



**PRODUCT MANUAL FOR
DOMESTIC GAS STOVES FOR USE WITH LIQUEFIED PETROLEUM GAS
ACCORDING TO IS 4246:2002**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	Product	:	IS 4246:2002
	Title	:	Domestic Gas Stove for use with LPG
	No. of Amendments	:	4
2.	Sampling Guidelines:		
a)	Raw material	:	Materials and Components - As per clause 5 of IS 4246:2002
b)	Grouping guidelines	:	Each Type of Domestic Gas Stove for use with LPG shall be tested for GoL/CSoL
c)	Sample Size	:	One Gas Stove
3.	List of Test Equipment	:	Please refer ANNEX – A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B
5.	Possible tests in a day	:	All tests
6.	Scope of the Licence	:	Please refer ANNEX – C

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar Marg,
New Delhi – 110002

ANNEX - A**List of Test Equipments****Major test equipment required to test as per the Indian Standard**

Sl. No	Tests used in with clause reference	Test Equipments
1.	Testing of Materials - clause 5	(a) Muffle Furnace with Temperature Indicator) (b) Magnifying Glass , Compass and Marker (c) Centre Punch and Hammer
2.	Gas Soundness - clause 13	(a) Leak Test apparatus with Bubble Indicator (b) Pressure gauge (c) Water Tank
3.	Strength and Rigidity - clause 15	(a) Dial Gauge with magnetic stand (b) Surface Plate and Iron weight (c) Steel Legs, Steel Strips (d) Frame, Fridge
4	Gas Consumption - clause 17	(a) Stopwatch, Thermometer (b) Gas Flow meter, Manometer (c) Air testing apparatus with empty compressor tank (d) Pressure Regulator, Barometer, Scale (e) Calibration Bottle
5	Resistance to draught - clause 23	a) Rotating Vane Anemometer b) Mini fan
6	Combustion Test - clause 24	(a) Digital CO(Carbon mono-oxide) Indicator (b) Gas collecting hood (c) Aluminium Vessel (d) Orsett Apparatus (e) Pipette (f) Chemicals, Measuring cylinders and Chemical Balance, wash bottle
7	Fire Hazard and Limiting Temperature - clause 25	(a) Thermocouple, Stainless steel tube (b) Temperature indicator
8	Thermal efficiency - clause 26	(a) Weighing Balance and Weight Box (b) Thermometer (c) Aluminium Pan and Stirrer (d) Pressure Regulator, Manometer
9	Dimensions	(a) Micrometer , Vernier caliper, Dial caliper (b) Thread Gauge
10	To maintain temperature for testing	(a) Air conditioner

The above list is indicative only and may not be treated as exhaustive.

ANNEX - B

Scheme of Inspection and Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipment.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirements of IS 4246: 2002.

4. CONTROL UNIT –Gas Stoves having same design and material of burners, total gas consumption in g/h and rating of individual burners in kcal/h, manufactured in a day shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of [Table 1](#) and the levels of control in column 3 of [Table 1](#), shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

	(1)		(2)		(3)		
	Test Details		Test equipment requirement R:required (or) S: Subcontracting permitted	No. of Sample	Levels of Control		
Cl.	Requirement	Test Method Clause Reference			Frequency	Remarks	
4.	General	4, 4.1.1 IS 5116	R	Each Stove	---	---	
5	MATERIALS						
	Main body of Burner	5.2,5.5 Annex C	IS 5116	S	One	Each Consignment	No further testing is required, if accompanied with the Test Certificate or ISI Marked. In case of failure, consignment shall not be used in manufacturing.
	Plastic Component	5.1.1, Annex B	IS 5116	S			
	Copper and Copper Alloy	5.3, IS 2305	IS 5116	S			
	Non Metallic materials in contact with LPG	5.4, Annex D	IS 5116	S			
	Gas tap	5.6	IS 5116	S			
	Drip tray	5.7	IS 5116	S			
6	Design for Maintenance	6 IS 4246	R	Each Stove			
7	Rigidity and Stability	7 IS 4246	R	Each Stove	---	---	

8	Workmanship and Finish	7.1	IS 5116	R	Each Stove	---	---
	Vitreous-enamelled Components	7.2, Annex E	IS 5116	R	Two pieces	Each Consignment	No further testing is required, if accompanied with the Test Certificate or ISI Marked. In case of failure, consignment shall not be used in manufacturing.
	Nickel Chrome plated material	7.3.	IS 5116 IS 3203 IS 6009	R	Two pieces		
	Painted surface	7.4	IS 5116	R	One	Every month	---
	Screws, Nuts, Bolts, Springs , Pipes and Pins	7.7 8.3	IS 5116 IS 4246	R	One	Each Consignment	No further testing is required, if accompanied with the Test Certificate or ISI Marked. In case of failure, consignment shall not be used in manufacturing.
	External finish	8.2	IS 4246	R	Each Stove	---	---
9	Gas Taps	8	IS 5116	R	Each Stove	---	---
		8.1 to 8.6, 8.8 to 8.12 Fig 2, 3	IS 5116	R	Each Stove	---	---
		8.7, Fig 4	IS 5116	R	Two	Each Consignment	No further testing is required, if accompanied with the Test Certificate or ISI Marked.
10	Injector Jets (Material of Construction and Thread to be declared)	9	IS 5116	R	10%	Each Consignment	In case of failure, consignment shall not be used in manufacturing.

11	Burners	10	IS 5116	R	Each Burner	---	---
		11.2, 11.3	IS 4246	R	Each Stove	---	---
12	Pan Supports	12	IS 4246	R	Each Pan Support	---	---
13	Gas Soundness	16, Annex J	IS 5116	R	Each Gas Stove	---	If there is any defect in any stove, it shall be rectified. The rectified stove shall again be tested and marked only if found conforming. In addition, a stove shall be drawn from each control unit and tested for Gas Soundness after the stove has been operated for two hours.
14	Gas inlet connection	18.2	IS 5116	R	One Stove	Every 30 th Control Unit	In case of failure, twice the number of samples shall be tested and if any stove fails the control unit shall be rejected.
		18.3,18.4	IS 5116	R	10%	Each Consignment	No further testing is required, if accompanied with the Test Certificate or ISI Marked. In case of failure, consignment shall not be used in manufacturing.
		14.2	IS 4246	R	Each Stove	---	---
15	Strength and Rigidity	15, Annex C	IS 4246	R	One Stove	Each Control Unit	In case of failure, twice the number of samples shall be tested and if any stove fails the control unit shall be rejected.

15.1	Verification of the strength of the Gas Stove Surface of Toughened Glass Top against Thermal Stress	15.1 , 5.1.2	IS 4246	R	One Stove	Every 15 th Control Unit of Toughened Glass Top variety or Once in a month, whichever is earlier.	In case of failure, ten more stoves shall be tested and if any stove fails the control unit shall be rejected.
15.2	Fragmentation Test of the Toughened Glass Top	15.2 5.1.3	IS 4246	S	One	Each consignment of Toughened Glass	No further testing is required, if accompanied with the Test Certificate
18	Ignition & Flame Travel	18 14, Annex G	IS 4246 IS 5116	R	Each Stove	-	If there is any defect in any stove, it shall be rectified. The rectified stove shall again be tested and marked only if found conforming.
19	Flame Stability	19	IS 4246	R	One Stove	Each Control Unit	
20	Noise Control	20	IS 4246	R	Each Stove	---	
21	Flash Back	21	IS 4246	R	One Stove	Each Control Unit	
22	Formation of Soot	22	IS 4246	R	One Stove	Each Control Unit	In case of failure, all gas stoves in the control unit shall be tested and only those stoves which are conforming shall be marked.

TYPE TESTS							
5	Flash Back Test for Material of the Burner	5.2, Annex C	IS 5116	R	One burner and its part	Every 15 th Control Unit	The test shall also be conducted, if there is any change in material of Burner and its parts. or source of supply
17	Gas Consumption	17, Annex D	IS 4246	R	Three Stoves	Each Control Unit	In case of failure, six more stoves shall be tested from the same control unit and if any stove fails all the stoves in the control unit shall be checked and those stoves which are conforming shall be marked. However, those stoves which are failing may be reprocessed and retested and marked only if found conforming.
23	Resistance to Draught	23	IS 4246	R	One Stove	Every 30 th Control Unit	---
24	Combustion	24, Annex E		R	One Stove	Every 30 th Control Unit	---
25	Fire Hazard and Limiting Temperature	23, Annex M	IS 5116	S	One Stove	Every 30 th Control Unit	Stoves having different body material and finish shall be tested separately, if such stoves fall within every 30 th control unit. +
		25.2, Annex F	IS 4246	S	One Stove		

26	Thermal Efficiency	26, Annex F	IS 4246	R	One Stove	Every 7 th Control Unit	In case of failure, samples from three consecutive control units shall be tested and original frequency may be restored if all the samples pass.
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NOTE-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

NOTE-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

ANNEX – CSCOPE OF THE LICENCE

Licence is granted to use Standard Mark as per IS 4246:2002 with the following scope:	
Name of the Product	Domestic Gas Stove for use with Liquefied Petroleum Gas
Type	<ul style="list-style-type: none"> a) Total Gas consumption in g/h. b) No. of burners and rating of burners in kcal/h. c) Material of body and burner d) Thread size of injector jet e) Thermal efficiency if declared value is more than 72% f) Toughened glass top, if applicable g) Auto- ignition, if applicable