



Schedule - 31

Side by Side Refrigerator and Multi Door Refrigerator

1. Scope: This scheme specifies the essential characteristics of household and similar refrigerating appliances cooled by internal natural convection or forced air circulation, and establishes test methods for checking these characteristics as specified in IS 17550 (Part 3) : 2021, being manufactured, commercially purchased, sold or imported, as the case may be, in India shall;-

- (i) comply with the energy consumption requirements defined in clause 6.8.4 of IS 17550 (Part 3) : 2021;
- (ii) meet the requirement of total volume as defined in clause 4.8 and Annex H of IS 17550 (Part 3);
- (iii) meet the requirement of pull-down test as defined in clause 4.6 (a) and Annex A of IS 17550 (Part 2);
- (iv) comply with provisions of Quality Control Order, wherever applicable issued by Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.

This Schedule is intended for energy labelling requirements for Side by Side and Multi Door refrigerating appliances and single door and double door refrigerators are outside the scope of this Schedule.

2. Normative Reference: This Schedule shall be read in conjunction with IS 17550 (Part 1 to Part 3): 2021 with all amendments.

3. Terms and Definitions: (1) In this Schedule, unless the context otherwise requires;-

- i. "Act" means the Energy Conservation Act, 2001(52 of 2001);
- ii. "average power consumption" means average rate of energy consumption of a refrigerating appliance measured in watts (W);
- iii. "energy consumption" means energy used by a refrigerating appliance over a specified period of time or for a specified operation measured in watt hours (Wh) or kilowatt hours (kWh).



- iv. "label" means any written, printed, marked, stamped or graphic matter affixed to, or appearing upon, refrigerator;
- v. "label period" means the validity period of the energy consumption under the star rating plan specified in the Schedule.
- vi. "models or family of models" means the model or range of models of one particular brand, to which a single set of test reports is applicable and where each of the models has the same physical characteristics, annual electricity consumption, energy efficiency level and performance characteristics;
- vii. "multi door refrigerator" means refrigerator having more than two doors and having one freezer compartment.
- viii. "permittee" means a person or agency to whom permission has been granted to affix label under clause 7;
- ix. "refrigerating appliance" means insulated cabinet with one or more compartments that are controlled at specific temperatures and are of suitable size and equipped for household use, cooled by natural convection or a forced convection system whereby the cooling is obtained by one or more energy-consuming means.;
- x. "refrigerator" means refrigerating appliances intended for the storage of foodstuff, with at least one fresh food compartment.
- xi. "side by side refrigerator" means a refrigerating appliance having top to bottom shelving on both sides, with one side serving as a freezer space and the other as the refrigerator.
- xii. "star rating or star level" means the grade of energy efficiency displayed on the label of the refrigerator based on energy consumption standard under the star rating plan specified in the Schedule.
- xiii. "storage temperature" means temperature which the refrigerating appliance is capable maintaining in accordance with the stipulation given in 6.5 of Part 2 of IS 17550 (Part 3) : 2021
- xiv. "trader or seller" in relation to any labelled refrigerator means a person who sells or distributes any such refrigerator and includes the shopkeeper, trader, manufacturer and permittee who has been given permission to affix label on such refrigerator.
- xv. "volume" means space within the inside liner of the refrigerating appliance, or a compartment or sub compartment.



- (2) Words and expressions used herein and not defined, but defined in Act shall have meanings respectively assigned to them in the Act.

4. Star rating or star level plan- (1) There shall be a label affixed on refrigerator which shall display a maximum of five stars with an interval of one star based on their relative annual energy consumption.

- (2) The refrigerator shall be rated from star one to star five based on their Annual Energy Consumption and which complies with the Annual Energy Consumption requirements as laid down in Table-1.
- (3) The star level of the refrigerator shall be determined as per clause 6 of IS 17550 (Part 3): 2021, as follows, namely:-

$$\text{Annual Energy Consumption (AEC) (kWh/year)} = \text{Daily Energy Consumption in 24 hours} * 365 \text{ days}/1000$$

For Frost Free technology Daily Energy Consumption (E_{daily}) includes steady state and incremental energy consumption for defrost and recovery cycle. Direct Cool Refrigerator's, E_{daily} includes only steady state conditions.

Table-1 for Side by Side Refrigerator (SBSR) and Multi Door Refrigerator (MDR)

Validity From 01-03-2023 to 31-12-2024

Star rating band	AEC (kWh/year)
1 Star *	$(0.746 * V_{\text{tot}} + 201) \leq \text{AEC} < (0.880 * V_{\text{tot}} + 237)$
2 Star **	$(0.632 * V_{\text{tot}} + 170) \leq \text{AEC} < (0.746 * V_{\text{tot}} + 201)$
3 Star ***	$(0.518 * V_{\text{tot}} + 139) \leq \text{AEC} < (0.632 * V_{\text{tot}} + 170)$
4 Star ****	$(0.425 * V_{\text{tot}} + 114) \leq \text{AEC} < (0.518 * V_{\text{tot}} + 139)$
5 Star *****	$\text{AEC} < (0.425 * V_{\text{tot}} + 114)$

Note : The values of various star level bands for particular model and the star level chosen for that model shall be based on the lower and the upper limits of each star level band as mentioned in Table-1.

5. Testing and tolerance -



- (1) For the purposes of determining the star level, the refrigerator shall meet the requirements of all the tests defined in Table-2 as given below:

Table-2

Serial Number	Nature of Test	Test Standard and Clause Reference
1	Daily Energy Consumption	Clause 6 of IS 17550 (Part 3)
2	Total Volume	Clause 4.8 and Annex H of IS 17550 (Part 3)
3	Pull Down	Clause 4.6 a) and Annex A of IS 17550 (Part 2)

NOTE: 1. Refrigerator shall carry Bureau of Indian Standard certification mark.

2. Manufacturer shall submit copy of valid Bureau of Indian Standard certification marks license at the time of registration of models

- (2) There shall be no tolerance for the star rating bands and all tested appliance shall meet the minimum threshold for each star rating band and the scope for manufacturing tolerance and other variations shall be accounted by the manufacturer when determining the Star Rating.
- (3) The tolerance limit for the total volume shall be as per clause 4.8.1 of IS 17550 (Part 3) and pull-down temperature shall be as per clause 4.6 (a) of IS 17550 (Part 2).
- (4) The star level plan shall be reviewed in every two years.
- (5) The scope for manufacturing tolerance and other variations shall be accounted by the manufacturer when determining the star rating based on the following points for rounding off-
- (a) the Annual Energy Consumption value and total volume shall be rounded off to nearest whole number up to one decimal place;
- (b) the value shall be rounded off to respective significant figures, as per IS 2:1960.
- (6) Target temperature of freezer compartment would be -18° C.



- (7) For the purpose of testing the models for energy consumption results, two samples shall be considered. The average energy consumptions of two samples to be considered for awarding star rating to respective models of Refrigerator.
- (8) Test report. - The result of the tests carried out in laboratory accredited by National Accreditation Board for Testing and Calibration Laboratories or International Laboratory Accreditation Cooperation or Asia Pacific Laboratory Accreditation Cooperation or equivalent bodies for ensuring consistency in quality of the equipment as well as the scope of the relevant Indian standards shall be reported in the format mentioned in the *Annexure-I* appended to this Schedule.

6. Particulars to be displayed on Label: (1) On every refrigerator, the following particulars shall be displayed on its label, namely:-

- a. star level;
 - b. electricity consumption in units per year (kWh/Year);
 - c. label period
 - d. appliance type;
 - e. name of manufacturer or importer or brand;
 - f. model number and year of manufacturing or import;
 - g. Type of Refrigerator (SBSR/MDR);
 - h. total Volume (litres);
 - i. logo of the Bureau of Energy Efficiency; and
 - j. unique series code;
 - k. Electricity Savings/Year (kWh)
 - l. CO₂ Emission Reduction (KgCO₂)
- (2) The design, colour, size and content of label shall be as specified in the *Annexure-II* of this Schedule.
- (3) The refrigerator shall display star level and label period with the energy consumption standard and the manufacturing year of the refrigerator in synchronization with existing energy consumption standards;

7. Manner of display of label: (1) On every refrigerator, label along with QR code shall be displayed at the point of sale and such label shall be affixed on the refrigerator in the following manner:-

- (a) Self-adhesive label along with QR code affixed on the front side of the top right corner of refrigerator;
- (b) Self-adhesive label along with QR code affixed on the front side of the carton box.



The QR code on the approval letter is recommended to be placed just below the star label being affixed on each unit of the refrigerator.

- (2) For refrigerator not on display, the label along with QR code may be affixed to the exterior of the packing and the label may be attached to the unit when put on sale.

8. Permission for display of label.- (1) No star label shall be affixed on a refrigerator without obtaining the prior permission of the Bureau.

- (2) Company registration.- For the purposes of obtaining permission of the Bureau, every brand shall be registered separately accompanied by a label security fee of one lakh rupees, payable by electronic mode of payment;

In case of Micro, Small and Medium Scale Enterprises (MSME) as defined in MSME Act, the label security fee shall be twenty five thousand rupees only. Appropriate certificate to be submitted by permittee in case of registering under MSME criteria.

- (3) Model registration.- Every application of the permittee under sub-clause (2) above shall be accompanied by –
 - (a) an application fee of two thousand rupees per model, payable by electronic mode of payment; and
 - (b) a label security fee of one lakh rupees, payable in favour of the Bureau of Energy Efficiency, New Delhi; by any acceptable electronic mode of payment.

9. Grant of permission.- (1) On receipt of an application under clause 8 and after being satisfied that all requirements therein are complied with, the Bureau may, within a period of one month from the date of such receipt, grant, as specified in its Operation Manual on standards and labelling, subject to such terms and conditions as specified in clause 10-

- (a) register the brand under clause 8 (2) in electronic form; and
- (b) grant permission for affixing label on refrigerator in electronic form

(2) The Bureau shall maintain a register and enter the name of the permittee therein.

(3) In case of revision of star rating plan, an application for renewal of permission shall be made by the permittee not later than one month before its expiry and shall be accompanied by a fee of rupees one thousand payable in electronic mode in favour of the Bureau of Energy Efficiency, New Delhi.



In case of extension of star rating plan, the said renewal fee of rupees one thousand shall be exempted.

- (4) No application shall be renewed after expiry of validity period, in which case the permittee shall make a fresh application.
- (5) The permittee shall seek permission to affix label afresh, if new model of the refrigerator is planned to be launched to synchronise with the revised star level and application for such permission may be made six months in advance of coming into force of the revised star level.

10. Terms and conditions for display of particulars on label.- Every permittee, trader and seller shall comply with the following terms and conditions in displaying the particulars on label, namely:-

- (1) the star level displayed on the label of refrigerator shall conform to energy consumption standards for refrigerator under the energy labelling plan specified in this Schedule.
- (2) the label along with QR code shall be affixed only on such model of refrigerator for which permission has been granted;
- (3) the label along with QR code shall be printed and affixed on the refrigerator at the cost of permittee;
- (4) the permittee, trader and seller shall ensure that the star level displayed on the label along with QR code of refrigerator shall be maintained at all time;
- (5) the permittee shall pay the label fee as specified in clause 11;
- (6) the permittee shall furnish to the Bureau a statement containing details of production of labelled equipment and the accrued labelling fee due for each quarter within the following month of the close of each quarter of the financial year;
- (7) the permittee shall furnish to the Bureau an updated list of authorised distributors, dealers, retailers, sellers appointed to sell their labelled products by 30th day of April of each year;
- (8) comply with such other terms and conditions as specified under Disseminating Star Labelling in Household Appliance (DISHA) - Operation Manual on Standards and Labelling.



11. Label fee.- (1) Every permittee shall pay to the Bureau a label fee of thirty rupees for each label affixed on the refrigerator.

(2) The label fee specified under sub-clause (1) above shall be paid annually within one month from the date of closure of each financial year:

Please note that on failure to pay the label fee within the period so specified, the Bureau may recover the amount due with interest thereon at ten per cent per annum from the label security fee made under clause 8 (3), and if complete labelling fees are not recovered within one year of the last date of submission, the Bureau may cancel all labels granted to the permittee and publish the name of the permittee in the newspapers as a defaulter.

12. Refund of label security fee.- Subject to the provisions of Clause 8 (3), a permittee shall be entitled to a refund of the label security fee in case of the followings:

(1) On ceasing to manufacture refrigerator

(2) On withdrawal of company registration subject to the approval of the competent authority or withdrawal of schedule/notification of respective appliance/equipment by the Bureau and clearing the pending dues, if any.

13. Verification by Bureau.- (1) The Bureau or its designated agency may, either suo motu, or on a complaint received by it, carry out verification to ensure that the refrigerator conforms to the star level and other particulars displayed on its label and that it complies with the other terms and conditions of permission.

(2) For the purpose of verification- (a) samples shall be picked up at random by the Bureau or its designated agency from the manufacturing facility, warehouse or the retail outlet (b) samples shall be picked up from following Test.- and shall be subjected to (i) Energy consumption test (ii) Total volume and (iii) Pull down test.

(3) Where, upon a complaint received under sub-clause (1) above, the Bureau is required to carry out verification by challenge testing the refrigerator in an independent laboratory duly accredited by National Accreditation Board for Testing and Calibration Laboratories. A notice shall be issued to the permittee for carrying out such testing and the complainant shall be called upon to deposit, such expenses relating to testing, transportation and other incidental expenses with the Bureau, within such time, as may be determined by Bureau, and if the sample drawn under challenge testing fails, all expenses towards the cost of



sample, transportation of sample and the testing charges, shall be reimbursed by the permittee to the Bureau and the Bureau shall refund the aforesaid expenses to the complainant; and where the equipment passes the challenge test, then, the expenses deposited by the complainant shall stand forfeited.

- (4) Where samples of refrigerator used for testing fails the test during suo motu testing or challenge testing, the permittee shall be offered another opportunity and the Bureau shall conduct second test with twice the quantity of refrigerator used in the first test in an independent test laboratory duly accredited by National Accreditation Board for Testing and Calibration Laboratories at the cost of the permittee and the Bureau shall intimate the permittee to witness the challenge testing referred to in sub-clause (3) above or the second test referred to in sub-clause (4) and the expenses to be made towards the procurement and testing of sample.
- (5) Where the second test fails, the Bureau shall,-
 - (a) direct the permittee, under intimation to all the State Designated Agencies, that the permittee shall, within a period of two months,-
 - (i) correct the star level displayed on the label of the refrigerator or remove the defects and deficiencies found during testing;
 - (ii) withdraw all the stocks from the market to comply with the directions of the Bureau; and
 - (iii) change the particulars displayed on advertising material;
 - (b) publish for the benefit of the consumers, the name of any permittee, brand name, model name or model number, logo and other specifications in any national or regional daily newspaper and in any electronic means or in any other manner as it deems fit, within two months;
 - (c) Intimate to the concerned State Designated Agency to initiate adjudication proceedings against the permittee and the trader under section 27 of the Act.
- (6) The permittee shall within ten days of the conclusion of the period of two months,-
 - (a) send the compliance report with respect to action taken in compliance with the direction; and
 - (b) in case the compliance report referred to in clause (a) is not received or received without complying to any of the direction within the specified



period, it shall be deemed as non-compliance of the direction issued and orders to that effect shall be passed by the Bureau.

- (7) The Bureau shall send a copy of the compliance report referred to in sub-clause 6 (a) above and orders passed in sub-clause 6 (b) above along with necessary documents to all the State Designated Agencies for the purpose of taking action under section 17 of the Act and enforcement of the orders passed under sub-clause 6 (b) above.
- (8) Where the permittee fails to comply with the directions issued by the Bureau under sub-clause 7 above, the Bureau under intimation to all State Designated Agencies for the reasons to be recorded in writing, shall,-
 - (a) withdraw the permission granted to the permittee under clause 9 (1);
 - (b) send report to the Central Government accompanied by the test report in support of the failure by the permittee to conform to the energy consumption standards under energy labelling plan specified in this Schedule, the directions of the Bureau referred to in sub-clause 6 (a) for consideration and taking action under clause (c) of section 14 of the Act by the Central Government;
 - (c) publish for the benefit of the consumers, the name of any permittee, brand name, model name or model number, logo and other specification in any national or regional daily newspaper and in any electronic or in any other manner as it deems fit within two months; and
 - (d) intimate to the concerned State Designated Agencies to initiate further adjudication proceedings against the permittee and the trader under section 27 of the Act.

14. Cancellation of permission.- The Bureau may cancel the permission granted under Clause 9, if the permittee -

- (a) fails to comply with any of the terms and conditions specified under Clause 10;
- (b) fails to pay label fee within the period specified under Clause 11;
- (c) does not comply with the direction issued under Clause 13.

No permission shall be cancelled unless the permittee has been given an opportunity being heard in the matter.



March, 2023



March, 2023

Annexure-I
[See Clause 5 (8)]
Form for reporting the test results

(Separate test report format shall be used for each type/models)

Test report No.

Date:

1. Product/Equipment Detail

1.1 General

Equipment
Type (SBSR or MDR)
Operating principle (Internal natural convection or forced air circulation)
Brand
Model Name and Number
Name of the manufacturer/Importer
Rated Total Volume (litre)
Month and Year of manufacturing
Annual Electricity Consumption (kWh per year)
Pull down Time (minimum)
Quality System certificate details (Attach copy of the License / Certificate)
Climate class (Tropical T)
Address of the Manufacturer
Bureau of Indian Standards certificate details (if any) (Attach copy of the License or Certificate)

2. Measurement of Volume



Srl. No	Description of Compartments	Measured Value
1	Cellar	
2	Fresh Food	
3	Chill	
4	Evaporator (as applicable for Zero-star, One-star, Two- star, Three- star and Four- star	
6	Total Volume	

3. Energy Consumption tests

Srl. No	Test Description	Measured Value
1	Number of defrost control (none, one or more than one)	
2	Steady state power consumption (W) a) Case SS1 b) Case SS2	
3	Defrost and recovery energy consumption (Wh)	
4	Temperature change (KWh)	
5	Number of test run a) Single test run b) By interpolation	
6	Daily Energy Consumption	
7	Total Energy Consumption (Optional)	
8	Specified Auxiliaries, if any (Optional)	

4. Pull Down Test

Srl.	Test Conditions	Measured value



No.		
1	Test room ambient temperature	
2	Time taken for heat soaking	
3	The period from the start of the test until all compartments are simultaneously at or below the target temperatures	
4	The average air temperature reached in each compartment	
	Cellar	
	Fresh Food	
	Chill	
	Evaporator (as applicable for Zero-star, One-star, Two- star, Three- star and Four- star	
5	Pull down time	

Annexure-II

[See Clause 9 (2)]

- (1) Material & Dimension of Label: The label shall be self -adhesive and shall be designed as set out in sample label.



- (2) Color scheme of label: The label shall be printed as per the following specification in



the following colors on a white background:

- a. Red: Pantone warm red
- b. Yellow: Pantone 116
- c. Black: Pantone Black
- d. Green: Pantone 340

Note: The color tone at the background of Electricity Consumption Display (Green) will be similar as followed for the Bureau of Energy Efficiency Logo.

POWER SAVINGS GUIDE

ANNUAL ENERGY CONSUMPTION
XXXX
UNITS PER YEAR
 Last Period: 1st March, 2022 to 31st Dec, 2021

Apparatus	: Refrigerator
Brand	: I 23
Model/Year	: I 23 / YYYY
Type	: I 2333
Total Volume	: XXX Liters
Electricity Reducted/Year	: XX kWh
CO ₂ Emission Reducted/Year	: XX kgCO ₂

XXXX Liters

QR Code

Bureau of Energy Efficiency
 Ministry of Power, Government of India

Technical Specifications:

- Black Outline (Outer) .5pt
- Black Outline (Inner) 1.5pt
- Yellow Y140
- Star Outline Black K-30
- 7.5pt text Black (Arial Black)
- Black 15pt text white
- Yellow Y220
- Black text 8pt (Arial Black)
- Green 11 pt White text (Arial Black)
- Black text 8pt (Arial Black)
- Black text 8pt (Arial Black)
- Outline 1pt
- Black text 8pt (Arial Bold)
- XXXX Liters
- Green C:81, M:18, Y:90, K:1
- Blue C:67, M:95, Y:6, K:1
- Black text 8pt (Arial)
- Black 8pt text (Arial Narrow)
- Outline .5pt
- Green C:81, M:18, Y:90, K:1
- Blue C:67, M:95, Y:6, K:1



March, 2023

The following colour scheme for Bureau's logo, namely:-

- a. BLUE - Hue(H)-239o Saturation(S):64% Brightness(B):59%
- b. Luminance or lightness(L) :28, chromatic components -a:24 b:54
- c. Red(R):54 Green(G):55 Blue(B):151
- d. Cyan(C):97% Magenta(M):95% Yellow(Y):6% Black(K):1%
- e. Web colour code - #363797
- f. GREEN - Hue(H)-150o Saturation(S):10% Brightness(B):67%
- g. Luminance or lightness(L) :61, chromatic components -a:-53 b:32
- h. Red(R):0 Green(G):170 Blue(B):87
- i. Cyan(C):81% Magenta(M):10% Yellow(Y):90% Black(K):1%
- j. Web colour code - #00AA56;



(3) Sample label: An example of a printed energy label for a refrigerating appliance is shown in following label.

POWER SAVINGS GUIDE

ANNUAL ENERGY CONSUMPTION
XXX
UNITS PER YEAR
Label Period: 1st March, 2023 to 31st Dec, 2024

Appliance	: Refrigerator
Brand	: XX
Model/Year	: XX / YYYY
Type	: XXXX
Total Volume	: XXX Liters
Electricity Savings/Year	: XX kWh
Co ₂ Emission Reduction/Year	: XX KgCO ₂

QR Code

Bureau of Energy Efficiency
Ministry of Power, Government of India