



CERTIFICATE OF ACCREDITATION

This is to attest that

COMPANHIA GOU FO DETECCAO (MACAU) LIMITADA
ALA. DR. CARLOS D'ASSUMPCAO NO.180, CENTRO COMERCIAL TONG NAM AH, 5 ANDAR T
MACAO 853, PEOPLE'S REPUBLIC OF CHINA

Testing Laboratory TL-838

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 May 15, 2023



A handwritten signature in black ink that reads 'Raj Nathan'.

President

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

COMPANHIA GOU FO DETECCAO (MACAU) LIMITADA

Contact Name Chris Chung

Contact Phone +853 28751766

Accredited to ISO/IEC 17025:2017

Effective Date May 15, 2023

NDT	
BS 3923	Non-destructive testing of welded joints - ultrasonic testing of welded joints
BS 5289	Non-destructive examination of fusion welds - visual examination
BS 6072	Non-destructive examination of welds – magnetic particle examination of welds
BS EN 287-1:2011 Clause 6.4	Qualification test of welders Fusion welding Part 1
BS EN 571-1:1997 (Colour Contrast Method)	Non-destructive test of welds - liquid penetrant test
BS EN 970	Non-destructive examination of fusion welds - visual examination
BS EN 1290	Non-destructive examination of welds – magnetic particle examination of welds
BS EN 1714	Non-destructive testing of welded joints - ultrasonic testing of welded joints
BS EN ISO 3452-1:2013 (Colour Contrast Method)	Non-destructive test of welds - liquid penetrant test
BS EN ISO 9606-1:2017 Clause 6.4	Qualification testing of welders. Fusion welding
BS EN ISO 9934-1:2016	Non-destructive examination of weld - magnetic particle examination of welds
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 of nickel and nickel alloys
HKCI TM1	Detection of building defects by Infrared Thermography
In-house Method TST-3	Detection of Moisture in Buildings by Infrared Camera
ISO 17637	Non-destructive examination of fusion welds - visual examination
ISO 17638	Non-destructive examination of welds – magnetic particle examination of welds
ISO 17640	Non-destructive testing of welded joints - ultrasonic testing of welded joints
Pile	
ASTM D1143; BS 8004	Static loading tests on piles

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ASTM D1194-94, D1195-93, D1196-93	Plate Load Test
ASTM D4945	Dynamic Pile Test
ASTM D5882	Pile integrity test
ASTM D6760	Ultrasonic crosshole sonic logging test
ASTM D8169	Deep Foundations Under Bi-Directional Static Axial Compressive Load
BS 1377: Part 9	Plate load test
HKCI:TM3	Ultrasonic echo sounder test (UEST)
In-house Method KODEN	Ultrasonic echo sounder test (UEST)
JGJ/T 403-2017	Technical specification for static loading test of self-balanced method of building foundation piles
Mechanical	
ASTM C403-90	Time Of Setting of Concrete Mixtures by Penetration Resistance
ASTM C939-10	Flow of grout (Flow cone method)
ASTM C939-97	Flow of grout (Flow cone method)
ASTM D 2938-95	Unconfined Compressive Strength of Intact Rock Core
ASTM D5731-95	Point load strength index of rock
BS 1881: Part 116: 1983	Compressive strength of concrete cubes
BS 1881: Part 120: 1983	Compressive strength of concrete cores
BS 4449: 1988	Bend and Rebend test of carbon steel bars
BS 4449: 1988; CS2: 1995	Tensile test of carbon steel bars
BS 4449: 2005 + A2: 2009	Tensile test of steel reinforcing bars
BS 8110: Part 1: 1997 Cl. 3.12.8.16.2	Tensile test of reinforcing bars with mechanical couplers
BS EN 10002-1	Tensile test of metallic materials
CS1: 2010 Section 12 + Amd. 1/2013	Compressive strength of concrete cubes
CS1: 2010 Section 15 + Amd. 1/2013	Compressive strength of concrete cores
CS2: 2012 + Amd. 1/2016 + Amd. 2/2018 Cl. 6.1 & 6.4	Tensile test of steel reinforcing bars

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CS2: 2012 + Amd. 2/2018 Cl. 6.2 & 6.5	Mass per metre and Rebend test of steel reinforcing bars
EN 12390-8:2019	Water impermeability of hardened concrete
HKHA Specification Library (2004 edition), section PIL 1.M410.4, PIL.T320.4 and General Specification for Civil Engineering Works (2006), Section 7,8&17	Determination of Bleeding and Free Expansion of Grout
ISO 1920-4	Compressive strength of concrete cubes
ISO 1920-4	Compressive strength of concrete cores
ISRM: 1985	Suggested method for determining point load strength
MTRC Materials & Workmanship Specification (1997) Vol.2 of 6 Cl.11.40(6)	Bleeding Test
Building Diagnostic	
AAMA 501.2-03	Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems
ASTM D 6132-04	Non-destructive Measurement of Dry Film Thickness (Ultrasonic Gage)
BS 1881: Part 102: 1983	Slump test
BS 1881: Part 202	Surface hardness measurement of concrete
BS 1881: Part 204	Covermeter survey
BS 5080-1; BS 5080-2	Structural fixings in concrete and masonry - method of test for tensile or shear loading
BS EN12504-2	Surface hardness measurement of concrete
BS EN 14630	Carbonation test
BS EN ISO 2178: 1995	Coating thickness (Magnetic method)
CS1: 2010 Section 2 Part I	Slump test
General Specification for Civil Engineering Works (2006) Vo1.1 APP.7.138	Pull-out test for soil nails
HKHA MTS (2012/2014) Package D Specification	Tensile Proof Load Test on Grouted Dowel Bars or Anchor Bolts

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In-house Method TST-1	Pull-off test of tiles and tile adhesive and render
In-house Method TST-2	Obtaining core samples
In-house Method TST-NM	Noise measurement for construction sites
ISO 1996-1: 1982	Noise measurement for construction sites
ISO 2808-2007 (Method 4A, 4B, 7C, 10)	Determination of film thickness
JGJ/T110-2017	Pull-off test of tile and tile adhesive and render
Soils	
GEOSPEC 3: 2001 Test 5.1	Moisture Content 45 °C ± 5 °C
GEOSPEC 3: 2001 Test 5.2	Moisture Content 105 °C ± 5 °C
GEOSPEC 3: 2001 Test 10.1	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a 1000cc mould and 2.5 kg rammer)
GEOSPEC 3: 2001 Test 10.2	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a 1000cc mould and 2.5 kg rammer)
GEOSPEC 3: 2001 Test 10.3	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a CBR mould and 2.5 kg rammer)
GEOSPEC 3: 2001 Test 10.4	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a CBR mould and 2.5 kg rammer)
GEOSPEC 3: 2001 Test 10.5	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a 1000cc mould and 4.5 kg rammer)
GEOSPEC 3: 2001 Test 10.6	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a 1000cc mould and 4.5 kg rammer)
GEOSPEC 3: 2001 Test 10.7	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a CBR mould and 4.5 kg rammer)
GEOSPEC 3: 2001 Test 10.8	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a CBR mould and 4.5 kg rammer)
GEOSPEC 3: 2001 Test 11.1	In-situ bulk density and in-situ dry density of soils by the sand replacement method suitable for fine- and medium-grained soils (with small pouring cylinder)
GEOSPEC 3: 2001 Test 11.2	In-situ bulk density and in-situ dry density of soils by the sand replacement method suitable for fine-, medium-, and coarse-grained soils (with large pouring cylinder)
GEOSPEC 3: 2001 Test 16.1	Direct shear test (small shear box apparatus)

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Monitoring	
In-house Method TST-IM	Inclinometer monitoring
In-house Method TST-PM	Piezometer monitoring
In-house Method TST-TM	Tiltmeter monitoring
In-house Method TST-VM	Vibration monitoring