

This translation has been made based on the original collections of the interpretation by JISCBA

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[Common 10] Concerning handling of Uncertainties

This set of interpretations applies to test results obtained at laboratories of the registered certification body and laboratories entrusted by the registered certification body, and to test results witness from observed tests at factories and similar facilities.

1. Handling of uncertainties in judging test results

(1) If the relevant JIS standard specifies the calculation of uncertainty and application to test results

Then the following shall be conducted:

- 1) The Registered certification body shall assess the estimates of the uncertainties according to the procedure for estimating uncertainties or data submitted from laboratories, factories, or other facilities.

If the estimate result is found appropriate, apply uncertainty to judgment of accepting or rejecting the test results.

- 2) In judging the validation of the estimate result on uncertainty from laboratories, factories, or other facilities, refer to examples of uncertainty calculations and interpretations from GUM, ILAC, APLAC, NITE, and other organizations.
- 3) Make judgments as per the provisions of the relevant JIS. When interpreting expressions of judgment, refer to JIS B 0641-1[Geometrical Product Specifications(GPS)--Inspection by measurement of workpieces and measuring equipment--Part 1: Decision rules for proving conformance or nonconformance with specifications(equivalent to ISO 14253-1)].

(2) If the relevant JIS does not specify the calculation of uncertainty and application to test results

Do not apply uncertainty to judgment of accepting or rejecting test results.

2. Future response to uncertainty approach

In the trends in standard certification toward international cooperation, developments are even more active toward harmonization of JIS with ISO/IEC and other international standards. In view of the circumstances including the establishment and enhancement of standards concerning uncertainty and those of the standard supply system accompanied with expressions of uncertainty, it is becoming unavoidable to consider uncertainty in measurement.

We will therefore position the present age as a period of preparing for "an estimation of the uncertainty in measurement" and work to enhance our technology for uncertainty approach toward the future.

(1) Enhancing the technology for uncertainty approach

In fields which are designated as those where the calculation of uncertainty is necessary and in fields which they consider should apply uncertainty to the results of product tests by calculating uncertainty, registered certification bodies will continue to request laboratories, factories, and other facilities with insufficient results of uncertainty approach to provide data to be considered concerning appropriate classification of categories and the estimation of uncertainty in an attempt to increase examples of assessment based on collected data.

Moreover, registered certification bodies will provide opportunities of discussion at technical and other committees, thereby conducting research into the factors of uncertainty and methods of uncertainty approach estimates, working to establish estimation procedures and methods of assessment, and aiming to promote the following:

1) Providing information when considering JIS (at JIS drafting committee)

The Standards Consideration Committee considers optimizing the process of preparing standards and is working to find the best way to incorporate uncertainty estimation into the framework of standards. The committee will provide such information that will enable specific methods of assessment (such as concepts, calculation methods, and procedures) in the standards of various fields.

2) Approach to Category II (the applicable item in JIS Q 17025, 5.4.6.2, Note 2)

At the present, some standards specify precision requirements for measuring equipment for use in testing. However, few standards provide numerical standards as to how much such precision values affect the test results. On the other hand, if the region of uncertainty is reduced to a negligible size (to category II) when judging standard tolerances, no consideration is needed for judgment. We will therefore in the future consider setting conditions that will be the main factors for uncertainty (such as the precisions of measuring equipment) based on the assessment results of uncertainty.

3) Developing a technology for uncertainty approach

Of all test items, dimensional measurement, weight measurement, tensile/compressive testing, and other general-purpose ones are likely to be established with relative equality regarding methods of uncertainty approach as well. However, uncertainty approach will not progress easily if it entails such issues as how much of the sample nature is to be incorporated as an uncertainty factor and an analysis based on complex expressions of calculation. In such a case, we will try considering and performing trial calculations on methods of mid-to-long-term assessment and accumulating documents and information in an attempt to settle the issues.

4) Considering the degree of measurement traceability required

The definition given in the International Vocabulary of basic and general terms in Metrology (VIM) requires collaboration of JIS with national and international standards through calibration accompanied with uncertainty. In this connection, we will examine whether it is necessary to apply such standards to all devices, measuring equipment, and instruments used in testing and propose traceability requirements with methods that do not impose an excessive burden on the applicant and keeps those test results reliable.

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