CERTIFICATE OF CALIBRATION

Issue:-	Certificate Number:	**93835**
93835_10	Date of Issue:	**27-Nov-19**
	Approved Signatory:	**Kim Hutchins**
Page 1 of 2	Signed:	

UKAS CALIBRATION 0352

Kent County Council kent.gov.uk

Submitter:-
Mecmesin Limited
Newton House
Spring Copse Business Park
Slinfold
West Sussex
RH13 0SZ

Issued by:-
Kent Scientific Services
8 Abbey Wood Road
Kings Hill
West Malling
Kent
ME19 4YT
Tel: 03000 415 100
Fax: 01732 220006

EQUIPMENT:	Weights
SERIAL NUMBER:	S501 to S527
MAKE/TYPE:	N/A
STANDARDS USED:	Local Standard Set 16521
DATE RECEIVED:	26 November 2019
DATE CALIBRATED:	27 November 2019
DETAILS:	27 Stainless Steel, 500N Stack Parts

MEASUREMENTS:

Kent Scientific Services method used: CAL-M2, Calibration of Small Masses.
The calibrations took place in a controlled environment with the temperature held between 18°C and 22°C, and with the relative humidity held between 40% and 60%.
The measurement results obtained in the table, where each measured value given represents not the true mass, but the mass of a hypothetical weight of density 8,000 $kg.m^{-3}$, which in air of density 1.2 $kg.m^{-3}$ would balance the corresponding weight identified in the first column at 20°C.
The method of weighing was by substitution (Borda's method). In each instance the standard weight used had been calibrated by UKAS Calibration Laboratory number 0474 or 0352 within the previous three years.
The uncertainty of measurements for each of the different denominations is listed in the last column of the table
Duplicate weights, where present, are indicated by a dot or dots.
Customer supplied information is notated with a ~, and results relate to the item calibrated.
Unless otherwise notated, samples are tested in as received condition at Kent Scientific Services.

TABLE OF MEASUREMENT RESULTS

Identity Mark	Nominal Force	Measured Value	Error from Nominal	Estimated Uncertainty
S501	5 N	509.607 4 g	- 0.8 mg	± 1.6 mg
S502	5 N	509.609 5 g	+ 1.4 mg	± 1.6 mg
S503	10 N	1,019.212 2 g	- 4.1 mg	± 3.1 mg
S504	10 N	1,019.221 6 g	+ 5.3 mg	± 3.1 mg
S505	10 N	1,019.217 7 g	+ 1.4 mg	± 3.1 mg
S506	10 N	1,019.225 5 g	+ 9.2 mg	± 3.1 mg
S507	10 N	1,019.215 5 g	- 0.8 mg	± 3.1 mg
S508	10 N	1,019.215 5 g	- 0.8 mg	± 3.1 mg
S509	10 N	1,019.214 8 g	- 1.5 mg	± 3.1 mg
S510	10 N	1,019.208 5 g	- 7.8 mg	± 3.1 mg
S511	10 N	1,019.222 1 g	+ 5.8 mg	± 3.1 mg
S512	10 N	1,019.218 0 g	+ 1.7 mg	± 3.1 mg
S513	10 N	1,019.214 0 g	- 2.3 mg	± 3.1 mg
S514	10 N	1,019.223 5 g	+ 7.2 mg	± 3.1 mg
S515	10 N	1,019.224 5 g	+ 8.2 mg	± 3.1 mg
S516	10 N	1,019.221 4 g	+ 5.1 mg	± 3.1 mg
S517	10 N	1,019.219 4 g	+ 3.1 mg	± 3.1 mg
S518	10 N	1,019.221 7 g	+ 5.4 mg	± 3.1 mg
S519	10 N	1,019.211 5 g	- 4.8 mg	± 3.1 mg
S520	10 N	1,019.215 1 g	- 1.2 mg	± 3.1 mg
S521	10 N	1,019.213 4 g	- 2.9 mg	± 3.1 mg
S522	50 N	5,096.123 g	+ 42 mg	± 16 mg
S523	50 N	5,096.119 g	+ 38 mg	± 16 mg
S524	50 N	5,096.112 g	+ 31 mg	± 16 mg
S525	50 N	5,096.090 g	+ 9 mg	± 16 mg
S526	50 N	5,096.137 g	+ 55 mg	± 16 mg
S527	50 N	5,096.132 g	+ 50 mg	± 16 mg

The basis for conversion between force units and mass units is that a 1kg mass will experience a force of g newtons where g is the strength of the local gravitational field. At Kent Scientific Services the estimated local g = 9.81146 ms ˆ.

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The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.