



CERTIFICATE OF ACCREDITATION

This is to attest

ALLIANCE TESTING CO.,LTD.

EM MACAU, RUA DA RIBEIRA DO PATANE, NO.157, INDUSTRIAL YAU KEONG LL11
MACAU, 999078

Testing Laboratory TL-1058

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date November 19, 2025



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International Accreditation Service
Issued under the authority of IAS management

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SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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ALLIANCE TESTING CO.,LTD.

www.alliance-testing.com

Contact Name Ting Yan Dee Lau

Contact Phone +853-62226621

Accredited to ISO/IEC 17025:2017

Effective Date November 19, 2025

Chemical Testing	
APHA 23e 2540B	Total Solids Dried at 103°C – 105°C
APHA 23e 2540C	Total Dissolved Solids Dried at 180°C
APHA 23e 2540D	Total Suspended Solids Dried at 103°C – 105°C
APHA 23e 4500-Cl- B	Chloride content of water
APHA 23e 4500-H+B	pH value of water
APHA 23e 5220D	Chemical Oxygen Demand
BS 1881-124:1988 Cl. 10.2	Chloride content of hardened concrete
GB/T 5750.4-2006 Cl 5	pH value of water
GB/T 5750.4-2006 Cl 8.1	Total Dissolved Solids Dried at 180°C
GB/T 11901-89	Total Suspended Solids Dried at 103°C – 105°C
GB/T 18204.2-2014 Cl 5.2	Respirable Suspended Particulates (PM ₁₀)
GB/T 18204.2-2014 Cl 6	Respirable Suspended Particulates (PM _{2.5})
GB/T 18204.2-2014 Cl 7.4	Formaldehyde (HCHO)
HJ/T 167-2004 C1	Nitrogen Dioxide (NO ₂)
HJ/T 167-2004 D3	Carbon Monoxide (CO)
HJ/T 167-2004 E1	Carbon Dioxide (CO ₂)
HJ/T 167-2004 G2	Ozone (O ₃)
HJ/T 167-2004 K4	Total Volatile Organic Compounds (TVOC)
HJ/T 167-2004 N	Radon (Rn)
In-house method (refer to GB/T 4336-2016)	Determination of carbon steel and low alloy steel (Carbon, Sulphur, Phosphorus, Nitrogen, Vanadium, Copper, Nickel, Manganese, Molybdenum, Chromium, Silicon)
Physical & CMT Testing	
AAMA 501.2-15	Water leakage test
ASTM C939/C939M-22	Determination of Flow Cone Test

TL-1058

ALLIANCE TESTING CO.,LTD.

Effective Date November 19, 2025

Page 2 of 8

IAS/TL/101-3

SCOPE OF ACCREDITATION

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ASTM C940-22	Determination of Bleeding and Free Expansion of Grout
ASTM D1143/D1143M-20	Static Load Test
ASTM D1194-94	Standard Test Method for Bearing Capacity of Soil for Static Load and Spread Footings
ASTM D2041/D2041M-19	Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
ASTM D2573/D2573M-18	Standard Test Method for Field Vane Shear Test in Cohesive Soil
ASTM D3689/D3689M-22	Static Axial Tensile Load Test for Deep Foundation
ASTM D4945-17	High-strain Dynamic Testing (PDA)
ASTM D5731:16	Point Load Strength Index of Rock
ASTM D5882-16	Low-Strain impact Integrity Testing (PIT)
ASTM D6132-2013(2022)	Nondestructive Measurement of Dry Film Thickness of Coatings
ASTM D6230-13	Ground movement monitoring
ASTM D6760-16	Cross-hole Sonic Logging Testing (CSL)
ASTM D7012-23	Unconfined Compressive Strength of Intact Rock Core Specimens
ASTM D7091-22	Nondestructive Measurement of Dry Film Thickness of Coatings
ASTM D8169-21	Standard Test Methods for Deep Foundations Under Bi-Directional Static Axial Compressive Load
ASTM E605-93 (Reapproved 2006)	Thickness Test - Fire-proof material
ASTM E605-93 (Reapproved 2006)	Density - Fire-proof material
ASTM E736-00 (Reapproved 2011)	Adhesion test - Fire-proof material
BS 1377-7:1990 CL.7	Determination of the unconfined compressive strength
BS 1881-204:1988	Measurements of Reinforcing Steel Bar in Concrete (Covermeter)
BS 4449-2005+A3:2016 Section 7.4	Bond property of steel reinforcing bars (surface geometry)
BS 4550-3.4:1978	Strength test of cement cubes
BS EN 895:1995	Transverse tensile test
BS EN 12390-8:2009	Determination of Water Penetration of hardened concrete under pressure
BS EN 12504-2:2012	Surface Hardness Testing by Rebound Hammer (Type N)
BS EN 14630:2006	Determination of carbonation depth in hardened concrete by the phenolphthalein method
CECS 21:2000	Inspection of Concrete Defects by Ultrasonic Method

TL-1058

ALLIANCE TESTING CO.,LTD.

Effective Date November 19, 2025

Page 3 of 8

IAS/TL/101-3

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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CECS 596-2019	Testing of borehole of cast-in-place piles
CEDD Guidance Note on Vibration Monitoring CEDD Guidance - Note on Vibration Monitoring 2009	Vibration Monitoring
CS1:2010 Section 7	Making test cubes from fresh concrete
CS1:2010 Section 12	Determination of compressive strength of concrete cubes (including cement grout, mortar cubes)
CS1:2010 Section 15	Obtaining core samples and determination of the compressive strength of concrete cores
CS2: 2012 Section 6.7	Bond property of steel reinforcing bars (surface geometry)
EN 12504-1:2019	Testing concrete in structures Part 1: Cored specimens-Taking, examining and testing in compression
GB 50026:2020	Subsidence monitoring
GB 50209-2002	Hammer Tap
GB 50210-2001	Hammer Tap
GB 50496-2018	Mass Concrete Temperature Monitoring
GB 50497-2019	Internal force monitoring of support structure
GB 50497-2019	Crack monitoring
GB 50497-2019	Water pressure gauge monitoring
General Specification for Building 2012 Section 5	Static Load Test
GEOGUIDE 2, CL. 21.4	In-situ Falling Head Permeability Test - Permeability by Constant Head method
GEOGUIDE 2, CL. 21.4	In-situ Falling Head Permeability Test - Permeability by Falling Head method
GEOSPEC 3:2001 CL. 5.1, 5.2, 5.3	Determination of Moisture Content by Oven-drying
GEOSPEC 3:2001 CL. 6.1	Determination of Liquid Limit, Plastic Limit and Plasticity Index
GEOSPEC 3:2001 CL. 7.1, 7.2	Determination of Particle Density
GEOSPEC 3:2001 CL. 8.1, 8.2	Determination of Particle Size Distribution by Wet Sieving
GEOSPEC 3:2001 CL. 8.5, 8.6	Determination of Particle Size Distribution by the Hydrometer Method
GEOSPEC 3:2001 CL. 10	Determination of Soil dry density / moisture content relationship
GEOSPEC 3:2001 CL. 11	Model Specification for Soil Testing, Determination of In-situ Bulk Density, In-situ Dry Density and Relative Compaction

TL-1058

ALLIANCE TESTING CO.,LTD.

Effective Date November 19, 2025

Page 4 of 8

IAS/TL/101-3



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SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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GEOSPEC 3:2001 CL. 12.1	Determination of the California Bearing Ratio (CBR)
GEOSPEC 3:2001 CL. 14.1	The One-dimensional Consolidation Test
GEOSPEC 3:2001 CL. 15.1, 15.2, 15.3	Isotropically Consolidated Undrained Triaxial Compression with pressure measurement - Multi Stage
GEOSPEC 3:2001 CL. 16.1	Determination of shear strength by direct shear
HKCI:TM1	Infrared Thermography Scanning
HKCI TM3	Ultrasonic Echo Sounder Test
HKHA MTS (2000/2002) PART D cl.10	Infrared Thermography Scanning
In-house method based on HKCI:TM1	Detection of Building Surface Defect by Infrared Thermography
ISO 1920-3:2019	Testing of concrete — Part 3: Making and curing test specimens
ISO 1920-4:2005	Testing of concrete — Part 4: Strength of hardened concrete
ISO 1920-4:2005	Compressive strength of cement cubes
ISO 1920-6:2019	Testing of concrete — Part 6: Sampling, preparing and testing of concrete cores
ISO 2808:2007	Nondestructive Measurement of Dry Film Thickness of Coatings
JGJ 8-2016	Tiltmeter Monitoring
JGJ 106:2014 CL. 8	Low-Strain impact Integrity Testing (PIT)
JGJ 106:2014 CL. 10	Cross-hole Sonic Logging Testing (CSL)
JGJ 120:2012	Soil nail / Anchor Test
JGJ/T 178-2009 + GB50119-2013	Determination of the percentage of restrained expansion of shrinkage-compensating concrete
JTG/T F50-2011, appendix D	Determination of the mud balance
JTG/T F50-2011, appendix D	Determination of the slurry viscosity
JTG/T F50-2011, appendix D	Determination of the sand content of slurry
Macao Special Administrative Region Chief Executive's Office 248/2014 Chief Executive's Instruction Annex "Acoustic Regulations"	Noisy Monitoring

TL-1058

ALLIANCE TESTING CO.,LTD.

Effective Date November 19, 2025

Page 5 of 8

IAS/TL/101-3



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SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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NDT and Mechanical Testing	
ASTM C876-21	Corrosion Potentials of Uncoated Reinforcing Steel on Concrete
ASTM D4541-22	Pull-Off Adhesion Strength of Coatings on Concrete
ASTM D7234-22	Pull-Off Adhesion Strength of Coatings on Concrete
BS 3923-1:1986	Ultrasonic Examination of Weld
BS 4449:1988 appendix C	Metallic Materials - Steel Reinforcing Bars
BS 4449:1988 appendix C	Bend Tests - Steel Reinforcing Bars
BS 4449:2005+A3: 2016	Bend Tests - Steel Reinforcing Bars
BS 4449:2005+A3:2016	Metallic Materials - Steel Reinforcing Bars
BS 5080-2:1993	Shear Force Test for structural fixings
BS 5289:1976	Visual Inspection of Fusion Welded Joints
BS 6072:1981	Magnetic Particle Flaw Detection of Fusion Welded Joints
BS 8110-1:1997	Tensile test of metal materials
BS EN 10002-1:2001	Tensile test of metal materials
BS EN 10045-1:1990	Impact Test on Metal
BS EN 1043-1:1996	Hardness test (Destructive) on welds in metallic materials.
BS EN 1290-1998	Magnetic Particle Flaw Detection of Fusion Welded Joints
BS EN 1320:1997	Destructive tests on welds in metallic materials. Fracture tests
BS EN 1321:1997	Destructive Tests on Welds in Metallic Materials. Hardness Testing: Macroscopic and Microscopic Examination of Welds
BS EN 1714+A1(2002)	Ultrasonic Examination of Weld
BS EN 287-1:2011 Clause 6.4	Qualification test of welders Fusion welding Part 1
BS EN 571-1:1997	Non-destructive testing of welds - Part 1: Penetrant testing
BS EN 875:1995	Impact Test on Metal
BS EN 910:1996	Destructive tests on welds in metallic materials - Bend Tests
BS EN 970:1997	Visual Inspection of Fusion Welded Joints
BS EN ISO 14555:2014 Clause 10.2. 11	Welding – Arc stud welding of materials
BS EN ISO 15613:2004 Clause 7	Specification and qualification of welding procedures for metallic materials — Qualification based on pre-production welding test
BS EN ISO 15614-1:2017 Clause 7.3	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding

TL-1058

ALLIANCE TESTING CO.,LTD.

Effective Date November 19, 2025

Page 6 of 8

IAS/TL/101-3

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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	of nickel and nickel alloys
BS EN ISO 17637: 2011	Visual Inspection of Fusion Welded Joints
BS EN ISO 17639:2022	Destructive tests on welds in metallic materials — Macroscopic examination of welds
BS EN ISO 17640:2010	Ultrasonic Examination of Weld
BS EN ISO 3452-1:2013 (Colour Contrast Method)	Non-destructive test of welds - liquid penetrant test
BS EN ISO 4136:2022	Destructive tests on welds in metallic materials — Transverse tensile test
BS EN ISO 5173:2023	Destructive tests on welds in metallic materials — Bend tests
BS EN ISO 9015-1:2011	Destructive tests on welds in metallic materials — Hardness testing
BS EN ISO 9016:2022	Destructive tests on welds in metallic materials — Impact tests
BS EN ISO 9934-1:2016	Non-destructive examination of weld - magnetic particle examination of welds
CS1:2010 Section 12	Determination of compressive strength of concrete cubes (including cement grout, mortar cubes)
CS1:2010 Section 2 Part I	Slump Test
CS1:2010 Section 2 Part IV	Flow Table Test
CS2:1995	Bend Tests - Steel Reinforcing Bars
CS2:1995	Metallic Materials - Steel Reinforcing Bars
CS2:2012	Metallic Materials - Steel Reinforcing Bars
CS2:2012 Section 12	Bend Tests - Steel Reinforcing Bars
GB 50621:2010	Torque test on threaded fasteners and related parts
HKIE (PWLTM No. MIS 10.1)	Description of test: Unconfined compression test of cement soil cores in accordance with "interim Guidelines on Testing of Unconfined Compressive Strength of Cement Stabilised Soil Cores in Hong Kong (October 2017, HKIE)"
ISO 17638:2009	Magnetic Particle Flaw Detection of Fusion Welded Joints
ISO 1920-4:2005	Testing of concrete — Part 4: Strength of hardened concrete
ISO 6892-1:2019	Tensile test of metal materials
ISO 898-1:1999	Tensile test for steel fasteners
ISO 9606-1:2012 Clause 7.4	Qualification testing of welders-Fusion Welding Part 1 : Steels
JGJ 145-2013	Pullout test for anchor bolts / Rebar
JGJ/T 110-2017	Tensile Adhesion Strength of Tiles (Pull-off Test)
The Hong Kong Concrete Institute TM2	Surface penetration radar survey for determination of concrete cover and distribution of steel reinforcement

TL-1058

ALLIANCE TESTING CO.,LTD.

Effective Date November 19, 2025

Page 7 of 8

IAS/TL/101-3



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The Hong Kong Concrete Institute TM4	Detection of Thermal Anomalies for Exposed Water-proof Membrances/ Coatings by Infrared Thermography
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