Issue date: 17 November 2022
Valid Until: 31 October 2025

NO: SAMM 056
(Issue 1, 17 November 2022 replacement
of SAMM 056 dated 17 November 2022)

LABORATORY LOCATION/ CENTRAL OFFICE:	SME Aerospace Sdn Bhd Lot 14643 Locked Bag No. 222 , 47000, SELANGOR MALAYSIA
ACCREDITED SINCE :	17 MARCH 2025
FIELD(S) OF TESTING:	MECHANICAL MECHANICAL (TESTING) MECHANICAL (NON-DESTRUCTIVE TESTING)
FIELD(S) OF CALIBRATION:	DIMENSIONAL

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

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 uncertainty covered by the CMC is expressed as the expanded uncertainty corresponding to a coverage probability of approximately 95 % and have a coverage factor of k=2 unless stated otherwise.**

CENTRAL LOCATION:	SME Aerospace Sdn Bhd Lot 14643 Locked Bag No. 222 , 47000, Selangor
FIELD(S) OF TESTING :	MECHANICAL, MECHANICAL, MECHANICAL

SCOPE OF TESTING : MECHANICAL

Issue date: 17 November 2022
Valid Until: 31 October 2025

NO: SAMM 056
(Issue 1, 17 November 2022 replacement
of SAMM 056 dated 17 November 2022)

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
Metal & Metal Products	Hardness Test a) Rockwell Hardness Test • Rockwell B Scale: 40 HRB to 100 HRB • Rockwell C Scale: 20 HRC to 70 HRC • Rockwell 15T Scale: 60-90HR15T • Rockwell A Scale: 30-70 HRA b) Vickers Hardness Test • Macrovickers (1 kgf to 30 kgf) • Microvickers (1 gf to 1000 gf)	In-house method (ref no: QA/METAL/02) Based on ASTM E18-2022 In-house method (ref no: QA/METAL/03) Based on ASTM E92-2017 (ref no: QA/METAL/26) Based on ASTM E384-2017

SCOPE OF TESTING : MECHANICAL (TESTING)

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
Metal & Metal Products	Hardness Test a) Rockwell Hardness Test • Rockwell B Scale: 40 HRB to 100 HRB • Rockwell C Scale: 20 HRC to 70 HRC • Rockwell 15T Scale: 60-90HR15T • Rockwell A Scale: 30-70 HRA b) Vickers Hardness Test • Macrovickers (1 kgf to 30 kgf) • Microvickers (1 gf to 1000 gf)	In-house method (ref no: QA/METAL/02) Based on ASTM E18-2022 In-house method (ref no: QA/METAL/03) Based on ASTM E92-2017 (ref no: QA/METAL/26) Based on ASTM E384-2017

SCOPE OF TESTING : MECHANICAL (NON-DESTRUCTIVE TESTING)

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Metal & Metal Products	Hardness Test a) Rockwell Hardness Test • Rockwell B Scale: 40 HRB to 100 HRB • Rockwell C Scale: 20 HRC to 70 HRC • Rockwell 15T Scale: 60-90HR15T • Rockwell A Scale: 30-70 HRA b) Vickers Hardness Test • Macrovickers (1 kgf to 30 kgf) • Microvickers (1 gf to 1000 gf)	In-house method (ref no: QA/METAL/02) Based on ASTM E18-2022 In-house method (ref no: QA/METAL/03) Based on ASTM E92-2017 (ref no: QA/METAL/26) Based on ASTM E384-2017

SCOPE OF TESTING : MECHANICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Metal & Metal Products	Tensile Test (Up to 100 kN) • Ultimate Tensile Strength • 0.2 % Proof Strength • Elongation	In-house method (ref no: QA/METAL/05) Based on BS EN ISO 6892-1:2019 & ASTM E8M-2021 ASTM B557-2015

SCOPE OF TESTING : MECHANICAL (TESTING)

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Metal & Metal Products	Tensile Test (Up to 100 kN) • Ultimate Tensile Strength • 0.2 % Proof Strength • Elongation	In-house method (ref no: QA/METAL/05) Based on BS EN ISO 6892-1:2019 & ASTM E8M-2021 ASTM B557-2015

SCOPE OF TESTING : MECHANICAL (NON-DESTRUCTIVE TESTING)

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Metal & Metal Products	Tensile Test (Up to 100 kN) • Ultimate Tensile Strength • 0.2 % Proof Strength • Elongation	In-house method (ref no: QA/METAL/05) Based on BS EN ISO 6892-1:2019 & ASTM E8M-2021 ASTM B557-2015

SCOPE OF TESTING : MECHANICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Non-destructive Testing (ndt) Metal And Metal Products	Fluorescent Magnetic Particle Inspection (Bench type)	ASTM E1444-2016
	Liquid Penetrant Inspection Type 1, Method A, Level III, Form a (Fluorescent Water Washable Penetrant Level III)	ASTM E1417-2016
	Conductivity Testing (Frequency 60 kHz, range 0.8 % to 110 % IACS)	ASTM E1004-2017

SCOPE OF TESTING : MECHANICAL (TESTING)

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Non-destructive Testing (ndt) Metal And Metal Products	Fluorescent Magnetic Particle Inspection (Bench type)	ASTM E1444-2016
	Liquid Penetrant Inspection Type 1, Method A, Level III, Form a (Fluorescent Water Washable Penetrant Level III)	ASTM E1417-2016
	Conductivity Testing (Frequency 60 kHz, range 0.8 % to 110 % IACS)	ASTM E1004-2017

SCOPE OF TESTING : MECHANICAL (NON-DESTRUCTIVE TESTING)

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
Non-destructive Testing (ndt) Metal And Metal Products	Fluorescent Magnetic Particle Inspection (Bench type)	ASTM E1444-2016
	Liquid Penetrant Inspection Type 1, Method A, Level III, Form a (Fluorescent Water Washable Penetrant Level III)	ASTM E1417-2016
	Conductivity Testing (Frequency 60 kHz, range 0.8 % to 110 % IACS)	ASTM E1004-2017

CENTRAL LOCATION	SME Aerospace Sdn Bhd Lot 14643 Locked Bag No. 222 , 47000, Selangor
FIELD(S) OF CALIBRATION :	DIMENSIONAL,

SCOPE OF CALIBRATION : DIMENSIONAL

Instrument Calibrated/Measurement Parameter	**Range**	**Calibration and Measurement Capability Expressed as an Uncertainty (±)***	**Remarks**
Dial Gauges	0 mm to 5 mm (1 µm resolution)	2 µm	Using Calibration Tester and Block Gauge as per JIS B 7503:2017
	0 mm to 10 mm (10 µm resolution)	6 µm	Using Calibration Tester and Block Gauge as per JIS B 7503:2017
Dial Test Indicators	0 mm to 0.25 mm (2 µm resolution)	3 µm	Using Calibration Tester and Block Gauge as per JIS B 7533:2020
	0 mm to 1 mm (10 µm resolution)	6 µm	Using Calibration Tester and Block Gauge as per JIS B 7533:2020
External Micrometer	0 mm to 25 mm (for frame size up to 75 mm)	6 µm	Using Block Gauge, Optical Flat and Top Pan Spring Balance as per JIS B 7502:2016

Issue date: 17 November 2022
Valid Until: 31 October 2025

NO: SAMM 056
(Issue 1, 17 November 2022 replacement
of SAMM 056 dated 17 November 2022)

Instrument Calibrated/Measurement Parameter	**Range**	**Calibration and Measurement Capability Expressed as an Uncertainty (±)***	**Remarks**
	25 mm to 50 mm (with setting gauge)	7 µm	Using Block Gauge, Optical Flat and Top Pan Spring Balance as per JIS B 7502:2016
Depth Micrometer	0 mm to 25 mm	6 µm	Using Block Gauge and Optical Flat as per JIS B 7544:1994
Vernier Caliper	0 mm to 150 mm	6 µm	Using Block Gauge and Surface Table as per JIS B 7507:2016
Vernier Depth Gauge	0 mm to 150 mm	4 µm	Using Block Gauge, Surface Table and Dial Test Indicator as per JIS B 7518:2018
Micrometer Head	0 mm to 25 mm	3 µm	Using Block Gauge and Optical Flat as per JIS B 7502:2016
Micro Indicator	0 µm to 25 µm	1 µm	Using Block Gauge and Top Pan Spring Balance as per JIS B 7519:2015
Indicating Micrometer	0 mm to 25 mm	1 µm	Using Block Gauge, Optical Flat, Optical Parallel, Top Pan Spring Balance as per JIS B 7520:2016
	25 mm to 50 mm	2 µm	Using Block Gauge, Optical Flat, Optical Parallel, Top Pan Spring Balance as per JIS B 7520:2016
Limit Gauges Plain Plug Gauges (diameter Only)	1 mm to 25 mm	1 mm	Using Calibration Block Gauge, Indicating Micrometer and Micrometer Indicator based on DIN 7162:1965, BS 969:2008 and JIS B 7420:2016

Issue date: 17 November 2022
Valid Until: 31 October 2025

NO: SAMM 056
(Issue 1, 17 November 2022 replacement
of SAMM 056 dated 17 November 2022)

Instrument Calibrated/Measurement Parameter	**Range**	**Calibration and Measurement Capability Expressed as an Uncertainty (±)***	**Remarks**
	25 mm to 50 mm	2 mm	Using Calibration Block Gauge, Indicating Micrometer and Micrometer Indicator based on DIN 7162:1965, BS 969:2008 and JIS B 7420:2016