



PM/ IS 7466/1/ June 2018

**PRODUCT MANUAL FOR
Rubber Gaskets for Pressure Cookers
According to IS 7466:1994**

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 7466 : 1994
	Title	:	Rubber Gaskets for Pressure Cookers
	No. of amendments	:	1
2.	Sampling Guidelines		
a)	Raw material	:	Raw materials shall conform to requirements as specified in Cl. 3.1 of IS 7466 : 1994.
b)	Grouping Guidelines	:	None
c)	Sample Size	:	Six numbers of rubber gaskets for pressure cookers, 4 slabs, 4 small buttons & 4 big buttons to be drawn for all tests
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	:	(a) Workmanship & finish (b) Hardness (c) Tensile Strength (d) Elongation at break
6.	Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 7466:1994 with the following scope:		
	Name of the product	Rubber Gaskets for Pressure Cookers	
	Type	Inner Lid Type or Outer Lid Type or both as applicable	
	Size	Capacity to be mentioned	

ANNEX A

TO PRODUCT MANUAL FOR RUBBER GASKETS FOR PRESSURE COOKERS
ACCORDING TO IS 7466: 1994List of Test Equipment

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Major test equipments essentially required to test as per requirements of Indian Standard

Sr. No.	Test Equipment	Recommended Range & Least count	Tests used in with Clause Reference
1.	Material	-	Cl. 3.1
2.	Workmanship and finish	-	Cl. 3.2
3.	Vernier Caliper	0 – 150 mm/ 0.02 mm	Dimension, Cl.3.3
4.	Micrometer	0-25 mm/.01 mm	
5.	Scale	0-30 mm/0.1 mm	
6.	IRHD Hardness Tester	0-10 mm/0.01mm	Hardness ,Cl. 3.4, Table 1, Sl. No. (i) & IS 3400 (Part 2):2003
7.	Tensile Testing Machine with required fixtures	0-250 Kgf/0.1 kgf	Tensile Strength, Elongation at break Cl. 3.4, Table 1, Sl. No ii),iii) & IS 3400(Part1) :2012
8.	Hot Air Oven with required fixtures with required fixtures	0 – 120 °C / 1° C	Hardness,Tensile Strength, Elongation at break Cl. 3.4, Table 1, Sl. No iv) & IS 3400 (Part 4) :2012 after ageing for 3 days.
10.	Auto Clave with required fixtures	0 – 150 °C/1° C Pressure : 100 kN/m ²	Hardness, Tensile Strength, Elongation at break, Volume Cl. 3.4, Table 1, Sl. No v), & IS 3400 (Part 4): 2012 after ageing for 8 hours.
11.	Compression Testing Machine	Specification, if any	Compression Set Cl. 3.4, Table 1, Sl No. vi), & IS 3400 (Part 10):1977
12.	Muffle Furnace	0-1100 °C/ 1° C	Total Zinc Oxide & Heavy Metals Cl. 3.4, Table 1, Sl No vii) & viii) , Annex A & B
13.	Hot Plate		
14.	Weighing Balance	0-100 gm, 1 mg	
15.	Steam Bath		
16.	Chemicals : Acetone Aluminium Chloride		

	Ammonium Fluoride Acetic acid Ammonium Acetate Dithizone Indicator EDTA Solution Zinc Chloride Solution Zinc Oxide Methyl orange Magnesium Chloride hexahydrate Ammonium chloride Dilute Hydrochloric acid Concentrated Hydrochloric acid Dilute Sulphuric Acid Hydrogen Sulphide Solution Aluminium Chloride Hexahydrate Magnesium Chloride Hexahydrate		
17.	Laboratory Glassware : Beaker Volumetric flask Conical Flask Rubber Cork Porcelain/ Silica Crucible Burette Evaporating dish Reagent Bottles Pipettes Measuring Cylinders Test tubes Test tube Stand Glass stirring Rod Distilled Water Stop Watch Steel Spoon Bunsen Burner Asbestos Board Desiccator Air Conditioner Dry & Wet Thermometer	250 ml, 500 ml 100 ml, 250 ml, <u>1000ml</u> 500 ml, 1000 ml 250 ml, 500 ml 250 ml, 30 ml 10 ml/0.02 50 ml/1ml 5 ml, 10 ml, 25 ml 10 ml, 50 ml, 100 ml -10 to 50 °C/ 1° C	
	Pressure Cookers of different capacities		Performance Tests Cl. 3.5 & Annex C

The list above is meant for guidance and may not be treated as exhaustive

(1)	(2)	(3)
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Annex – B
 TO PRODUCT MANUAL FOR RUBBER GASKETS FOR PRESSURE COOKERS
 ACCORDING TO IS 7466: 1994
 SCHEME OF INSPECTION AND TESTING
 FOR RUBBER GASKETS FOR PRESSURE COOKERS
 ACCORDING TO IS 7466 : 1994

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 – The following labelling and marking requirements in addition to the requirements of the Indian Standard shall be mentioned on each packaging:

- a) BIS licence CM/L.....
- b) BIS website www.bis.org.in

4. CONTROL UNIT – For the purpose of this scheme, all gaskets produced from sheets vulcanised under the same conditions of temperature and pressure, in a shift of eight hours, shall constitute a control unit.

4.1 On the basis of test results, decision regarding conformity or otherwise of a control unit to a given requirement shall be made.

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.

7. 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
 LEVELS OF CONTROL

Test Details				Test equipment requirement R : required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of samples	Frequency	Remarks
		Clause	Reference				
3.1	Material	3.1	IS 7466 : 1994		Adequate precautions to be taken in choosing the rubber and compounding ingredients to ensure that requirements of specification are fulfilled.		
3.2	Workmanship & Finish	3.2	-do-	Visual examination	Each and every gasket		Gasket not meeting the requirements shall be rejected.
3.3	Dimensions	3.3	-do-	R	Adequate inspection ensure that dimensions are within prescribed limits as prescribed by purchaser.		With vernier calipers, thickness gauge and scale.
3.4	Requirements of rubber used for Gaskets i) Hardness	3.4 & Table 1	-do- IS 3400 (Pt 2) : 1980	R	One	Each control unit	Hardness values shall be taken at 5 different points of the sheet and the medium value to be taken. In case of failure the gaskets pertaining to that control unit shall be rejected.
	ii) Tensile strength	-do-	IS 3400 (Pt 1) : 1987	R	One	-do-	In case of failure two more samples shall be taken from the same lot and both should pass. In case of failure in retesting the control unit shall be rejected.
	iii) Elongation at break	-do-	-do-	R	One	-do-	
	iv) After ageing for 3 days at 100°	3.4 & Table 1	IS 7466 : 1994 IS 3400				

	in air oven, change from the original value in :		(Pt 4) : 1987				
	a) Hardness	-do-	-do-	R	One	Each control unit	Hardness values shall be taken at 5 points of the sheet and the medium value to be taken. In case of failure the control unit shall be rejected.
	b) Tensile strength	-do-	-do-	R	One	-do-	In case of failure two more samples shall be taken from the same lot and both should pass. In case of failure in retesting the control unit shall be rejected.
	c) Elongation at break	-do-	-do-	R	One	-do-	
v)	After ageing in autoclave for 8 hours under a direct steam pressure of 100 kN/m ² (app 1kgf/cm ²) and 120° C temp. , change from the original value in						
	a) Hardness	-do-	-do-	R	One	-do-	Hardness value shall be taken at 5 points of the sheet and the medium value to be taken. In case of failure the control unit shall be rejected.

	b) Tensile strength	3.4 & Table 1	IS 7466 : 1994 IS 3400 (pt 4)	R	One	Each Control Unit	In case of failure two more sample shall be taken from the same lot and both should pass. In case of failure in retesting the control unit shall be rejected.
	c)Elongation at break	-do-	-do-	R	One	-do-	In case of failure two more samples to be tested and both should pass.
	d) Volume	-do-	-do-	R	One	-do-	
vi)	Compression set	-do-	IS 3400 (pt 10)	R	One	-do-	
vii)	Total zinc oxide	Annex A	IS 7466 : 1994	R	One	One in fortnight	In case of failure in any of requirement making shall be suspended and reasons found out for the possible reasons of failure and necessary corrective action taken. Marking should be resumed, Only after three consecutive control unit show satisfactory results.
viii)	Heavy metals	Annex B	-do-	R	One	-do-	
3.5	viii) performance test	3.5 & Annex C	-do-	R	One	-do-	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled 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.