water including water at room temperature. It covers a bottled water dispenser with a rated voltage not exceeding 240 V a.c., 50 Hz for a single-phase and the rated cooling capacity up to and including 8 l/h and heating capacity up to and including 5 l/h.

1.2 The following types of bottled water dispensers are covered in this standard:

- a) Bottom load water dispenser;
- b) Table-top water dispenser; and
- c) Freestanding water dispenser.

1.3 The product covered in this standard can have one or more combinations for dispensing cold water, hot water, and water at room temperature as follows:

- a) Cold and hot;
- b) Cold, hot, and room temperature;
- c) Hot and room temperature;
- d) Cold and room temperature; and
- e) Water dispenser with an in-built refrigerator cabinet.

1.4 This standard does not apply to the following:

- a) Peltier-based bottled water dispenser;
- b) Self-contained water coolers covered in IS 1475 (Part 1); and
- c) Point-of-use water dispensers (connected directly to the water line from the overhead water tank or connected through a direct water pipeline).

2 REFERENCES

The Indian Standards listed in Annex A contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All the standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Cold and Normal Water Storage Tank — A thermally insulated food-grade stainless steel or a food-grade plastic material tank intended for storage of cold and normal water.

3.2 Ambient Temperature — The measured temperature in the space surrounding the water dispenser under test.

NOTE — It is the arithmetical average value of temperatures measured at three points, located at 300 mm from the two sides and front side of the water dispenser (see Fig. 5 at Annex B).

3.3 Hot Water Storage Tank — It is a food-grade stainless steel tank that is fitted with a heater. It shall be constructed by sheathing material which should be copper or food-grade stainless steel.

3.4 Refrigeration Compartment/Cabinet — A floor-standing type water dispenser where the bottom space is fitted with a refrigeration compartment physically separated from the dispenser unit and an integral part of the dispenser to store beverages, cans, etc., at a temperature comparatively lower than the room/ambient temperature.

3.5 Overall Dimensions (Unit Without Bottle Loaded on Top) — Measurement of the outside rectangular dimensions over the horizontal base within which the water bottle is inscribed to include the complete appliance.

NOTE — The dimension of water bottles varies from manufacturer to manufacturer and hence not included.

3.6 Overall Space Required for Use — Overall space necessary for the free circulation of the cool air when the appliance is in service, plus the space necessary to allow door opening (in case of a refrigeration cabinet models).

3.7 Floor Standing — Appliance in which the minimum height must be maintained in such a way that user can take the water freely as shown in Fig. 1. It may contain a storage compartment, or the bottle can be placed in the cabinet as shown in Fig. 2 and 3 for refrigerated cabinets.

3.8 Table Top — Appliance in which there is no storage volume compartment normally and can be placed on the table as shown in Fig. 4.

3.9 Pull-Down — It is the capability of water dispensers to achieve the water temperatures within the prescribed time when the appliance is operated under normal operating condition.

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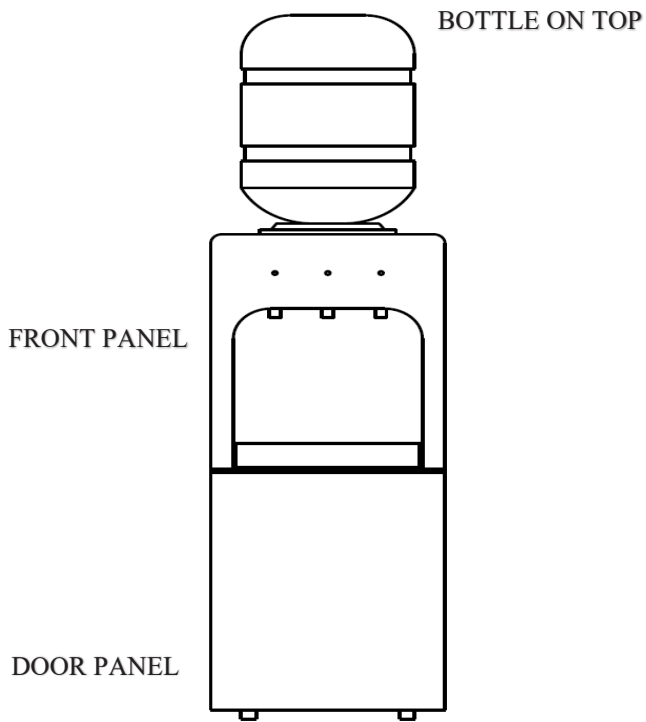


FIG. 1 FLOOR STANDING — BOTTLE ON TOP

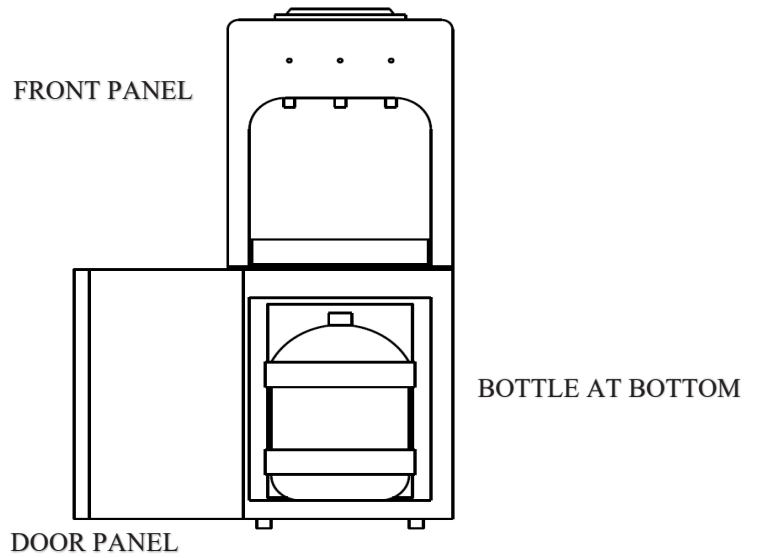


FIG. 2 FLOOR STANDING — BOTTLE AT BOTTOM

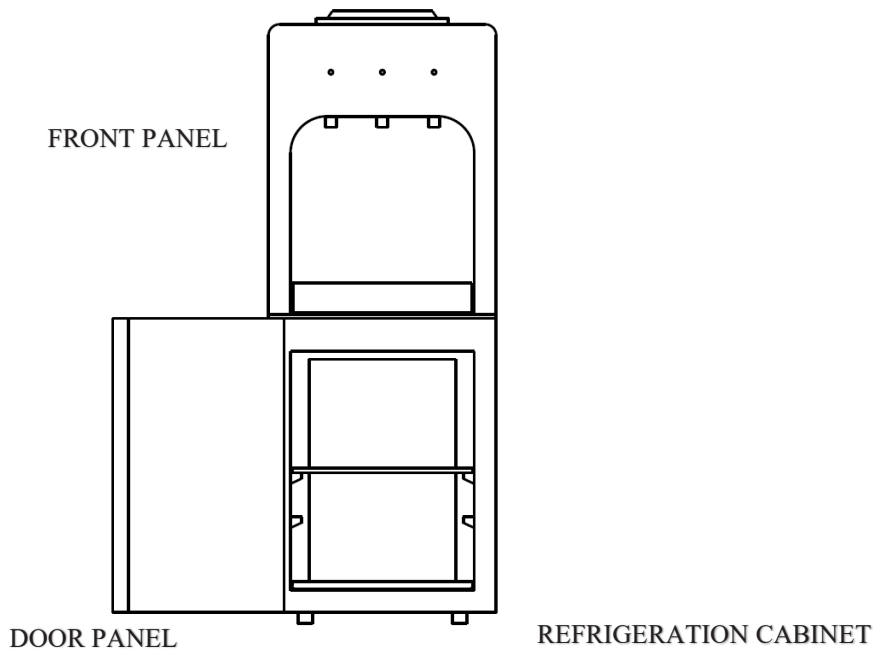


FIG. 3 FLOOR STANDING — WITH REFRIGERATION CABINET

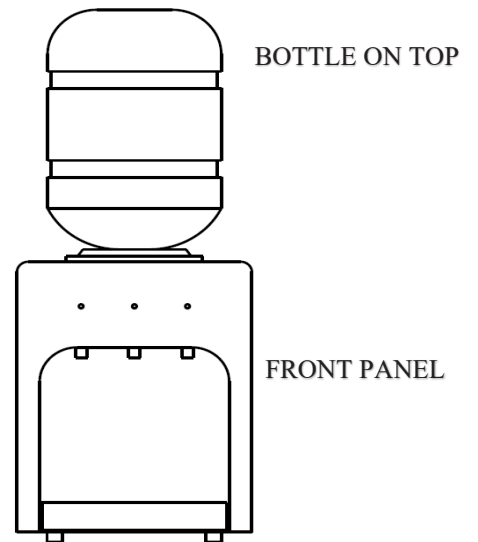


FIG. 4 TABLE TOP

NOTE — The definition and the figure as explained above. The figure is for reference only.

3.10 Climate Class — The classification of the test room climate according to the dry bulb temperature and relative humidity.

The manufacturer shall mention the climate class of the product as per the table given below. In case of class other than mentioned below, the manufacturer must take adequate measures to communicate the effective temperature class to the customer through declaration in the user manuals/stickers or any other suitable means.

<i>Sl No.</i>	<i>Condition</i>	<i>Ambient Temperature (° C)</i>
(1)	(2)	(3)
i)	Tropical (T)	16 – 43
ii)	Normal (N)	16 – 32

3.11 Stable Operating Conditions — Condition in which the appliance mean temperatures and energy consumption comply with the relevant stability requirements as defined in this standard.

3.12 Energy Consumption — Energy consumed by the water dispenser over a specified period of time or for a specified operation stated in kWh (kilowatt-hour).

4 CONSTRUCTION

4.1 General Design

The water dispensers shall have adequate mechanical strength and be constructed to withstand handling and transportation. There shall be no sharp edges or corners liable to cause injury to the user in the normal conditions of use.

4.2 Materials

Materials used in the construction of the cabinet shall comply with relevant Indian Standards wherever applicable, except where such requirements are modified by this standard. They shall be free from defects that are liable to cause undue deterioration or failure. Under normal conditions of use, the materials used shall not shrink, warp or cause odour and shall be resistant to attack by local vermin and destructive pests.

Where liable to be exposed to moisture, chemically active substances, and beverages, they shall be suitably resistant and shall not contaminate stored products placed in contact with them. Sealing materials used shall not lose in service, any of their essential properties, such as adhesiveness, plasticity, and moisture resistance, due to aging, temperature, and humidity variations.

4.2.1 The material used for the storage tank shall be either of stainless steel conforming to IS 5522 or IS 6911 or of plastic conforming to IS 10146 or IS 10151 or IS 10910.

4.3 Finish

The interior and exterior finish shall be durable and capable of being cleaned effectively and hygienically without undue physical deterioration.

4.4 Thermal Insulation

The quality, thickness, and application of the insulating material shall be such that insulation of the water storage tank or cabinet is effective and efficient to maintain the required temperature inside the water storage tank and cabinet. There shall be proper sealing against moisture penetration by diffusion or condensation. Detachable plates and covers in the tank shall be provided with suitable sealing to prevent the ingress and trapping of moisture into the insulation. Highly thermal conductive external or internal surfaces shall be separated by suitable insulating material. As far as possible, no part of the frame shall penetrate and cause damage to the insulation layers.

The thermal insulation for the cooling unit, connections therefrom to the outlets, and for suction pipe of the condensing unit shall be of vapour-proof materials or covered with an external vapour-proof barrier. The insulation shall have no interior air gap and shall be of sufficient thickness to prevent condensation on the exterior cold surfaces.

4.5 Hardware

The structure fitted with fasteners and hinges shall be smooth and positive in action and designed to maintain their proper function without undue wear under normal conditions of service. Screws and all other hardware shall be adequately protected from corrosion.

4.6 Disposal of Waste Water

The appliance shall be suitably designed at the water dispense area, such that the wastewater must be stored for a certain quantity without any spillage or have a provision of proper disposal through a drain.

4.7 Hot Water Tank

The thermostat is connected to the tank in such a way that it controls the required temperature and cuts off the heater power supply once the required temperature is achieved.

4.8 Hermetically Sealed Compressor

The compressor shall comply with the requirements of IS 10617.

4.9 Protective Guards

All moving parts shall be protected by suitable guards, shields, or screens of adequate strength and durability to avoid the possibility of making inadvertent contact therewith during normal service conditions.

5 REFRIGERATION SYSTEM

5.1 Pipes and Connections/Fittings

The pipes and fittings shall be so arranged and installed so as not to foul or transmit vibration to other parts.

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The pipes including their fittings shall be securely fixed which shall be of sufficient length to avoid any failure during vibration. It shall also be ensured that the piping connection does not foul with any adjacent parts which can be detrimental to the normal operation of the water dispenser.

The water dispenser shall have no ragged or sharp edges, other than those necessary for the functioning of the appliance, which could create a hazard for the user in normal use or during user maintenance.

5.2 Control of Operation

The operation of the compressor shall be controlled with the help of an electronic thermostat or thermistor to maintain the water temperature within the limits of application. A suitable capacity strainer or dehydrator shall be provided in the refrigeration circuit for the smooth functioning of the refrigeration cycle in presence of contaminations.

6 SAFETY REQUIREMENTS

6.1 General

The water dispensers shall comply with the safety requirements given 8, 10, 11, 13, 16, 27, and 28 of IS 302-2-24. The equipment shall be capable of working at an operating voltage of 230 V $\pm$ 10 percent in case of a single phase.

6.2 Electrical Accessories

All internal electrical fittings, such as indicators, water lifting pumps, and switches, shall be provided with suitable guards for protection against mechanical damage and shall be suitable for operation at the lowest air temperature likely to occur.

6.3 Salt Mist Test

All metal parts used inside or outside the water dispenser which are exposed to moisture or ambient conditions shall be corrosion resistant or adequately protected against corrosion as per IS 9000 (Part 11) for 72 h.

7 SOUND PRESSURE LEVEL

The water dispenser shall not have a sound pressure level of more than 55 dBA.

The water dispenser shall be placed centrally in the test chamber with a background noise of less than 45 dBA.

With the help of calibrated sound meter/analyser/recorder, the sound level is to be measured at a distance of 1.1 m from the front side.

8 GENERAL CONDITIONS OF TESTS

8.1 Water Dispenser Installation

The tests are carried out as supplied and installed as per the manufacturer's instructions. Unless otherwise

specified, the test shall be conducted on the water dispenser installed for normal use.

8.2 Electrical Power Supply

The tests shall be conducted at the rated voltage as indicated on the nameplate. If the water dispenser specifies two or more distinct rated voltages, the tests shall be carried out at the most unfavourable voltage.

When a voltage range is indicated on the nameplate, the test voltage shall be as follows:

- The highest and the lowest values of the range when voltage range is in excess of 10 percent of the mean of the range; and
- The mean of the upper and lower limits when the voltage range is 10 percent or less of the mean of the range.

All the tests specified in this standard shall be carried out at the rated frequency. For a water dispenser where the rated frequency is not specified, the tests shall be carried out at 50 Hz.

8.3 Limits of Voltage Variation

The variation in the voltage shall not exceed ± 1 percent of the test voltage while carrying out the tests specified in this standard. While taking the current and wattage readings, the voltage shall be the test voltage.

8.4 Test Room Ambient

The test room shall be capable of being maintained up to the maximum temperature class declared within ± 1 °C.

The vertical ambient temperature gradient from the platform to a height of 2.1 m shall be within 1 °C for every 1 m of vertical distance.

The water dispenser shall be placed on a solid platform the way it shall be installed under normal use. The water dispenser shall be so placed or shielded as to prevent direct radiation from the test room heating equipment.

8.5 General Operating Conditions

Before starting the first test, the unit shall be drained of all water and the interior of the tank shall be emptied and dried. Units shall be switched ON after all the internal parts have achieved the ambient temperature of the test after a minimum soaking period of 2 h. Stable operating conditions are deemed to be reached when during a time of 2 h the mean temperatures measured at the same position of the control cycle do not vary by more than 1 °C from the final regulated figure.

8.6 Stable Operating Conditions

The water dispenser shall be kept running till equilibrium conditions are achieved. The average temperature shall be within ± 2 °C. The dispenser shall be kept under this condition for minimum 30 min and water temperature shall be recorded at an interval of 5 min to establish this.

8.7 Humidity

Unless otherwise specified, the relative humidity of the test room shall be kept between 45 percent and 75 percent.

9 MEASUREMENT

9.1 Measuring Instruments

9.1.1 Temperature measurement shall be made with one or more of the following instruments:

- Mercury-in-glass thermometers;
- Thermocouples;
- Electric resistance thermometers; or
- Electric resistance measuring instruments having accuracy 0.2 percent of the scale.

9.1.2 Accuracy of measurement shall be within ~ 0.25 °C. Electrical measurements shall be made with indicating instrument. The accuracy of indicating instruments shall be within 0.5 percent of the full-scale reading.

9.1.3 Volume measurement shall be made with one or more of the following instruments:

- Liquid quantity measuring device, measuring either volume or weight; or
- Liquid flow meter.

Accuracy of measurements shall be within +1 percent. The smallest division on the scale of any instrument shall not exceed twice the specified accuracy for it.

9.1.4 The temperatures shall be measured with thermocouples, or other temperature measuring probes, which are inserted in the centre of a circular copper mass weighing 25 g and of minimum external area (diameter and height ≈ 15.2 mm). Temperature measuring instruments shall have an accuracy up to ± 0.5 °C.

9.1.5 Relative humidity shall be measured either by means of ventilated psychrometers having thermometers of accuracy of ± 3 percent or with recording apparatus of equivalent accuracy. When psychrometers are used, it shall be necessary to measure at regular intervals.

9.2 Temperature Measurement Conditions

9.2.1 Ambient Temperature

The ambient temperature shall be maintained within ± 1 °C of the specified value and shall be measured at 300 mm from left/right and front of the water dispenser and at the height of the geometric centre of the front and sides. This condition shall be maintained during both the stabilization and test period.

The ambient temperature shall be measured and recorded at one of the above positions preferably with a recording instrument. If an indicating instrument is used, reading shall be taken at intervals not greater than 5 min.

The temperature-sensitive element of the temperature measuring instrument shall be separated from any heat-conducting surface by at least 13 mm of air space. Connections from the measuring instruments shall be arranged in such a manner as not to interfere with the air-seal of the storage compartment.

All instruments used for measurement shall be calibrated against master instruments duly calibrated from an accredited calibration agency.

10 PERFORMANCE TESTS

10.1 Cooling Capacity Test

As per the climate class.

10.1.1 Cooling Capacity Test – Table Top, Floor Standing Without Refrigeration Cabinet

Table 1 Cooling Capacity Test – Table Top, Floor Standing without Refrigeration Cabinet
(Clause 10.1.1)

Sl No.	Test Condition	Unit	Requirement (T Class)	Requirement (N Class)
(1)	(2)	(3)	(4)	(5)
i)	Ambient temperature	°C	35 ± 1	28 ± 1
ii)	Inlet water temperature	°C	30 ± 1	25 ± 1
iii)	Test voltage	–	Rated voltage	Rated voltage
iv)	Water out flow rate (cold/hot/normal)	l/h	As per rated cooling/heating capacity (as applicable)	As per rated cooling/heating capacity (as applicable)

10.1.1.1 Test Procedure

- The water dispenser shall be operated continuously at rated voltage for a minimum of 60 min or till the steady-state condition is achieved without withdrawing water (see 8.6); and
- 3 min after the steady-state, at the interval of 10 min the cold water shall be withdrawn at the rated cooling capacity. The minimum and maximum temperature of withdrawn water shall be recorded. For example – if the rated capacity is 3 l/h, withdraw 500 ml in each cycle. Repeat this cycle 6 times.

NOTE — During the water withdrawal if the compressor trips then wait for 3 min. The compressor off time shall not be considered in the test time.

After the test, the water dispenser shall comply with the following requirements:

- Mean outlet water temperature shall be ≤ 16 °C in each cycle readings; and
- If outlet water temperature is less than 16 °C in all the measurements, the dispenser qualifies the cooling capacity. However, if any of the readings is more than 16 °C, the dispensers shall be deemed not conforming to the requirement of the cooling capacity test.

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10.1.2 Cooling Capacity Test – Floor Standing with Refrigeration Cabinet

Table 2 Cooling Capacity Test– Floor Standing with Refrigeration Cabinet

(Clause 10.1.2)

Sl No.	Test Condition	Unit	Requirement (T Class)	Requirement (N Class)
(1)	(2)	(3)	(4)	(5)
i)	Ambient temperature	°C	35 ± 1	28 ± 1
ii)	Inlet water temperature	°C	30 ± 1	25 ± 1
iii)	Test voltage	–	Rated voltage	Rated voltage
iv)	Water out flow rate (cold/hot/normal)	l/h	As per rated cooling/heating capacity (as applicable)	As per rated cooling/heating capacity (as applicable)

10.1.2.1 Test procedure

- The product shall be installed as per the manufacturers instructions;
- Before commencement of the test the thermostat shall be short circuited or disconnected from the electric circuit;
- The temperature sensor shall be placed in the cabinet to record the cabinet temperature;
- The water dispenser shall be operated continuously for a minimum of 60 min or till the steady-state condition is achieved without withdrawing water; and
- After the steady-state condition, at the interval of 10 min the cold water shall be withdrawn at the rated cooling capacity. The minimum and maximum temperature of withdrawn water shall be recorded. For example – if the rated capacity is 3 l/ h, withdraw 500 ml in each cycle. Repeat this cycle 6 times. Also, the inside air temperature of the refrigeration cabinet shall be measured and maintained lower than the ambient temperature in all the cycles.

After the test, the water dispenser shall comply with the following requirements:

- Outlet water temperature shall be ≤ 16 °C and the centre of the refrigeration cabinet air temperature shall be lower than ambient temperature (*Min* 5 °C) in all the readings; and
- If outlet water temperature is ≤ 16 °C and refrigeration cabinet temperature is lower than the ambient temperature in all the readings then the dispenser qualifies for the cooling capacity test. If any of readings of outlet water temperature is >16 °C and the refrigeration cabinet temperature is more than the ambient temperature, then the dispenser shall be deemed not conforming to the requirement of the cooling capacity test.

10.2 Maximum Operating Condition Test (Environmental)

10.2.1 Climate Class –Tropical (T)

10.2.1.1 Temperature

Ambient temperature 43 °C and
Water temperature 35 °C.

10.2.1.2 Method of test

- After stabilizing as mentioned in 8.6, the dispenser shall be operated at a full capacity of the storage tank drawn from the bottle and cold drink/water bottles in cabinet (8 bottles of 500 ml each);
- Cold and plain water shall be withdrawn at regular intervals of 10 min at rated cooling capacity and the temperature shall be recorded; and
- Simultaneously the temperature drop of one of the bottles in the cabinet shall be recorded by the suitable temperature measuring device (*see* 9.1.1).

10.2.1.3 Outlet cold water temperature

The cold-water temperature shall be less than or equal to 23 °C at rated outlet flow.

The refrigeration cabinet air temperature shall be minimum 5 °C less than ambient temperature.

10.2.2 Climate Class – Normal (N)

10.2.2.1 Temperature

- Ambient temperature 32 °C; and
- Water temperature 28 °C.

10.2.2.2 Method of test

- The dispenser shall be operated for at least 4 h at a full capacity of the loaded bottle in the main tank and cold drink/water bottles in cabinet (8 bottles of 500 ml each);
- Cold and plain water shall be withdrawn at regular intervals of 10 min at rated cooling capacity and the temperature shall be recorded; and
- Simultaneously the temperature drop of one of the bottles in the cabinet shall be recorded by the suitable temperature measuring device (*see* 9.1.1).

10.2.2.3 Outlet cold water temperature

The cold-water temperature shall be less than or equal to 23 °C at rated outlet flow.

10.3 Maximum Operating Condition Test (Voltage)

10.3.1 At High Voltage

After stabilization as per the climate condition, the bottled water dispenser shall be operated at high voltage that is, + 10 percent of rated voltage for 2 h. If the compressor trips, the voltage shall be reduced gradually at the rate of 10 V/min.

The supply voltage at which the compressor starts without tripping shall be recorded.

The compressor shall not trip at the target voltage.

10.3.2 At Low Voltage

Five min after stabilization as per the climate condition, the bottled water dispenser shall be operated at low voltage that is, –10 percent of rated voltage for 2 h. If the compressor trips, the voltage shall be increased gradually at the rate of 10 V/min and the test shall be repeated.

The compressor shall not trip during the test.

10.4 Heating Capacity Test

The purpose of the test is to validate the water heating performance of the dispenser.

10.4.1 Test Procedure

- a) The dispenser shall be installed at ambient temperature and inlet water temperature as per Table 1 and 2. After establishing the stabilised conditions as mentioned in 8.6, it shall be operated continuously for heating at rated voltage until the thermostat trips without the withdrawal of water; and
- b) Immediately after tripping of the thermostat water shall be withdrawn at an interval of 5 min (417 ml for 5 l/h). The minimum and maximum temperature of withdrawn water shall be recorded. Repeat this cycle 12 times.

10.4.2 Outlet Water Temperature

In each cycle, the mean outlet water temperature shall be within 80 ± 5 °C. However, if any of the readings does not meet the criteria, the dispensers shall be deemed not conforming to the requirement of the heating capacity test.

10.5 Annual Energy Consumption Test

The water dispenser shall be operated under the loaded condition at an ambient temperature and inlet water temperature as per Table 1 and 2 before commencement of the test.

10.5.1 Test Procedure — For All Types of Units

The dispenser shall be switched ON after the cooling capacity test and at same conditions without drawing water. It shall be ensured that the compressor and heater (if applicable) are switched ON. The measurement shall be taken under ON condition till 24 h.

10.5.2 Calculation

Equation 1: Normalize the no water draw energy

$$Q_{24h} = \frac{Q_{\text{No water draw}} \times 1440}{T_{\text{No draw}}} \quad \dots 1$$

where

Q_{24h} = normalized 24 h energy consumption (Wh);

$Q_{\text{No water draw}}$ = energy consumption during the ON mode with no water draw (Wh);

$T_{\text{No draw}}$ = duration of the ON mode with no water draw (in min); and

1440 = number of minutes in 24 h.

Annual Energy Consumption = $Q_{24h} \times 365$

10.6 Freeze-up Test

The dispenser shall be operated for 24 h at ambient temperature and inlet water temperature as per Table 1 and 2 without withdrawing any water.

After 24 h, 3 cups of 100 ml cold water is withdrawn, and then normal water is withdrawn. The normal water temperature shall not be less than 25 °C and there shall not be any frosting on the outside of the water tank.

10.7 Door Opening and Closing Test

The bottled water dispenser with refrigeration cabinet shall be subjected to 3 000 cycles of the door opening and closing of a minimum 15 min cycle. Each cycle shall comprise of 1 opening and 1 closing. After this test, the dispenser shall qualify the door seal test (see 10.8) and there shall be no failure of the hinges.

10.8 Door Seal Test

This test is applied for the bottled water dispenser with refrigeration cabinet.

The purpose of this test is to ensure that the gasket of the door of the water dispenser adequately prevents any ingress of the surrounding air. This test shall be conducted with bottled water dispenser at rest or when not under operation.

A strip of paper 50 mm wide, 0.08 mm thick, and of suitable length shall be inserted at any point of the seal and the door shall be closed normally. The strip of paper shall not slide freely.

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Table 3 Pull Down Test

(Clause 10.9)

Sl No.	Condition	Ambient Temperature (°C)	Inlet Water Temperature (°C)	Pull Down (°C)
(1)	(2)	(3)	(4)	(5)
i)	Tropical (T)	43	35	Outlet cold water temperature: $< 23 \pm 1$
ii)	Normal (N)	32	28	Outlet cold water temperature: $< 18 \pm 1$

10.9 Pull-down Test

The water temperatures as per the climate conditions shall be as specified in Table 3.

10.9.1 Test Procedure

The product is installed as per the cooling capacity test. The cold-water storage tank shall be filled with water as per the conditions mentioned in Table 3. The dispenser shall be operated at rated voltage and frequency. The water temperature and time shall be recorded.

10.9.2 Requirements

The measured water temperature shall be as per Table 3 within 30 min. At any condition maximum pull down time shall be 60 min.

11 MARKING AND INSTRUCTION

11.1 Marking on Bottled Water Dispenser

Each bottled water dispenser shall have the following information marked in a permanent and legible manner on one or several locations where it is readily accessible:

- The manufacturer's name, address and/or the trade-mark;
- The model (or commercial designation) and serial number;
- The rated capacity (cooling and heating) in l/h;

- The name of the refrigerant used in system and its quantity;
- Rated power input for cooling and heating in watts;
- Rated voltage and rated frequency; and
- Country of manufacture.

11.1.1 Each bottled water dispenser shall be accompanied with the instructions for its use and maintenance printed on strong paper/cardboard or similar material. These instructions shall at least provide information related to the following:

- Installation requirements;
- Conditions of operation (starting and stopping);
- Use of various control devices (thermostat, defrosting, etc.); and
- Maintenance and cleaning the bottled water dispenser.

11.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product may be marked with the Standard Mark.

ANNEX A

(Clause 2)

LIST OF INDIAN STANDARDS

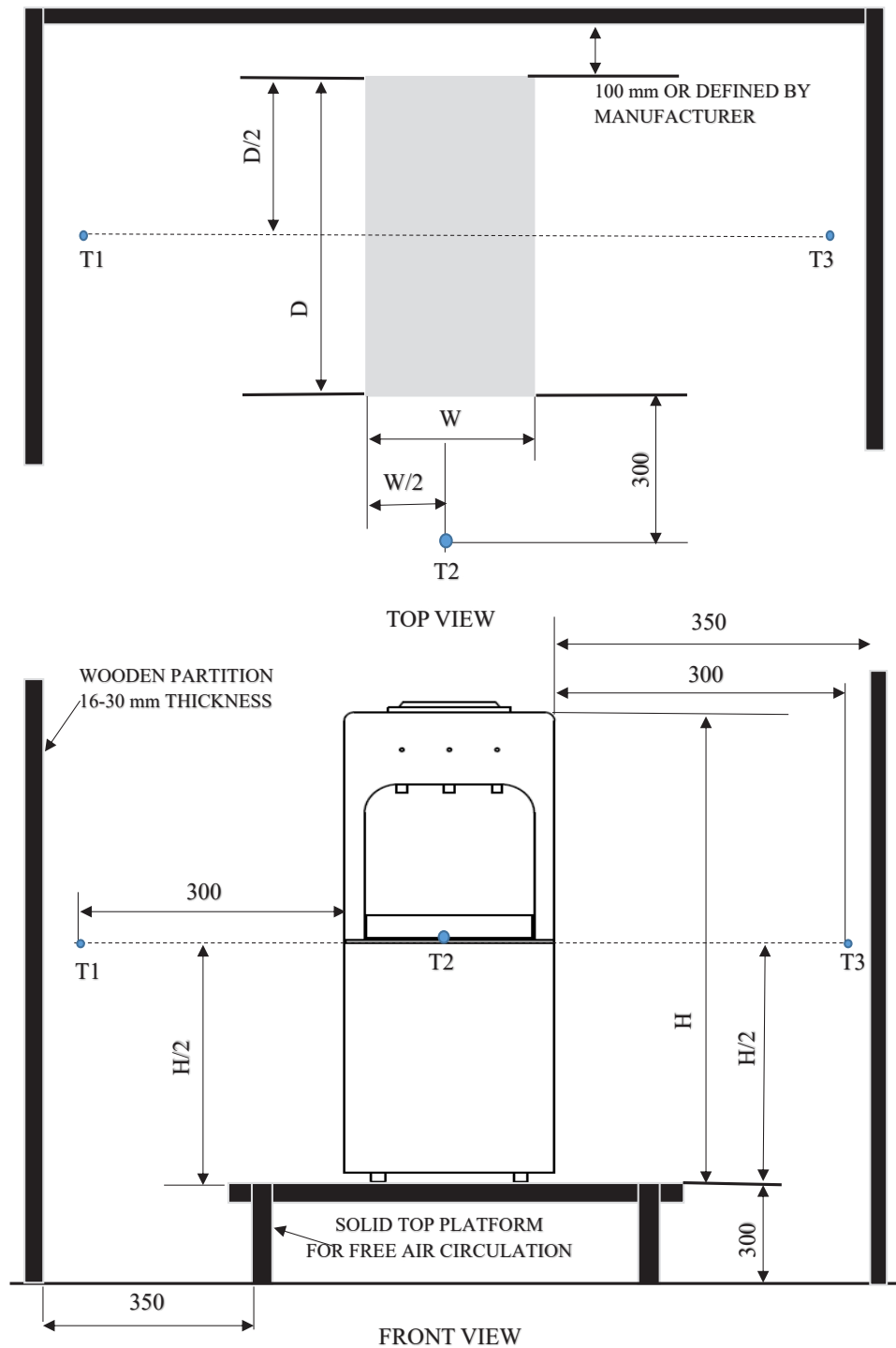
<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
302-2-24 : 1994	Safety of household and similar electrical appliances: Part 2 Particular requirements, Section 24 Refrigerators, food freezers and ice makers	10146 : 1982	Specification for polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water
5522 : 2014	Stainless steel sheets and strips for utensils — Specification (<i>third revision</i>)	10151 : 2019	Polyvinyl chloride (PVC) and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water — Specification (<i>first revision</i>)
6911 : 2017	Stainless steel plate, sheet and strip — Specification (<i>second revision</i>)	10617 : 2018	Hermetic compressors — Specification (<i>second revision</i>)
9000 (Part 11) : 1983	Basic environmental testing procedures for electronic and electrical items: Part 11 Salt mist test	10910 : 1984	Specification for polypropylene and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water

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ANNEX B

(Clause 3.2)

MEASUREMENT OF AMBIENT TEMPERATURE



T1, T2, T3 ambient measurement sensor's location

All dimensions are in mm

Tolerance on dimension are ± 10 mm

FIG. 5 MEASUREMENT OF AMBIENT TEMPERATURE

ANNEX C

(Foreword)

COMMITTEE COMPOSITION

Refrigeration and Air Conditioning Sectional Committee, MED 03

<i>Organization(s)</i>	<i>Representative(s)</i>
Indian Institute of Technology, Roorkee	PROF (DR) RAVI KUMAR (Chairman)
Annapurna Electronics and Services Ltd, Hyderabad	SHRI G. K. PRASAD SHRI J. S. SASTRY (<i>Alternate</i>)
BSH Household Appliances Manufacturing Pvt Ltd, Chennai	SHRI VIJAY KUMAR LOGANATHAN SHRI BALASUBRAMANIAN ANAND (<i>Alternate</i>)
Blue Star Limited, Mumbai	SHRI JITENDRA BHAMBURE SHRI SUNIL KUMAR JAIN (<i>Alternate</i>)
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