

TM5 - Decision Rule Policy

Universal Instrument Services Ltd is a calibration laboratory accredited to the international standard ISO/IEC 17025:2017: General requirements for the competence of testing and calibration laboratories.

ISO/IEC 17025:2017, 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.”

A decision rule describes the agreed process for making a conformity statement. The rule explains how to use a measured value to decide whether a specification has been met, and it explains the role of the measurement uncertainty in reaching that decision.

Risk in conformity decisions is controlled by agreeing a decision rule.

There are two common types of decision rule, those based on **simple acceptance** criteria, and those based on **guarded acceptance** criteria. In both cases the decision rule defines a range for the measured values that are considered to indicate conformance. This is known as the **acceptance interval**.

Compliance statements will be included on all certificates of calibration where possible and unless specified in a standard/specification or otherwise agreed with the customer, the following decision rules will be applied by default:

Dimensional Calibrations:	Simple acceptance/shared risk
Electrical Calibrations:	Guarded acceptance
Pressure Calibrations:	Guarded acceptance
Torque Calibrations [BS EN ISO 6789:2003 only]:	Simple acceptance/shared risk

Definition of Decision Rules

Simple acceptance/shared risk:

A simple acceptance decision rule based on the requirements as stated in JCGM 106:2012 section 8.2, where the acceptance limit is equal to the tolerance limit, provided that the measurement capability index, C_m , is greater than or equal to 1, at a 95 % level of confidence.

As the alternative name ‘shared risk’ implies, the laboratory and customer share the consequences of incorrect decisions. To minimise this risk, the measurement uncertainty will be considered and judged to be acceptable if it is less than or equal to the tolerance limit.

Guarded acceptance:

A guarded accepted decision rule based on the requirements as stated in JCGM 106:2012 section 8.3. For this decision rule the tolerance limit is reduced by the estimated measurement uncertainty resulting in a reduced acceptance limit. This reduces the probability of false acceptance.

None [conformity statement not made]:

This could be due to a specific customer request or lack of a documented specification.