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Decision Rule in 17025

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17025 Technical Requirements

This is where the new version states each requirement:

ITEM	CLAUSE(S)
Examining own lab Capacity/Competence	7.1
People with skills and knowledge/competence	6.2
Environment, Equipment, Services/Supplies	6.3, 6.4, 6.6
QA and QC	7.7
Procedures, including	
Uncertainty of measurement	7.6, 7.8.3.1 c)
Traceability of measurement	6.5
Validation of methods	7.2
Sampling and Sample handling	7.3, 7.4
Reporting Results – now with Decision Rule	7.8

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1. There are 5 questions in this Section.
2. What does the standard require?
3. Participants select their own answers.
4. The whole group is balloted for the most appropriate response.
5. Clapping indicates a correctly answered question.
   Buzzer indicates an incorrectly answered question.
6. The citation from the standard is displayed next to the most correct answer.
7. The quiz then advances to the next question.

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The Decision Rule:

ISO/IEC 17025, Clause 7.1.3 states:

When the customer requests a statement of conformity to a specification or standard for the test or calibration (e.g. pass/fail, in-tolerance/out-of-tolerance) the specification or standard, and the decision rule shall be clearly defined. Unless inherent in the requested specification or standard, the decision rule selected shall be communicated to, and agreed with, the customer.

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7.1 Review of requests, tenders and contracts:

Statements of compliance do not need to consider the uncertainty of the result.

A. TRUE
B. FALSE
C. NOT APPLICABLE

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6.4 Equipment:

All measurement equipment must be calibrated.

A. TRUE
B. FALSE
C. NOT APPLICABLE

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7.8.3 Specific requirements for test reports:

Testing laboratories MUST ALWAYS report the uncertainties associated with their tests.

A. TRUE
B. FALSE
C. NOT APPLICABLE

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7.6 Evaluation of measurement uncertainty:

Testing and calibration laboratories MUST estimate the uncertainties associated with their tests and calibrations.

A. TRUE
B. FALSE
C. NOT APPLICABLE

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7.8 Reporting of results:

When reporting pass/fail statements from laboratory results, the laboratory will consider the risk of making such a statement.

A. TRUE
B. FALSE
C. NOT APPLICABLE

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Decision Rule Resources (1)

- ILAC G8:09/2019 Guidelines on Decision Rules and Statements of Conformity (https://ilac.org/?ddownload=122722)
- UKAS LAB 48, Edition 2 February 2020, Decision Rules and Statements of Conformity (https://www.ukas.com/download/publications/publications-relating-to-laboratory-accreditation/LAB-48-Decision-Rules-Edition-2-February-2020.pdf)
- JCGM 106:2012 Evaluation of measurement data – The role of measurement uncertainty in conformity assessment (https://www.bipm.org/utils/common/documents/jcgm/JCGM_106_2012_E.pdf)

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Decision Rule Resources (2)

- ANSI/NCSL Z540.3:2006: Requirements for the Calibration https://www.ncsli.org/ItemDetail?iProductCode=MS06_04_CALDWEL&Category=MEAS_ARTIC&WebsiteKey=d502eebf-7ea1-4ae1-ac05-e2faa9324627
- Handbook for the interpretation of ANSI/NCSL Z540.3 – eFile https://www.ncsli.org/ItemDetail?iProductCode=HB_Z5403F&Category=DOC_STD&WebsiteKey=d502eebf-7ea1-4ae1-ac05-e2faa9324627

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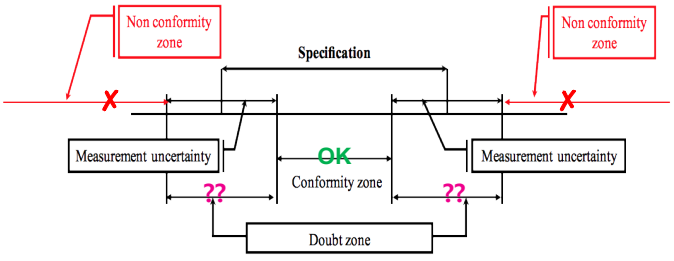
Impact of Uncertainty on Statement of Compliance:



OK – Any results in here with this amount of uncertainty = PASS
✗ – Any results anywhere in this area = FAIL
?? – Any results in the uncertainty area = We don't know??

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Impact of Uncertainty on Statement of Compliance 2:

This is the uncertainty of the measurement

OK – Any results in here with this amount of uncertainty = PASS

?? – Any results in the uncertainty area = We don't know??

✗ – Any results in this area at all = FAIL

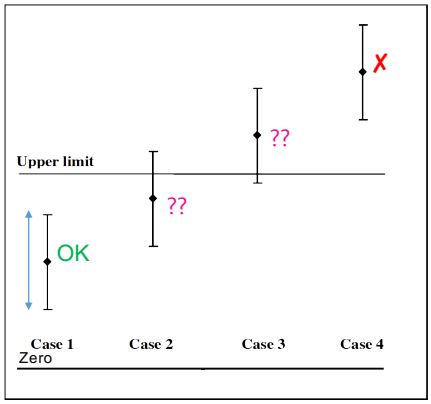

Fig.1 Compliance with specification for an upper limit. Compliance statements may be expanded to explicitly state whether compliance concerns an upper or a lower limit of specification using a coverage probability of 95 %.

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Examples of Decision Rule

1. Measuring Mercury (Hg) in Drinking Water (≤ 1.0 mg/L):

- Uncertainty of measurement = ± 0.02 mg/L
- Decision Rule
  - IF RESULT, INCORPORATING UNCERTAINTY, IS LESS THAN .98 mg/L THE SAMPLE IS OK = PASS.
  - IF RESULT, INCORPORATING UNCERTAINTY, IS .99 mg/L OR GREATER, THE SAMPLE IS NOT OK = FAIL

2. Length of a 10 cm Steel Ruler (10 cm ± 0.05 cm):

- Uncertainty of measurement = ± 0.05 cm
- Decision Rule
  - IF TOTAL LENGTH OF RULER, INCORPORATING UNCERTAINTY, IS BETWEEN 9.98 cm AND 10.02 cm, THE SAMPLE IS OK = PASS.
  - IF TOTAL LENGTH OF RULER, INCORPORATING UNCERTAINTIES IS OUTSIDE OF THESE LIMITS, THE RULER DOES NOT PASS

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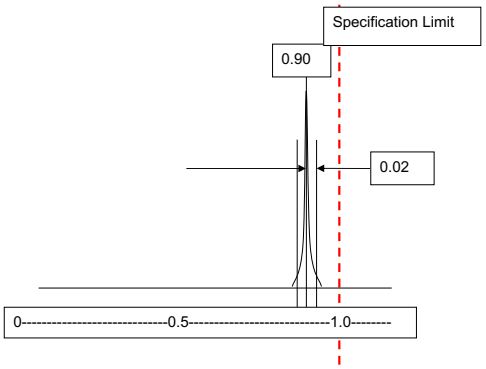
Example 1. Measuring Mercury (Hg) in Drinking Water:

- Specification = less than 1.0 mg/L of Mercury in Water
- Uncertainty of measurement = ± 0.02 mg/L
- Decision Rule

  IF RESULT, INCORPORATING UNCERTAINTY, IS LESS THAN .98 mg/L, THE SAMPLE IS OK = PASS.

  IF RESULT, INCORPORATING UNCERTAINTY, IS .99 mg/L OR GREATER, THE SAMPLE IS NOT OK = FAIL



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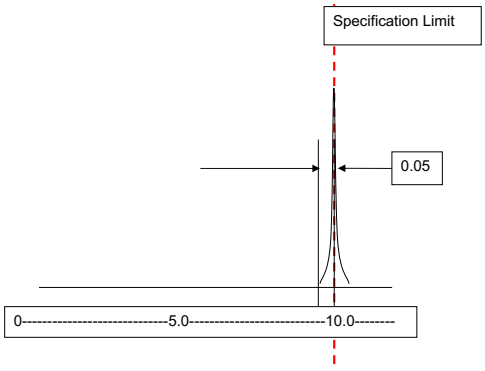
Example 2. Length of a 10 cm Steel Ruler:

- Specification = 10 cm length ± 0.05 cm
- Uncertainty of measurement = ± 0.05 cm
- Decision Rule

  IF TOTAL LENGTH OF RULER, INCORPORATING UNCERTAINTY, IS BETWEEN 9.98 cm AND 10.02 cm, THE SAMPLE IS OK = PASS.

  IF TOTAL LENGTH OF RULER, INCORPORATING UNCERTAINTIES IS OUTSIDE OF THESE LIMITS, THE RULER DOES NOT PASS



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Thank you!

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