



उत्पाद मैनुअल
आई एस 1660: 2024 के अनुसार
पिटवान एवं कास्ट एल्युमीनियम बर्तन
के लिए

दस्तावेज संख्या - पी एम/आई एस 1660/5/ सितम्बर 2025

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 दस्तावेज का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR
WROUGHT AND CAST ALUMINIUM UTENSILS
ACCORDING to IS 1660:2024

Document No.- PM/IS 1660/5/September 2025

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.

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1.	Product	:	IS 1660:2024	
	Title	:	WROUGHT AND CAST ALUMINUM UTENSILS	
	No. of Amendments	:	One	
2.	Sampling Guidelines:			
a)	Raw material	:	Main Body	IS 21 or IS 737 IS 617, as applicable
			Other Aluminium Components and parts of Utensils	IS 21 or IS 617 or IS 734 or IS 737, as applicable
			Lid	Aluminium - IS 21 or IS 737 or IS 617 Stainless steel – IS 5522 or IS 6911 or IS 15997 Rim of Tempered glass lid- IS 5522 or IS 15997
			Wires of clip of lunch box	Designation 19000 of IS 739
			Strips	IS 21 or IS 737
			Clips	Aluminium Alloy Wire (Designation 19000) - IS 739
			Rivets for fixing of handles	Aluminium- Designation 19000/19500 of IS 739/IS 740 Stainless steel- Specific grades of IS 6527 or IS 6528 as specified in IS 1660 Stainless steel cap- IS 5522
			Strips for flame guards	IS 21 or IS 737 or IS 1285 or IS 6911
b)	Grouping guidelines	:	Please refer <u>ANNEX-A</u>	
c)	Sample Size	:	Two Utensils	
3.	List of Test Equipment	:	Please refer <u>ANNEX – B</u>	
4.	Scheme of Inspection and Testing	:	Please refer <u>ANNEX – C</u>	
5.	Requirements which can be tested in a day : All tests except Salt Water Corrosion test and, Limit of toxic metals for coated utensils			

6.	Scope of the Licence :
“Licence is granted to use Standard Mark as per IS 1660:2024 with the following scope:	
Name of product	• Wrought Aluminium Utensils • Cast Aluminium Utensils
Type of Utensil	• Utensils • Compartmental Tray • Lunch Box • Thick bottom Utensils • Aluminium Utensils with Shape and Dimensions not covered in Clause 6.1
Classification	Light Medium Heavy
Nominal Diameter/Size	
Type of coating (as applicable)	Plain/Hard Anodic/Anodic/Non-stick/Ceramic/High temperature Liquid resistant/Powder coated
Whether provided with induction friendly base (as applicable)	

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ANNEX A**Grouping Guidelines**

1. The parameters given below shall be considered for grouping of Aluminium Utensils as per IS 1660 : 2024 for Grant of Licence/Change in Scope of Licence:

(a) Based on manufacturing process:

- Wrought utensil
- Cast utensil

(b) Further, both wrought and Cast Utensils may be sub-classified into following types of Utensil

Group	Type of Utensil	Reference to IS 1660:2024
Group I	Utensils	Figure 1 to Figure 21 and Figure 25 & 26
Group II	Compartmental Tray	Figure 22 and Figure 23
Group III	Lunch Box	Figure 24
Group IV	Thick bottom Utensils	Table 2
Group V	Wrought Aluminium Utensils with Shape and Dimensions not covered in Clause 6.1	Note under Clause 6.1, and Clause 3.1.2

(c) Type of Coating : Plain/Hard Anodic/Anodic/Non-stick/Ceramic/High temperature Liquid resistant/Powder coated**(d) Classification:** Light/Medium/Heavy**(e) Whether provided with induction friendly base** : Yes/No

2. The Firm shall declare the varieties of Aluminium Utensils intended to be covered in the Licence.
3. Sample of Wrought and Cast Utensils shall be tested separately as following to cover both wrought and Cast utensils:
- a) For Group I to III, one sample of utensil from each Group, Type of Coating and Classification shall be tested to cover the entire range of nominal diameter/sizes of that group for the particular type of coating and classification tested.
 - b) For Group IV, one sample from any nominal diameter/size specified in Table 2 of IS 1660 and from each Type of Coating shall be tested to cover the entire range of diameter/size of the Utensils for the particular type of coating tested.
 - c) For Group V, one sample from any inner diameter specified in clause 3.1.2 of IS 1660 and Type of Coating shall be tested to cover the entire range of inner diameter of the Utensils for the particular type of coating tested. However, shape and dimension of each such utensil shall be declared to BIS for records.

- d) However, while drawing samples as 3 a), b) and c) above, if utensils with coating (hard anodic/anodic/non- stick Ceramic/High temperature Liquid resistant/Powder coated) is tested, plain utensils of that group shall also be covered.
- e) Cookware provided with induction friendly base shall be tested separately.
- f) The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
- g) 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**

Indicative list of major test equipment required to test as per the Indian Standard (For guidance only)

Sr. No.	Test Equipment	Tests used in with clause reference
1	Micrometer	Thickness of Sheet as per <i>Clause 3</i> Permissible reduction in thickness as per <i>Clause 5.2</i>
2	Measuring Scale Vernier Caliper	Nominal Size as per <i>Clause 6.3</i> , Depth of groove as per Table 1 , Bottom thickness as per Cl. 5.3
3	Coat Thickness Meter	Thickness of Hard Anodized coating as per <i>clause 8.4.2</i>
4	Emery Paper	Abrasion Resistance as per <i>Clause 8.4.3</i>
5	Eddy Current Equipment / Magnetic Coat Thickness meter	Coating Thickness test
6	Gas Stove and Cylinder Plastic Spatula Thermometer	Non Stick Quality Test
7	Gas Stove with Cylinder	Salt Water Corrosion test
8	Thermometer New Razor Blade Adhesive tape	Adhesion Test
9	Test set up as per IS 1868	Measurement of coating thickness for anodized coating, Cl. 8.3
10	Test set up as per IS 6057 for hard anodized coating	Measurement of coating thickness, Abrasion resistance, hardness requirements as per Cl. 8.3
11	Test set up as per IS 9730 for non-stick PTFE coating	Coating requirements as per Cl. 8.5
12	Induction cook top, Gas stove	Test for induction bottom, Cl. 8.9, Annex-B

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

ANNEX C

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit i.e. Batch and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4 below.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 **Control Unit:** For the guidance of manufacturers, the recommended definition of Control Unit is quantity of utensil made by same manufacturing process (Casting or mechanical working like Forging or Spinning etc.) of same type, coating and classification (Light/Medium/heavy) manufactured from the same sheet thickness manufactured in a day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in-house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in- process controls as may be defined and put in place by the manufacturer, and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in-house as “R” or other tests which can be sub-contracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in- house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. LABELLING AND MARKING – As per the requirement of IS 1660:2024. The Standard Mark, as given in the Schedule of the licence, shall be marked on each Utensil provided always that the product thus marked conforms to all the requirement of the specification. In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place on product or package as follows: “For details of BIS certification please visit www.bis.gov.in”.

4. REJECTION - All the production which conforms to the Indian Standard and covered under scope of the licence shall be marked with Standard Mark. 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 (Recommended levels of control)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub- contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3	Thickness of Sheet	3.1.1, 3.1.2, 3.1.3	IS 1660	R	Random check	Each Consignment	Please see Note 1
	Minimum base thickness of body for cast utensil	3.1.4, Table 3	IS 1660	R			
4	Material	4	IS 1660	S	One	Each Consignment	Please see Note 2
5	Fabrication	5.1,5.2, 5.3,5.4, 5.4.2, 5.5, 5.5.1	IS 1660	R	Firm should exercise adequate control so that whole production should meet the requirements		
		5.4.1, 5.5.2	IS 1660	R	One	Each batch of utensils anodized together	
6	Shape and Dimensions	6	IS 1660	R	One	Each Control Unit	-
7	Handles	7.1, 7.2	IS 1660	R	One	Each Control Unit	
8	Workmanship and Finish	8.1,8.2	IS 1660	R	Firm should exercise adequate control so that whole production should meet the requirements		
8.3	Tests for Anodic coating						
	Thickness	9	IS 1868	R	5% of total or 5 pieces <i>Min</i>	Once in a week	

	Quality of sealing by marking test	10.2.2	IS 1868	R	2 pieces	Once in a week	
	Colour and appearance	11		R	Firm should exercise adequate control so that whole production should meet the requirements		
8.4	Tests for Hard Anodic coating						
	Workmanship and Finish	8.4.1 8.3	IS 1660	R	Firm should exercise adequate control so that whole production should meet the requirements		
				R	One	Each batch of utensils anodized together	
	Thickness	8.4.2		R	5% of total or 5 pieces <i>Min</i>	Once in a week	
	Abrasion Resistance	8.4.3	IS 1660	R	One	Every day	
	Colour	8.4.4		R	One	Each Control Unit	
	Hardness	8.4.5		R	Three		
8.5	Tests for Non-stick Coating						
	Visual Defects	4.2	IS 9730	R	Firm should exercise adequate control so that whole production should meet the requirements		
	Thickness Non-stick Quality	4.3 4.4		R	5% of total or 5 pieces <i>Min</i>	Once in a week	
	Salt Water Corrosion Resistance	4.5		R	2 pieces	Once in a week	
	Adhesion	4.6		R	One	Every day	
8.6	Tests for food grade ceramic coating on inside of cookware						
	Visual Defects	4.2	IS 9730	R	Firm should exercise adequate control so that whole production should meet the requirements		
	Thickness Non-stick Quality	4.3 4.4	IS 9730	R	5% of total or 5 pieces <i>Min</i>	Once in a week	

	Salt Water Corrosion Resistance	4.5	IS 9730	R	2 pieces	Once in a week	
	Adhesion	4.6	IS 9730	R	One	Every day	
8.7	<i>Tests for powder coating/ceramic coating/high-temperature resistant liquid coating/PTFE coating on outside of cookware</i>						
	Thickness	4.3	IS 9730	R	5% of total or 5 pieces <i>Min</i>	Once in a week	
	Adhesion	4.6	IS 9730	R	One	Every day	
	Thermal shock test	8.7.1	IS 1660	R	Every batch or 1000 pieces whichever is earlier		
8.8	Maximum limit of Toxic metals for PTFE , Ceramic coating, powder coating, High temperature resistant liquid coating	8.8	IS 1660	S	One	Once in a month for each type of coating	
8.9	Test for induction compatible base cookware	Annex-B	IS 1660	S	One	Once in a month	
8.10	Tests for Lunch-Box	8.10.1, 8.10.2	IS 1660	S	One	Once in a month	
8.11	Tests on Tempered glass lid						
8.11.1	Fragmentation test	8.11.1.1, 8.11.1.2	IS 1660	S	One	Each consignment	
8.11.2	Ball drop test	8.11.2.1, 8.11.2.2	IS 1660	S	One	Each consignment	
8.11.3	Thermal shock test	8.11.3.2	IS 1660	S	One	Each consignment	

8.11.4	Free fall test	8.11.4.1, 8.11.4.2	IS 1660	S	One	Each consignment	
9	Nominal capacity	9	IS 1660	R	One	Each Control Unit	

NOTE-1: In case of any failure whole consignment shall be checked and defective pieces shall be rejected.

NOTE-2: No further testing is required, if accompanied with test certificate or ISI marked.