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IS 9445 (1980): Aluminium containers for packing of liquid pesticides (capacity 5 litres and above) [MTD 32: Metal Containers]



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Indian Standard
SPECIFICATION FOR
ALUMINIUM CONTAINERS FOR
PACKING OF LIQUID PESTICIDES
(CAPACITY 5 LITRES AND ABOVE)

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Indian Standard

SPECIFICATION FOR ALUMINIUM CONTAINERS FOR PACKING OF LIQUID PESTICIDES (CAPACITY 5 LITRES AND ABOVE)

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Indian Standard

SPECIFICATION FOR ALUMINIUM CONTAINERS FOR PACKING OF LIQUID PESTICIDES (CAPACITY 5 LITRES AND ABOVE)

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 January 1980, after the draft finalized by the Metal Containers Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 After the finalization of IS : 9503-1980*, work has been taken up on the formulation of standard on aluminium containers of nominal capacity 5 litres and above used for the bulk packing of liquid pesticides [see IS : 8190 (Part II)-1976† and IS : 8190 (Part III)-1979‡].

0.3 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§. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements for aluminium containers of 5, 10, 20 and 50 litres nominal capacities for the packing of liquid pesticides.

*Specification for aluminium bottles for packing of liquid pesticides.

†Requirements for packing of pesticides: Part II Liquid pesticides.

‡Requirements for packing of pesticides: Part III Household pesticides.

§Rules for rounding off numerical values (*revised*).

2. TERMINOLOGY

2.1 For the purpose of this standard, the definition given in IS : 1394-1973* shall apply.

3. REQUIREMENTS

3.1 Material

3.1.1 Container Material — The container material shall be aluminium alloy conforming to grade 19 500 of IS : 737-1974†.

3.1.2 Rigid Handles — The rigid handles, where provided, shall be made from extruded section of aluminium alloy conforming to designation HS-79 or HE-30 of IS : 733-1975‡.

3.1.3 Sealing Plug — The sealing plug shall be made of low density polyethylene, high density polyethylene, polyvinyl chloride or any other material which is compatible with the contents of the containers and shall not show any signs of stress cracking when tested according to the test given in 4.2.

3.1.4 Wad Material — The wad material shall be cork, board or pulp board, rubber or any other suitable material. The wad thickness shall be such as to provide effective sealing. The wad diameter shall be such that it is retained by the knurled portion of the cap. The wad facing shall be compatible with the product to be packed.

3.2 Manufacture, Shape and Dimensions

3.2.1 The container shall be of seamless construction.

3.2.2 The containers shall be of cylindrical shape and conforming to dimensions and capacities given in Table 1.

3.2.3 Rigid handles when provided shall be brazed or welded to the body of the can. The dimensions of the handle shall be as shown in Fig. 1.

3.2.3.1 The container shall be provided with a leak-proof closure system. Figures 2 and 3 illustrate some of the recommended neck finishes and closures.

*Glossary of terms relating to metal containers trade (*second revision*).

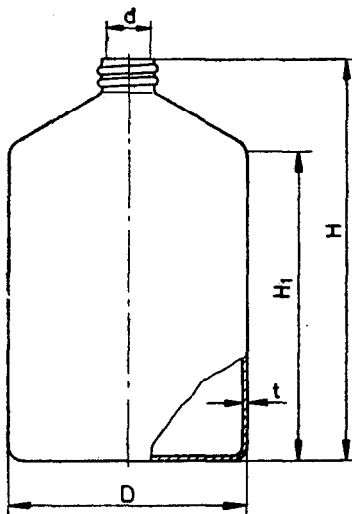
†Specification for wrought aluminium and aluminium alloys, sheet and strip (for general engineering purposes) (*second revision*).

‡Specification for wrought aluminium and aluminium alloy bars, rods and sections (for general engineering purposes) (*second revision*).

TABLE 1 DIMENSIONS OF ALUMINIUM CONTAINERS

(Clause 3.2.2)

All dimensions in millimetres.



NOMINAL CAPACITY	DIAMETER D	OVERALL HEIGHT H	HEIGHT UP TO SHOULDER H_1	BRIMFUL CAPACITY Min	MONTH OPENING d	MINIMUM THICKNESS t
(1)	(2)	(3)	(4)	(5)	(6)	(7)
litres				litres		
5	173 ± 1	317 ± 3	240 ± 2	5.5	33 ± 0.5	0.9
10	221 ± 1	420 ± 3	316 ± 2	11.0	33 ± 0.5	1.2
20	303 ± 1	395 ± 5	290 ± 2	22.0	33 ± 0.5	1.7
50	385 ± 1	595 ± 5	465 ± 2	55.0	66 ± 0.5	2.5

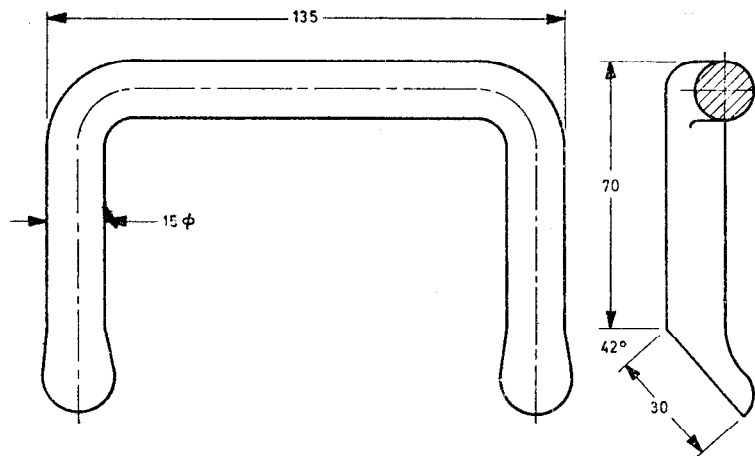


FIG. 1 RIGID HANDLE FOR ALUMINIUM CANS

3.2.4 The containers shall be clean, dry and free from any foreign material as agreed to between the purchaser and the supplier.

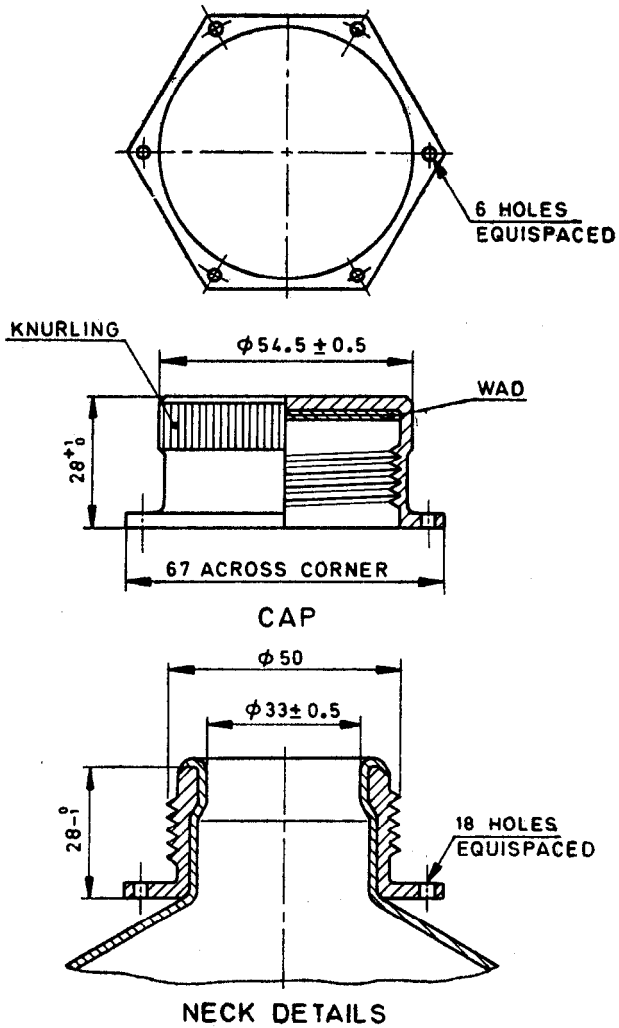
3.2.5 The containers may be given a protective lacquer coating internally if required by the purchaser. The lacquer selected shall be compatible with the contents of the containers for which it is intended to be used.

3.2.6 The polyethylene plug shall withstand the stress cracking resistance test as given in 4.2.

4. TESTS

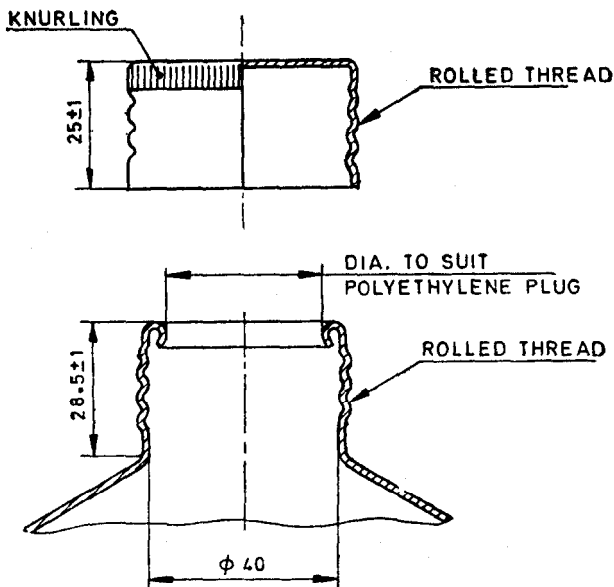
4.1 Closure Leakage Test — The containers shall be filled with a coloured solution leaving normal head space. After filling, the container shall be appropriately closed. The closed container shall then be kept upside down on a white paper for 24 hours. After 24 hours the container shall be examined for any leakage which would be evident from coloured stains on the paper.

4.2 Stress Crack Resistance Test — The containers shall be filled up to two-thirds of its capacity with a surface active agent, such as Lissapol NX, Hioxid AAC or Teepol TS. The containers shall then be fitted with the polyethylene plug and screwed tightly with the cap assembly. The sealed container shall be kept inverted at 50°C for 24 hours. The plug shall not show any stress cracking or any other permanent deformation after the test is over.



All dimensions in millimetres.

FIG. 2 33 mm CLOSURE



All dimensions in millimetres.

FIG. 3 NECK FINISH WITH ROLLED THREAD CLOSURE

5. MARKING

5.1 The container may be marked with the manufacturer's name, initials or recognized trade-mark, if any.

5.1.1 The container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

6. SAMPLING

6.1 Representative samples of aluminium containers for dimensional checks and visual defects shall be taken as specified in IS : 3259-1966*. For closure leakage test (4.1), the sampling scheme as detailed in Table 2 shall be followed.

TABLE 2 SAMPLING SCHEME FOR THE CLOSURE LEAKAGE TEST OF ALUMINIUM CONTAINERS

LOT SIZE	SAMPLING PLAN*	SAMPLE SIZE	ACCEPTANCE No.	REJECTION No.
Up to 3 000	Single	13	0	—
3 000 to 5 000	Single	50	1	—
	Double			
	First Sample	32	0	2
	Second Sample	32	—	—
	Cumulative Sample	64	1	2
5 000 and above	Single	80	2	—
	Double			
	First Sample	50	0	3
	Second Sample	50	—	—
	Cumulative Sample	100	3	4

*For a cumulative sample size below 40 double sampling is not recommended for AQL — 1% due to poor efficiency of Sampling scheme.

*Methods for sampling of metal containers.

(Continued from page 2)

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AMENDMENT NO. 1 SEPTEMBER 1995
TO
IS 9445 : 1980 SPECIFICATION FOR ALUMINIUM
CONTAINERS FOR PACKING OF LIQUID PESTICIDES
(CAPACITY 5 LITRES AND ABOVE)

(Page 5, Table 1, column 7, first row) — Substitute '0.7' for '0.9'.

(MTD 32)

Reprography Unit, BIS, New Delhi, India