

Table of Contents

	Page
Section 4.41. Liquid Measures	4-11
A. Application	4-11
A.1. General.....	4-11
A.2. Exceptions.....	4-11
A.3. Additional Code Requirements.....	4-11
S. Specifications	4-11
S.1. Units.....	4-11
S.2. Material.....	4-11
S.3. Capacity Point.....	4-11
S.4. Reinforcing Rings.....	4-11
S.5. Discharge.....	4-11
S.6. Marking Requirements.....	4-11
T. Tolerances	4-12
T.1. Tolerance Values.....	4-12

This publication is available free of charge from: <https://doi.org/10.6028/NIST.HB.44-2023>

THIS PAGE INTENTIONALLY LEFT BLANK

Section 4.41. Liquid Measures

A. Application

A.1. General. – This code applies to liquid measures; that is, to rigid measures of capacity designed for general and repeated use in the measurement of liquids.

A.2. Exceptions. – The code does not apply to test measures or other volumetric standards.

A.3. Additional Code Requirements. – In addition to the requirements of this code, Liquid Measures shall meet the requirements of Section 1.10. General Code.

S. Specifications

S.1. Units.

- (a) The capacity of a liquid measure marked in SI units shall be 0.1 L, 0.2 L, 0.5 L, 1 L, 2 L, 5 L, or a multiple of 5 L, and the measure shall not be subdivided.
- (b) The capacity of a liquid measure marked in U.S. customary units shall be 1 gill, ½ liq pt, 1 liq pt, 1 liq qt, ½ gal, 1¼ gal, 1½ gal, or a multiple of 1 gal, and the measure shall not be subdivided. However, 3 pt and 5 pt brick molds and 2½ gal (10 qt) cans shall be permitted when used exclusively for ice cream.

S.2. Material. – Measures shall be made of metal, glass, earthenware, enameled ware, composition, or similar and suitable material. If made of metal, the thickness of the metal shall not be less than the appropriate value given in Table 1. Minimum Thickness of Metal for Liquid Measures.

Nominal Capacity	Minimum Thickness	
	For Iron or Steel, Plated, or Unplated (inch)	For Copper or Aluminum (inch)
1 pint or less	0.010	0.020
1 quart, ½ gallon, 1 gallon	0.014	0.028
Over 1 gallon	0.016	0.032

S.3. Capacity Point. – The capacity of a measure shall be determined to a definite edge, or to the lowest portion of a plate, bar, or wire, at or near the top of the measure, and shall not include the capacity of any lip or rim that may be provided.

S.4. Reinforcing Rings. – Reinforcing rings, if used, shall be attached to the outside of the measure and shall show no divisions or lines on the inside surface of the measure.

S.5. Discharge. – A measure equipped with a discharge faucet or valve shall be susceptible to complete discharge through the faucet or valve when the measure is standing on a level surface.

S.6. Marking Requirements. – A measure shall be marked on its side with a statement of its capacity. If the capacity is stated in terms of the pint or quart, the word “Liquid” or the abbreviation “Liq” shall be included.

T. Tolerances

T.1. Tolerance Values. – Maintenance tolerances in excess and in deficiency shall be as shown in Table 2. Maintenance Tolerances, in Excess and in Deficiency, for Liquid Measures. Acceptance tolerances shall be one-half the maintenance tolerances.

Table 2.				
Maintenance Tolerances, in Excess and in Deficiency, for Liquid Measures				
Nominal Capacity	Tolerance			
	In Excess		In Deficiency	
	fluid drams	cubic inches	fluid drams	cubic inches
½ pt or less	2.0	0.4	1.0	0.2
1 pt	3.0	0.7	1.5	0.3
1 qt	4.0	0.9	2.0	0.5
½ gal	6.0	1.4	3.0	0.7
	fluid ounces	cubic inches	fluid drams	cubic inches
1 and ¼ gal	1.0	1.8	4.0	0.9
1½ gal	1.5	2.7	6.0	1.4
	fluid ounces	cubic inches	fluid ounces	cubic inches
2 gal	2.0	3.5	1.0	1.8
3 and 4 gal	4.0	7.0	2.0	3.6
5 gal	6.0	11.0	3.0	5.4
10 gal	10.0	18.0	5.0	9.0