

## Sec. 5.52. Linear Measures

### A. Application

**A.1.** - This code applies to any linear measure or measure of length, whether flexible or inflexible, permanently installed or portable.

**A.2.** - See also Sec. 1.10; General Code requirements.

### S. Specifications

**S.1.M. Units.** - A linear measure may be in total length, and the total length may be subdivided in any or all of the following:

- (a) centimeters and tenths of the centimeter;
- (b) meters; and
- (c) multiples of meters

A 1-m measure may be graduated, in addition, to show 0.1-m and multiples of 0.1-m subdivisions.

**S.1. Units.** - A linear measure may be in total length, and the total length may be subdivided in any or all of the following:

- (a) inches and binary submultiples of the inch;
- (b) feet;
- (c) yards and multiples of yards.

A 1-yd measure may be graduated, in addition, to show 1/3-yd and 2/3-yd subdivisions. A flexible tape may be graduated in tenths or hundredths of a foot, or both tenths and hundredths of a foot. (Any other subdivisions are allowable only on measures of special purposes and when required for such purposes.)

### S.2. Material.

**S.2.1. Flexible Tape.** - A flexible tape shall be made of metal.

**S.2.2. End Measure.** - If an end measure is made of material softer than brass, the ends of the measure shall be protected by brass (or other metal at least equally hard) securely attached.

**S.3. Finish.** - Measures shall be smoothly finished.

### S.4. Design.

**S.4.1. Rigid Measure.** - A rigid measure shall be straight.

**S.4.2. Folding Measure.** - A folding measure shall open to a definite stop, and when so opened shall be straight.

### S.5. Graduations.

**S.5.1. General.** - Graduations shall be perpendicular to the edge of the measure.

**S.5.2. Width.** - The width of the graduations on any measure shall not exceed one-half the width of the smallest graduated interval on the measure, and in no case shall be wider than 0.75 mm (0.03 in). (Amended 1982)

## T. Tolerances

**T.1. For Measures Except Metal Tapes.** - Maintenance tolerances in excess and in deficiency for measures except metal tapes shall be as shown in Table 1. Acceptance tolerances shall be one-half the maintenance tolerances.

Table 1. Maintenance Tolerances, in Excess and in Deficiency, for Linear Measures Except Metal Tapes	
Nominal interval from zero	Tolerance
feet	inch
1/2 or less	1/64
1	1/32
2	1/16
3	3/32
4	1/8
5	5/32
6	3/16

**T.2. For Metal Tapes.** - Maintenance and acceptance tolerances in excess and in deficiency for metal tapes shall be as shown in Table 2. Tapes of 10 m (25 ft) or over shall be tested at a tension resulting from a load of 5 kg (10 lb). Tapes less than 10 m (25 ft) shall be tested at a tension resulting from a load of 2.5 kg (5 lb). However, flexible metal tapes of 10 m (25 ft) or less that are not normally used under tension shall be tested with no tension applied. All tapes shall be supported throughout on a horizontal flat surface whenever tested.  
(Amended 1972)

<b>Table 2.</b> <b>Maintenance and Acceptance Tolerances, in Excess and in Deficiency, for Metal Tapes</b>	
Nominal interval from zero	Tolerance
feet	inch
6 or less	1/32
7 to 30, inclusive	1/16
31 to 55, inclusive	1/8
56 to 80, inclusive	3/16
81 to 100, inclusive	1/4