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LABORATORY LOCATION:

SOUTHERN STAR TESTING LABORATORY SDN. BHD

(PERMANENT LABORATORY) NO. 6 JALAN PENAGA 4

KAWASAN PERINDUSTRIAN KOTA PUTRI

81750 MASAI, JOHOR

MALAYSIA

FIELD OF TESTING:

MECHANICAL

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).

SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Metals and Metal Products	Sample Preparation	ASTM E3-2011
(Metallurgy)	Average Grain Size Measurement	ASTM E112-2013 (Comparison Method)
	Microetching and Microstructure Examination	E407-07 (2015)
	Macroetching and Macrostructure Examination	ASTM E381-01 (2012) ASTM E340-15
	Inclusion Content	ASTM E45-13 (Method A)
	Carburization and Decarburization	ASTM F2328-14 (Microscopic Examination)
	Microindentation Vickers Hardness Test	ASTM E384-17
	Coating Thickness Determination by Microscopic Examination	ASTM B487-85 (2013)
	Determining Volume Fraction by Systematic Manual Point Count	ASTM E562-2011

- 1. Mohd Hanif bin Abdullah
- 2. Dr. Ng Theng Pin

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SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement		Standard Test Methods/ Equipment/Techniques
Metallic Materials (Aluminum & Zinc Based)	Elemental Analysis Positive Material Identification (Spectrometric Analysis Instrumentation Technique)	a. Aluminum Based Alloys	ASTM E1251: 17a
		b. Zinc Based Alloys	ASTM E1251: 17a
	Corrosion Test (Electrolysis - Capacity/Consumption F - Potential Test		 NACE TM 0190: 2012 DNVGL RP B401 (june 2017) DEP 37.81.20.31 GEN (Sept 2011) ASTM D1141: 1998 (Reapproved 2013) FMC M40108 Rev. L FMC M40109 Rev. J FMC M40150 Rev. C FMC M40148 Rev. C *GS 2.01 Rev. B *NORSOSK M-503-edition 4, sept 2016 *GS EP COR 201 Rev. 7 (2012) ISO 15589-2 Second Edition 2012-12-01 *Standard adopted from DNV or NACE method.

- 1. Saiful Effendy bin Ismail
- 2. Nursyafiqah binti Ramli
- 3. Nur Asmira binti Rosli

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SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement		Standard Test Methods/ Equipment/Techniques
Metals and Metal Products (Mechanical)	Hardness Test - Rockwell Method		ASTM E18: 17e1
(Base Metal)	- Brinell Method		ASTM E10-17
	Tensile Test a. Tensile Strength b. Yield Strength c. Elongation & Reduction Area		ASTM A370: 17
	Impact Energy Absorption Test - Charpy Method		ASTM E23: 16b
	Elemental Analysis Positive Material Identification (Spectrometric Analysis Instrumentation Technique)	a. Carbon/ Low Alloy Steel	ASTM E415: 17
		b. Stainless Steel	ASTM E1086: 14
	Elemental Analysis Positive Material Identification (X-Ray Fluorescence Technique)		ASTM A751-14a ASTM E1476-04 (R2014)
	Salt Spray (Fog) Test		ASTM B117-16
Fasteners	Proof Load Test		ASTM F606/F606M-16

- 1. Wan Hafizul bin Wan Hamat
- 2. Eddy Nor Ezwan bin Mohd Hatta
- 3. Shazana binti Zulkifle

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SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Metals and Metal Products (Mechanical – Welds)	Break Test (Filled Weld) Bend Test	AWS B4.0-2016 ASTM E190-14 ASTM E290-14
	Transverse Weld Tensile	BS EN ISO 4136-2012

- 1. Dr. Ng Theng Pin
- 2. Wan Hafizul bin Wan Hamat
- 3. Eddy Nor Ezwan bin Mohd Hatta
- 4. Shazana binti Zulkifle