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BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

पेंट के लिए गोल टिन — विशिष्टि

(IS 1407 का *तीसरा पुनरीक्षण*)

Draft Indian Standard

Round Paint Tins — Specification

(*Third Revision* of IS 1407)

ICS 55.120

Metal Containers Sectional Committee, PGD 38 Last Date for Comments: 01 May 2025

FOREWORD

(*Formal clauses will be added later.*)

The cans conforming to this standard are suitable for liquid paints (insoluble pigment products) of the following varieties:

a) Air-drying type paints, enamels, undercoats and primers (oil or synthetic base);
b) Stoving finishes, undercoats and primers (oil or synthetic base);
c) Emulsion type paints; and
d) Nitrocellulose and spirit enamels and lacquers.

In this revision following major changes have been made:

1) Reference to Indian Standard on electrolytic tinplate added under material clause.
2) Dimensions of 5 litre capacity tin has been added.
3) Soldering removed from the manufacturing process.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values’ (*second revision*). The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

ROUND PAINT TINS — SPECIFICATION

(*Third Revision* of IS 1407)

1 SCOPE

This standard specifies the requirements for round tins up to 5 litre nominal capacity with lever lid type closures used for the packing of liquid paints.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

IS No.	*Title*
IS 1394 : 1973	Glossary of terms relating to metal containers trade (*second revision*)
IS 1993 : 2018 ISO 11949 : 2016	Cold-reduced tinmill products — Electrolytic tinplate (*fifth revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 1394, along with the following, shall apply.

3.1 *Handle* — A free moving shaped piece of steel wire or any other suitable material, properly attached to the container so as to support its filled weight with adequate factor of safety and convenience.

3.2 *Gross Lidded Capacity* — The internal volume of the closed can in millilitres determined as described in Annex A.

3.3 *Ullage* — The difference between the nominal capacity and the gross lidded capacity.

4 CAPACITY

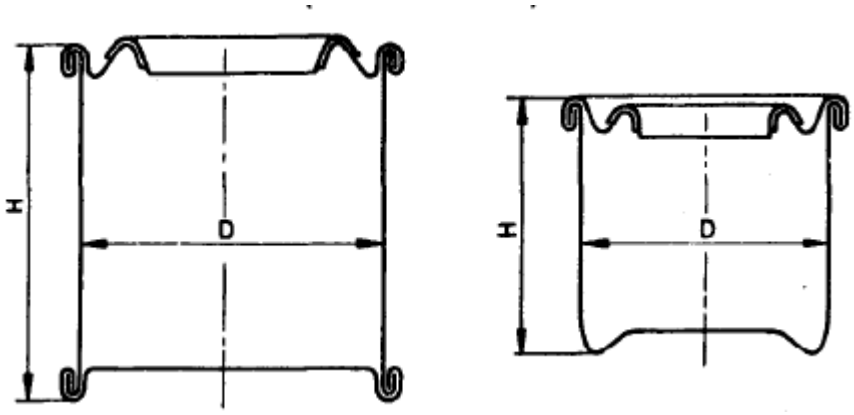
The nominal capacities of the round cans shall be 50 ml, 100 ml, 200 ml, 500 ml, 1 litres, 4 litres and 5 litres. Other nominal capacities may be used if agreed between the purchaser and manufacturer.

5 DIMENSIONS

The tins shall be manufactured to the dimensions and tolerances as shown in Table 1. Other internal diameter and over-seam height may be used if agreed between the purchaser and manufacturer.

Table 1 Capacities and Dimensions of Round Paint Tins and Solid Drawn Round Paint Tins

(*Clause* 5)



Sl No.	Nominal Capacity	Trade Size[1)]	Nominal Internal Diameter	Internal Diameter D ± 0.1	Over-Seam Height (for reference only) H	Minimum Gross Lidded Capacity (for reference only)
(1)	(2)	(3) mm	(4) mm	(5) mm	(6) mm	(7) ml
i)	50 ml	202	52	52.3	36	60
ii)	100 ml	207	59	59.2	48	110
iii)	200 ml	301	74	74.1	60	220
iv)	500 ml	307	83	83.4	108	540
v)	1 litre	404	105	105.1	132	1040
vi)	2 litres	509	138	138.4	163	2220
vii)	4 litres	700	174	174.1	197	4250
viii)	5 litres	700	174	174.1	246	5310

[1)] This trade size is being given here because the market is currently more familiar with it. When the trade becomes familiar with metric nomenclature, the trade size will be deleted.

6 MATERIAL

Each can component, namely, body, ring, bottom and closure shall be manufactured from a single piece of electrolytic tinplate conforming to IS 1993. The nominal thickness should be as given in Table 2. Other nominal thickness may be used as agreed between purchaser and manufacturer.

Table 2 Nominal Thickness of Body, Ring, Bottom and Closure for Round Paint Tins
(*Clause* 6)

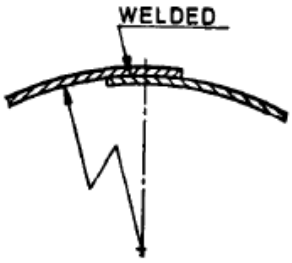
Nominal Capacity	Nominal Thickness mm
(1)	(2)
50 ml	0.19
100 ml	0.19
200 ml	0.19
500 ml	0.20
1 litre	0.21
2 litres	0.24
4 litres	0.26
5 litres	0.26

7 MANUFACTURE

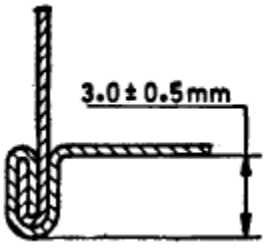
7.1 The body side seam shall be formed, welded or bonded as shown in Fig. 1A.

7.2 The ring and bottom shall be attached to the body of the can by double seaming as shown in Fig. 1B. The end seam shall be untreated, doped or compound lines as specified by the purchaser.

7.3 The tins shall be new and in clean condition inside and outside and shall be free from rust and foreign matter.



1A SIDE SEAM



1B END SEAM

Fig. 1 SEAMS

8 CLOSURES

The recommended types of closures for each size of the tin are shown in Table 3 read with Fig. 2. The type of closure shall be as agreed to between the purchaser and the supplier and it may be with or without capsule.

Table 3 Recommended Closures for Round Tins
(*Clause* 8 and Fig. 2)

Closure	Ref to Fig.	Nominal Capacity
(1)	(2)	(3)
Full aperture lid with:		
Full aperture ring	2A	5 litres, 4 litres and 2 litres
Curled back or safety ring	2B	1 litres, 500 ml and 200 ml
Ordinary lever ring with or without tagger	2C	200 ml, 100 ml and 50 ml
Double tite ring and lid	2D	5 litres, 4 litres, 2 litres, 1 litre and 500 ml
Flanged ring with cushion ring and bung (flush top)	2E	1 litre and 2 litres
Capsule for above-mentioned fitments	—	4 litres, 2 litres, 1itres, 500 ml, 200 ml and 50 ml
Integrated top or spout	—	5 litres, 4 litres, 2 litres, 1itres and 500 ml

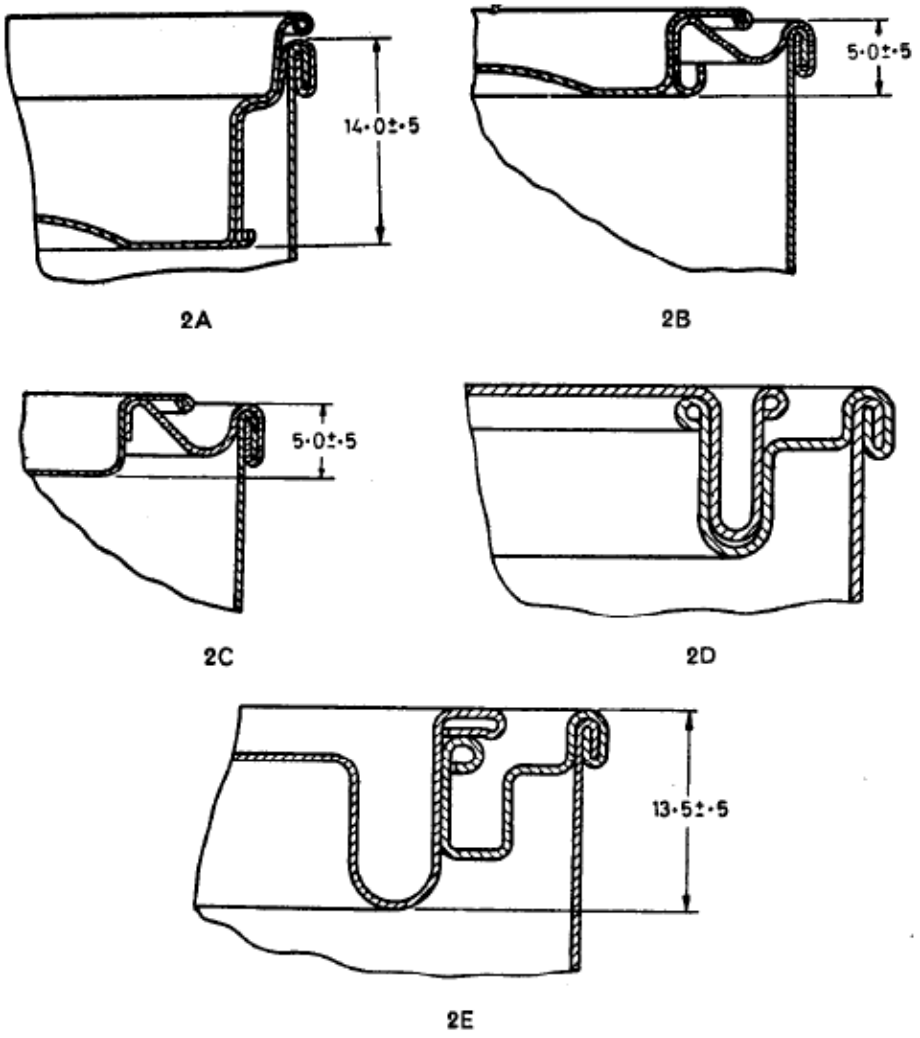


FIG. 2 TYPES OF CLOSURES

9 HANDLE

If required by the purchaser and specified in his enquiry and order, cans having a capacity of 4 litres and 5 litres shall be fitted with a handle attached to the can by bail ears located in relation to the side seam as shown in Fig. 3. The bail ears shall be spot welded to the body.

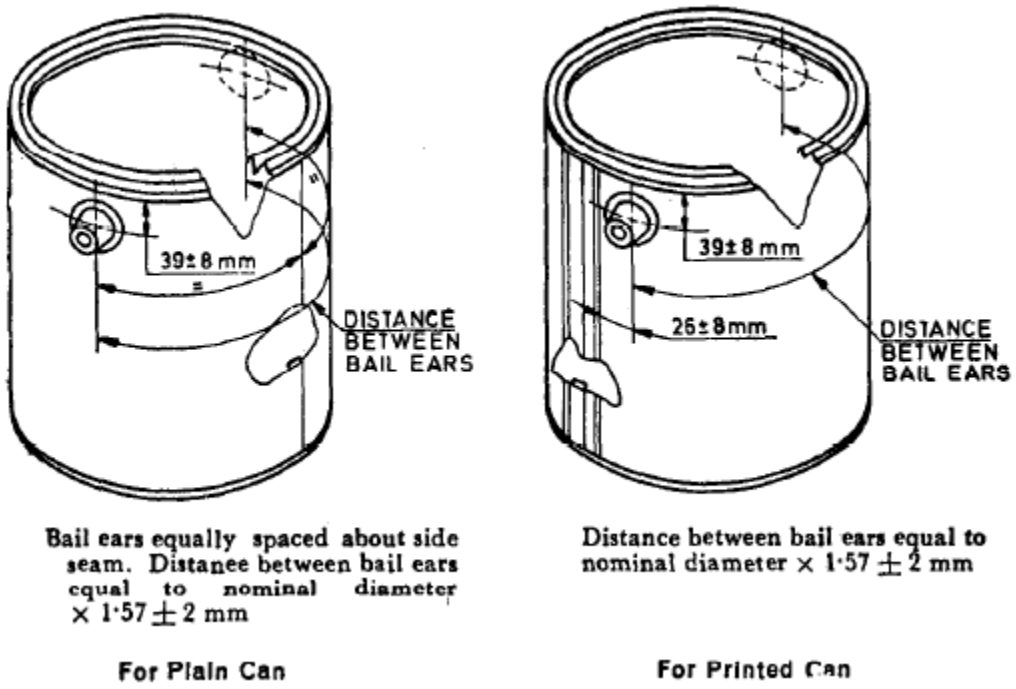


FIG. 3 LOCATION OF BAIL EARS

10 FINISH

Any internal and external finishes (for example, lacquer, printing) shall be in accordance with the details specified by the purchaser. The side seam may be either fully lithographed or coated with some rust protective lacquer to prevent rusting, if required by the purchaser.

11 LEAKAGE RESISTANCE TEST

Each tin (without its closures) when tested according to the details given in Annex B shall be capable of withstanding the applied pressure without showing any evidence of leakage.

12 MARKING

12.1 The tin may be marked with the manufacturer's identification.

12.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed there under, and the product(s) may be marked with the Standard Mark.

13 INFORMATION TO BE SUPPLIED BY THE PURCHASER

Annex C sets out information which the purchaser should specify in his enquiry and order.

ANNEX A

(*Clause* 3.2)

DETERMINATION OF GROSS LIDDED CAPACITY

Gross lidded capacity can be determined by the following procedure:

a) Drill two 8 mm diameter holes in the bottom of the can adjacent to one another and remove the burrs.
b) Fit all the closure components (just as though the can had been filled), being careful to ensure that none is omitted. Ensure that the closure is correctly driven home. Weight the closed, empty can in grams (m_1).
c) With the closed can tilted slightly, fill it through one of the holes with water at a temperature of 20℃, using a narrow jet. When water first runs out of the second hole, complete filling is ensured by closing the holes with the fingers, gently shaking the can, removing the fingers from the holes and completing the filling. Carefully remove all surface water.

   NOTE — An alternative method of filling the closed can is as follows:
   Drill two 8 mm diameter holes in the bottom of the can, diametrically opposite one another and each as close as possible to the circumference of the bottom Immerse the can bottom upwards in a bucket or tank of clean water at room temperature. Tilt slightly to dispel any residual air pocket. Withdraw the can vertically and carefully remove all surface water.

d) Weigh the filled can in grams (m_2). The difference between the two weighing ($m_2 – m_1$) represents the capacity of the can in millilitres.
e) Report the value obtained to the nearest milliliter rounding down to the nearest whole milliliter if the decimal fraction is 0.5 or greater.

ANNEX B

(*Clause* 11)

LEAKAGE TEST

The leakage test shall be carried out as follows:

a) Take the can without its closure and place over the open end a rubber-faced sealing plate equipped with the means of introducing air into the can and a pressure gauge capable or measuring 15 kPa.
b) Pump air into the can until the gauge reads 15kPa and immerse the can in water until it is just below the surface of the liquid.
c) Leave the can in the water for 15 seconds and examine for leakage. The presence of any leakage is indicated by a steady stream of bubbles.

ANNEX C

(*Clause* 13)

INFORMATION TO BE SUPPLIED BY THE PURCHASER

The purchaser should supply the following information with his enquiry and order:

a) The nominal capacity of the can require (*see* **4**).
b) The type of seam treatment required (*see* **7.1**).
c) The type of closure required (*see* **8**).
d) If a handle is required and the location of the bail ears (*see* **9**).
e) Particular internal and/or external finishes required (*see* **10**).
f) Any special marking requirements (*see* **12.1**).
g) Any particular requirements not covered by this specification.