



उत्पाद मैनुअल
पेय पदार्थों के लिए एल्युमिनियम के डिब्बे
आई एस 14407: 2023 के अनुसार

PRODUCT MANUAL
Aluminium Cans for Beverages
According to IS 14407: 2023

यह उत्पाद नियमावली सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसधारियों द्वारा विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-1 के अंतर्गत प्रमाणन के संचालन में एकरूपता और पारदर्शिता सुनिश्चित करने के लिए संदर्भ सामग्री के रूप में उपयोग की जाएगी। बीआईएस प्रमाणन प्राप्त करने के इच्छुक भावी आवेदक भी इस दस्तावेज़ का उपयोग कर सकते हैं।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity 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.

1.	मानक संख्या / IS No.	:	IS 14407: 2023	
	शीर्षक / Title	:	Aluminium Cans for Beverages	
	संशोधनों की संख्या No. of amendments	:	01	
2.	नमूनाकरण दिशानिर्देश / Sampling Guidelines			
a)	कच्चा माल Raw material	:	Can Body stock	As per Cl. 5.1 to 5.4, Table 1A, Table 2A of IS 14407
			Can Shell stock	As per Cl. 5.1 to 5.3, Table 1B, Table 2B of IS 14407
			Can Tab stock	
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX – A	
c)	नमूने का परिमाण Sample Quantity	:	100 nos.	
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	• Lacquer material used for internal finish and external finish (Cl. 6.2, Cl. 6.3) • Can End Size (Cl. 6.4, Table 4) • Can End Type (Cl. 6.4, Table 4) • Enamel Rater Criteria (Cl. 7.1.2) in addition to the parameters given in scope of the licence under S. No. 6. <i>Note: Apart from the above, any other requirements/ parameters may also be declared as per the standard, as applicable.</i>	
3.	परीक्षण उपकरण की सूची List of Test Equipment	:	Please refer ANNEX – B	

4.	निरीक्षण एवं परीक्षण योजना Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	• All tests (except Migration test - Cl. 7.3) <i>Note: This section is for the guidance of BIS Certification Officers/ Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/ auditor.</i>
6.	लाइसेंस का दायरा /Scope of the Licence:		
“Licence is granted to use Standard Mark as per IS 14407: 2023 with the following scope:			
Name of the product		Aluminium Cans for Beverages	
Temper Designation for Aluminium Alloy Stock	Body	H18 / H19	
	Shell	H48 / H49	
	Tab	H18 / H19 / H38 / H39 / H48 / H49	
Can Type / Nominal Capacity		Slim	Up to and including ____ ml
		Stubby	Up to and including ____ ml
		Fit	Up to and including ____ ml
		Standard	Up to and including ____ ml
		Jumbo	Up to and including ____ ml
Can End Type		B64 / CDL / ISE	
Beverage Type		Refer Informal table below Cl. 7.1.2	
Type of lacquer for Internal Finish		Epoxy / Polyester / Acrylic water based Lacquers	

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9, BAHADUR SHAH ZAFAR MARG, NEW DELHI-110002
www.bis.gov.in

ANNEX - A

Grouping Guidelines

1. Aluminium Cans for Beverages as per IS 14407: 2023 are classified based on the following:

- (a) Can Type : Slim / Stubby / Fit / Standard / Jumbo
- (b) Nominal Capacity: As per Table 1. In addition, cans may be of any capacity as agreed between manufacturer and purchaser. (Cl.4)
- (c) Can End Type: B64 / CDL / ISE (of different sizes as per Table 2)
- (d) Temper Designation for Aluminium Alloy Stock:

Body	H18 / H19
Shell	H48 / H49
Tab	H18 / H19 / H38 / H39 / H48 / H49

- (e) Beverage Type based on Enamel Rater Criteria (Refer Informal table below Cl. 7.1.2)
- (f) Type of lacquer for Internal Finish: Epoxy / Polyester / Acrylic water based Lacquers

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

- Sample of Aluminium Cans for Beverages with maximum nominal capacity specified against each can type shall be tested for covering all nominal capacities of the same can type upto and including tested nominal capacity.
- Sample of Aluminium Cans for Beverages of each can end type shall be tested separately.
- Sample of Aluminium Alloy Stock of each temper designation for body shall be tested separately on any one of the can types and any one of the nominal capacities.
- Sample of Aluminium Alloy Stock of each temper designation for shell and tab shall be tested separately on any one of the can end type and any one of the can end sizes. However, if temper designation HX9 is tested, temper designation HX8 may also be covered.
- Sample of Aluminium Cans suitable for beverage types requiring the most stringent Enamel Rater Criteria shall be tested to cover Aluminium Cans suitable for beverage types requiring lesser stringent Enamel Rater Criteria. (Ref: Informal table below Cl. 7.1.2)
For eg: If Aluminium Cans suitable for lactic acid drinks are tested, Aluminium Cans suitable for all beverage types shall be covered, since Enamel Rater Criteria (Individual) ≤ 10 mA is the most stringent.
- Sample of Aluminium Cans for Beverages of each type of lacquer for Internal Finish shall be tested separately.

3. The Firm shall declare the varieties of Aluminium Cans for Beverages they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.

4. 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.

Note:

- 1. Declaration w.r.t type of lacquer material used for external finish is to be submitted by the manufacturer.
- 2. The manufacturer shall also submit the drawing of each variety of Aluminium Cans for Beverages and Can ends. In case, manufacturer intends to use resealable can end, then the declaration w.r.t those can ends and their drawing as per Cl. 6.1.2.2 is to be submitted.

ANNEX- B
List of Test Equipments
(Indicative List, For Guidance Only)

Major test equipment required to test as per the Indian Standard

Sl. No.	Cl. Ref.	Tests used in with Clause Reference	Test Equipment
1.	5.1, Table 1A, 1B	Chemical Composition of aluminium alloy stock for body, shell and tab	Spectrometer Certified Reference Material
2.	5.3, Table 2A, 2B	Mechanical properties of aluminium alloy stock for body, shell and tab	Universal Testing Machine
3.	6.2	Internal Finish	Enamel Rater 1% Sodium Chloride Solution
4.	7.1.2	Enamel Rater	
5.	6.3	External Coating Bottom ring coating Pasteurization and Retort coating	Coating Thickness gauge Copper Sulphate solution
6.	6.4, Table 3, Table 4	Shape and Dimensions Thickness, Capacity/ Brimful capacity	Vernier Caliper Micrometer Measuring Jar Burette Pipette
7.	7.1.1	Top Load /Axial Load/ Column Strength	Suitable Test fixture with top load / axial load or column strength
8.	7.1.3	Buckle Strength/Dome Reversal	Test fixture with pressure gauge
9.	7.1.4	Air Pressure Test	Air Leak Tester as per IS 2471
10.	7.1.5	Slip Angle/Wall Mobility Test	Tilt Table
11.	7.2	Testing of ends	Venting test machine
12.	7.3	Migration Test	Electric oven/Water bath Electric hot plate Weighing balance Beaker Evaporating Dish Scale / Caliper to measure dimensions

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 during operation of BIS licence manufacturers will implement a Quality Assurance Plan (QAP) 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or sub-contracting/ sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.
- 1.3 Recommended Levels of Control/ Control Unit:**
- 1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: *entire quantity of Aluminium Cans for Beverages of same variety (can type, nominal capacity and temper designation) manufactured under similar conditions in a day* shall constitute a control unit.
- 1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in [Table 1](#). Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.
- 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.
- 1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING

The manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognized/ empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 Test Records- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. PACKING AND MARKING – Marking on each Aluminium cans shall be done as per Cl. 9 of IS 14407: 2023

3.1. The Standard Mark as given in the Schedule of the licence shall be marked indelibly and clearly on the label attached to the packaging of the Aluminium cans for Beverages provided that these cans so marked conforms to each requirement of the specification.

3.1.1 **Additional Marking requirements:** The following additional marking requirement shall also be marked on the packaging of the Aluminium cans for Beverages:

- “For BIS certification details please visit www.bis.gov.in”

3.2. **TEST CERTIFICATE** - For each consignment of Aluminium cans for Beverages conforming to IS 14407: 2023, a test certificate shall also be issued by the firm as given in [ANNEXURE-I](#) enclosed.

3.3. Each Aluminium Cans may also be marked through any digital mode such as ‘QR code’ or ‘Bar code’ displaying the details of licences. For eg. ISI Mark (see image below for example) along with the Name and address of the manufacturer, Licence no.



4. REJECTION

The production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the 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 by BIS- for Guidance Only)

(1)				(2)		
Test Details				Levels of Control		
Cl.	Requirement	Test Methods		No. of Sample	Frequency	Remarks
		Clause	Reference			
5	Material					
5	Materials for Can Body stock, Can Shell stock, Can Tab stock	5.1 to 5.4 Table 1A, 1B Table 2A, 2B	IS 14407	01	Each Consignment	No further testing is required if accompanied with the Test Certificate or ISI marked. However, appropriate records shall be maintained by the manufacturer as an evidence of conformity.
	Closure Components	If procured outside		01	Each Consignment	
		If manufactured in - house		01	Each Consignment	
6	Requirements					
6.1	Manufacture	6.1	IS 14407	01	Each Control Unit	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity.
6.2	Internal Finish	6.2	IS 14407	01	Each Control Unit	
6.3	External Coating	6.3	IS 14407	01	Each Control Unit	
6.4	Shape and Dimensions	6.4	IS 14407	01	Each Control Unit	
7	Testing of Cans					
7.1.2	Enamel Rater	7.1.2	IS 14407	24	Each Control Unit	

(1)				(2)		
Test Details				Levels of Control		
Cl.	Requirement	Test Methods		No. of Sample	Frequency	Remarks
		Clause	Reference			
7.1.1	Top load / Axial Load / Column Strength	7.1.1	IS 14407	As per sampling plan given in Cl. 8	Each Control Unit	
7.1.3	Buckle strength/ Dome Reversal	7.1.3	IS 14407		Each Control Unit	Applicable for cans used for carbonated beverages.
7.1.4	Air Pressure test	7.1.4	IS 14407		Each Control Unit	Applicable for cans used for non-carbonated beverages.
7.1.5	Slip Angle Test/ Wall Mobility Test	7.1.5	IS 14407		Each Control Unit	
7.2	Testing of Ends	7.2	IS 14407		Once in a month for each consignment	
7.3	Migration Tests					
7.3.1	Overall Migration Limit	7.3.1	IS 14407	As per sampling plan given in Cl. 8	Once in every month from one lot of each variety of any type and size manufactured during the period	
7.3.2	Specific Migration limit	7.3.2	IS 14407			



ANNEXURE – I
 (Para 3.2 of the Scheme of Inspection and Testing)
 (Name of the Firm)
 (Registered office Address and works address)

TEST CERTIFICATE FOR ALUMINIUM CANS FOR BEVERAGES

TEST CERTIFICATE No.:

DATE OF ISSUE:

To

M/s.:

We certify that the Aluminium Cans for Beverages described below fully conforms to IS 14407: 2023. The product is tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No.CM/L _____.

(PLEASE REFER TO IS 14407: 2023 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

1. Aluminium Alloy for Can Body Stock*

Aluminium Cans		Control Unit No. / Batch No.	Qty.	Chemical Composition												Temp er Designation	Mechanical Properties				Any other detail	Rem arks
Can Type	Capa city			Cu	Mg	Si	Fe	Mn	Zn	Ti	Cr	Ga	V	Oth ers	Al		Tensile Test			% Elongati on		
																	Thic kne ss	Tensile (MPa)	0.2% Proof Stress (MPa)			

2. Aluminium Alloy for Can Shell Stock and Can Tab Stock*

Aluminium Cans		Control Unit No. / Batch No.	Qty.	Chemical Composition													Temp er Designation	Mechanical Properties				Any other detail	Rem arks
Can End Type	Capa city			Cu	Mg	Si	Fe	Mn	Zn	Ti	Cr	Ga	V	Oth ers	Al	Tensile Test			% Elongati on				
																Thic kne ss		Tensile (MPa)		0.2% Proof Stress (MPa)			

*- Details can be given either from Supplier Test Certificate or In-house Test records

3. Aluminium Cans for Beverages

Aluminium Cans		Control Unit No. / Batch No.	Qty.	Mechanical Properties						Migration Test(s)		Remarks
Can Type	Nominal Capacity			Top load / Axial Load / Column Strength (N)	Enamel Rater (mA)	Buckle strength / Dome Reversal (kPa)	Air Pressure test (kPa)	Slip Angle Test/Wall Mobility Test (°)	Testing of Ends (N)	Overall Migration Limit	Specific Migration Limit	

REMARKS

For Name of the Firm
Sign and Stamp

(It is suggested that size A4 paper be used for this test certificate)