



**PRODUCT MANUAL FOR
WROUGHT ALUMINUM UTENSILS
ACCORDING to IS 1660:2009**

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 1660:2009	
	Title	:	WROUGHT ALUMINUM UTENSILS	
	No. of Amendments	:	1	
2.	Sampling Guidelines:			
a)	Raw material	:	<i>Main Body</i>	IS 21
			<i>Other Aluminium Components and parts of Utensils</i>	IS 21 or IS 20
			<i>Lid</i>	Aluminium - IS 21 Steel - IS 6911 Toughened Safety Glass (tempered) – IS 2553 (Part 1)
			<i>Wires and Rivets</i>	Designation 19000 of IS 739 or IS 740
			<i>Strips</i>	Grade 19000 of IS 737
			<i>Clips</i>	Aluminium Alloy Wire (Designation 19000) - IS 739
			<i>Rivets</i>	Aluminium or Stainless Steel
b)	Grouping guidelines	:	Please refer ANNEX-A	
c)	Sample Size	:	Two Utensils	
3.	List of Test Equipment	:	Please refer ANNEX – B	
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – C	
5.	Requirements which can be tested in a day : All tests except Salt Water Corrosion test for non-stick utensils			
6.	Scope of the Licence :			
“Licence is granted to use Standard Mark as per IS 1660:2009 with the following scope: Wrought Aluminium Utensils, Type of Utensil _____, Nominal Diameter _____, Type of coating - Plain/Anodic/Non-stick, Classification - Light/Medium/Heavy				

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ANNEX A**Grouping Guidelines**

1. The parameters given below shall be considered for grouping of Wrought Aluminium Utensils as per IS 1660 : 2009 for GoL/CSoL:

(a) Type of Utensil

Group	Type of Utensil	Reference to IS 1660:2009
Group I	Utensils	Figure 1 to Figure 21 and Figure 25
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	Clause 3.1.2

(b) Type of Coating : Plain/Hard Anodic/Anodic/Non-stick**(c) Classification:** Light/Medium/Heavy

2. The Firm shall declare the varieties of Wrought Aluminium Utensils intended to be covered in the Licence.
3. For Group I to III, one Article from each Group, Type of Coating and Classification shall be tested to cover the entire range of nominal sizes of that group for the particular type of coating and classification tested.
4. For Group IV, one sample from any diameter specified in Table 2 of IS 1660: 2009 and Type of Coating shall be tested to cover the entire range of diameter of the Utensils for the particular type of coating tested.
5. For Group V, one sample from any inner diameter specified in clause 3.1.2 of IS 1660: 2009 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.
6. However, for 3, 4 and 5 above, if utensils with coating (hard anodic/anodic/non- stick) is tested, plain utensils of that group shall also be covered.
7. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
8. 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*

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>
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

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 requirements of IS 1660: 2009.

4. CONTROL UNIT – One kind of Article manufactured from the same sheet thickness 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: 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
4	Material	4	IS 1660	S	One	Each Consignment	Please see Note 1
5	Fabrication	5.1,5.2, 5.3,5.4, 5.4.2, 5.5, 5.5.1	IS 1660	R	One	Each Control Unit	
		5.4.1, 5.5.2	IS 1660	R	Three panels	Each batch of anodized article	
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	Each piece		
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		R	2 pieces	Once in a week	
	Colour and appearance	11		R	Each piece		

8.4	Tests for Hard Anodic coating						
	Workmanship and Finish	8.4.1 8.3	IS 1660	R	Each piece		
	Thickness	8.4.2		R	Three panels	Each batch of anodized article	
	Abrasion Resistance	8.4.3		R	5% of total or 5 pieces <i>Min</i>	Once in a week	
	Colour	8.4.4	IS 1660	R	One	Every day	
	Hardness	8.4.5		R	One	Each Control Unit	
				R	Three		
8.5	Tests for Non-stick Coating						
	Visual Defects	4.2	IS 9730	R	Each Piece		Visual
	Thickness	4.3		R	5% of total or 5 pieces <i>Min</i>	Once in a week	
	Non-stick Quality	4.4		R	2 pieces	Once in a week	
	Salt Water Corrosion Resistance	4.5		R	One	Every day	
	Adhesion	4.6		R	One	Every day	
8.6	Tests for Lunch-Box	8.6	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

NOTE-3: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

NOTE-4: 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.