



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT SHANGHAI¹
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MECHANICAL

Valid to: August 31, 2023

Certificate Number: 5327.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above, as well as the satellite location listed below, 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; ISO 6506-1
Rockwell Hardness (B, C, 15T, 15N, 30T, 30N)	ASTM E18, A370; GB/T 230.1; ISO 6508-1
Fatigue test	ASTM E466, E606/E606M; GB/T 3075, 15248

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Test:

Fracture Toughness

Crack Growth

Metallurgical

Alpha Case

Grain Size

IGA

Inclusion

Carburization/Effective Case Depth

Decarburization

Stress Corrosion Cracking

Exfoliation Corrosion Susceptibility

Vickers Hardness (0.1, 0.2, 0.3, 0.5, 1.0 kgf)

Knoop Hardness (0.1, 0.2, 0.3, 0.5, 1.0 kgf)

Microstructure

Macrostructure

Coating Thickness

Chemical

Combustion Analysis (C, H, N, O, S)

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)

Test Method(s):

ASTM E399, GB/T 4161

ASTM E647, GB/T 6398

SOP MET-010²

ASTM E112, E930, E1181, E1351; GB/T 6394, 24177; ISO 643; GE E50TF133

SAE AMS 2772, SAE AMS-H-6088 (withdrawn August 2020)³; ASTM A262 (Practice A and E), G110, F2111

ASTM E45(Method A & D); GB/T 10561; ISO 4967

SAE J423; GB/T 9450

ASTM E1077; GB/T 224

ASTM G38, G44, G47, G49; GB/T 22640, 15970.4, 15970.5

ASTM G34

ASTM E384; GB/T 4340.1

ASTM E3, A247; E407; GB/T 13298

ASTM E340, E381; GB/T 226, 1979

ASTM B487

ASTM E1019, E1409, E1447, E1941; SOP CHM-002²ASTM A751, E415, E1086, E1251, E3047; SOP CHM-004²

ELEMENT SUZHOU¹
埃类特材料科技（苏州）有限公司
No.39 Qiming Road, Shengpu Town,
Suzhou Industry Park, Suzhou 215126
People's Republic of China

Test:

Test Method(s):

Tensile test
(Room temp.—UTS, YS, EL, R/A)
(Elevated temp.—UTS, YS, EL, R/A)

ASTM E8/E8M, A370, B557, B557M
ISO 6892-1; GB/T 228.1; EN 2002-001
ASTM E21; ISO 6892-2; GB/T 228.2;
EN 2002-002

Stress Rupture

ASTM E292, E139; GB/T 2039

Creep

ASTM E139; GB/T 2039

Brinell Hardness
(10/3000kgf)

ASTM E10, A370; GB/T 231.1

Metallurgical

Alpha Case

ASTM E407; SOP MET-010²

Grain Size

ASTM E112, E930, E1181, E1351; GB/T 6394,
24177; ISO 643; GE E50TF133

IGA

SAE AMS 2772, SAE AMS-H-6088 (withdrawn
August 2020)³; ASTM A262, G110, F2111

Inclusion

ASTM E45(Method A & D); GB/T 10561

Microstructure

ASTM E3; GB/T 13298

Macrostructure

ASTM E340, E381; GB/T 226, 1979

Photomicrography

ASTM E883

¹This accreditation covers testing performed at all laboratory locations listed in this scope of accreditation.

²In-house test method.

³This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.



Accredited Laboratory

A2LA has accredited

ELEMENT SHANGHAI

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 17th day of June 2021.

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, 2023

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