



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIAL TECHNOLOGY (SHANGHAI) CO., LTD.

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MECHANICAL

Valid to: August 31, 2021

Certificate Number: 5327.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on metals:

<u>Test:</u>	<u>Test Method(s):</u>
Charpy Impact (Room Temp. ~ -60°C)	ISO 148-1; GB/T 229; ASTM E23, A370
Izod Impact	ASTM A370, E23
Tensile test (Room temp.—UTS, YS, EL, R/A)	ASTM E8/E8M, A370, B557, B557M; ISO 6892-1; GB/T228.1; I.S. EN 2002-001
Tensile test (Elevated temp.—UTS, YS, EL, R/A)	ASTM E21; ISO 6892-2; GB/T 228.2; I.S. EN 2002-002
Stress Rupture	ASTM E292, E139; GB/T 2039
Creep	ASTM E139; GB/T 2039
Hydrogen Embrittlement	ASTM F519
Brinell Hardness (500kgf, 1000kgf, 3000kgf)	ASTM E10, A370; GB/T 231.1
Rockwell Hardness (B, C, 15T, 15N, 30T, 30N)	ASTM E18, A370; GB/T 230.1
Fatigue test	ASTM E466, E606/E606M; GB/T 3075, GB/T 15248

Test:

Test Method(s):

Metallurgical

Alpha Case	SOP MET-010 ¹
Grain Size	ASTM E112, E930, E1181; GB/T 6394, GB/T 24177; ISO 643; GE E50TF133
IGA	AMS 2772, AMS-H-6088; ASTM A262 (Practice A and E), G110, F2111
Inclusion	ASTM E45(Method A & D); GB/T 10561
Carburization/Effective Case Depth	SAE J423; GB/T 9450
Decarburization	ASTM E1077; GB/T 224
Vickers Hardness (0.1, 0.2, 0.3, 0.5, 1.0 kgf) Knoop Hardness (0.2, 0.3, 0.5, 1.0 kgf)	ASTM E384; GB/T 4340.1
Microstructure	ASTM E3, A247; E407; GB/T 13298
Macrostructure	ASTM E340, E381; GB/T 226, GB/T1979
Coating Thickness	ASTM B487

Chemical

Combustion Analysis (C, H, N, O, S)	ASTM E1019, E1409, E1447, E1941
OES (Al, Fe, Ni and Ti Alloy) (Al, B, Cr, Co, Cu, Fe, Mn, Mo, Nb, P, Si, Ti, W, V, Zr, Sn, Ni, Mg, Zn)	ASTM A751, E415, E1086, E1251, E3047

¹In-house test method





Accredited Laboratory

A2LA has accredited

ELEMENT MATERIAL TECHNOLOGY (SHANGHAI) CO., LTD.

Shanghai, People's Republic of China

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 25th day of July 2019.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5327.01
Valid to August 31, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.