

Schedule

Issue date: 18 May 2018
Valid until: 23 November 2020



NO: SAMM 082

(Issue 2, 18 May 2018 replacement of SAMM 082 dated 8 December 2017)

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LABORATORY LOCATION: (PERMANENT LABORATORY)



SENDI MAHIR SDN. BHD.
NO. 6, 8 & 10, 12 JALAN KAPAR 27/89
MEGAH INDUSTRIAL PARK
40400 SHAH ALAM, SELANGOR
MALAYSIA

FIELDS OF CALIBRATION:

FORCE, TORQUE, DIMENSIONAL, MASS, FLOW, PRESSURE, TEMPERATURE, VOLUMETRIC, ELECTRICAL & OPTICAL AND PHOTOMETRIC MEASUREMENTS

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2005 (ISO/IEC 17025:2005).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

* The expanded uncertainties are based on an estimated confidence probability of approximately 95% and have a coverage factor of $k=2$ unless stated otherwise.

SCOPE OF CALIBRATION: FORCE

| Instrument Calibrated/ Measurement Parameter | Range | Calibration and Measurement Capability Expressed as an Uncertainty(\pm)* | Remarks |
|--|--------------------|---|--|
| Push-Pull Gauge | 0 kgf to 100 kgf | 0.5 % of reading | Calibrated using Deadweight Standard Weight based on ISO 376:2004 |
| Tension Gauge | 0 kgf to 100 kgf | 0.5 % of reading | |
| Load Measuring Device | | | Calibrated using Load Cell, Proving Ring and Tension/ Compression Testing Machine based on ISO 376:2004 |
| Tension | 0 kgf to 500 kgf | 15 gf | |
| | 500 kgf to 1 tonf | 0.58 kgf | |
| | 1 tonf to 5 tonf | 1.7 kgf | |
| | 5 tonf to 10 tonf | 13 kgf | |
| | 10 tonf to 30 tonf | 79 kgf | |
| Compression | 0 kgf to 500 kgf | 15 gf | |
| | 500 kgf to 1 tonf | 0.56 kgf | |
| | 1 tonf to 5 tonf | 1.7 kgf | |
| | 5 tonf to 10 tonf | 13 kgf | |
| | 10 tonf to 30 tonf | 79 kgf | |
| | 30 tonf to 40 tonf | 93 kgf | |

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| Instrument Calibrated/ Measurement Parameter | Range | Calibration and Measurement Capability Expressed as an Uncertainty(\pm)* | Remarks |
|--|---|---|--|
| Shore Hardness Tester (spring load) | | | |
| 1. Type A, B, E, O | 0 to 100 shore hardness index | 0.24 shore hardness index | Calibrated using Durometer tester based on ASTM D 2240:2005 |
| 2. Type C, D, DO | 0 to 100 shore hardness index | 0.23 shore hardness index | |
| 3. Type OO | 0 to 100 shore hardness index | 0.23 shore hardness index | |
| Adhesion Tester (pressure) | 0 N/mm ² to 25 N/mm ² | 0.14 N/mm ² | Calibrated using Load Cell based on ASTM D 4541:2009 |

Signatory:

1. **Seah Leong Ho**

NO: SAMM 082(Issue 2, 18 May 2018 replacement
of SAMM 082 dated 8 December 2017)**SCOPE OF CALIBRATION: FORCE****SITE: CATEGORY I**

| Instrument Calibrated/ Measurement Parameter | Range | Calibration and Measurement Capability Expressed as an Uncertainty(\pm)* | Remarks |
|--|---|---|---|
| Universal Testing Machine 1. Tensile mode (0~10,000 kgf) 2. Compress mode (0~200,000 kgf) | 0 kgf to 500 kgf 500 kgf to 1,000 kgf 1,000 kgf to 5,000 kgf 5,000 kgf to 10,000 kgf 10,000 kgf to 50,000 kgf 50,000 kgf to 200,000 kgf | 24 gf 0.26 kgf 1 kgf 15 kgf 60 kgf 260 kgf | Calibrated using Deadweight up to 500 kgf or Load Cell based on ISO 7500-1:2004 |
| Hardness Tester | 20 HRA to 88 HRA 30 HRB to 100 HRB 10 HRC to 70 HRC | \pm 0.6 HRA \pm 0.6 HRB \pm 0.6 HRC | Calibrated using Load Cell and Hardness Block set based on ISO 6508-2:2005 under method clause 5 indirect verification |

Signatory:

1. Seah Leong Ho