

NO: SAMP 875

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LABORATORY LOCATION:
(PERMANENT LABORATORY)
ADVANCED MATERIALS TESTING LABORATORY
SIRIM INDUSTRIAL RESEARCH
SIRIM BERHAD
LOT 34, JLN HI-TECH 2/3, KULIM HI-TECH PARK
09000 KULIM, KEDAH
MALAYSIA

FIELDS OF TESTING:

CHEMICAL & PHYSICAL

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: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Plastic Polymers Functional Group	Qualitative measurement of IR Spectrum	ASTM E1252-98 (Reapproved 2013) ASTM E573-01(Reapproved 2013)
Ceramic Polymer Metal	Morphology: Elemental analysis for elements with an atomic number of 11 (Na) or above	ISO 22309 : 2011 (E)

Signatories:

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|----|--------------------------|-------------------------|
| 1. | Mohamed Izat Mohd. Ezwan | IKM No.: M/4722/7793/17 |
| 2. | Dr. Kartini Noorsal | IKM No.: A/2820/5521/09 |
| 3. | Mat Tamizi Zainuddin | IKM No.: M/4830/7963/18 |

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SCOPE OF TESTING: PHYSICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Ceramic	Density and Apparent Porosity	ISO 18754 : 2013 (E) (4.3.3 Method A)
	Porosity: Specific Surface Area	ISO 18757 (2003)
Ceramic Polymer Metal	Morphology and Particle Size	ASTM F1877-98(2003)
	Topography: 3-dimensional Surface Profiling	ASTM E2859-11(2011)
	Morphology: Crystallinity by Relative X-Ray Diffraction Intensities	Powder Diffraction File™ (PDF-2 2015), International Centre for Diffraction Data 2015 Diffraction ^{Plus} Evaluation Package 2003
Metal	Carbon	ASTM E 1019 – 11 (2011) ASTM E1941 – 10 (2010)
	Sulfur	ASTM E 1019 – 11 (2011)

Signatories:

1. **Mat Tamizi Zainuddin**
2. **Dr. Rosdi Ibrahim**