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Issue 1

WELMEC

European cooperation in legal metrology

Measuring Instruments Directive (2004/22/EC): Common Application – Capacity Serving Measures (CSM)



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WELMEC

European cooperation in legal metrology

WELMEC is a co-operation between the legal metrology authorities of the Member States of the European Union and EFTA. This document is one of a number of Guides published by WELMEC to provide guidance to manufacturers of measuring instruments and to Notified Bodies responsible for conformity assessment of their products. The Guides are purely advisory and do not themselves impose any restrictions or additional technical requirements beyond those contained in relevant EC Directives. Alternative approaches may be acceptable, but the guidance provided in this document represents the considered view of WELMEC as to the best practice to be followed.

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Contents

- 1 Foreword
- 2 Background
- 3 Compliance with the essential requirements
- 4 Conformity assessment procedures
- 5 Essential Requirements
 - 5.1 Preamble
 - 5.2 Definitions
 - 5.3 Maximum permissible errors
 - 5.4 Durability
 - 5.5 Suitability
 - 5.6 Information to be borne by the capacity serving measure
 - 5.7 Materials
 - 5.8 Shape
 - 5.9 Marking
- 6 Prescription: Application of Member State
 - 6.1 Austria
 - 6.2 Czech Republic
 - 6.3 Finland
 - 6.4 Germany
 - 6.5 Spain
 - 6.6 Slovakia
 - 6.7 Slovenia
 - 6.8 UK
- 7 Specific Decisions
 - 7.1 Question 1: Ceramic Mug – Outside marking
 - 7.2 Question 2: CSM with CE marking etc on accompanying documentation

1 Foreword

1. This document is intended to provide guidance to all those concerned with the application of Measuring Instruments Directive 2004/22/EC, on capacity serving measures. It provides a record of the continuing work of WELMEC Working Group 8 in the area of the common application of the Directive itself. The document is one of a number of Guides published by WELMEC to provide guidance to manufacturers of measuring instruments and to notified bodies responsible for conformity assessment of their products. The Guides are purely advisory and do not themselves impose any restrictions or additional technical requirements beyond those contained in relevant EC Directives. Alternative approaches may be acceptable, but the guidance provided in this document represents the considered view of WELMEC as to the best practice to be followed.

2. This guidance is intended to assist manufacturers, notified bodies and competent authorities in the Member States in understanding the requirements of the Directive.

2 Background

3. The Directive under Article 1 for Material Measures (Annex MI-008) in Chapter II applies to capacity serving measures. It provides in Article 2 that Member States may prescribe them for measuring tasks for reasons of public interest, public health, public safety, public order, protection of the environment, protection of consumers, levying of taxes and duties and fair trading where they consider it justified. Therefore prescription may be different in each Member State however where measures are regulated they are required to be in conformity with the MID. Basic information in relation to prescription in each Member State can be found on the WELMEC web-site at:

<http://www.welmec.org/welmec/mid-information.html>

4. The Commission has issued guidance on New Approach directives "Guidance on the implementation of directives based on the New and Global Approach" which can be found at

<http://ec.europa.eu/enterprise/policies/single-market-goods/documents/blue-guide/>

5. The "New Approach" to Technical Harmonisation is an important part of the process for achieving the single market. It is intended to remove the technical barriers to trade caused by differing national laws. Directives agreed under the New Approach allow for the free movement (placing on the market and putting into service) in the Community of goods that conform to the essential and other requirements of those Directives. Such products carry the "CE marking" (and in relation to the metrology Directives additionally the 'M marking') and, subject to limited restrictions, no Member State is allowed to refuse complying products access to its market. In this case all compliant capacity serving measures covered by the Directive 2004/22/EC have free movement throughout the Community. This is subject to legislation on units of measurement. It is also important to recognise that Member States may for consumer protection reasons only allow certain capacities of measures to be provided in regulated areas whereas in unregulated areas the market is unrestricted.

6. The Directive applies to CSM which are first placed on the market or put into use. It is for Member States to decide how they are regulated once on the market i.e. in-service control. For many member States, CSM where previous national prescription was not subject of type approval just verification (e.g. the UK), the transitional provisions of the MID

are not applicable therefore all new measures placed on the market after 30 October 2006 were immediately subject to the MID. It should be born in mind that existing stock of national measures placed on the market but not put into use could still exist. For other Member States where such measures are the subject of generic national approval (e.g. Austria, Germany) the transitional provisions could enable national measures to be first placed on the market until 30 October 2016 or the life of the approval whichever is the sooner. It is possible that a Member State's legislation prior to 30 October 2006 also permitted approved CSMs from another Member State to be placed on to their market in which case those CSM types can continue to be placed on the market of the first mentioned Member State until the expiry of that approval.

7. The Directive provides an 'optionality clause'. This means that Member States may prescribe the scope, category and range of applications for measuring instruments they wish to control. This may lead to a variation between Member States which will mean that for the same use, instruments in some Member States will be regulated, whereas in other Member States they will not. Member States may choose to only regulate in certain areas of legal metrological control. Where regulated in relation to capacity serving measures this may also mean that there are certain nominal capacity restrictions as is the case for use for trade in the UK. In the UK therefore where CSM are regulated only those measures which conform to the MID and nominal capacity restrictions can be placed on the UK market. In all other 'non-prescribed' areas of the market CSM are unregulated e.g. a glass into which beer is poured from a measuring container bottle.

8. For existing national measures these need only to have had to be placed on the market not put into use as well. This may have been achieved in a number of different ways including specifically identifying stock for a given customer or transferring stock to another legal entity. For further generic guidance reference should be made to the European Commission Guide to the Global and New Approach.

3 COMPLIANCE WITH THE ESSENTIAL REQUIREMENTS

9. Manufacturers can use more than one method for compliance with the essential requirements. These methods are identified as:-

- using any technical solution that complies with the essential requirements;
- correctly applying solutions set out in the relevant harmonised standard; or
- correctly applying solutions set out in the relevant normative document,

or any mix of these, and selecting and following one of the conformity assessment procedures referred to in MID MI-008 Chapter II.

10. For CSMs the harmonised standard option has not been taken forward therefore there are no standards available. Measures which conform fully or in part to normative documents will be presumed to conform fully or in part to the essential requirements. A normative document covering capacity serving measures was published by the Commission in Official Journal 2009/C268/01 in relation to OIML R138 edition 2007.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:268:0001:0012:EN:PDF>

11. The cross reference table for CSM published in the OJ addresses all the relevant provisions of the Directive, both the general and instrument specific requirements, in relation

to those relevant paragraphs of the OIML Recommendation R138 and provides comment, in general terms, in relation to any limitations. The equivalent WELMEC document sets out in more detail guidance in the form of a corresponding table. The CSM document is WELMEC Guide 8.18-2.

http://www.welmec.org/publications/WELMEC_8.18-2_issue_1.pdf

12. Where conformity is only in part to normative documents or not in accordance with normative documents then other technical solutions can be used to give full conformity. Other technical solutions could include the use of national standards, European standards or other International standards. However In such cases, presumption cannot be guaranteed as conformity will need to be established directly against the essential requirements. Manufacturers are advised to check this with their notified body.

13. The appropriate OIML Recommendation for capacity serving measures is Recommendation R138 (2007) which can be found on the OIML web-site at:

<http://www.oiml.org/publications/>

4 CONFORMITY ASSESSMENT PROCEDURES

14. The different conformity assessment procedures available to manufacturers are set out as modules in the annexes of the Directive. These modules are A to H1. The modules, and combinations, available to manufacturers of capacity serving measures are shown in the table below.

	A1	D1	E1	F1	B+D	B+E	H
CSMs	✓	✓	✓	✓	✓	✓	✓

15. In relation to all available options it is recognised that statistical sampling may be used in the conformity assessment process. The sampling requirements applied should ensure that the generic requirements in relation to the particular conformity assessment module are met.

16. In relation to Module F1 under points 6.1 and 7.2 it is for the Notified Body to decide on the actual tests to be carried out for product verification as these are not identified in the OIML normative document R138.

Note: It should be recognised that the International Standard (ISO 3951; 1989) referred to in Annex A of R138 in relation to statistical tests relates to sampling by variables whereas the basis of statistical sampling in relation to Module F1 is against attributes.

17. Where verification of conformity takes place following the testing of random samples drawn from a homogeneous batch this must be carried out on the basis of statistical sampling by attributes against both of the requirements in point 7.3 as set out below:

- A level of quality corresponding to a probability of acceptance of 95%, with a non-conformity of less than 1%.
- A limit of quality corresponding to a probability of acceptance of 5%, with a non-conformity of less than 7%.

The first indent relates to sampling on the basis of an acceptance quality limit (AQL) and the second relates to sampling on the basis of a limiting quality (LQ). The most appropriate sampling standard is ISO 2859; Part 1 (AQL sampling plans) and Part 2 (LO sampling plans). It is important to recognise that not all sampling plans fit both AQL and LQ requirements.

Note: A separate WELMEC guide is being developed to provide guidance on the use of appropriate sampling plans for the purpose of statistical verification.

5 Essential Requirements

5.1 Preamble

18. There are two elements to the essential requirements. Annex I of the Directive outlines the essential requirements with which all measuring instruments must, where relevant, comply. Annex MI-008 cover the specific requirements relating to Material Measures. Chapter II of that annex relates to Capacity Serving Measures.

19. The two sets of essential requirements, general and specific, have been combined together to provide a more consistent presentation of the requirements and details which are not relevant to capacity serving measures have omitted.

20. The preamble to Annex I of the Directive, see below, should be noted as it sets out the underlining principle behind the essential requirements:

‘A measuring instrument shall provide a high level of metrological protection in order that any party affected can have confidence in the result of measurement, and shall be designed and manufactured to a high level of quality in respect of the measurement technology and security of the measurement data.’

21. The essential requirements are generic. For instance the method of testing is not specified therefore this could be by gravimetric or volumetric means. The method of test and the standards to be used for testing is one that would be determined by application of the relevant harmonised standard or normative document, where available, or by the notified body appropriate to the particular conformity assessment module. Notified bodies responsible for quality system certification would be looking to ensure that appropriate equipment used by manufacturers, traceable ultimately to International standards, was being used by trained personnel to carry out checks and tests on CSM.

5.2 Definitions

22. This covers the generic definitions and those for CSM. A CSM is a material measure.

23. The examples given in the definition of capacity serving measure e.g. drinking glass, jug or thimble measure, applies to all types of measures as appropriate be it a drinking (serving) measure or a transfer measure. It is for the manufacturer to define the type of measure however in many cases this can often be established by its design.

24. If a measure has a pouring spout/lip then the manufacturer is in effect declaring that this measure is a transfer measure and therefore the particular essential requirement in relation to the 'shape' applies. Measures without a pouring spout/lip or other such means could be either a transfer measure or drinking measure. An example of this would be a thimble measure (transfer measure) for measuring out spirit into a glass to which a mixer is added e.g. rum and coke or gin and tonic, or the same type of measure provided as a 'shot' glass specifically for drinking spirit neat (drinking measure).

25. It is important to recognise that the definition of a transfer measure relates to its intended use. It is for pouring from a legal measure into another measure which may not be a legal measure, for consumption.

26. Consumption in this context relates to drinking by human beings. It is not intended to cover the broader meaning of 'use'. Therefore it does not cover a transfer measure which is used for example in the measuring out of liquid detergent for pouring into a washing machine or dish washer.

27. In relation to 'transfer measure' the English text refers to 'decant' and this relates to the general context of pouring out from the one measure, in this case the legal measure, to another, the unknown, for immediate consumption. Decant should not be read in relation to the more specific meaning of to pour off, wine for example, without disturbing the sediment as is the general understanding in the Latin languages. *Note: The Commission is currently finalising a corrigendum to the MID in relation to translation errors specific to certain languages.*

5.3 Maximum permissible errors

28. The MPEs are as set out in MI-008 Chapter II point 2. For the avoidance of doubt the bi-lateral MPE for line serving 'drinking' measures greater than or equal to 200 ml presented as $\pm 5 \text{ ml} + 2.5 \%$ should be read as $+ 5 \text{ ml} + 2.5 \%$ and $- 5 \text{ ml} - 2.5 \%$. The percentage figure relates to the particular capacity.

Note: For brim measures the '+' sign indicates that the measure contains at least the brim capacity V_r up to a maximum of V_r plus MPE.

29. For line measures the meniscus must be taken into consideration in the determination of the MPE. This should be established using the convention where the bottom part of meniscus coincides with the top of line (as opposed to the top of meniscus to bottom of line). This is the convention that is specified in the International Standard ISO 4787 (1984) on Capacity Testing of Laboratory Glassware, and OIML Recommendation R138: Vessels for Commercial transactions (2007).

Section 7 (Setting of the meniscus) of the International Standard states:

'The meniscus shall be set so that the plane of the upper edge of the filling line is horizontally tangential to the lowest point of the meniscus with the line of sight being in the same plane.'

Point 4.6.1 (Vessels with gauge marks) of the OIML Recommendation states:

'"Filled to the gauge mark" is when the lowest part of the meniscus formed by the liquid is tangential to the upper edge of the gauge mark.'

30. For brim measures the MPEs should be established where the surface of the liquid is in the same plane as the brim. Using a 'strike' glass may assist with this measurement.

31. The MPEs relate to a reference temperature of 20°C therefore it is important when determining the capacity of the measure to make the appropriate adjustment for the temperature of the liquid.

5.4 Durability

32. This requirement must be considered in relation to the intended use of the CSM and therefore measures intended for 'one off' use can be treated differently from those which are expected to be used on an ongoing basis. For plastic measures used on an ongoing basis one might expect, similar to glass measures, such measures to be rigid and capable of withstanding a temperature sufficient for continual cleaning in hot water as they are likely to be used in a glass washing machine or dish washer e.g. 95°C for 10 minutes, without deformation or showing signs of striation.

33. For 'one off' use less rigid measures could be acceptable. OIML R138 under paragraph 4.2 provides guidance on what may be permitted and suggests that drinking measures may be made of thin plastic or cardboard provided that they 'remain accurate during nominal filling, transportation and discharge functions'.

34. It should be noted that 'one off' measures are often used during large indoor or outdoor social events e.g. concerts for selling alcoholic drinks and organizers of those events may be obligated to use less rigid measures i.e. flexible measures, for health and safety reasons. These measures must be suitable for purpose and in accordance with MI-008 Chapter II point 3 and be sufficiently rigid and dimensionally stable to maintain capacity within the MPE when used.

5.5 Suitability

35. The measure must be designed without potential fraudulent features and minimise inadvertent misuse. How this is achieved will depend on the type measure and both possibilities should be considered at the design stage. As an example transfer measures of the thimble type in addition to single ended measures are often made double ended as a single and double measure e.g. 25 ml and 50 ml, or with two dissimilar capacities e.g. 25 ml and 35 ml. A measure with more than two capacities would need to be considered very carefully to ensure that the design does not add to the possibility of fraud or misuse.

36. In relation to intended use it is important to establish whether the robustness of the measure is suitable for the intended use i.e. for 'one off' or continued use. This needs to be considered both in the context of an indoor and an outdoor environment eg sporting events, pop concerts. One off measures need only be sufficiently rigid to support the weight of the liquid and to provide sufficient strength to enable the measure to be lifted whilst maintaining the capacity within the MPE.

5.6 Information to be borne by the capacity serving measure

37. Annex I point 9.7 indicates that the permissible units of measurement and their symbols are as set out in EU legislation. This legislation is the Units of Measurement Directive (as amended) which in addition to metric units permits for CSMs the Imperial unit of the pint 'pt' to continue to be used solely for the dispensing of draught beer and cider in the UK and Ireland. It should also be recognised that placing both metric and Imperial capacities

on the same CSM would not be acceptable in many Member States. (See section on 'Marking' in relation to additional capacities.)

38. Note: It should be recognised that under 'optionality' some Member States may not prescribe the use of CSMs whilst other Member States only prescribe CSMs for certain uses. Equally it may be that for consumer protection measures only certain capacities are prescribed for such use.

39. "Old national" marked CSMs are only valid inside individual Member States unless other Member States have existing agreements in place. Placing on the market of these national measures after 30 October 2006, under the transitional provisions of the MID, depends on whether the existing national arrangements required CSMs to be type approved. Unlimited approvals are valid until 30 October 2016. It is not accepted that CSMs which fulfill "old national" and MID requirements can have both markings on the measure as this can be misleading and cause confusion among users. It is also likely to be considered contrary to Article 7.3.

40. In relation to Annex I point 9.2 it is regarded that all CSMs should bear the required markings as no CSM is considered likely to be either too small or of too sensitive a composition. Manufacturers would not be justified in arguing that markings are not required because it will spoil the appearance of the measure. Appropriate means to apply the marks should be found applicable to the design of measure to be marked. Even where CSMs are not mass produced this should equally be considered the position. This means that all, for all practical purposes, CSMs should bear CE mark as a proof of conformity.

41. On CSM transfer measures down to 25 ml it should easily be possible to provide the necessary marks in a clearly visible form. It may also be possible for smaller capacities to be marked however this needs greater care to ensure that the requirements are met.

42. It is important to recognize that so long as the manufacturer's name or mark is on the CSM other names such as a name of a beer or hotel can be added. CSMs do not have to bear 'information in respect to accuracy' as this is optional (see preliminary remarks to MI-008 Chapter II).

5.7 Materials

43. The requirements in relation to durability affect the materials which can be used and are different for 'one off' measures and those for 'ongoing' use.

44. Brim measures made of flexible plastic may not satisfy the test to be sufficiently rigid and dimensionally stable if any slight hand pressure, sufficient for holding the measure, would be likely to result in any loss of liquid or take the capacity of the measure outside the MPE. No test for the degree of compressibility of the measure is set out however such measures with a lip, sleeve or collar at the place of holding may be sufficient to meet the requirements. Line measures made of more flexible plastic with an appropriate amount of space above the line to the brim are likely to satisfy the requirement as any slight compression is unlikely to result in any loss of liquid however it is still required to remain with its MPE.

45. There is no restriction on the opacity or colour of materials used. Materials can be opaque, translucent or transparent and of different colours. Frosted or decorated material is permitted. Different combinations over all or part of the measure is in principle acceptable. In all cases the overriding consideration will be the adherence in particular to the essential requirements for suitability and information to be borne by the measure including the

conformity markings. Where measures are made of opaque materials then only brim measures are appropriate unless the line is on the inside of the measure at such a height that the line can be easily be seen. It should be stressed that such measures are unlikely to be suitable for use with drinks which have a 'head' (froth) (see Question 1)

5.8 Shape

46. The particular requirements on shape in MI-008 Chapter II point 4 relate solely to transfer measures.

47. The requirement in point 4.1 relates to a 2 mm change in the level of the liquid about the brim or filling mark. For a transfer measure of 35 ml nominal capacity (typically for spirits) this comes in the capacity range < 100 ml where the error is fixed at ± 2 ml (line) and 4 ml (brim) and would correspond to a maximum diameter of about 50 mm.

48. For a transfer measure of 175 ml nominal capacity (typically for wine) this comes in the capacity range ≥ 100 ml where the error is $\pm 3\%$ (line) and 6% (brim) of the nominal capacity and would equate to 10.50 ml. This would correspond to a maximum diameter of about 81 mm. Note: calculation is based on the absolute error.

49. The requirement in point 4.2 relates to the discharge of the liquid from the measure and as such should be considered as a guide in assessing the acceptability of the measure to ensure that no liquid is trapped on emptying when tilted. It is recommended that the measure is tilted to an angle of 135 degrees from the vertical for any rotational orientation about that axis.

5.9 Marking

50. The conformity markings are set out in Article 17. These markings may appear in one horizontal or vertical line or the markings may be split over a number of lines or be on a curved line provided that they are closely associated with each other (See examples in Figure 1). There is no requirement that the conformity markings and the quantity denomination have to be closely associated. Therefore it is possible that the required conformity markings might appear elsewhere on the measure.

51. For **brim measures**, the manufacturer could choose to place the nominal capacity marking on the base of the measure. For **line measures**, the line plus nominal capacity should be placed on the side of the measure. It would normally be expected, and could be considered contrary to marking and suitability requirements, if the capacity is marked other than in close proximity to the line e.g. on the base.

52. Conformity markings should generally, appear on the side of the measure and be associated with the quantity declaration however they may appear on the base so long as they met the requirements in Article 17. It is recognised, particularly where there is a need to change the 'year digits' annually, that placing the conformity markings on surfaces like the base would allow more practical (and cost effective) changes to be made to moulds or marking equipment.

53. The requirement in MI-008 II point 5.2 permits up to three additional capacities to be marked on the measure subject to certain constraints. This would therefore include both sub-divisions of nominal capacities and other nominal capacities. Capacities must be both clearly distinguishable from each other and not lead to confusion. Even though it would be possible to place both metric and Imperial capacities of non-similar nominal values on the same

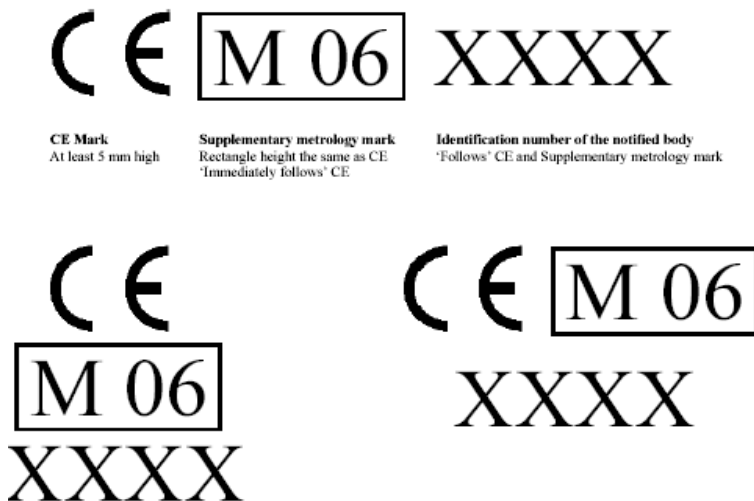
measure e.g. 1 pint and 0.2 litre, it would not be acceptable in many Member States where Imperial capacities are prohibited and in the UK where Imperial capacities only are prescribed for the measurement of certain intoxicating liquors i.e. beer and cider.

54. In relation to line measures the thickness and length of the filling mark is required under Annex 1, point 7.2 and MI-008 II point 5.3 to be such that the correct result can be determined without any undue effort of behalf of the user and the line is sufficiently clear and durable to ensure that the MPE is not exceeded.

55. If the line is too thick, then it is prohibited as a filling mark. As an example the thickness of the filling mark on a 500 ml drinking measure must not be greater than corresponds to the MPE i.e. 35 ml, and the diameter of the measure. With a CSM having a diameter of 80 mm the maximum thickness of line equates to 7 mm (based on the absolute value of the error). In an endeavour to prevent exploitation an acceptable solution would be having a filling line with a minimum thickness of 0.4 mm and not more than of the height that corresponds to $\frac{1}{3}$ of the MPE. This would correspond to a thickness of about 2 mm in the above example. Where this is greater than $\frac{1}{3}$ of the MPE it should be clear to the user that the upper edge is the relevant edge in relation to the measurement.

56. There is no specific limit on the length of line however this should in general be proportionate to its thickness so that it has the appearance of a long narrow mark. The mark should not extend out of sight to the user in relation to the capacity marking. It is unlikely that a filling mark of less than 10 mm or more than a $\frac{1}{4}$ of the circumference of the measure would be acceptable.

Possible Examples of Article 17 Markings required by the MID Directive



Note: The above representations of the CE, M and notified body number markings are provided as examples of how they might be set out on a measure or measuring instrument. To ensure that the marking are presented fully as required reference should be made to the text in Article 17.

Figure 1

6 Prescription: Application of Member State

Below are listed those member States where capacity serving measures are regulated. The list of countries may not be exhaustive. It provides an indication of level and scope of prescription.

6.1 Austria

In relation to the transitional provision of the MID until 30 October 2006 there was an obligatory registration for manufacturers of regulated CSMs and an allocation map with their marks for market surveillance purposes. The registered manufacturers may use their registered marks until 30 October 2016.

Products from registered manufacturers from other member states (pre MID legislation) are accepted. For market surveillance purposes the seller has to show document for legality in that country of the EC or EEA on demand.

The requirements are valid for the quality of product and the responsibility rests with the manufacturer.

There are requirements for usage (only certain sizes are allowed: prescribed quantities), based on consumer protection.

Fair competition: every EC-manufacturer can produce and market his CSM's with the prescribed quantities in Austria.

Prescribed quantities: for direct selling open drinks (all except coffee, tea and mixed drinks with milk)

- 0,01; 0,02; 0,025; 1/32; 0,04; 0,05 or 1/16 litre;
- 0,1; 1/8; 0,2; 0,25 or 1/4; 0,3; 0,4; 0,5 or 0,75 litre;
- 1; 1,5; 2; 3; 4 or 5 litres

6.2 Czech Republic

In relation to the transitional provision of the MID until 30 October 2006 there was an obligatory registration for manufacturers of regulated CSM's and an allocation map with their marks for market surveillance purposes. The registered manufacturers may use their registered marks until 30 October 2016

The possibility exists to accept instruments legally put on the market and in service in other country provided the regulation gives an equivalent level of protection, This applies to CSM approved nationally before MID.

The requirements are valid for the quality of product and the responsibility rests with the manufacturer.

There are regulated CSM's for direct selling open drinks (all except coffee, tea and mixed drinks with milk).

Capacities for CSMs used are those prescribed in OIML Recommendation R138.

6.3 Finland

Until 30 October 2006 the national legislation in Finland required a type approval of capacity serving measures in regulated field for sale of alcoholic beverages (beer or cider) and non-alcoholic beverages (when sold by volume). These capacity serving measures could be manufactured in Finland or in any other countries. The approval certificates have a validity period of 10 years. The type approved CSMs can be placed on the market and put into use in Finland until the date of expiration of the certificate. After 30 October 2006 CSMs fulfilling the requirements of the MID can be used in serving all alcoholic drinks.

Initially verified transfer measures were used to measure the volume of other alcoholic drinks (sprints, wine) according to the national requirements until 30 October 2006. After that transfer measures put on the market and used in regulated measurements need to fulfil the requirements of the MID. It is the choice of the restaurant/entrepreneur whether to use CSMs or transfer measures or other types of measuring instruments to fulfil the requirement to measure alcoholic beverages.

6.4 Germany

In relation to the transitional provision of the MID until 30 October 2006 there was an obligatory registration for manufacturers of regulated CSM's and an allocation map with their marks for market surveillance purposes. The registered manufacturers may use their registered marks until 30 October 2016.

Germany regulates CSM's for selling directly open beverages in restaurants, except for cocktails mixed before serving, coffee, tea, cocoa, chocolate or similar prepared drinks, and refreshments from vending machines prepared by addition of water. For "old national" regulation, there is an obligatory registration for manufacturers of regulated CSM's and an allocation map with their marks for market surveillance purposes.

MID permits any capacity however in Germany for consumer protection purposes for the above use this is limited to the following nominal capacity measures: 1; 2; 4; 5 or 10 centilitre or 0,1; 0,2; 0,25; 0,3; 0,4; 0,5;1; 1,5; 2; 3; 4 or 5 litre.

6.5 Spain

The scope in Spain is the one in MID according to CSM definition.

The only CSM regulated are those which bear a declaration of nominal capacity used for commercial transactions.

6.6 Slovakia

CSM covered by old Slovak national regulations and other countries are still accepted. New measures of a type which has been approved according to the former national regulations may be placed on the market only during the validity of the type approval certificate or, in the case of a type approval certificate of indefinite validity, for a period of a maximum of ten years from 30 October 2006 (in accordance with Article 23 of the MID Directive). Where CSM from other countries are provided the recognition of initial verification carried out abroad is also necessary.

Capacity serving measures are used in regulated field for sale of open drinks (e.g. beer, wine, spirit, non-alcoholic drinks). But it is permitted to use measures made of thin plastic or cardboard for health or safety reasons on mass events which are not subject to metrological control.

6.7 Slovenia

Slovenia regulates CSMs for direct selling open drinks (except coffee, tea and mixed drinks with milk). We also regulate transfer measures.

In relation to the transitional provision of the MID until 30 October 2006 there was an obligatory registration for manufacturers - after assessing producer quality system. Other option was initial verification made from National metrology Institute (MIRS). Allocation map with their marks exist for market surveillance. The registered manufacturers may use their marks unless tools are replaced or the last until 30 October 2016.

Capacities for CSMs used are those prescribed in OIML Recommendation R138.

6.8 United Kingdom

The UK only prescribes for legal metrological control purposes CSM which are in use for trade, inter alia, for public interest, protection of the consumer and fair trading, in relation to the dispense of following intoxicating liquors both as drinking measures and serving measures:

- Beer and cider (Imperial units only)
- Wine and spirits (metric units only)

Spirits in the UK are only prescribed in relation to gin, rum, vodka and whisky. The MID permits any capacity however in the UK for consumer protection purposes this is limited to the following nominal capacity measures. Other capacities may be provided as sub-divisions on the measure however these are also limited in general to the multiples of certain base measures:-

- Beer and cider
 - 1/3 pint, 1/2 pint, 1 pint, 2 pints, 4 pints, 8 pints, 16 pints (nominal capacity of measure)
 - 1/3 pint, 1/2 pint and multiples of 1/2 pint (quantity for sale)
- Wine by the glass (carafe from 250 ml)
 - 125 ml, 175 ml, 250 ml, 500 ml, 1 litre, 2 litres, 2.5 litres, 5 litres, 10 litres and multiples of 10 litres (nominal capacity of measure)
 - 125 ml and 175 ml, and multiples of 125 ml and 175 ml (quantity for sale)
- Spirits
 - 25 ml, 35 ml, 50 ml, 70 ml, 100 ml (nominal capacity of measure)
 - 25 ml and 35 ml, and multiples of 25 ml and 35 ml (quantity for sale)

Note: The UK is considering permitting $\frac{2}{3}$ pint as a legal measure for beer and cider, adding brandy as a prescribed spirit, and allowing wine to be sold by the glass (as a taster) unrestricted for quantities below 75 ml. If however, sold by a nominal capacity measure then it will be restricted to capacities of 1 ml, 2 ml, 5 ml, 10 ml, 20 ml, 25 ml, 35 ml, 50 ml or 70 ml.

Other drinks (including beverages) in the UK are not specifically regulated and can therefore be sold by for example the cup or glass in small, medium or large sizes, however if sold by volume must only be sold in a defined UK legal capacity.

For full information on the current legal position please refer to the following UK legislation:-

- Schedule 3: Weights and Measures Act 1985 (as amended)
- Measuring Instruments (Capacity Serving Measures) Regulations 2006 (SI 2006/1264)
- Weights and Measures (Intoxicating Liquor) Order 1988 (SI 1988/2039) (as amended)

7 Specific decisions

7.1 Question 1: Ceramic mug with line marked on the outside of the measure

MID - Annex I paragraph 1.1 and MI-008 Chapter 2 paragraph 2 (MPEs), and Annex I paragraph 7.2 (Suitability) applies:

- A ceramic mug is unsuitable as a line measure with a line marked on the outside of the measure as it would be impossible, for beers and other drinks with a head, to determine the correct result (assuming the head is not part of the measure) and for flat beers and drinks, and beers where the head is considered part of the measure, it would place unreasonable demands on the users (buyer or seller) to obtain a correct result even if the mark was near to the top of the measure.
- A ceramic mug with the line marked on the inside of the measure would also be considered unsuitable for the same reasons as above except where the mark was near to the top of the measure i.e. generally not greater than 10 mm however for larger diameter measures where the line is clearly visible this may could be increased to 20 mm, and the use restricted to flat beers and drinks, and beers where the head is considered part of the measure.
- A ceramic measure would however be suitable as a brim measure.

Note: The above advice for ceramic mugs would equally apply to other opaque capacity serving measures (CSM). Establishing the correct position of the meniscus in relation to the line will become extremely difficult in relation to all opaque CSM.

7.2 Question 2: Measures with CE marking etc on packaging/ accompanying documentation

MID - Article 17.4 paragraph 2 (Markings) and Annex I paragraph 9.2 (Information to be borne by and accompany the measure) applies:

- It is unlikely that measures will be of too sensitive a composition and therefore could have markings on accompanying documentation.
- It is unlikely that any measure would be too small to prevent it from bearing the required markings.
- All measures, except in very special and limited circumstances, should be marked with all the required legal markings.

Note: From an enforcement point of view a measure without documentation or documentation which could not be specifically associated with a particular measure, would be regarded as unmarked and unsuitable for use for a legal metrological control purpose