DRAFT
RECOMMENDATION

TC 8/SC 5
(UK)

INFORMATION

Revision of R 49-2

Water meters intended for the metering of cold potable water and hot water.

Part 2: Test methods

Draft submitted for CIML online ballot on 2013.02.07

Voting closes on 2013.05.07

ORGANISATION INTERNATIONALE
DE MÉTROLOGIE LÉGALE

INTERNATIONAL ORGANIZATION
OF LEGAL METROLOGY

Draft Recommendation - Revision of R 49-2

Template for comments and secretariat observations

Date: 2012-10-31	Document: ISO 2DIS 4064-2 – Compiled comments'

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
FR			ge	Due to a lack of consensus inside the French mirror committee, France will cast the vote : abstention. It is important to notice that the vote could be changed in a positive vote if those comments are taking into account.		This comment was taken into account during the Joint Working Group discussion.
JP			ge	If our comments on 8.12.3 and 8.13.3 are accepted at the minimum, we will change our vote to "Yes".		This comment was taken into account during the Joint Working Group discussion.
AU			ed	We suggest that the temperature ranges and the flowrates be number for ease of referencing.		Editorial
FR			te	We still believe there is a need for a general requirement to cover "non exploitation of mpe" and " do not favour any party". The new text in 7.3.6 is not sufficient.	We propose to add the following sentence as new 6.1 9. "The meter shall not exploit the mpe nor favour any party".	This has been addressed in Part 1.
FR				A paragraph should be added to explain how the requirement on non exploitation of MPE and not favour any party is checked during type approval (evolution of the performance during time, influence of the different type of installation…)		No proposal given, so this could not be discussed further. For consideration at next Revision.
PL	vi	Forward	ed/ge	Please remember to correct the date of publication of this document. The final publication took place in 2011 is wrong. Generally, this page is direct copy of relevant page from ISO/DIS 4064-1.2/OIML R49-1 with all mistakes. Last line of this page: reference to OIML R49-1 should be changed to OIML R49-2.		Agreed
Kor	1		ed/	We propose to revise the second sentence		Agreed

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ea			ge	; This Part of ISO 4064/OIML R 49 sets out details of the test programme, principles, equipment and procedures to be used for the type evaluation and initial verification ~~testing~~ of a meter type.		
AT	Figure 2		ed	In the German version is used "P" it should be used "p". In both figures is used " Δ P" in the figures. Please change it to " Δ p" In the 2nd picture is used " Δ P_1" it should be corrected to " Δ p_2"		Noted and agreed.
JP	2		ed	In IEC 61000-4-5, "measuring" should be amended.	"measuring" should be amended to "measurement".	Agreed
PL		2	ed/ge	Please remember to correct the year of publication of parts of ISO 4064. What means sign "=" before OIML abbreviation in first two narrative reference?.		Agreed. '=' intended to signify that the ISO and OIML publications will be identical. However, these references are likely to be simplified in the final publication.
JP	3		ed		ISO 4064-1/OIML R 49-1	Agreed
CN		4		Reference supply water pressure should be limited in narrower pressure range (e.g. 0.2MPa to 0.6MPa) instead of rated operating conditions. Error curve of some water meters (e.g. Dry transmission water meters) are affected by pressure of supply water more obviously.		This technical change should be addressed at the next Revision
ID	4. Reference Condition	Paragraph 3	Ed	sign" : " in T30,T50 : 20 ^{0} C ± 5 ^{0} C and the other are confused	Should be revised with "is"	Editorial

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				there are 2 reference for T70 to T180 i.e 20 ^{0} C ± 5 ^{0} C and 50 ^{0} C ± 5 ^{0} C . in row 1 " Water pressure", number 1) of OIML R49 – 1) is written under Water pressure..	"and" should be revised with "or" Should be revised to be in same row.	Not agreed – this would be a major technical change Agreed
CN		6		In static pressure test, provision should be mad that the valve is in open state for water meters with control valve.		There is no reference to a valve in the static pressure test
FR	6.1 & 7.3.6		te	We propose a negative vote due to the same comment as last year : the text proposed even with the additional text does not bring an acceptable solution to fit to the essential requirement of the directive on measuring instruments However if the draft would be modified to include the requirement as in MID " The meter shall not exploit the maximum permissible errors or systematically favour any party" then we could change our vote in a positive one. Reminder of the reaction on the previous draft : The rule proposed is not correct as it comes back to the same wording that we discussed in the past for gas meters which do not guarantee anything. The manufacturer could have one point at a non significant flowrate which is within half of MPE and all the rest of the points greater than half the mpe so exploiting the mpe and in addition to the benefit of one party only. (This is exactly what we don't want in Europe) taking into consideration the additional problem identified by Canada that, (with the text as it was, a meter could pass a type test and still fail at initial verification using identical data, depending on which data points were used	Add : The meter shall not exploit the maximum permissible errors or systematically favour any party.	This has been addressed in Part 1.

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				at initial verification) it seems that the section 6 should include a requirement similar to the one used for initial verification in order to be consistent. "The meter shall not exploit the maximum permissible errors or systematically favour any party" could be included in both sections 6.1 and 7.3.6. in order to avoid that a meter that has passed type approval fail at initial verification.		
Korea	6.4.3.5.2		ed	We propose to replace the number I) and II) with i) and ii).		Editorial
JP	6.4.3.6.2.3 6)		ed		NOTE 1 and NOTE 2 should be added to the head of the last two sentences respectively.	Agreed
Korea	7.3.3.1		ed	We propose to replace the number a), b) and c) with i), ii) and iii).		Editorial
AU		7.4.2.2.4.1 , b)	ed/ge	As mentioned in Australia's comment on Part 1, there appears to be a number of interchangeable terms used throughout the Standard/Recommendation to describe the organisations responsible for performing type approval testing and issuing type approval certification. We suggest that terminology be developed and implemented to describe these organisations in a uniform way. We would suggest the following terminology, however would be open to discussion on the matter: Approving Authority:- the person or organisation responsible for evaluating the water meter and issuing type approval certification in accordance with this Standard/Recommendation.		See response to corresponding comment in Part 1. Use 'body responsible for type approval' where possible.

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				Testing Laboratory:- the person or organisation responsible for testing the water meter in accordance with this Standard/Recommendation. The Testing Authority maybe the same entity as the Approving Authority. Obviously the terminology would be defined in Part 1, however the following clauses are indentified as requiring such uniform terminology. In many cases the terminology used is similar and consistent with that proposed above. However, in each case consideration should be given to what power is given to a testing laboratory and what is retained by the approving authority where they are separate entities. • 4, last paragraph – "Type approval testing authority" • 7.4.2.2.7.5, 3) – "approving authority" • 7.4.4, NOTE – "approving authority" • 7.10.3, e) – "approving authority" • 8.1.8.1, NOTE – "approving authority" • 8.11.3, iii) – "approving authority" • 8.12.3, viii) – "approving authority" • 8.13.3, ix) – "approving authority"		

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				• 9.1 – "Notified Body or service responsible for type approval" • 9.4 – "approving authority" • 9.5 – "approving authority" • 10.1.1 – "Type approval testing authority" • B.2 – "metrological authority" • D.1 – "approving authority" • D.3 – "approving authority"		
AU		7.4.2.2.4.2 7.4.2.2.4.1 b	ed	the clause should read as follows, "…the expanded uncertainty of the method employed does not exceed the stipulated value…"		Agreed.
AU		7.4.2.2.6.1	ed	For consistency, we suggest changing the numbering to a), b), c)…		Editorial
ID	7.4.2.2.7.3	Paragraph 4	Ed	"from" in the statement : The relative variation of the pressure loss does not exceed : ±5 % from Q1 to Q2 (not inclusive) ± 10 % from Q2 (inclusive) to Q4 are not appropriate	"from" should be revised with "for"	To be rewritten using greater than or equal signs.
CN		7.4.2.2.7.2		1、Advice is needed to judge " pressure pulsation resulted by other method is not more		Agreed in principle, but this change should be saved for the next Revision.

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				than the effect by constant head device" 2、Suggest for all the test ,the variation of press not more than 10%.		
AU		7.4.2.2.7.5	ed	the heading should read as follows "Expanded uncertainty of the value of measured actual volume".		Agreed for 7.4.2.2.6.1
CN		7.4.2.2.7.5 2)		If the meters are marked 'V', meters should be mounted according to specification of manufacturer. If the specification permit meter to be mounted in both downstream and upstream, intrinsic error tests should be carry out in two case. If it only permits unique stream direction (up or down), it's not necessary to perform the error test in the other stream direction.		The test requires a V meter to work in both orientations. Changing this test requirement would be a major technical change, which should be considered at the next Revision.
CN		7.4.2.2.7.5 4)	ed	Add: If manufacturer claim that indication device in a complete meter cannot be positioned at the side, the test describe in this paragraph is not necessary.		No change agreed.
CN		7.4.4 1)	ed	Unity is suggested for every flow test point of three times.		Explanatory note to be given as in response to comments on Part 1.
AU		7.4.6	ed	We suggest replacing the dashes/dot-points with numbers/letters to assist with referencing. E.g. 1), 2), 3) or a), b), c) or i), ii), iii) etc…		Agreed – editorial.
JP	7.4.6.3		ed		Add the number 1), 2), 3) and 4) to each sentence respectively.	Agreed
JP	7.4.6.4		ed		Add the number 1) and 2) to each sentence.	Agreed

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CN		7.4.6.4	ed	Make clear the definition of "standard connection interfaces" and "valve mete"		Definitions for 'connection interface' are given in 3.1.21 and 3.1.24 of Part 1 (there is also extensive reference to different connection interface types in Part 4). Further clarification of 'valve meter connection interface' and 'tap meter connection interface' may be required at the next Revision.
AU		7.6.4, 1)	ed/ge	This test procedure refers to "cartridge meters or meters with exchangeable metrological modules". We cannot see the benefit in retaining both terms and suggest that a single term be devised and used throughout the standard to describe these types of meters.		See reply on definitions in Part 1.
PE	7.7.1		te	the meter should withstand the test without damage	should be added "without damage" similar to 7.3.1	This test is not concerned with overall damage, only with the effect on errors of indication.
CN		7.7.3	ed	out let pressure should be 0.03 MPa (0.3 bar) （0，. 5 %）		Agreed (-0, +5 %).
AU		7.7.3, 1) <u>7.6.4</u>	ed	The first requirement (1) seems to be redundant. If the error of indication, measured after recovery of the meter, is within the MPE (the third criteria) then does that not automatically satisfy the requirement that functionality regarding volume totalisation remain unaffected? Or is there an additional requirement that we have misunderstood?		Not agreed – the requirements are different.

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				Could that be explained?		
AU		7.8.3.1, 5)	ed	Include parentheses around the ±5%.		Follow CN comment above
JP	7.8.3.2	7th and 8th lines	ed	The numbering is wrong.	2) and 3) should be amended to 4) and 5).	Agreed
AU		7.9.2, Figure 1 7.8.3.1 5)	ed	Wes suggest that the clause be reworded as follows: "In addition, the following tests shall be carried out with the application of reverse flow: pressure loss test…"		Agreed
JP	7.9.2	Figure 1	ed	In the Figure 1, the position of 1 is wrong and the numbers 2 and 3 are missing.	The position of the numbers 1, 2 and 3 in the figure should be kept as it was in Figure 1 of the previous DIS, which was correct.	Errors in Figure 1 to be corrected
ID	7.9.2 Figure 1		Ed	figure : 1 Flow direction, in wrong place. 2 dan 3 is not exist in the figure . a and b are not explained	Need explanation for :1, 2 and 3, a, b, L1, L2, L in the correct place in the figure	Errors in Figure 1 to be corrected
PL		7.9.2.1 Figure 1	ed/ge	Description symbols presented below picture ("1","2","3") are not consistent with symbols used on the pictures ("a","b","c").		Errors in Figure 1 to be corrected
AU		7.9.3.2	ed	The numbering for the legend/key to the figure requires correction. In addition, the elements described in the NOTE should be included in the legend/key and not as a NOTE.		Errors in Figure 1 to be corrected
AU		7.9.3.2, Figure 2	ed	There appears to be an unnecessary page break following the fourth paragraph.		Agreed - will be addressed
ID	7.9.3.2 Figure 2		Ed	Title of figure 2 is not appropriate, No explanation on a) and b), Wrong place explanation (1,2 dan 3),	Title of Figure 2.should be Pressure loss test, the arrangement of the test. a) Test of pipe pressure loss	Errors in Figure 2 to be corrected

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				No explanation of *4* and *5* No explanation of *a* and *b*	b) Test of Water meter pressure loss placed 1,2,3,4 dan 5 inline with the explanation	
JP	7.9.3.2	Figure 2	ed	In the Figure 2, the positions of ,2 and 3 are wrong and the numbers 4 and 5 are missing.	The position of the numbers 1, 2, 3, 4 and 5 in the figure should be kept as it was in Figure 2 of the previous DIS, which was correct.	Errors in Figure 2 to be corrected
PL		7.9.3.2 Figure 2	ed/ge	Description symbols, which are used on figures a) and b), presented below picture ("1","2","3","4","5") are not consistent with symbols used on the pictures ("a","b","c","d","e").		Errors in Figure 2 to be corrected
Korea	7.11.2.2.4		ed	We propose to replace the number i), ii), iii) and iv) with a), b), c) and d).		Editorial.
ID	7.11.2.3.5 tabel 1	column 9 row 2	Ed	"s is unit for second of the formula 0.15 [Q3]	Should be revised to be 0.15 [Q3] s	Agreed
ID	7.11.2.4 Dan 7.11.3.4	Paragraph 3 & 4 6 & 7		Inconsistent writting and/or numbering Paragraph 3 an 4 numbered with 1) dan 2) on the explanation of class one, first letter is written in capital Same case for paragraph 6 dan 7 numbered i) and ii), first letter is written in lowercase. description 2) is not the same as description ii) word "or" in paragraph 6 for "or 1.5% is not appropriate	Numbering should be consistent : using 1), 2),... or i), ii),... Should be the same as description ii) "or" should be replaced with "and"	Editorial improvements to 7.11.2.4 to be made.
JP	7.11.2.4		ed	The same kind numbers should be used for accuracy class 1 and accuracy class 2.	i) and ii) for accuracy class 2 should be amended to 1) and 2).	Editorial improvements to 7.11.2.4 to be made.
Korea	7.11.2.4		ed	We propose to revise the paragraph ; For accuracy class 1 water meters:		Editorial improvements to 7.11.2.4 to be made.

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				1) The variation in the error curve shall not exceed 2 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), and 1 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$). For the purpose of determining these requirements the mean values of the errors (of indication) at each flowrate, shall apply. 2) The curves shall not exceed a maximum error limit of ; ± 4 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), and ± 1.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for ~~meters of temperature class~~ T30 meters or ~~and~~ ± 2.5 % for ~~all other temperature classes.~~ flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for meters other than T30 For accuracy class 2 water meters: ~~i~~1) ~~t~~The variation in the error curve shall not exceed 3 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), or 1.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$). For the purpose of determining these requirements the mean values of the errors (of indication) at each flowrate shall apply. ~~ii~~2) ~~t~~The curves shall not exceed a maximum error limit of: ± 6 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), and ± 2.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for T30 meters or ± 3.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for meters other than T30.		

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AU		7.11.3.4, ii)	ed	The numbering for the legend/key to both figures requires correction.		Figures to be corrected – see above.
JP	7.11.3.4		ed	The same kind numbers should be used for accuracy class 1 and accuracy class 2.	i) and ii) for accuracy class 2 should be amended to 1) and 2).	Improve 7.11.3.4 in the same way as 7.11.2.4
Korea	7.11.3.4		ed	We propose to revise the paragraph. ; For accuracy class 1 water meters: 1) The variation in the error curve shall not exceed 2 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), and 1 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$). For the purpose of determining these requirements the mean values of the errors (of indication) at each flowrate, shall apply. 2) The curves shall not exceed a maximum error limit of ; ± 4 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), and ± 1.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for ~~meters of temperature class~~ T30 meters or ~~and~~ ± 2.5 % for ~~all other temperature classes.~~ flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for meters other than T30 For accuracy class 2 water meters: ~~i~~1) ~~t~~The variation in the error curve shall not exceed 3 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), or 1.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$). For the purpose of determining these requirements the mean values of the errors (of indication) at each flowrate shall apply. ~~ii~~2) ~~t~~The curves shall not exceed a maximum error		Improve 7.11.3.4 in the same way as 7.11.2.4

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				limit of: ± 6 % for flowrates in the lower zone ($Q_1 \leq Q < Q_2$), and ± 2.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for T30 meters or ± 3.5 % for flowrates in the upper zone ($Q_2 \leq Q \leq Q_4$) for meters other than T30.		
AU		7.13.3, 3)	ed	Include number for list of errors.		See response to Japanese comment below.
JP	7.13.3 3)		ed	The section number is missing.	Amend to the following: "Complete test report ISO 4064-3/OIML R 49-3, 4.5.12."	Agreed.
Korea	7.13.4		ed	We propose to replace the number i) and ii) with 1) and 2).		Editorial
AU		7.14 7.13	ed	Include reference to test report 4.5.3 of Part 3.		Agreed to check: not clear what the problem is (was it already addressed?)
JP	7.14	3rd line	ed	"sections 8.2, 8.3 and 8.4" are not correct.	According to IEC 60068 series, 8.6 and 8.7 should be added.	Substitute 'section 8' for 'sections 8.2, 8.3 and 8.4'.
JP	7.14	3rd line	ed	"ISO 4064-1/OIML R 49-2" is not necessary in the text of Part 2.	It is enough as "It is specified in section 8.1.8".	Agreed
CN		8.1	te	Because there is the risk of leakage existing in conecting between error test device and emc test device, and it is difficult to finish the electromagnetic compatibility test affecting errors of water meters under the condition of flowing, zero flow testing methods and qualified criterion requirements should be recommended.		To address this would involve a major technical change, and probably requires further discussion as to the acceptability of simulation. Suggestion to launch work on this soon after publication.

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JP	8.2.2		ed	IEC 60068-2-2	The year and month should be deleted.	Agreed
Korea	8.2.3		ed	i) at the reference air temperature of 20 ℃ ± 5 ℃, before conditioning the EUT; ii) at an air temperature of 55 ℃ ± 2℃, after the EUT has been stabilized at this temperature for a period of 2 hours; iii) at the reference air temperature of 20 ℃ ± 5 ℃, after recovery of the EUT.		Editorial
Korea	8.3.3			3) Stabilize the air temperature at either – 25 ℃ ± 3 ℃ (environmental classes O and M) or + 5 ℃ ± 3 ℃ (environmental class B) for a period of 2 hours. 4) Measure the error (of indication) of the EUT at the reference flowrate at an air temperature of either – 25 ℃ ± 3 ℃ (environmental classes O and M) or + 5 ℃ ± 3 ℃ (environmental class B).		Editorial
Korea	8.4.3		ed	2) Expose the EUT to cyclic temperature variations between the lower temperature of 25 ℃ ± 3 ℃ and the upper temperature of 55 ℃ ± 2 ℃ (environmental classes O and M) or 40 ℃ ± 2 ℃ (environmental class B). Maintain the relative humidity above 95 % during the temperature changes and during the phases at low temperature, and at 93 %± 3 % at the upper temperature phases. Condensation should occur on the EUT during the temperature rise.		Editorial
JP	8.5.2.2		ed	IEC 61000-4-11	The name of the reference should be amended as 2 Normative references.	Agreed
JP	8.5.4.2 4)		ed	The clause number 5.2.3 of Part 1 is wrong.	5.2.4	Agreed.

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Korea	8.6.3		ed	Total RMS level: 7 m.s^{-2} →Total RMS level: 7 m·s^{-2} ASD level 10 to 20 Hz: 1 m^{2}.s^{-3} → ASD level 10 to 20 Hz: 1 m^{2}·s^{-3}		Editorial
JP	8.8.2		ed	IEC 61000-4-11	The name of the reference should be amended as 2 Normative references.	Agreed
JP	8.12.3 2)		ed		a) and e) should be amended to i) and v) according to the numbers of the additional requirements.	Agreed
JP	8.12.3 4)		ed		d) should be amended to iv). (The same reason as above.)	Agreed
PL		8.12.3 Step 4)	ed/ge	Phase "…is reached in accordance with requirements of d) below" is misleading because additional requirements which are placed below are marked "I","ii","iii","iv", etc.		Agreed
JP	8.12.3 viii)	Table 4	te	The start and stop carrier frequencies in Table 4 are inconsistent with those in 4.6 11 of Part 3. Table 4 should be kept as it was in the text of the previous DIS. (see right.)	According to 4.6.11 of Part 3, Table 4 should be amended as following: Table 4 – Start and stop carrier frequencies (Radiated electromagnetic fields) MHz / MHz / MHz 26 / 160 / 600 40 / 180 / 700 60 / 200 / 800 80 / 250 / 934 100 / 350 / 1 000 120 / 400 / 1 500 144 / 435 / 2 000	Agreed, with 1500 to be 1400 Corresponding change in Part 3

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					150 500	
PL		8.12.3 Step 5)	ed/ge	Like previous comment – additional requirements which are placed below are marked "I","ii","iii","iv", etc, so reference to requirements c) is misleading.		Editorial.
JP	8.13.3 2)		ed		a) and e) should be amended to i) and vi) according to the numbers of the additional requirements.	Editorial
JP	8.13.3 4)		ed		e) should be amended to v). (The same reason as above.)	Editorial
JP	8.13.3 ix)	Table 5	te	The start and stop carrier frequencies in Table 5 are inconsistent with those in 4.6 12 of Part 3. Table 5 (see right) was created based on the 17 frequency ranges in DIS 4064-3, 4.6.12 (p.58).	According to 4.6.12 of Part 3, Table 5 should be as following: Table 5 – Start and stop carrier frequencies (Conducted electromagnetic fields) MHz MHz MHz 0.15 0.75 30 0.25 0.85 40 0.35 0.95 50 0.45 1 60 0.55 10 70 0.65 20 80	Agreed to change – use Stephen Bruce's table as adjusted in meeting: make Part 3 consistent. See new table at the end of this compilation – Sec.
PE	9.2		te	Tests 1-9 must be carried out in the order showed in Table 6. because this way we can compare results obtained by other laboratories.	In 9.2 Tests 1-13 shall be carried out in the prescribed order. In table 6.	Not agreed – there was long discussion of this, to reach the sequence specified.

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					Tests 1-9 to be carried out in the order given	
CN		10.1.3		For T70 t0 T180 , the initial working water temperature range should be 50 °C ± 10 °C.		Not agreed – there was much discussion of this previously, resulting in the text as shown. For consideration again if necessary at Revision.
AU		10.1.3, 5) and 7)	ed	The reference in the last sentence to ISO 4064-**1**/OIML R 49-**2** is incorrect. We suggest that ISO 4064-1 should be ISO 4064-2.		Agreed.
PL		10.1.4 criterion 2)	ed	The reference to ISO 4064-1/OIML R49-1, 3.3.3 paragraphs 3 and 8 is wrong: the correct clause indicated in this reference should be "4.3.3".		Agreed.
JP	11.2.2		ed	The consecutive numbering is not reasonable .The items for identification of the testing laboratory and of the meter tested should be clarified. (see right)	1) Identification of the testing laboratory a) name and address 2) Identification of the meter tested a) name and address of the manufacturer or the trade mark b) accuracy class c) temperature class d) meter designation Q3 e) ratios Q3/Q1 f) maximum pressure loss (and corresponding flowrate) g) year of manufacture and the serial number of the meter tested h) type or model 3) The results and conclusions of the tests	Agreed - editorial

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AT	B.3.3 and B.3.4			Use the same notation for the formula as in R49-1		Editorial
PL		B.3.3.2	ed	Please correct the record of the unit of measure of the constant C_1 as $m^3*h^{-1}*mA^{-1}$		Editorial
PL		B.3.3.3	ed	Please correct the record of the unit of measure of the constant C_v as $m^3*h^{-1}*V^{-1}$		Editorial
PL		B.3.4.2	ed	The same to page 74, clause 3.3.2		Editorial
PL		B.3.4.3	ed	The same to page 75, clause 3.3.3		Editorial
DE	Annex C	Key: Flow disturbance scheme	te	The sequence of the flow disturbance scheme isn't useful. 1 Type 1 disturber – Swirl generator sinistrorsal 2 Meter 3 Straight length 4 Straightener 5 Type 2 disturber – Swirl generator dextrorsal 6 Type 3 disturber – Velocity profile flow disturber	Better use the sequence as OIML R49. **Key:- Flow disturbance scheme** 1 – Type 1 Disturber – L.H. Swirl 2 – Type 2 Disturber – R.H. Swirl 3 – Type 3 Disturber – Asymmetry 4 – Flow Straightener (conditioner) 5 – Meter 6 – Straight Length – (Minimum specified by manufacturer)	Editorial – will change if possible.
ID	Annex F	formula		Assignment of number and title of the formula	Number of the formula should be in the right side : X + y = 3 .....eq.(1) X + 2y = 5 .....eq. (2) etc	Editorial (Sec)
PL		Annex X	ed	In both equation ("1" and "2") the coefficients a_o should have the unit of measure – equation 1, a_o:$kg*m^{-1}$: equation 2, a_o:Pa^{-1}.		Editorial: check needed. Where is Annex X? Secretary: this refers to

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						annex F – equations will be checked.

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New table 5 for Part 2 and corresponding in Part 3

MHz	MHz	MHz	MHz
0.15	1.1	7.5	50
0.30	2.2	14	80
0.57	3.9	30	

Plus Note as under table 4.