भारतीय मानक

चौकोर कनस्तर — 15 किग्रा घी, वनस्पति, खाद्य तेलों और बेकरी में प्रयुक्त मोयन के लिए – विशिष्टि

(दूसरा पुनरीक्षण)

Indian Standard

SQUARE TINS — 15 kg/litre FOR *GHEE, VANASPATI*, EDIBLE OILS AND BAKERY SHORTENINGS — SPECIFICATION

(Second Revision)

ICS 55.120; 67.200

BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

April 2000

Price Group 2

FOREWORD

This Indian Standard (Second 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 1982 and subsequently revised in 1989. With the promulgation of the *Standards of Weights and Measures (Packaged Commodities) Third Amendment Rules*, 1994, the edible oils, *Ghee, Vanaspati* and butter oils may be packed by mass or volume basis, it had become necessary to make suitable provisions in the standard. The rules also state that in case packing has been done on mass basis, declaration of volume (within brackets alongside mass) has to be made and *vice versa*.

The standard has been revised to cover tins for packing 15 kg/litre of *Ghee, Vanaspati* and all other edible oils including bakery shortenings or nitrogen dispersed edible oils by making provisions for keeping different heights to suit the specific gravity and sullage requirements of the product to be packed into it. Also, Amendments No. 1 to 4 issued earlier have been incorporated suitably.

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 specified value in this standard.

Indian Standard

SQUARE TINS — 15 kg/litre FOR *GHEE, VANASPATI*, EDIBLE OILS AND BAKERY SHORTENINGS — SPECIFICATION

(Second Revision)

1 SCOPE

This standard specifies the requirements for 15 kg/ litre square tins used for packing of *ghee, vanaspati,* edible oils and bakery shortenings (or nitrogen dispersed edible oils).

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.

IS No.	*Title*
280 : 1978	Mild steel wire for general engineering purposes (*third revision*)
998 (Part 1) : 1983	Methods of chemical analysis of solders (soft and rosin cored) : Part 1 Determination of tin antimony (*first revision*)
1327 : 1988	Method of determination of mass of tin coating on tinplate (*third revision*)
1394 : 1984	Glossary of terms relating to metal containers (*third revision*)
1993 : 1993	Single cold-reduced tinplate and single cold-reduced blackplate— Electrolytic and hot-dipped tinplate sheet and blackplate sheet (*third revision*)
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 Dimensions and Tolerances

The tins shall be manufactured to the dimensions given in Fig. 1. Depending upon the product to be filled in the tins, namely, *ghee, vanaspati,* edible oils, bakery shortenings etc, the height of the tin may be varied to contain 15 kg/litre of the product, and shall be as specified by the purchaser.

4.2 Material

4.2.1 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 capseals on lids of tins.

4.2.1.1 The tin coating thickness shall be of grade E 2.8/2.8. The tin coating shall be checked by the method given in IS 1327 or any other established instrumental or chemical method. The tins for *ghee* shall be given a compatible lacquer coating on the inside.

4.2.2 *Handle*

The handle shall be of 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.

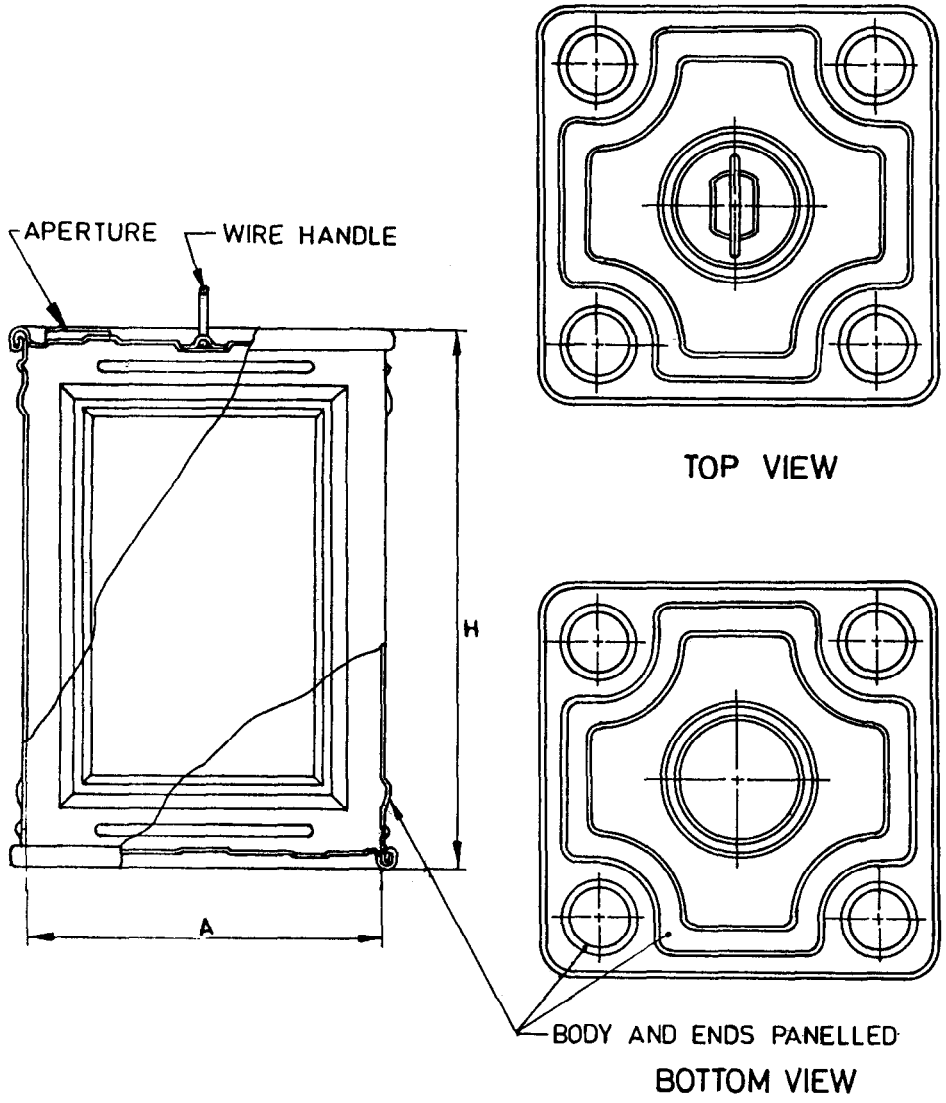
4.2.3 *Solder*

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.

4.2.3.1 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.

4.2.4 *Sealing Compound*

Sealing compound, if used, shall be compatible with the product to be packed.



Nominal Capacity kg/litre	*A* mm	*H* mm *(Recommended)*
15 kg	235 ± 3	325± 5
15 litres	do	292 ± 5

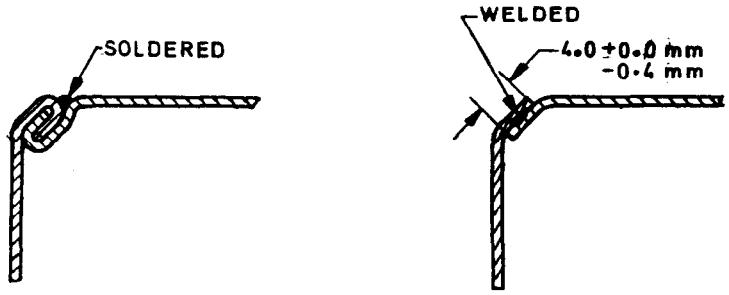
FIG. 1 A TYPICAL 15 KG SQUARE TIN

4.3 Manufacture

4.3.1 Body may be a single or two piece construction, soldered or welded as shown in Fig. 2A and Fig. 2B. The welded seam shall be coated with a compatible lacquer on the inside and outside and the soldered seam shall be coated with a suitable sidestripe lacquer on the outside only.

4.3.2 All the four sides and the top and bottom end panels shall be stiffened by embossing or panelling. The embossing designs shown in Fig. 1 are illustrative and may be changed at the option of the manufacturer. Bottom end panelling shall be the same as for the top end.

4.3.3 The top and bottom ends shall be made of one piece and joined to the body by either a single or double seam as shown in Fig. 3. Single seam shall be fully soldered whereas double seam shall be lined with a non-toxic compound or fully soldered.



2A SOLDERED 2B WELDED

FIG. 2 SIDE SEAM

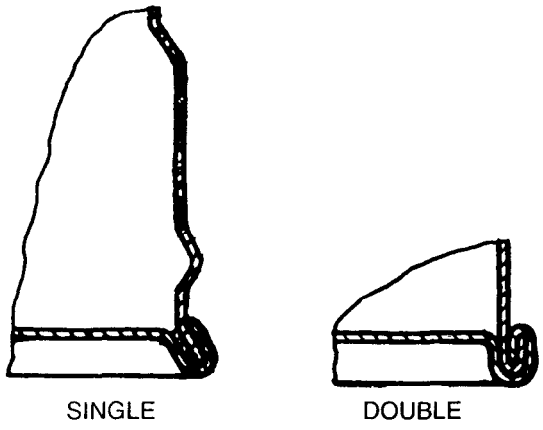
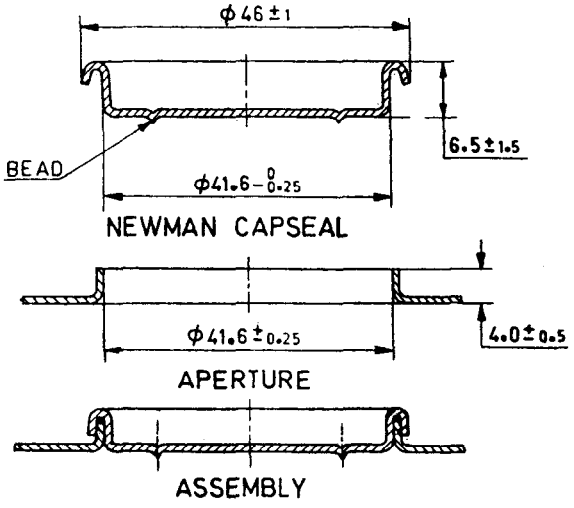


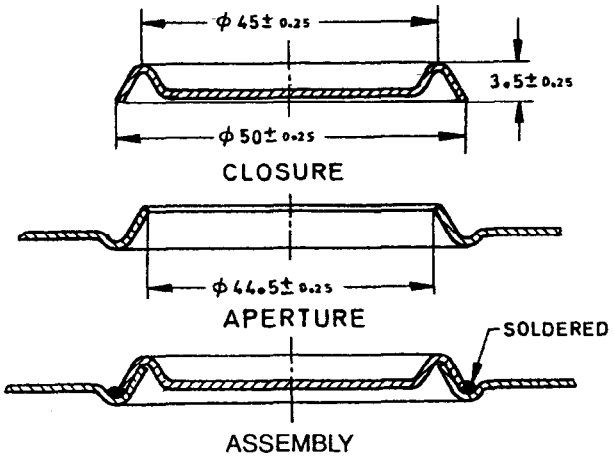
FIG. 3 END SEAMS

4.3.4 The tins may be provided with Newman or K.O. type closures as shown in Fig. 4 and Fig. 5. The aperture edge shall be located at least 14 mm away from the inside edge of the top seam.



All dimensions in millimetres.

FIG. 4 NEWMAN CAPSEAL



All dimensions in millimetres.

FIG. 5 K.O. TYPE CAPSEAL

4.3.5 *Handle*

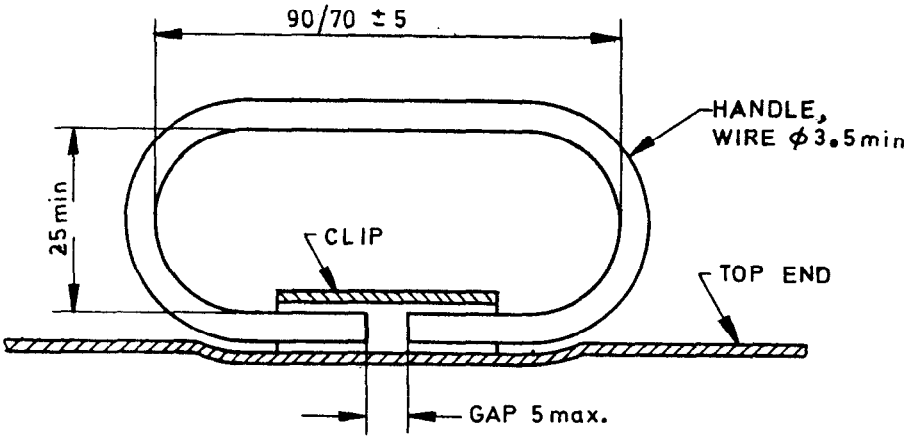
A wire handle of the design and dimensions as shown in Fig. 6 shall be provided on the top centre of the tin. Handle shall be firmly secured to the top by soldering, spot welding or projection welding. The handle may be fixed parallel to the sides as shown in Fig. 6 or in the diagonal position as required by the purchaser. Other suitable types, shape and sizes of handle may also be used, if agreed to between the purchaser and the supplier.

4.3.6 *Supply Condition*

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

4.3.7 *Internal Finish*

For *vanaspati* and edible oils, the tins shall be plain inside. For *ghee*, the tins and closure components shall be given a compatible lacquer coating inside. Internally plain, welded tins shall be coated with side-stripe lacquer on the welded seams.



All dimensions in millimetres.

FIG. 6 WIRE HANDLE

4.3.8 *Outside Finish*

The tins may be plain or given a protective outside coating as required by the purchaser. The tins shall be coated with sidestripe lacquer on the soldered or welded seams.

5 TESTING

5.1 Air-Pressure Test

Each tin shall be subjected to an air pressure of 8 kPa (0.08 kgf/cm^2), 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 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 withstand gradually applied vertical pull of 40 kgf for a period of 2 minutes.

5.3 Hydraulic Pressure Test

The representative samples of tins shall be subjected to hydraulic pressure test of 30 kPa (0.30 kgf/cm^2) for a period of not less than 3 minutes and shall show no sign of leakage, the test shall be carried out as prescribed in **4** of IS 2471.

6 SAMPLING

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

7 MARKING

7.1 The manufacturer's name, initials or recognized trade-mark, and year of manufacture may be clearly and indelibly marked or embossed on the tins if required by the purchaser.

7.2 BIS Certification Marking

The tins may also be marked 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.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act,* 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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