



**PRODUCT MANUAL FOR  
PORTABLE SOLID BIO-MASS COOKSTOVE (CHULHA)  
ACCORDING TO IS 13152 (Part 1): 2013**

*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.	<b>Product</b>	:	IS 13152 (Part 1):2013
	<b>Title</b>	:	Portable Solid Bio-mass Cookstove (CHULHA)
	<b>No. of Amendments</b>	:	Nil
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	As per clause 7.1 and 11.6 of IS 13152 (Part1):2013
b)	<b>Grouping guidelines</b>	:	Please refer ANNEX – A
c)	<b>Sample Size</b>	:	One
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX – B
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX – C
5.	<b>Possible tests in a day</b>	:	Please refer ANNEX – D
6.	<b>Scope of the Licence:</b>		
	“Licence is granted to use Standard Mark as per IS 13152 (Part 1):2013 with the following scope:		
	Name of the product	Portable Solid Bio-mass Cookstove (Chulha)	
	Design	A/B/C or any other design	
	Type of draft		
	Power output rating, KW		

**ANNEX - A****Grouping Guidelines**

1. Chulha as per IS 13152 (Part 1): 2013 are grouped based on the following:

<b>Group</b>	<b>Type of Draft</b>
Group I	a) Natural Draft Side Continuous Fed b) Natural Draft Top Continuous Fed c) Natural Draft Top Batch Fed
Group II	a) Forced Draft Side Continuous Fed b) Forced Draft Top Continuous Fed c) Forced Draft Top Batch Fed
Group III	Forced Draft Self Power Generating

<b>Group</b>	<b>Power Output Rating</b>	
Group I	Domestic cookstove	Small- Above 0.5 and up to 1.0 kW
Group II		Medium- Above 1.0 and up to 2.0 kW
Group III		Large- Above 2.0 and up to 3.0 kW
Group IV	Community/ Commercial cookstoves	Above 3 to 10 kW

2. The commonly used designs of chulhas i.e, Design A, Design B and Design C as per clause 4 of IS 13152 (Part 1):2013 are for guidance. The manufacturers and cookstove developers may design and develop cookstoves confirming to thermal power output rating with required performance parameters as specified in clause 6 and clause 11 respectively of IS 13152 (Part 1):2013.

3. Considering the above, the guidelines given below shall be followed for considering GoL/CSoL:

- (i) Cookstove of highest wattage from each power output rating group, for each design shall be tested to cover all ratings in that group.
- (ii) Cookstove of any type of draft from each group shall be tested to cover all types of draft in that group. The firm shall submit design of all types of draft to be covered in the licence.

4. If the design of chulha is different from that given in IS: 13152 (Part1): 2013, the detailed drawing of the components along with the critical dimensions indicating material shall be submitted to BIS.

5. The Firm shall declare the varieties intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

6. During the operation of the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation, to the extent possible.

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

<b>Sl. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1.	Material (Clause 7.1, Column 2 of Table 1)	Micrometer (Ball & Point)
2.	Dimensions (Clause 8.1)	Micrometer (Ball & Point), Vernier Calliper, Meter Scale, Bevel Protector
3.	Quenching test of C.I. Components (Clause 11.4), Annex D	Quenching Vessels, Temperature Indicator, Digital Stop watch, Measure (5 litre)
4.	Thermal Efficiency (Clause 11.1), Annex A	Standard Fume Hood, Draught free AC Room, Digital Bomb Calorimeter with printer, Digital Thermometer, Glass Thermometer, Digital Balance, Measuring Jar 2 litres, 5 litres, Digital Stop Watch, Clean Cloth, Moisture meter with microwave or infrared heating, Clean Vessels, Fuel wood, Hot Air Oven, Pair of tongs, metallic tray, high temperature gloves, matches etc
5.	Emissions (Clause 11.2)	Standard Fume Hood, Stack monitoring, Multi component gas analyser, Non-dispersive infrared based detector system, Stainless Steel sample probe, Gravimetric measurement equipment consisting of cyclone for 2.5 micron cut off and an s-type pitot, Digital Pressure Transducer, Test set up as per Cl B-2.2.1, Hot wire Anemometer, Test set up for filter weighing as per Cl B-2.2, Weighing Balance (LC- 0.001 gm), Digital Stop watch
6.	Surface Temperature Test (Clause 11.3)	Digital Thermometer with flat tip aluminium foil, Digital Stop watch
7.	Stability Test (Clause 11.5)	Bevel Protector
8.	Electric appliances test, Cl. 11.6	Equipment required as per relevant Standards

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

**ANNEX C**

**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 requirement of clause 10 of IS 13152 (Part1):2013.

**4. CONTROL UNIT** –Chulha of same design, type of draft and power rating made from the same material manufactured during 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) Test Details				(2) Test equipment requirement R: required (or) S: Sub- contracting permitted	(3) Levels of Control		
Cl.	Requirement	Test Method		No. of Sample	Frequency	Remarks	
		Clause	Reference				
7.1	Material	7.1	IS 13152 (Part 1)	S	One	Each consignment	No further testing is required, if accompanied with test certificate or ISI marked.
11.6	Electrical appliances test	11.6	IS 13152 (Part 1)	S	Blowers, condensers/storage battery, wires, plugs, thermopile shall be as per IS 12292, IS 941, IS 7358, IS 1293, IS 302 (Part 1), IS 302 (Part 2/Sec 6), IS 302 (Part 2/Sec 202)		
8.1	<b>Dimensions</b>	8.1 Fig.1 to 4 or as per manufacturer's drawing	IS 13152 (Part 1)	R	5	Each batch	-
	Bought out components					Each day's Production	
	Manufactured components					Each Control Unit	
	Assembled Chulha				2		
9	Manufacture & Workmanship	9.1 to 9.3	IS 13152 (Part 1)	R	Each stove		-
11.1	Thermal Efficiency	Annex-A	IS 13152 (Part 1)	S	One	Once in Six Months for each control unit	-
11.2	Emissions Co and Co2	11.2.1, B-1	IS 13152 (Part 1)	S	One		
	Total Particulate Matters	11.2.2, B-2			One		
11.3	Surface Temperature Test	Annex-C	IS 13152 (Part 1)	S	One		

11.4	Quenching test of C.I. Components	Annex-D	IS 13152 (Part 1)	R	One	Each Batch of C.I. Components	-
11.5	Stability Test	11.5	IS 13152 (Part 1)	R	Two	Each Control Unit	-

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.

Note-3: If the chulha tested from one control unit fails in one or more requirements, two more chullha from the same control unit shall be tested in the requirements where failure has occurred. The control unit shall not be marked, if any or both the chulha's so tested fail.

**ANNEX D**

**Possible tests in a day**

- a) Dimensions and Tolerances (Cl. 8)
- b) Manufacture and workmanship (Cl. 9)
- c) Thermal efficiency (Cl. 11.1)
- d) Emission (Cl. 11.2)
- e) Surface temperature test (Cl. 11.3)
- f) Stability test (Cl. 11.5)
- g) Electric Appliances test (Cl. 11.6)