

ANNEX X

MATERIAL MEASURES (MI-008)

CHAPTER I

Material measures of length

The relevant essential requirements of Annex I, the specific requirements of this Annex and the conformity assessment procedures listed in this chapter, apply to material measures of length defined below. However, the requirement for the supply of a copy of declarations of conformity may be interpreted as applying to a batch or consignment rather than each individual instrument.

DEFINITIONS

Material measure of length	An instrument comprising scale marks whose distances are given in legal units of length.
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SPECIFIC REQUIREMENTS

Reference Conditions

- 1.1. For tapes of length equal to or greater than 5 metres, the maximum permissible errors (MPEs) are to be met when a tractive force of fifty newtons or other force values as specified by the manufacturer and marked on the tape accordingly, or in the case of rigid or semi-rigid measures no tractive force is needed, is applied.
- 1.2. The reference temperature is 20 °C unless otherwise specified by the manufacturer and marked on the measure accordingly.

MPEs

2. The MPE, positive or negative in mm, between two non-consecutive scale marks is $(a + bL)$, where:
 - L is the value of the length rounded up to the next whole metre; and
 - a and b are given in Table 1 below.

When a terminal interval is bounded by a surface, the MPE for any distance beginning at this point is increased by the value c given in Table 1.

Table 1

Accuracy Class	a (mm)	b	c (mm)
I	0,1	0,1	0,1
II	0,3	0,2	0,2
III	0,6	0,4	0,3
D — special class for dipping tapes ^a	1,5	zero	zero

a Applies to the tape/dip weight combinations.

b If the nominal tape length exceeds 30 m, an additional mpe of 0,75 mm shall be permitted for each 30 m of tape length.

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

Table 1

Up to and including 30 m ^b			
S — special class for tank strapping tapes For each 30 m length when the tape is supported on a flat surface	1,5	zero	zero

a Applies to the tape/dip weight combinations.

b If the nominal tape length exceeds 30 m, an additional mpe of 0,75 mm shall be permitted for each 30 m of tape length.

Dip tapes may also be of Classes I or II in which case for any length between two scale marks, one of which is on the sinker and the other on the tape, the MPE is $\pm 0,6$ mm when application of the formula gives a value of less than 0,6 mm.

The MPE for the length between consecutive scale marks, and the maximum permissible difference between two consecutive intervals, are given in Table 2 below.

Table 2

Length <i>i</i> of the interval	MPE or difference in millimetres according to accuracy class		
	I	II	III
$i \leq 1$ mm	0,1	0,2	0,3
$1 \text{ mm} < i \leq 1$ cm	0,2	0,4	0,6

Where a rule is of the folding type, the jointing shall be such as not to cause any errors, supplementary to those above, exceeding: 0,3 mm for Class II, and 0,5 mm for Class III.

Materials

3.1. Materials used for material measures shall be such that length variations due to temperature excursions up to ± 8 °C about the reference temperature do not exceed the MPE. This does not apply to Class S and Class D measures where the manufacturer intends that thermal expansion corrections shall be applied to observed readings where necessary.

3.2. Measures made from material whose dimensions may alter materially when subjected to a wide range of relative humidity, may only be included in Classes II or III.

Markings

4. The nominal value shall be marked on the measure. Millimetre scales shall be numbered every centimetre and measures with a scale interval greater than 2 cm shall have all scale marks numbered.

CONFORMITY ASSESSMENT

The conformity assessment procedures referred to in Article 17 that the manufacturer can choose between are:

F 1 or D1 or B + D or H or G.