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(Reaffirmed 2011)

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भारतीय मानक

चौकोर कनस्तर — ठोस पदार्थों के लिए — विशिष्ट

(चौथा पुनरीक्षण)

Indian Standard

**SQUARE TINS FOR SOLID PRODUCTS —
SPECIFICATION**

(*Fourth Revision*)

ICS 55.120

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**BUREAU OF INDIAN STANDARDS
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Price Group 2

Metal Containers Sectional Committee, MTD 32

FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Metal Containers Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1958 and subsequently revised in 1966, 1975 and 1989. While reviewing the standard, the committee decided to revise it to align with the present practice being followed by the Indian industry.

With the revision of IS 10325 : 1989 'Square tins — '15-kg/l for *Ghee, Vanaspati*, edible oils and bakery Shortening' in 2000 by extending its scope to cover almost all liquid products and by making variation in its height depending upon the product density, the use of 18-litre square tins has been restricted to the packing of solid products such as dry milk powder, cashew kernels, etc.

In this revision, the following changes have been made:

- i) Title and scope of the standard has been modified.
- ii) Material clause has been modified by including double reduced tinplate.
- iii) Requirements of solder has been modified.

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, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
**SQUARE TINS FOR SOLID PRODUCTS —
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(Fourth Revision)**

1 SCOPE

This standard prescribes the requirements of square tins of 18-litre nominal capacity used for packing of solid products.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions 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 editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
280 : 1978	Mild steel wire for general engineering purposes (<i>third revision</i>)
998 (Part 1) : 1983	Methods of chemical analysis of solders (soft and rosin cored): Part 1 Determination of tin and antimony (<i>first revision</i>)
1327 : 1988	Method of determination of mass of tin coating on tinplate (<i>third revision</i>)
1394 : 1984	Glossary of terms relating to metal containers (<i>third revision</i>)
1993 : 1993	Single cold-reduced tinplate and single cold-reduced blackplate-Electrolytic and hot-dipped tinplate sheet and blackplate sheet (<i>third revision</i>)
2471 : 1963	Methods of test for metal containers
3259 : 1966	Methods for sampling of metal containers
13954 : 1994	Double cold-reduced electrolytic tinplate sheet

3 TERMINOLOGY

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

4 REQUIREMENTS

4.1 Capacity

The gross capacity of the tins measured with water at ambient temperature shall be not less than 18.9 litres.

4.2 Dimensions and Tolerances

The tins shall be manufactured to the dimensions given in Fig. 1.

4.3 Material

4.3.1 Standard grade single cold reduced electrolytic tinplate of nominal thickness 0.28 mm conforming to IS 1993 or standard grade double cold reduced electrolytic tinplate of nominal thickness 0.21 mm conforming to IS 13954 shall be used for the body, ends and closure components of the tins.

4.3.1.1 The tin coating thickness shall be as specified by the purchaser and shall be tested according to the method given in IS 1327 or any other established instrumental or chemical method.

4.3.2 The handle, if provided, shall be made from the galvanized steel wire, conforming to IS 280 of not less than 3.5 mm in diameter. If agreed to between the purchaser and the supplier, phosphated or painted steel wire may also be used.

4.3.3 Solder

The solder used shall have minimum tin content of 2 percent for machine soldering and 40 percent for hand soldering. The antimony content of the solder shall not exceed 6 percent of the tin content.

4.3.3.1 The tin and antimony contents shall be determined by the methods specified in IS 998 (Part 1) or any other established instrumental or chemical method.

4.4 Manufacture

4.4.1 Body may be a two-piece construction, soldered at the diagonally opposite seams or a single-piece welded seam construction as shown in Fig. 2A and 2B. The welded seam shall be covered with a suitable lacquer on the inside and outside.

4.4.2 Each of the four sides of the body shall be stiffened by embossing, preferably inwards. The designs shown in Fig. 1 is an illustrative example. Lettering or designs as required may be displayed on each of the panels which are formed by embossing without affecting stiffness.

4.4.3 The top and bottom ends shall be made in one

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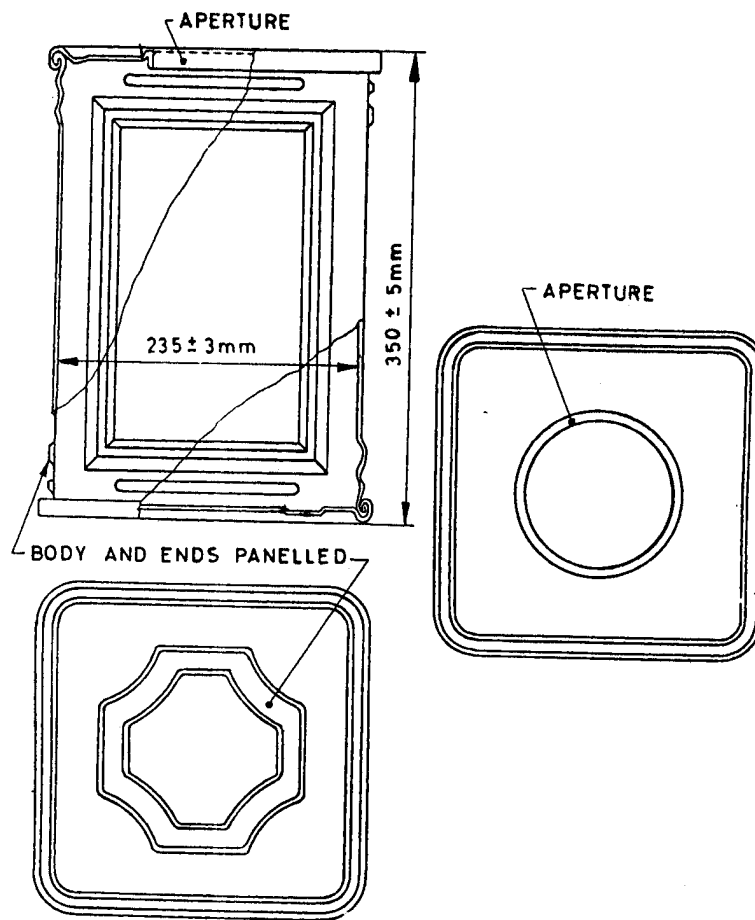


FIG. 1 18-LITRE SQUARE TIN

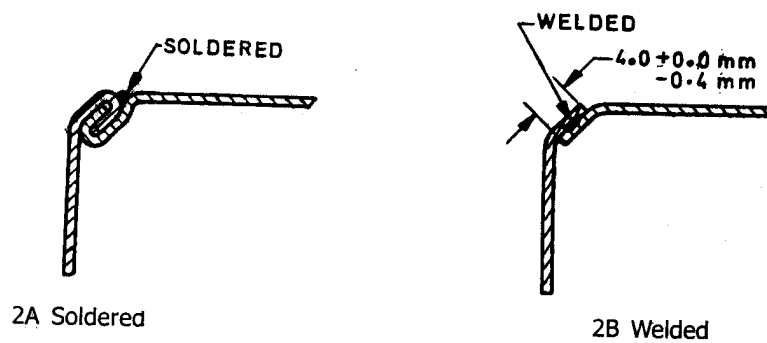


FIG. 2 BODY SIDE SEAM

piece and joined to the body by either a single or double seam as shown in Fig. 3A and 3B. Single seam shall be fully soldered whereas double seam may not be soldered but shall be lined with a suitable non-toxic compound to prevent any leakage at the seams.

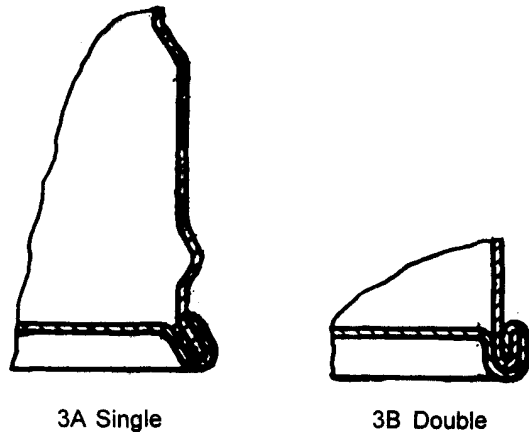


FIG. 3 END SEAM

4.4.4 The top and bottom ends may be stiffened by embossing. Embossed lettering may be provided, if required by the purchaser.

4.4.5 Handle

If required, a handle of suitable shape and size may be provided at a position as agreed to between the purchaser and the supplier. Handle shall be firmly secured to the top by soldering, spot welding or projection welding.

4.4.6 Closure

The tin may be provided with lever lid closure as shown in Fig. 4. When the undertagger is required, it shall be made of aluminium foil of minimum thickness 0.064 mm. Alternate material may be used, if agreed to between the purchaser and the supplier.

4.4.7 Supply Condition

The tins shall be supplied in new and clean conditions. They shall be free from all traces of rust and foreign matter.

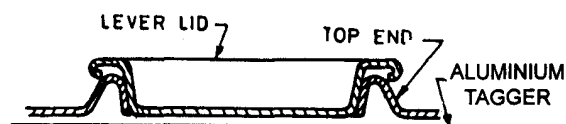


FIG. 4 LEVER LID

4.4.8 Internal Finish

The internal surface of the tins may be plain or given in suitable lacquer coating, if so required by the purchaser.

4.4.9 External Treatment

The outside surface of the tins may be plain or given a protective or decorative coating or both, if so required by the purchaser.

5 TESTING

5.1 Air-Pressure Test

Each tin shall be subjected to an air pressure of 8 kPa (0.08 kgf/cm²), minimum for 15 seconds. The tin shall show no sign of leakage when immersed in water. The test shall be carried out as prescribed in 3 of IS 2471.

5.2 Handle Pull Test

The representative samples of tins (if provided with a handle), shall be subjected to handle pull test. The handle of each tin when tested by the method as prescribed in 5 of IS 2471, shall be capable of withstanding gradually applied vertical pull or 40 kgf for a period of 2 minutes.

6 SAMPLING

Sampling shall be done in accordance with the procedure given in IS 3259.

7 MARKING

7.1 The tins shall be clearly and indelibly marked or embossed with the following information:

- a) Name, initials or trade-mark of the manufacturer; and
- b) The year of manufacture or batch number of the tins.

7.2 BIS Certification Marking

The tins may also be mark with the Standard Mark.

7.2.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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