INTERNATIONAL
RECOMMENDATION

OIML R 126-2:2021
Amendment 2026

Evidential breath analysers

Amendment 2026 to R 126-2:2021



INTERNATIONAL ORGANIZATION
OF LEGAL METROLOGY

Amendment 2026 to OIML R 126-2:2021
Evidential breath analysers
Part 2: Metrological controls and performance tests

Subclause 2.5.8.13 - Mechanical shock
Table 37 - Mechanical shock

Table 37 of the published version of OIML R 126-2:2021 currently reads:

2.5.8.13 Mechanical shock

Table 37 - Mechanical shock

Test method	**Dropping the EUT onto a rigid surface**			
Applicable standard	IEC 60068-2-31 [13]			
Applicability	Applicable to all EBAs.			
Object of the test	Verification of compliance with the provisions for disturbances in R 126-1, 6.11.1 under conditions of mechanical shocks specified in R 126-1, 6.11.1, Table 4, clause a.			
Condition of the EUT	Power is to be “on” for the duration of the test.			
Test procedure in brief	For stationary or transportable EBAs: - the EUT, standing in its normal position of use on a rigid surface, is tilted along one bottom edge and subsequently is allowed to fall freely back on to the test surface. The height of fall is the distance between the opposite bottom edge and the test surface. However, the angle between the bottom and the test surface shall not exceed 30°. For portable EBAs: - the test surface shall be smooth, hard, rigid, horizontal, and made of concrete or steel; - the specimen shall be allowed to fall freely in its normal attitudes of use, taking into account all 3 spatial axes; - the height shall be measured from the part of the specimen nearest to the test surface, when the specimen is suspended prior to letting it fall. Test sequence: 1) Measurements before disturbance (at reference conditions) 2) The disturbance shall be applied 3) Measurements after disturbance (at reference conditions)			
Test level		Stationary EBAs	Transportable EBAs	Portable EBAs
	Height of fall	25 mm	50 mm	1 000 mm
	Number of falls (on each bottom edge)	1	1	6
Measurement conditions	Ethanol concentration: 0.40 mg/L (test gas no. 4). Test gas conditions: within reference gas conditions as defined in 2.4.3.1, Table 4 and 2.4.3.2, Table 6. Ambient conditions: within reference conditions as defined in 2.4.1.			
EUT performance	Number of measurements at reference conditions (before disturbance): 5. Number of measurements at reference conditions (after disturbance): 5. Time schedule: consecutively at each test condition. Parameters at least to be recorded: as defined in 2.5.3.			
Acceptance criteria	The errors and fault of the EUT shall be determined as prescribed in 2.5.4. Either significant faults do not occur, or checking facilities detect and act on potential significant faults, thus preventing such faults from occurring.			

Table 37 should be corrected to read:

2.5.8.13 Mechanical shock

Table 37 - Mechanical shock

Test method	**Dropping the EUT onto a rigid surface**			
Applicable standard	IEC 60068-2-31 [13]			
Applicability	Applicable to all EBAs.			
Object of the test	Verification of compliance with the provisions for disturbances in R 126-1, 6.11.1 under conditions of mechanical shocks specified in R 126-1, 6.11.1, Table 4, clause a.			
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Test procedure in brief	For stationary or transportable EBAs: - the EUT, standing in its normal position of use on a rigid surface, is tilted along one bottom edge and subsequently is allowed to fall freely back on to the test surface. The height of fall is the distance between the opposite bottom edge and the test surface. However, the angle between the bottom and the test surface shall not exceed 30°. For portable EBAs: - the test surface shall be smooth, hard, rigid, horizontal, and made of concrete or steel; - the specimen shall be allowed to fall freely in its normal attitudes of use, taking into account all 3 spatial axes; - One drop from each of the 6 orientations (opposite sides on each of 3 spatial axes); - the height shall be measured from the part of the specimen nearest to the test surface, when the specimen is suspended prior to letting it fall. Test sequence: 1) Measurements before disturbance (at reference conditions) 2) The disturbance shall be applied 3) Measurements after disturbance (at reference conditions)			
Test level		Stationary EBAs	Transportable EBAs	Portable EBAs
	Height of fall	25 mm	50 mm	1 000 mm
	Number of falls	1 on each bottom edge	1 on each bottom edge	6
Measurement conditions	Ethanol concentration: 0.40 mg/L (test gas no. 4). Test gas conditions: within reference gas conditions as defined in 2.4.3.1, Table 4 and 2.4.3.2, Table 6. Ambient conditions: within reference conditions as defined in 2.4.1.			
EUT performance	Number of measurements at reference conditions (before disturbance): 5. Number of measurements at reference conditions (after disturbance): 5. Time schedule: consecutively at each test condition. Parameters at least to be recorded: as defined in 2.5.3.			
Acceptance criteria	The errors and fault of the EUT shall be determined as prescribed in 2.5.4. Either significant faults do not occur, or checking facilities detect and act on potential significant faults, thus preventing such faults from occurring.			

Subclause 2.5.9 - Physiological influence substances
Table 42- Physiological influence substances

Table 42 of the published version of OIML R 126-2:2021 currently reads:

2.5.9 Physiological influence substances

Table 1 - Physiological influence substances

Test method	**Test gases with additionally one interfering substance at a time**
Applicable standard	None
Applicability	Applicable to all EBAs.
Objective of the test	Verification of compliance with the provisions in R 126-1, 6.11.2.
Condition of the EUT	The EUT electrical power shall be switched on during the test.
Test procedure in brief	The test comprises of at least 5 measurements per test gas. Test sequence: 1) Measurement with test gas no. 4; 2) Measurement with test gas no. 4 with one additional substance. For each substance, this test sequence shall be repeated 4 times.
Test gases mass concentration of substances	a) Ethanol concentration: 0.40 mg/L (test gas no. 4) b) 0.40 mg/L ethanol plus acetone: 0.5 mg/L c) 0.40 mg/L ethanol plus methanol: 0.1 mg/L d) 0.40 mg/L ethanol plus isopropanol: 0.1 mg/L e) 0.40 mg/L ethanol plus carbon monoxide: 0.2 mg/L Depending on the results, additionally test gases with reduced concentrations of the interfering substances may be needed (see acceptance criteria).
Measurement conditions	Test gas conditions: test gas composition as defined for this test, other parameters within reference gas conditions as defined in 2.4.3.1, Table 4 and 2.4.3.2, Table 6. Ambient conditions: within reference conditions as defined in 2.4.1.
EUT performance	Number of measurements with each test gas and concentration: 5. At least the following parameters shall be recorded: as defined in 2.5.3.
Calculation of results	- Calculation of deviation the deviation $\Delta_{is\,[1\ldots5]}$ between each result of the 5 measurements with the respective interfering substance (b to e) and the appendant result for ethanol test gas a) is calculated - Calculation of sensitivity: $sensitivity_{is} = \frac{\Delta_{is[1\ldots5]}}{mass\ concentration\ of\ interfering\ substance}$
Acceptance criteria	a) if none of the calculated values for sensitivity is equal or below the value defined in R 126-1, 6.11.2 the EBA has passed the test for the interference substance concerned; b) if a calculated value for sensitivity exceeds the value defined in R 126-1, 6.11.2 and no error message is given, the EBA has failed; c) if an error message is displayed, another sequence of 5 tests shall be performed with the same interfering substance at a mass concentration 5 times lower. In this case the sensitivity shall not be more than the value defined in R 126-1, 6.11.2; d) if an error message continues to be displayed, the mass concentration of the added interfering substance shall be reduced repeatedly by a factor of 2 and again, another sequence of 5 tests shall be performed. If the error message is no longer displayed and the sensitivity is not more than the value defined in R 126-1, 6.11.2, the EBA has passed the test for the interference substance concerned. This requirement shall be fulfilled for each measurement with each interfering substance.

Table 42 should be corrected to read:

2.5.9 Physiological influence substances

Table 2 - Physiological influence substances

Test method	**Test gases with additionally one interfering substance at a time**
Applicable standard	None
Applicability	Applicable to all EBAs.
Objective of the test	Verification of compliance with the provisions in R 126-1, 6.11.2.
Condition of the EUT	The EUT electrical power shall be switched on during the test.
Test procedure in brief	The test comprises of at least 5 measurements per test gas. Test sequence: 3) Measurement with test gas no. 4; 4) Measurement with test gas no. 4 with one additional substance. For each substance, this test sequence shall be repeated 4 times.
Test gases mass concentration of substances	a) Ethanol concentration: 0.40 mg/L (test gas no. 4) b) 0.40 mg/L ethanol plus acetone: 0.5 mg/L c) 0.40 mg/L ethanol plus methanol: 0.1 mg/L d) 0.40 mg/L ethanol plus isopropanol: 0.1 mg/L e) 0.40 mg/L ethanol plus carbon monoxide: 0.2 mg/L Depending on the results, additionally test gases with reduced concentrations of the interfering substances may be needed (see acceptance criteria).
Measurement conditions	Test gas conditions: test gas composition as defined for this test, other parameters within reference gas conditions as defined in 2.4.3.1, Table 4 and 2.4.3.2, Table 6. Ambient conditions: within reference conditions as defined in 2.4.1.
EUT performance	Number of measurements with each test gas and concentration: 5. At least the following parameters shall be recorded: as defined in 2.5.3.
Calculation of results	- Calculation of deviation the deviation $\Delta_{is\,[1\ldots5]}$ between each result of the 5 measurements with the respective interfering substance (b to e) and the appendant result for ethanol test gas a) is calculated - Calculation of sensitivity: $sensitivity_{is} = \frac{\Delta_{is[1\ldots5]}}{mass\ concentration\ of\ interfering\ substance}$
Acceptance criteria	a) if **all** of the calculated values for sensitivity **are** equal or below the value defined in R 126-1, 6.11.2 the EBA has passed the test for the interference substance concerned; b) if a calculated value for sensitivity exceeds the value defined in R 126-1, 6.11.2 and no error message is given, the EBA has failed; c) if an error message is displayed, another sequence of 5 tests shall be performed with the same interfering substance at a mass concentration 5 times lower. In this case the sensitivity shall not be more than the value defined in R 126-1, 6.11.2; d) if an error message continues to be displayed, the mass concentration of the added interfering substance shall be reduced repeatedly by a factor of 2 and again, another sequence of 5 tests shall be performed. If the error message is no longer displayed and the sensitivity is not more than the value defined in R 126-1, 6.11.2, the EBA has passed the test for the interference substance concerned. This requirement shall be fulfilled for each measurement with each interfering substance.