Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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0209

Accredited to ISO/IEC 17025:2017

Tru-Thread Limited

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Calibration performed at the above address only

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED			
LENGTH			NOTES
Plain plug gauges (parallel) and rollers	1 to 50 diameter 50 to 100 100 to 150 150 to 200 200 to 300	0.80 1.0 1.5 2.0 3.0	Comparison to gauge blocks using a comparator
Plain plug gauges (taper)			
Taper up to 1 in 8 on diameter	3 to 50 diameter 50 to 100 100 to 200 200 to 300	2.0 on diameter 3.0 4.0 5.0	Comparison to gauge blocks and rollers using a length measuring machine
Taper above 1 in 8 and up to 1 in 3 on diameter	3 to 50 diameter 50 to 100 100 to 200 200 to 300	4.0 on diameter 5.0 6.0 7.0	Using a two axis measuring machine
Plain ring gauges (parallel) and setting standards	2 to 50 diameter 50 to 100 100 to 150 150 to 300	1.5 1.8 2.0 3.0	Comparison to master setting rings using a length measuring machine
Plain ring gauges (taper)			
Taper up to 1 in 8 on diameter	2 to 50 diameter 50 to 100 100 to 200 200 to 300	3.0 on diameter 4.0 5.0 8.0	Comparison to gauge blocks and vee end pieces using an internal diameter measuring machine
Taper above 1 in 8 and up to 1 in 3 on diameter	2 to 50 diameter 50 to 100 100 to 200 200 to 300	5.0 on diameter 6.0 7.0 10	Comparison to gauge blocks and vee end pieces using an internal diameter measuring machine

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED			
LENGTH Continued			
Screw plug gauges (parallel) including check and setting plugs See Note 1	1 to 100 diameter 100 to 300 300 to 400	2.5 on pitch diameter 5.0 7.0	By comparison to cylindrical setting standards and thread measuring cylinders using a screw diameter measuring machine Note 1. Single and multi-start symmetrical and asymmetrical thread forms.
Screw plug gauges (taper) including API working gauges and API profile gauges to Specs. 5B, 7 & 11B See Note 2	2 to 100 diameter 100 to 300 300 to 350	4.0 8.0 10	By comparison to cylindrical setting standards and thread measuring cylinders using a bench micrometer. API gauge compared to master ring Note 2 Single start, symmetrical and asymmetrical thread forms only.
Screw ring gauges (parallel) See Notes 1 and 3	1 to 100 diameter 100 to 150 150 to 300 300 to 400	5.0 6.0 8.0 on pitch 12	comparison to a cylindrical vee groove setting standard using a two axis measuring machine Note 3. Includes use of check plugs for screw rings from 1 mm to 6mm diameter.
Screw ring gauges (taper) including API working gauges to Specs. 5B, 7 & 11B See Note 4	6 to 150 diameter 150 to 300 300 to 350	7.0 10 15	Using a two axis measuring machine. API gauge compared to master plug Note 4 Single start, symmetrical thread forms only.
Screw pitch	0.2 to 8	1.5	Using a two axis measuring machine
Screw flank angle	0° to 52°	5.0 minutes of arc	Optical projection and a hob & flank machine
Thread pitch profile gauges	1 to 8 pitch	7.0	Optical projection and a two axis measuring machine

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
LENGTH Continued			
Plain gap gauges (parallel)	2 to 50 50 to 100 100 to 200 200 to 300 Flatness of Faces Parallelism of Faces	4.0 4.3 5.0 7.0 4.1 4.5	By comparison to gauge blocks
END			

Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$