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Dear Members of OIML TC7**,** 1st August 2013

**OIML R35 Part 1, Industry Perspective**

Further to Christine Munteanu’s email of 9th July requesting your suggestions for the amendment of R35-1, we would like to give you an industry perspective on this subject and also its affect on interpretations of annex MI-008 of MID.

OIML R35-Part1 2007 Edition’s specification of “rated operating conditions” is in our view misconceived and possibly the cause of differing interpretations of MID annex MI-008 by various authorities.

MI-008 does not specify rated operating conditions, but some authorities have interpreted the temperature variation material specification of +/-8°C in clause 3.1, in the section headed “Materials”, as a rated operating condition to be taken into account in the MPE. Other authorities have not interpreted MI-008 in that way and have continued to apply the MPE at the reference temperature. There is ample documented evidence of this.

In R35 1985 edition the only requirement in which temperature variation was specified was in regard to the stability of the material. The same was the case in EC Directive 73/362/EEC in force prior to MID. We maintain that this should have been carried through into R35 2007 edition and is the correct interpretation of MI-008.

However, R35 2007 edition introduces this temperature variation of +/-8°C as a rated operating condition, but in a confused manner. In the section “Materials”, clause 6.2 includes the words “.....plus all other errors....” a variable which is impossible as a material property.

This indicates a lack of clarity in applying rated operating conditions at a late stage in the drafting of R35 without due consideration. It was introduced at the 1DR stage at which industry was no longer a party to consultations and we did not become aware of it or of the publication of R35 Part 1 until 2011.

Applying +/-8°C as a rated operating condition makes no practical sense. Material measures of length can be used in any climatic environment and expansion or contraction of the measure will always take place as will expansion or contraction of the object to be measured usually by a larger or smaller amount. In our view the climatic environments in which the products can be used should be stated, but the MPE should apply as before at the reference temperature.

Thus the interpretation of MI-008 for material measures of length will be made clear, in that the temperature variation in the material specification clause 3.1 does not apply as a rated operating condition.

It is noteworthy that material measures of length are not the only type of measuring instrument covered by MID which does not specify any rated operating conditions. The same is the case with capacity serving measures.

A suggestion that Class I accuracy should be applicable only to tape measures made of base materials with low thermal expansion, such as invar tapes, should not be considered here. Invar tapes are not generally known in today’s industry. References suggest that invar tapes were made mainly in the first half and early second half of the last century for precise base line measurements in surveying and have been superseded by EDM. Generally they have only end marks and one or two intermediate marks. Also because the alloy is soft, an invar tape has to be reeled onto a minimum 16” diameter drum in order that it is not permanently damaged.

It certainly cannot be described as a “material measure of length for general use” which is the title of OIML R 35-1. Furthermore R35-1 clause 14 describes measures for short lengths, which are semi-rigid, have cambered blades and generally are tightly wound into a case. 14.4 states that they should be Class I or Class II. For the reasons above they can certainly not be made from invar. Therefore invar tapes are not appropriate material measures of length for inclusion in R35 and should not be the only tapes available in Class I.

Although the large majority of tapes in the market are of EC Class II accuracy, EC Class I measuring tapes have been supplied in substantial quantities to the EU market for some years and customers have specified them in their catalogues. If the MPE at rated operating conditions of +/-8°C remains specified in R35 and becomes the generally accepted interpretation of MI-008, manufacturers will not be able to manufacture Class I tapes in an economic way, with up to 80% of the MPE taken up with thermal expansion effects, and will be forced to withdraw them from the market. EC Class II tape measures will be more difficult to manufacture with up to 40% of the MPE taken up with thermal expansion effects. Thus competition in the market will be reduced, contrary to one of the main intentions of MID.

Furthermore there has been no demand from the market for a tightening of the accuracy tolerances which have applied for many years in R35 1985 Edition, so it is merely the idea that rated operating conditions should be specified, unnecessary for material measures in our view, which have brought about the change in R35 2007 Edition.

We hope that you will take our points of view into consideration in your deliberations.

Yours sincerely,

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