



उत्पाद मैनुअल
आई एस 17153: 2019 के अनुसार
पाईप नैचुरल गैस (पी एन जी) के प्रयोग हेतु घरेलु गैस चूल्हे के लिए

दस्तावेज़ संख्या – पी एम/आई एस 17153/2/ जून 2022

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/ प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR
DOMESTIC GAS STOVES FOR USE WITH PIPED NATURAL GAS (PNG)
ACCORDING to IS 17153:2019

Document No.- PM/IS 17153/2/June 2022

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.

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, ९, बहादुर शाह ज़फ़र मार्ग
Manak Bhawan, 9, Bahadur Shah Zafar Marg
नई दिल्ली- ११०००२
New Delhi – 110002



PRODUCT MANUAL FOR DOMESTIC GAS STOVE FOR USE WITH PIPED NATURAL GAS ACCORDING TO IS 17153:2019

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1.	Product	:	IS 17153:2019
	Title	:	Domestic Gas stove for use with PNG
	No. of Amendments	:	Two
2.	Sampling Guidelines:		
a)	Raw material	:	Material and components – As per clause 5 of IS 17153:2019
b)	Grouping guidelines	:	Each type of Domestic Gas Stove for use with PNG shall be tested for GOL/CSoL
c)	Sample Size	:	One Gas Stove with additional components
3.	List of Test Equipment	:	Please refer ANNEX – <u>A</u>
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – <u>B</u>
5.	Possible tests in a day :		
	All Tests		
6.	Scope of the Licence	:	Please refer ANNEX- C

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

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Ageing test for plastic materials, Cl. 5.1.1, Annex B of IS 5116	Heating cabinet
2.	Flash back test for material of Burner, Cl. 5.2, Annex C of IS 5116	Test set up as per Annex C of IS 5116
3.	Mercurous Nitrate Test, Cl. 5.3	a) Mercurous Nitrate, Di-hydrate b) Distilled Water c) Conc. Nitric Acid d) Weighing Balance e) Measuring cylinder f) Magnifying glass
4.	Immersion test for non-metallic materials, Cl. 5.4	a) Pentane or PNG b) Weighing Balance
5.	Melting point of body of burner, Cl. 5.5	Thermometer, Arrangement for heating
6.	Thermal Shock test, Cl. 5.8.3	Oven, Thermometer, Test Set up as per Annex D of IS 6506
7.	Dimensions, Cl. 6	Scale, Micrometer
8.	Finish for vitreous enamelled components, Cl. 8.2, Annex E of IS 5116	a) Dropper bottle or medicine dropper b) Watch glass c) Citric acid solution d) Cleaner solution e) Acetone f) one percent solution of trisodium phosphate g) Test set up as per Annex E-1.2 of IS 5116
9.	Coating thickness test of electroplated body, Cl. 8.3.1	BNF Jet test apparatus or equipment as per any other method such as mentioned in IS 3203
10.	Adhesion test of electroplated body, Cl. 8.3.2	File and vice
11.	Resistance to abrasion for paints or similar finishes for gas stove body, Cl. 8.4 (a)	Apparatus as per Fig. 1 of IS 17153

12.	Resistance to Heating for paints or similar finishes for gas stove body, Cl. 8.4 (b)	Pan, Oven with thermometer (Alternate arrangement)
13.	Dimensions of injector jet, Cl. 10.1	Vernier caliper, Thread gauge
14.	Melting point of injector jet, Cl. 10.1.1	Burner and thermometer
15.	Wall thickness of main gas rail, Cl. 14.4	Micrometer or any suitable thickness gauge
16.	Gas Soundness – Clause 13, Annex J of IS 5116	a) Leak Test apparatus with Bubble Indicator b) Pressure Gauge c) Water Tank
17.	Screwed inlet and outlet connections, Cl. 14.3	Thread gauges as per IS 554
18.	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
19.	Gas Consumption – Clause 17	a) Stop watch, Thermometer b) Gas Flow meter, Manometer c) Air testing apparatus with empty compressor tank d) Pressure regulator, Barometer, Scale e) Calibration Bottle
20.	Resistance to Draught – Clause 23	a) Rotating Vane Anemometer b) Mini Fan
21.	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
22.	Fire Hazard and Limiting Temperature – Clause 25	a) Thermocouple, Stainless Steel tube b) Temperature Indicator
23.	Thermal Efficiency – Clause 26	a) Weighing Balance & Weight Box b) Thermometer c) Aluminium Pan and Stirrer d) CNG cylinder e) Pressure regulator, Manometer

24.	To maintain temperature for testing	a) Air Conditioner
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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 equipments.

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

3. LABELLING AND MARKING – As per the requirement of IS 17153:2019

4. CONTROL UNIT – Gas Stove having same design and material of burners, total gas consumption in m³/h and rating of individual burner 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 Standards 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: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4	General	4.1,4.2, 4.3	IS 17153	R	Each Stove	--	--
5	MATERIALS						
	Plastic Component	5.1.1, Annex-B	IS 17153 IS 5116	S	One	Each consignment	No further testing is required, if accompanied with the Test Certificate or ISI Marked. Raw materials which are under mandatory BIS Certification, shall be ISI Marked. In case of failure, consignment shall not be used in manufacturing
	Mercurous nitrate test for Copper and Copper Alloy	5.3, IS 2305	IS 17153	S			
	Immersion test for Non Metallic materials	5.4 Annex-D	IS 17153 IS 5116	S			
	Main body of burner	5.5	IS 17153	S			
	Drip Tray	5.7	IS 17153	S			
	Surface of Glass or Glass Ceramic	5.8.2 (a), (b) & (c)	IS 17153 IS 2553-1 IS 14900	S	One	Each consignment	No further testing is required, if accompanied with the Test Certificate
	Surface of Glass or Glass Ceramic	5.8.2 (d),	IS 17153	S			
	Surface of Glass or Glass Ceramic	5.8.2 (e)	IS 17153	R			
	Additional requirements for Surface of Glass or Glass Ceramic	5.8.3 (a), (b), (c), (d) & (f)	IS 17153	R	One	Each Control Unit	

	Thermal Shock test for Surface of Glass or Glass Ceramic	5.8.3 (e) Annex D	IS 17153 IS 6506	S	One	Each consignment	No further testing is required, if accompanied with the Test Certificate.
6	Design for maintenance	6	IS 17153	R	Each Stove	--	--
7	Rigidity and Stability	7	IS 17153	R	Each Stove	--	--
8	Workmanship and Finish	8.1	IS 17153	R	Each Stove	--	--
8	Vitreous Enamelled components	8.2 Annex-E	IS 17153 IS 5116	S	Two Pieces	Each Consignment	No further testing is required if accompanied with test certificate. In case of failure consignment shall not be used in manufacturing
	Electroplated material	8.3.1 8.3.2	IS 17153 IS 17153 IS 3203	S	Two Pieces		
	Paints or similar finish for gas stove body	8.4	IS 17153	R	One	Every month	---
	Concealed Gas supplies	8.5	IS 17153	S	One	Each Consignment	No further testing is required if accompanied with test certificate. In case of failure consignment shall not be used in manufacturing
	Screws, Nuts, Bolts, Springs, Pipes and Pins	8.6	IS 17153	S	One	Each Consignment	No further testing is required if accompanied with test certificate. In case of failure consignment shall not be used in manufacturing
	External Finish	8.7	IS 17153	R	Each Stove	--	--

9	Gas Taps	9.1 to 9.6 9.8 to 9.12 Fig 2, 3	IS 17153	R	Each Stove	--	--
		9.7, Fig 4	IS 17153	S	Two	Each Consignment	No further testing is required if accompanied with test certificate. In case of failure consignment shall not be used in manufacturing
10	Injector Jets (Material of construction & threads to be declared)	10.1 to 10.2	IS 17153	S	10%	Each Consignment	No further testing is required if accompanied with test certificate. In case of failure consignment shall not be used in manufacturing
11	Burners	11.1 to 11.7	IS 17153	R	Each Burner	--	--
12	Pan Support	12.1, 12.1.1, 12.1.2	IS 17153	R	Each Pan support	--	--
13	Gas Soundness	13 Annex-J	IS 17153 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 Connections	14.2	IS 17153	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.
		14.3 ,14.4	IS 17153	S	10%	Each Consignment	No further testing is required, if accompanied with test certificate. In case of failure consignment shall not be used in manufacturing.
		14.5	IS 17153	R	Each Stove	--	--

15	Strength & Rigidity	Annex-A	IS 17153	R	One Stove	Each control Unit	In case of failure twice the number of sample shall be tested if any stove sample fails the control unit shall be rejected.
17	Gas Consumption	17, Annex-B	IS 17153	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 shall be conforming shall be marked. However those stoves which are failing may be reprocessed and retested and marked only if found conforming.
18	Ignition and Flame travel	18.1 to 18.4 14, Annex-G	IS 17153 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	19.1 to 19.3	IS 17153	R	One Stove	Each Control Unit	
20	Noise Control	20	IS 17153	R	Each Stove		
21	Flash Back	21	IS 17153	R	One Stove	Each Control Unit	
22	Formation of soot	22	IS 17153	R	One Stove	Each Control Unit	In case of failure, all gas stove shall be tested and only those stoves which are conforming shall be marked.
5	Flash back test for material of the burner	5.2, Annex-C	IS 5116	R	One burner and its parts	Every 15 th control unit	The test shall be conducted if there is any change in material of burner and its parts or source of supply.
23	Resistance to Draught	23	IS 17153	R	One Stove	Every 30 th control Unit	--

24	Combustion	24, Annex-C	IS 17153	R	One Stove	Every 30 th control Unit	--
25	Fire hazard and limiting temperature	23, Annex-M	IS 5116	R	One Stove	Every 30 th control Unit	Stoves having different body material and finish shall be tested separately, if such stoves fails within every 30 th control unit.
		Annex-E	IS 17153	R	One Stove		
26	Thermal Efficiency	Annex-D	IS 17153	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 sample pass.

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 17153:2019 with the following scope	
Name of Product	Domestic Gas Stove for use with PNG
TYPE	a) Total Gas Consumption in m ³ /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) Toughened glass top, if applicable
	f) Auto Ignition, if applicable