

Schedule

ZwickRoell Pte. Ltd.
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Singapore 609966

Certificate No. : LA-2022-0818-C
Issue No. : 03
Date : 27 August 2024
Expiry of Certificate : 16 October 2026
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FIELD OF TESTING : Calibration and Measurement

METHOD	MEASURED QUANTITIES / INSTRUMENTS / RANGE TO BE CALIBRATED	CALIBRATION AND MEASUREMENT CAPABILITY (CMC*)
A. Mechanical		
1. ZRSG-02-WP001 Rev 01 site/overseas site WP	Impact Tester	
a) ISO 13802: 2015 ASTM D 256: 23e1	Plastic Material (Up to 50J)	
	Center Of Percussion	0.4%
	Potential Energy	0.5%
	Error in Indicated Energy	0.02%
b) ZRSG-02-WP001 Rev 01 site/overseas site WP		
ISO 148-2: 2016 ASTM E23-24	Metallic Material (Up to 450J)	
	Center Of Percussion	0.01%
	Potential Energy	0.11%
	Error in Indicated Energy	0.02%

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METHOD	MEASURED QUANTITIES / INSTRUMENTS / RANGE TO BE CALIBRATED	CALIBRATION AND MEASUREMENT CAPABILITY (CMC*)
c) ZRSG-02-WP004 Rev 00: Site/overseas site WP ISO 7500-1:2018	Force Material Testing Machine -Tension & Compression <u>Dead Weights</u> 0.02N to 200N <u>Loadcell</u> Up to 500kN	 0.10% 0.12%
d) ZRSG-02-WP005 Rev 00: Site/overseas site WP ISO 9513:2012 ASTM E2309/E2309M-20	Extensometer Material Testing Machine 0mm to 60mm	 0.5µm
B. Velocity ZRSG-02-WP003 Rev 01: site/overseas site WP ASTM E2658-15R23	Material Testing Machine crosshead/actuator speed 0.5 to 1000mm/min	 0.000257mm/min
C. Extrusion Plastometers ZRSG-02-WP002 Rev 01 site/overseas site WP ISO1133-1:2022 ISO1133-2:2011 ASTM D1238-23	Load Up to 21.6kg Temperature Up to 390°C Displacement Up to 50mm Time	 0.15% 0.061°C 0.003mm 0.258s

* CMC is expressed as an expanded uncertainty estimated at a level of confidence of approximately 95%.
Note: Overseas site calibration performed with supervision from ZwickRoell Pte. Ltd., Singapore.

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Mr Jeremiah Espiritu	- For A(a), A(b) & C
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Mr Bas Cauwenberghs	- For A(c) & A(d)
Mr Loganathan Ambalagan	- For A(c) & A(d)

Note:

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. A laboratory's fulfilment 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 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.