OIML R60-1 Metrological Regulation of Load Cells

R60 Parts 3 1WD Comments and Secretariat's Responses

Member State	Page number	Document clause	Comment	Secretariat's Response
Austria			*Despite the missing parts in 2.2.5 and 2.2.8 and the format issue, we may send our comments to 1 WD R60-2 at the moment as follows:*	
Austria	36	4.10.5	*Chapter 4.10.5 should be deleted, because it is twice (see 4.10.3)*	Amended as proposed
Austria	41	5.1	*The term "OIML certificate number should be renamed to "type evaluations mark according to R60-1.*	Amended as proposed
CECIP	2	1.1	Replace "R60 (20XX)" by "OIML R60" Editorial change Remark: I recommend referring to OIML R60 without year specification.	Amended
CECIP	7	2.2	Head line: Change "load cells equipped with electronics" by "digital load cell" in general Editorial change	Replaced "load cells equipped with electronics" with "digital load cells"
CECIP	2	1.2 2	Replace "R60-1 (20XX)" by "OIML R60-1" Editorial change	Amended

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CECIP	7	2.2.1.2	Supplement: Calculate the span in count: $span\ (counts) = counts\ at\ D_{max} - counts\ at\ D_{min}$ Calculate the span in units of vmin: $span\ (vmin) = span(counts)\ x\ (Dmax - Dmin) / f\ x\ n\ x\ vmin$ Calculate the change of the span in units of vmin with regard to the initial span. The change of span must not exceed vmin.	See also comments from Germany. Refer to comments and response for R60 Part 1, paragraph 5.7.1.1. The significant change being proposed would cause substantial changes in tests and interpretation of results. This type of change is more appropriate for consideration during early stages of a revision and should not be implemented without the support of a majority of PG members.
CECIP	7/8	2.2.3.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	8	2.2.4.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	8	2.2.5.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	8	2.2.6.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	8	2.2.7.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	9	2.2.8.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	9	2.2.9.2	Miscalculation, must refer to v_{min}, according 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	13	4.3.2	2nd table: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1

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CECIP	22	4.9.1	Row 5: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	23	4.9.3	Head line: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	31	4.10	Table, row 7: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	38	4.10.8	Chapter 4.10.7 is missing. Leads to changes in the numbering of the following chapters Editorial change	Amended
CECIP	38	4.10.8	Head line: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	40	4.10.12	Head line: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	45	6.1.1	Head line: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	48	6.2.1	Table, row 7: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
CECIP	71	Form 6.11	Table 6.11: Change the "span" in the second line in "span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.

Member State	Page number	Document clause	Comment	Secretariat's Response
CECIP	71	Form 6.11	Table 6.11: Change the "change" in the third line in "change of span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	71	Form 6.11	Table 6.11: Delete "mpc v" in the last column Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	71	Form 6.11	Add the following remark: The change of span must not exceed vmin. Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2..
CECIP	72	Form 6.12	Table 6.12: Change the "span" in the second line in "span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	72	Form 6.12	Table 6.12: Change the "change" in the third line in "change of span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	72	Form 6.12	Table 6.12: Delete "mpe v" in the last column Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	72	Form 6.12	Add the following remark: The change of span must not exceed vmin. Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	73	Form 6.12	The Table on page 73 is not named and has no head line (table 6.13 or table 6.12 b ?). Editorial change	Table has been titled 6.12 (b)

Member State	Page number	Document clause	Comment	Secretariat's Response
CECIP	73	Form 6.12	Table ???: Change the "span" in the second line in "span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	73	Form 6.12	Table ???: Change the "change" in the third line in "change of span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	73	Form 6.12	Table ???: Delete "mpe v" in the last column Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	73	Form 6.12	Add the following remark: The change of span must not exceed vmin. Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	73	Form 6.13	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	74 / 75	Form 6.14	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	74 / 75	Form 6.14	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	76 / 77	Form 6.15	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	78 - 80	Form 6.16	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	80 - 81	Form 6.17	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	82 - 83	Form 6.18	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.
CECIP	84 - 92	Form 6.18	Miscalculation, must refer to v_{min} according 6.11 new.	Existing language retained. See response to comment on clause 2.2.1.2.

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Germany	2	1.1	Replace "R60 (20XX)" by "OIML R60" Editorial change Remark: I recommend referring to OIML R60 without year specification.	Amended as proposed
Germany	2	1.2	Replace "R60-1 (20XX)" by "OIML R60-1" Editorial change	Amended as proposed
Germany	2	2	1st paragraph: Replace "R60-1 20XX" by "OIML R60-1" Editorial change	Amended as proposed
Germany	2	2	2nd paragraph: Replace "R60 parts 1 20XX" by "OIML R60-1" Editorial change	Amended as proposed
Germany	7	2.2	Head line: Change "load cells equipped with electronics" by "digital load cell" Editorial change	Replaced "load cells equipped with electronics" with "digital load cells"
Germany	7	2.2.1.2	Supplement: Calculate the span in count: $$span\ (counts) = counts\ at\ D_{max} - counts\ at\ D_{min}$$ Calculate the span in units of vmin: $$span\ (vmin) =\ span(counts)\ x\ (Dmax - Dmin)\ /\ f\ x\ n\ x\ vmin$$ Calculate the change of the span in units of vmin with regard to the initial span. The change of span must not exceed vmin.	See also comments from CECIP. Refer to comments and response for R60 Part 1, paragraph 5.7.1.1. The significant change being proposed would cause substantial changes in tests and interpretation of results. This type of change is more appropriate for consideration during early stages of a revision and should not be implemented without the support of a majority of PG members.
Germany	7/8	2.2.3.2	Erroneous calculation; refers to v instead to v_{min}; calculation should be done in analogy to 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.

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Germany	8	2.2.4.2	Erroneous calculation; refers to v instead to v_{min}; calculation should be done in analogy to 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	8	2.2.5.2	Missing calculations; they shall refer to v_{min}, see 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	8	2.2.6.2	Erroneous calculation; refers to v instead to v_{min}; calculation should be done in analogy to 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	8	2.2.7.2	Erroneous calculation; refers to v instead to v_{min}; calculation should be done in analogy to 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	9	2.2.8.2	Missing calculations; they shall refer to v_{min}, see 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	9	2.2.9.2	Missing calculations; they shall refer to v_{min}, see 2.2.1.2	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	13	4.3.2	2nd table: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
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Germany	31	4.10	Table, row 7: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
Germany	38	4.10.8	Chapter 4.10.7 is missing. Leads to changes in the numbering of the following chapters Editorial change	Amended
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Germany	48	6.2.1	Table, row 7: Change "load cells equipped with electronics" by "digital load cell" Editorial change	"load cells equipped with electronics" has been replaced with "digital load cells" for consistency with R60-1
Germany	71	Form 6.11	Table 6.11: Change the "span" in the first line in "span in counts" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	71	Form 6.11	Table 6.11: Change the "span" in the second line in "span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2..
Germany	71	Form 6.11	Table 6.11: Change the "change" in the third line in "change of span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	71	Form 6.11	Table 6.11: Delete "mpe v" in the last column Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	71	Form 6.11	Add the following remark: The change of span must not exceed vmin. Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.

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Germany	72	Form 6.12	Table 6.12: Change the "span" in the first line in "span in counts" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	72	Form 6.12	Table 6.12: Change the "span" in the second line in "span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	72	Form 6.12	Table 6.12: Change the "change" in the third line in "change of span in units of vmin" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
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Germany	72	Form 6.12	Add the following remark: The change of span must not exceed vmin. Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	73	Form 6.12	The Table on page 73 is not named and has no head line (table 6.13 or table 6.12 b ?). Editorial change	Table has been titled 6.12 (b)
Germany	73	Form 6.12	Table ???: Change the "span" in the first line in "span in counts" Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
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Germany	73	Form 6.12	Add the following remark: The change of span must not exceed vmin. Substantial correction	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	73	Form 6.13	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	74 / 75	Form 6.14	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	74 / 75	Form 6.14	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	76 / 77	Form 6.15	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	78 - 80	Form 6.16	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	80 - 81	Form 6.17	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	82 - 83	Form 6.18	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Germany	84 - 92	Form 6.18	Erroneous calculations and designations (v_{min} instead of v); should be done as on in Form 6.11	Existing language retained. See response to comment on clause 2.2.1.2.
Japan	(not specified)	(not specified)	In the present R60 (2000), there are many recording examples in Annex E. We propose to add such examples also in this draft.	These examples appear in R60-1, Annex B

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Japan		2 Applicability of this Report Format	We consider that the contents of Clause 2 may not appropriate for Part 3 (test report format). Such contents are usually placed under Part 1 or 2 in many OIML Recommendations. We cite the present titles under Clause 2 for your reference. 2. Applicability of this Report Format 2.1. Calculation procedures 2.2. Additional tests for load cells equipped with electronics 2.3. General notes 2.4. Formula signs and list of symbols	Considering that the conclusions of the calculations of test results will be recorded in the report formats provided in Part 3, this portion of OIML R60 seems an appropriate location for these clauses
Japan	6	2.1.5.8.	Delete "Emin" as it is unnecessary. Correct the equation as shown below. $DR = (Emax - \cancel{Emin} \times CDR) / nmax$	Amended as proposed
Japan	10	2.4 and throughout the document	In Part 1and 2, "n_{max}" was changed to "n_{LC}". Therefore, "n_{max}" should be replaced with "n_{LC}" in Part 3.	Amended as proposed
Japan	After 56	After 6.8 Creep (Cc) and DR (C_{DR})	It is not clear where to record data of D_{min} and D_{max} in some datasheets. Add a comment to clarify where to record the data.	Reports and data tables seem to have locations for these values when it is necessary to record them. Please identify those missing locations
Japan	50	Table 6.3	There are several "0"s in the column of "Test load (units)". The lowest "0" is written in the wrong row. It should be written in a-row-above (the same row in which asterisk is written).	Amended as proposed

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Japan	50 and 52	Table 6.3 and Table 6.4	Preload is required only once. Therefore, cells which are not necessary for recording in the datasheet should be shadowed with a grey background like Table D.1 in the present R60 (2000).	Amended as proposed
Japan	10, 53, 54, 57, 69 and 72		For the expression of "MPE", both upper and lower cases are used. Correct "mpe" to "MPE" (p.10, 53, 54, 57, 69 and 72) for consistency.	Amended as proposed