

4/7/0
7/1/85



NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

GENERAL CERTIFICATE OF APPROVAL No 4/7/0

This is to certify that an approval has been granted by the Commission that the pattern and variants of

Volume Measures of 0,5 L to 20 L Capacity

are suitable for use for trade.

This approval is subject to review on or after 1/1/90.

Certificate of Approval No 4/0 dated 23/8/72 was cancelled on 27/11/84.

Signed

Executive Director

Descriptive Advice

Pattern: approved 10/12/84

. Volume measures of 0,5 L to 20 L capacity

Variants: approved 10/12/84

1. Ice cream measures of 12 L capacity and milk measures of 45 L capacity.
2. Special industrial measures of 0,5 L to 20 L capacity.

Technical Schedule No 4/7/0 describes the pattern and variants 1 and 2.

Filing Advice

Certificate of Approval No 4/0 dated 23/8/72 and Notifications of Change Nos 1 and 2 dated 2/9/76 and 21/2/77 are superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 4/7/0 dated 7/1/85
Technical Schedule No 4/7/0 dated 7/1/85.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 4/7/0

Pattern: Volume Measures of 0.5 L to 20 L Capacity

1. Description of Pattern

1.1 Nominal Values

Measures shall be limited to the following values:

0.5, 1, 2, 4, 5, 10, 20 L

1.2 Construction

1.2.1 Material

Every liquid measure shall:

- (a) be substantially made of pewter, white-metal, aluminium, nickel alloys, tinfoil, copper, brass, bronze, gunmetal, stainless steel, plated steel, or other approved metals;
- (b) if of pewter or other tin alloy, have a recommended content of not less than 80% by weight of tin or not more than 10% by weight of lead;
- (c) if of copper, brass, bronze or gunmetal, be tinned internally;
- (d) have a recommended minimum thickness of material as shown in Table 1.

1.2.2 Design

Every measure shall:

- (a) have no strengthening ribs which, by indentation or otherwise, show divisions inside the measure which might be mistaken for scale marks;
- (b) have a strong, rigid bottom, provided that a measure may have reinforcing straps or indented ribs across the bottom, be concave or convex when viewed from below and shall have a band of sufficient dimensions to protect the bottom from damage;
- (c) stand firmly on its base, with the scale mark defining its capacity horizontal;
- (d) if provided with a tap, be capable of being completely emptied by the tap without tilting;
- (e) if not provided with a tap, empty completely when tilted to an angle of not more than 120° from the vertical.

The capacity of conical measures shall be defined by the neck formed at the junction of the conical body and any lip, funnel, spout etc. fitted to aid filling and pouring of the liquid.

The capacity of cylindrical line measures shall be defined by a denominated scale mark or marks which exclude every part of any lip, funnel, spout etc. fitted.

1.2.3 Shape

Every measure shall be cylindrical, conical or of various combinations of cylindrical and conical, provided that any measure with the maximum internal diameter not more than 10% greater than the minimum internal diameter shall be considered cylindrically.

The depth of a cylindrical measure shall be not less than $1\frac{1}{2}$ times nor more than twice the diameter of the measure.

Any milk can which is used as a measure and is of cylindrical form with a conical top may have a neck to contain a lid if the capacity is clearly defined by internal scale marks at the bottom of the neck and below the bottom of the lid.

The diameter of the neck, or that part of the measure which determines the measurement, shall be such that a variation of at least 2 mm in the height of the liquid shall be equal to the absolute value of the maximum permissible error for that measure.

1.2.4 Requirements for Subdivided Measures

Cylindrical-conical and conical measures of any capacity, and cylindrical line measures of a capacity less than 5 litres, shall not be subdivided.

Subdivided measures shall not be subdivided below 5 litres.

1.3 Markings

Every measure of volume shall be clearly and permanently marked with its capacity value and unit symbol on the body and not on the bottom or rim; a measure with its capacity defined by a line shall be marked at the line.

Only the following unit symbol shall be used: litre : L

Every subdivided measure shall have equal scale marks of not less than 25 mm in length on the inside, opposite sides of the measure. The scale interval shall not be less than 2 litres and the thickness of all scale marks shall not exceed 1 mm. All scale marks shall be numbered with digits not less than 5 mm in height.

1.4 Verification Mark

A stamping plug* to receive the verification mark shall be securely affixed to every measure:

- (a) on the outside immediately under the brim, if the measure is cylindrical; or
- (b) on the inside of the lip or on the outside below the junction of the body and the lip at an angle of 90° to the line of the handle, if the measure is conical; or
- (c) on the outside of the neck, if the measure is cylindrical-conical with cylindrical neck.

The stamping plug shall consist of a lead plug so secured that it cannot be removed from the instrument without defacing the verification mark. The lead plug shall have a circular face of not less than 12 mm diameter or a rectangular face of dimensions not less than 8 mm x 25 mm.

*Note: A plug of soft solder attached directly to the metal of the measure is considered to be satisfactory provided that it meets the requirements for position and size.

1.5 Maximum Permissible Errors

The maximum permissible errors for conical measures are listed in Table 2, and for cylindrical line measures are listed in Table 3.

1.6 Test Conditions

Measures shall be tested when standing on a level surface, the capacity being determined when the level of the surface of the liquid coincides with the top of the line or other reference mark.

Every scale mark of a subdivided measure shall be tested for compliance within the maximum permissible error applicable to the full capacity of the measure.

The volume of each measure shall be tested to be correct at 20°C.

2. Description of Variants

2.1 Variant 1

Ice cream measures of 12 L capacity and milk measures of 45 L capacity shall comply with the pattern in respect of cylindrical line measures except in the following respects:

2.1.1 Nominal Values

They shall be limited to the following values -

12 L for ice cream
45 L for milk

2.1.2 Maximum Permissible Errors

The maximum permissible errors are listed in Table 4.

2.2 Variant 2

Volume measures of 0.5 L to 20 L capacity for special industrial services shall comply with the pattern except in the following respects.

2.2.1 Nominal Values

They may be of any value from 0.5 L to 20 L to suit the purpose for which they are to be used.

2.2.2 Markings

They shall be clearly marked with the words "factory use only" or "non-retail".

2.2.3 Maximum Permissible Errors

The maximum permissible errors are the same as those applicable to the nearest measure described in the pattern.

TABLE 1 - RECOMMENDED MINIMUM THICKNESS OF METAL

Capacity L	Recommended minimum thickness mm
0.5	0.4
1,2,4,5	0.5
10	0.6
20	0.8

TABLE 2 - MAXIMUM PERMISSIBLE ERRORS FOR CONICAL MEASURES

Capacity L	Maximum permissible error mL
0.5	+ 5
1	+10
2	+15
4	+25
5	+30
10	+45
20	+70

TABLE 3 - MAXIMUM PERMISSIBLE ERRORS FOR CYLINDRICAL LINE MEASURES

Capacity L	Maximum permissible error mL
0.5	± 2.5
1	± 5
2	± 7.5
5	± 15
10	± 20
20	± 35

TABLE 4 - MAXIMUM PERMISSIBLE ERRORS
FOR CYLINDRICAL LINE MEASURES FOR SPECIAL PURPOSES

Capacity L	Purpose	Maximum permissible error mL
12	Ice cream	± 50
45	Milk	±150

National Standards Commission



NOTIFICATION OF CHANGE

GENERAL CERTIFICATE OF APPROVAL No 4/7/0

CHANGE No 1

The following changes are made to the approval documentation for

Volume Measures of 0.5 L to 20 L Capacity

In Technical Schedule No 4/7/0 dated 7/1/85, page 4 (containing Tables 1 to 4) is replaced by the page attached herein in which Tables 2 and 3 have been amended.

(NOTE: The maximum permissible errors listed in the Tables are those given in the Commission's Document 118, *Schedule of Maximum Permissible Errors for Trade Measuring Instruments.*)

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

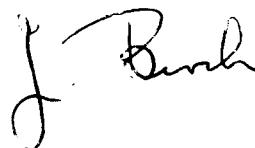


TABLE 1 - RECOMMENDED MINIMUM THICKNESS
OF METAL

Capacity (L)	Recommended minimum thickness (mm)
0.5	0.4
1, 2, 4, 5	0.5
10	0.6
20	0.8

TABLE 2 - MAXIMUM PERMISSIBLE ERRORS
FOR CONICAL MEASURES

Capacity (L)	Maximum permissible error (mL)
0.5	+5
1	+6
2	+10
4	+15
5	+20
10	+30
20	+45

TABLE 3 - MAXIMUM PERMISSIBLE ERRORS
FOR CYLINDRICAL LINE MEASURES

Capacity (L)	Maximum permissible error (mL)
0.5	±5
1	±10
2	±15
5	±30
10	±45
20	±70

TABLE 4 - MAXIMUM PERMISSIBLE ERRORS
FOR CYLINDRICAL LINE MEASURES FOR SPECIAL PURPOSES

Capacity (L)	Purpose	Maximum permissible error (mL)
12	Ice cream	±50
45	Milk	±150