**Comments from Japan to the   
OIML R 35-1 Material measures of length for general use.   
Part 1: Metrological and technical requirements (2007)**

**Submitted to TC 7 Secretariat on 12 August, 2013**

We support the opinion submitted by European Tool Committee on 1 August, 2013.

Assuming conventional tape measures made of steel, the present requirement to MPE (maximum permissible errors) under the rated operating condition (clause 4.2) with a wide temperature range (±8 ºC) is too severe for the manufacturers. For example, a thermal expansion of a steel tape with a total length of 100 m becomes 8.6 mm under a temperature change of 8 ºC. This value is equivalent to 85% of MPE of class I.

We consider that it is not realistic to specify a rated operating condition (temperature) in R 35 because such measures, especially long measures, usually used outside under different and uncontrollable climatic conditions. Measurers using such tape measures are usually aware (and should be aware) of a fact that the material expands or contracts corresponding to the temperature. They should consider measurement uncertainty due to the thermal expansion that may be partly corrected using known values of thermal expansion coefficient.

Therefore, we request that the following points should be taken into considerations in the future revisions of R35.

1. Maximum permissible error in the initial verification (4.2) should be applied to the constant reference temperature (20 ºC with a tolerance ±2 ºC) and not to the rated operating condition (20±8 ºC). Another reference temperature may be specified by the manufacturer if necessary.
2. The requirement to maximum permissible error in service (4.3) may not be necessary.
3. The first dot point of 6.2 (*the properties of the materials*...) is not necessary. A value of thermal expansion coefficient of the material may be provided if it is necessary to make a correction.