

I. Proposal

Annex 4, Paragraph 6.1., amend to read:

6.1. Checking the analysers for measuring gaseous emissions

The zero and span of the analysers of gaseous components shall be checked by using calibration gases identical to the ones applied under paragraph 4.5. to evaluate the analyser's zero and response drift compared to the pre-test calibration. It is permissible to zero the analyser prior to verifying the span drift, if the zero drift was determined to be within the permissible range. The post-test drift check shall be completed as soon as possible after the test and before the PEMS, or individual analysers or sensors, are turned off or have switched into a non-operating mode. The difference between the pre-test and post-test results shall comply with the requirements specified in Table A4/2.

Table A4/2

Permissible analyser drift over a PEMS test

<i>Pollutant</i>	<i>Absolute Zero response drift</i>	<i>Absolute Span response drift¹</i>
CO ₂	≤ 2000 ppm per test	≤ 2 % of reading or ≤ 2000 ppm per test, whichever is larger
CO	≤ 75 ppm per test	≤ 2 % of reading or ≤ 75 ppm per test, whichever is larger
NO _x	≤ 3 ppm per test	≤ 2 % of reading or ≤ 3 ppm per test, whichever is larger
CH ₄	≤ 10 ppm C ₁ per test	≤ 2 % of reading or ≤ 10 ppm C ₁ per test, whichever is larger
THC	≤ 10 ppm C ₁ per test	≤ 2 % of reading or ≤ 10 ppm C ₁ per test, whichever is larger

If the difference between the pre-test and post-test results for the zero and span drift is higher than permitted, all test results shall be invalid and the test repeated.

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At the request of the manufacturer and with approval of the approval authority, the permissible drifts may be exceeded if:

- (i) the difference between the uncorrected and the corrected concentration values according to paragraph 5.0. of Annex 7 are lower than 6 per cent of the uncorrected concentration values, and**
- (ii) the uncorrected and the corrected emissions values give the same conclusion as to whether or not there is an exceedance of the emissions limits.**

¹ If the zero drift is within the permissible range, it is permissible to zero the analyser prior to verifying the span drift.

II. Justification

1. In Japan, the responsible authority and vehicle manufacturers are encountering the RDE test invalid and test repeated when PEMS concentration drift is out of criteria even though the NOx emission results are expected to be lower than the emission limit.
 2. The original version of this regulation was described that if the difference between the pre-test and post-test results for the zero and span drift is higher than permitted, all test results shall be invalid and the test repeated.
 3. On the other hand, Annex 8, Appendix 1 in UN Regulation No.49 permit to select the test invalid or corrected per the concentration drift if the difference between the pre-test and post-test results for the zero and span drift is higher than permitted.
 4. The proposal aims to clarify and align the provision of PEMS concentration and emission correction with UN Regulations as common provision.
 5. This amendment is expected to avoid the unnecessary RDE test repeat and extra burden for responsible authorities and vehicle manufacturers.
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