Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

UKAS CALIBRATION 0419 Accredited to ISO/IEC 17025:2017	**Impact Test Equipment Ltd** **Issue No:** 039 **Issue date**: 14 June 2021	
	Calibration Services Division **Building 21** **Stevenston Industrial Estate** **Stevenston** **Ayrshire** **KA20 3LR**	**Contact: Mr T Hawkins** **Tel: +44 (0)1294-602626** **Fax: +44 (0)1294-461168** **E-Mail: calibration@impact-test.co.uk** **Website: www.impact-test.co.uk & www.impact-test.com**
Calibration performed by the Organisations at the locations specified below		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Address	**Local contact**		
Calibration Services Division Building 21 Stevenston Industrial Estate Stevenston Ayrshire KA20 3LR	Mr T Hawkins	Force Dimensional	P

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Customer's sites or premises The customer's sites or premises must be suitable for the nature of the particular calibrations undertaken and will be subject of contract review arrangements between the laboratory and the customer	Force Dimensional	S

DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (*k*=2)	Remarks	Location Code
FORCE				
UNIVERSALS TESTING MACHINES			Note	S
Verification and calibration of the force measuring system by force proving instruments in Compression	0.10 kN to 3000 kN for Class 1, 2 and 3 machines to BS EN ISO 7500-1:2018	0.38 %	Calibration also include the alignment and restraint of the upper machine platen required by BS EN 12390-4:2000 & BS 1881:Part 115 1986 (withdrawn)	
CONCRETE CUBE TESTING MACHINES				S
Verification and calibration of the force measuring system by force proving instruments in compression	0.10 kN to 3000 kN for Class 1, 2 and 3 machines to BS EN ISO 7500-1:2018 See note	0.38 %		
Rate of application of Force (Pacer Rate)	As BS EN 12390-4:2000 & BS 1881:Part 115:1986-(withdrawn) 3 kN/min to 1300 kN/min	2.0 %		
Flatness of Platens and Spacing Blocks	As BS EN 12390-4:2000 & BS 1881:Part 115:1986 (withdrawn) 40 mm to 300 mm	0.015 mm		
FORCE MEASURING DEVICES				
Calibration of force measuring devices used in soils testing machines in compression	As BS 1377:Part1:2016 0.1 kN to 100 kN	0.53 %		S & P
Calibration of load gauges for plate bearing	1 kN to 750 kN	0.53 %		S & P
DIMENSIONAL				
Test Sieves:			Using optical methods	P
Plate type	4 mm to 125 mm	0.025 mm	As BS ISO 3310-2:2013 & BS 410-2 (withdrawn) & ISO 3310-2:2000 (withdrawn)	
Woven wire type	0.02 mm to 125 mm	0.0020 mm	As BS ISO 3310-1:2016 & ASTM E11-20	

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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (*k*=2)	Remarks	Location Code
Cube moulds for concrete (Specific values)	100 mm & 150 mm	Length 0.054 mm Squareness 0.018 mm Flatness 0.015 mm	By comparison to reference instruments As BS EN 12390-1:2012	S & P
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 uncertainty of measurement 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 CIPM-ILAC definition of the CMC is as follows:

A CMC is a calibration and measurement capability available to customers under normal conditions:
(a) as published in the BIPM key comparison database (KCDB) of the CIPM MRA; or
(b) as described in the laboratory's scope of accreditation granted by a signatory to the ILAC Arrangement.

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 CMC is calculated according to the procedures given in M3003 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 CMC in certificates issued under its accreditation.

The CMC may be described using various methods in the Schedule of Accreditation:

As a single value that is valid throughout the range.
As an explicit function of the measurand or of a parameter (see below).
As a range of values. The range is stated such that the customer can make a reasonable estimate of the likely uncertainty at any point within the range.
As a matrix or table where the CMCs depend on the values of the measurand and a further quantity.
In graphical form, providing there is sufficient resolution on each axis to obtain at least two significant figures for the CMC.

Expression of CMCs - symbols and units

In general, only units of the SI and those units recognised for use with the SI are used to express the values of quantities and of the associated CMCs. Nevertheless, other commonly used units may be used where considered appropriate for the intended audience. For example, the term "ppm" (part per million) is frequently used by manufacturers of test and measurement equipment to specify the performance of their products. Terms like this may be used in Schedules of Accreditation where they are in common use and understood by the users of such equipment, providing their use does not introduce any ambiguity in the capability that is being described.

When the CMC is expressed as an explicit function of the measurand or of a parameter, this often comprises a relative term (e.g., percentage) and an absolute term, i.e. one expressed in the same units as those of the measurand. This form of expression is used to describe the capability that can be achieved over a range of values. Some examples are shown below. It should be noted that these expressions are *not* mathematical formulae but are instead written in a commonly used shorthand for expressing uncertainties - therefore, for purposes of clarity, an indication of how they are to be interpreted is also provided below.

<u>DC voltage, 100 mV to 1 V</u>: 0.0025 % + 5.0 µV

Over the range 100 mV to 1 V, the CMC is 0.0025 %·V + 5.0 µV, where V is the measured voltage.

<u>Hydraulic pressure, 0.5 MPa to 140 MPa</u>: 0.0036 % + 0.12 ppm/MPa + 4.0 Pa

Over the range 0.5 MPa to 140 MPa, the CMC is 0.0036 %·p + ($0.12 \cdot 10^{-6} \cdot p \cdot 10^{-6}$) + 4.0 Pa, where p is the measured pressure in Pa.

It should be noted that the percentage symbol (%) simply represents the number 0.01. In cases where the CMC is stated only as a percentage, this is to be interpreted as meaning percentage of the measured value or indication.

Thus, for example, a CMC of 1.5 % means 1.5 · 0.01 · i, where i is the instrument indication.