Decision Rule of Compliance with specification

i) Purpose
This document intended to provide a general guidance of the decision rule to be applied for all conformity assessment to a specification or standard.

ii) Rules of compliance
Assuming that limits were set with no allowance for uncertainty, four situations are apparent for the case of compliance with an upper limit (see Figure 1):

![Figure 1: Four situations are apparent for the case of compliance with an upper limit](image)

Case (i), the result exceeds the limit value plus the expanded uncertainty. This case is normally interpreted as demonstrating clear non-compliance (FAIL) and reported as “Non-compliance” or “Non-compliance – The measurement result is outside (or above) the specification limit when the measurement uncertainty is taken into account”. For reporting of overall evaluation of non-compliance, it can be stated as “Some/All of the measured values do not comply with specifications” or “The item/sample does not comply with the requirements”.

Case (ii), the result exceeds the limiting value by less than the expanded uncertainty.

Case (iii), the result is below the limiting value by less than the expanded uncertainty. It is not possible to confirm either compliance or non-compliance at the stated confidence level for case (ii) and case (iii). It will normally require individual consideration in the light of any agreements with the user of the data. In case (ii), where the result of a measurement is above the limit set in the specification or standard, even if the lower limit of uncertainty is below the limit set in the standard or specification, the result shall be declared as “It is not possible to state compliance” (FAIL). For reporting of overall evaluation result for both case (ii) and (ii) as non-compliance (FAIL), it can be stated as “For some/all of the measured values it is not possible to make a statement of compliance with specification”.

Case (iv), the result is less than the limiting value minus the expanded uncertainty. It is normally interpreted as demonstrating compliance (PASS) and reported as “Compliance” or “Compliance – The measurement result is within (or below) the specification limit when the measurement uncertainty is taken into account”. For reporting of overall evaluation of compliance, it can be stated as “All measured values comply with the specification limit(s)” or “The item/sample complies with the requirements”.

Analogous arguments apply in the case of compliance with a lower limit.

In case any deviation to this document was existed and agreed with customer, detail of the altered decision rule shall be properly remarked and recorded in the conformity assessment report. Customer can request that questionable results are declared FAIL.

iii) Additional reference documents
ILAC-G8:03/2009 Guidelines on the Reporting of Compliance with Specification