Draft EAC measures of capacity regulations, 2011

Material for making liquid measures of capacity

1 (1) Liquid measures of capacity shall be made of glass, aluminum alloys, tin or tin alloys, copper or copper alloys, brass, nickel alloys, enameled metal, plated or galvanized iron or steel, stainless steel or such other material as shall be approved by the Head of Legal Metrology:

Provided that liquid measures made of brass, bronze or copper shall be well tinned all over the inside.

(2) The glass used in the manufacture of liquid measures of capacity shall be clear, well annealed and free from flaws.

Type and Denomination

2 (1) Metal measures of capacity shall be of the following types and denominations-

(a) cylindrical measures-
(i) dipping type – 1 litre, 500 ml., 200ml., 100 ml., 50ml., and 20ml;
(ii) pouring type 2 litres, 1 litre, 500ml., 200ml., 100ml., 50ml., and 20ml.
(b) conical measures – 20 litres, 10 litres, 5 litres, 2 litres, 1 litre, 500ml, 200ml, and 100ml
(c) liquor measures – 100 ml, 60 ml, and 30 ml

(2) Glass measures of capacity shall be of the following types and denominations-

(a) dispensing measures –
(i) conical type 200 ml, 100ml, 50ml, 20ml, 10ml, and 5ml
(ii) breaker type – 500ml. and 100ml
(b) liquor measures – 100ml, 60ml and 30 ml
(c) beer measures – 2 litres, 1 litre,500ml, 300ml, 200ml, and 100ml

Shapes and dimensions

3. (1) The shapes and dimensions of metal measures of capacity (other than liquor measures) shall be

(a) in the case of dipping and pouring types, as shown in figure 1 and 2 and table 1 of the Fifth Schedule;
(b) in the case of conical measures, as shown in Figure 3 and table 2 of the Sixth Schedule

(2) Liquor measures shall be of the shape and dimensions showing figure 4 of the **Seventh Schedule** and shall have a wall of thickness of no less than 1.2mm

Dispensing measures

4. (1) A dispensing measure shall be

(a) of cylindrical or conical shape as shown in Figure 5 and 6 respectively of the Eighth Schedule
(b) Constructed such that when empty, it shall not topple when placed on a plane inclined at an angle of 15^0 from the horizontal;
(c) Provided with a pouring lip

(2) The volume above the highest graduation line on dispensing measures shall be-

(a) in the case of cylindrical measures not less than twenty five per cent of the marked capacity of the measure; and

(b) in the case of conical measures not less than fifty per cent or more than seventy-five per cent of the marked capacity of the measure.

(3) The external surface of conical dispensing measures shall be an inverted cone having an included angle as follows-

(a) for measures of 5, 10, and 20 millilitres, not less than 8^0 or more than 14^0.

(b) For measure of more than 20 millilitres, not less than 13^0 or more than 14^0.

False bottoms prohibited

5. (1) No liquid measure of capacity shall be permitted if-

(a) it has a false bottom; or

(b) it does not completely empty when tilted to an angle of 120^0 from the vertical.

Mode of defining capacity

6. (1) The capacity of a glass liquid measure shall be defined by its internal volume limited either-

(a) by the brim of the measure; or

(b) by a line of at least 50 mm in length and at a distance of not less than 10 mm. nor more than 40mm from the brim of the measure:

Provided that in the case of measures of 100 ml. or less, the line defining the capacity shall go right round the measure:

Provided also that the distance from the brim of the measure to the line defining the capacity shall not be less than-

(i) 5mm, in the case of measure of 50ml or less; and

(ii) 20mm, in the case of measures used for the sale of beer or other frothy drinks

(2) the capacity of the metal liquid measure shall be defined by is internal volume limited either-

(a) by the brim of the measure; or

(b) by an indelible line marked on the inside of the measure so that the distance of the bottom of the line from the brim does not exceed 10mm on measures of one litre and under, or 20mm on measures of higher capacity:

Provided that in the case of a metal measure fitted with a lip or retaining edge the capacity shall be defined by the bottom of the lip or retaining edge.

Metal measure not to be sub-divided

7. Metal measure of capacity shall not be subdivided

Subdivided glass measures

8. (1) The graduation line on glass liquid measures shall be engraved or etched with clean edges and shall be uniform thickness and in the case of dispensing measures, the thickness

of the graduation line shall not exceed 0.3mm.

(2) For subdivided glass liquid measure of 5 litres or less other than dispensing measures, the subdivisions shall be defined by lines of at least 25mm in length.

(3) In the case of dispensing measures, the lines defining the subdivision shall be-

(a) on the right side of, and at right angles to, a vertical line extending above the top graduation line and below the bottom line;

(b) not less than 2 mm apart; and

(c) of the following minimum lengths-

Graduation line relating to	Minimum Length of Lines
5 millilitres	7.5 mm.
10 millilitres	10.0 mm.
20 millilitres	12.5 mm.
50 millilitres	15.0 mm.
100 millilitres	17.5 mm.
200, 500, 1,000 millilitres	20.0 mm.

(4) Numbered sub-division shall have longer lines than the unnumbered subdivisions.

(5) Each numeral of the numbered subdivisions shall be engraved or etched at the end of the line to which it relates and shall be in such a position that it would be bisected by a prolongation of that line.

Temperature Compensators

9. (1) Where liquid measures of capacity is provided with a temperature compensator, a graduated scale shall be fitted indicating "plus" and "minus" on either side of zero.

(2) A suitable thermometer and hydrometer shall be always available to enable the operator to adjust the compensator when necessary.

Denominations

10. (1) Every liquid measure of capacity shall have its denomination, serial number, manufacture's name or trade mark, permanently and legibly marked on the outside of the handle or bottom rim or edge.

(2) The size of the numeral and letter indicating the denomination shall be twice the size of the letters indicating the manufacturer's name or trade mark.

(3) On a glass liquid measure in which the capacity is defined by a line, the denomination shall be plainly marked at the line.

Testing

11. (1) Every liquid measure of capacity shall be tested at the ambient temperature by filling he appropriate secondary

reference standard or working standard with water and emptying the contents into the measure under test.
(2) Where the capacity is defined by a line, the measure shall be tested to the bottom of the line and, in the case of measures made of glass the level of the water shall be taken at the bottom of the meniscus.
(3) A liquid measure provided with a lip or retaining edge shall be tested to the bottom of the lip or retaining edge.

Permissible errors for liquid measures of capacity.

12. (1) The maximum permissible errors on the verification of liquid measures of capacity, other than dispensing measures shall be as follows-

Purported Value	Error in Excess Only
20 litres	100 ml
10 litres	75 ml
5 litres	50 ml
2 litres	25 ml
1 litre	15 ml
500 ml	10 ml
300 ml	5 ml
200 ml	5 ml
100 ml	2.5 ml
60 ml	2.0 ml
50 ml	2.0 ml
30 ml	1.5 ml
20 ml	1.0 ml
10 ml	0.5 ml
5 ml	0.25 ml
2 ml	0.1 ml
1 ml	0.05 ml

(2) In the case of subdivided measures, the error at any graduation shall not exceed that specified for a measure of equivalent purported value.
(3) The maximum permissible errors on the verification of

dispensing measures shall be as follows-

Appropriate Internal Diameter of Measure in Millimetres at the Graduation Tested	Error in Excess or in Deficiency
100 mm	1.0 millilitre
90 mm	1.0 millilitre
80 mm	0.8 millilitre
70 mm	0.8 millilitre
60 mm	0.6 millilitre
50 mm	0.6 millilitre
40 mm	0.4 millilitre
30 mm	0.3 millilitre
20 mm	0.15 millilitre
10 mm	0.05 millilitre

(4) In the case of graduated measures of glass in the form of burettes, one half the above amount of error shall be allowed.

(5) The maximum permissible errors on re-verification or inspection of liquid measures of capacity, other than glass measures, shall be twice the errors on verification in excess or half in deficiency.

Stamping

13. The verification mark shall be placed-

(a) in the case of measures made of glass or enameled metal, near the denomination;

(b) in the case of metal measures (other than enameled metal measures) which are provided with a lip or retaining edge, on the bottom of the inside of the lip or retaining edge;

(c) in the case of metal measures which are not provided with a lip or retaining edge, near the denomination;

(d) in the case of measures other than those specified in the preceding paragraph of this rule, on a plug or stud of soft metal provided for such use.