

**This Appendix is an integral part of
Certificate of Accreditation No. 440/2023 of 16/08/2023**

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

Element Materials Technology Pilsen s.r.o.

CAB number 1685, Element Materials Technology Pilsen s.r.o.

Podnikatelská 1184/39, Skvrňany, 301 00 Plzeň

The laboratory applies a flexible approach to the scope of accreditation.

The current list of activities carried out within the flexible scope is publicly available on the laboratory's website www.element.com/accreditations-and-approvals or from the Laboratory Manager in the form „List of activities within the flexible scope“.

Tests:

Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
1	Mechanical testing			
1.1	Tensile test	EL-AEE-OP-MEC-PL-MD102855 (ASTM E8/E8M; ASTM B557; ASTM A370, section 7-15; ASTM E21; BS 4A4 - Part 1:Section 1 & Section 2; BS EN ISO 6892-1; BS EN ISO 6892-2; BS EN 2002-1; BS EN 2002-2; MSRR 9922:2017; RRMS 30020); EL-AEE-OP-MEC-PL-MD102863 (ASTM A370, section 7-15; ASTM B557; ASTM E8/E8M; BS 4A4 - Part 1:Section 1; BS EN ISO 6892-1; BS EN 2002-1; MSRR 9922:2016; RRMS 30020; ASTM E8/E8M; ASTM A370, section 7-15; BS 4A4:1966 - Part 1:Section 1; BS EN 2002-1; BS EN 10002-1:2001; BS EN ISO 6892-1; ASTM B557)	Metallic materials	D
1.2	Tensile test at elevated temperature	EL-AEE-OP-MEC-PL-MD102855 (ASTM E8/E8M; ASTM B557; ASTM A370, section 7-15; ASTM E21; BS 4A4 - Part 1:Section 1 & Section 2; BS EN ISO 6892-1; BS EN ISO 6892-2;	Metallic materials	D

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		BS EN 2002-1; BS EN 2002-2; MSRR 9922:2017; RRMS 30020); EL-AEE-OP-MEC-PL-MD102643 (ASTM A370, section 7-15; ASTM B557; ASTM E21, EN 2002-2; BS 4A4 - Part 1: Section 2; BS EN ISO 6892, Part 2.1.7; MSRR 9922:2017; RRMS 30020); ASTM E21; ASTM A370, section 7-15; BS 4A4 - Part 1:Section 2:1967; BS EN 2002-2; BS EN 10002-5:1992; BS EN ISO 6892-2		
1.3	Tensile test at low temperature	EL-AEE-OP-MEC-PL-MD102855 APP F; BS EN ISO 6892-3	Metallic materials	D
1.4	Uniaxial creep test in tension	EL-AEE-OP-MEC-PL-MD27093 (BS 4A4: Part 1 Section 3; ASTM E139; ASTM E292; BS EN 2002-005; BS EN ISO 204; MTL 120-3; MTL 144-3); ASTM E139; BS 4A4: Part 1 Section 3:1967; BS EN 2002-005, Section 17; BS EN 10291:2000; BS EN ISO 204	Metallic materials	D
1.5	Stress rupture test	EL-AEE-OP-MEC-PL-MD27087 (ASTM E139; ASTM E292; BS 4A4:1967, Part 1 Section 3; BS EN 2002-005, part. 16; BS EN ISO 204); ASTM E139; ASTM E292; ASTM F519; BS 4A4:1967, Part 1 Section 3;	Metallic materials	D

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
		BS EN 2002-005, Section 16; BS EN 10291:2000; BS EN ISO 204		
1.6	Brinell hardness test	EL-AEE-OP-MEC-PL-MD27080 MD27091 (BS EN ISO 6506-1; BS EN ISO 6506-2; ASTM E10); ASTM E10; BS EN ISO 6506-1	Metallic materials	D
1.7	Rockwell hardness test	EL-AEE-OP-MEC-PL-MD27080 (ASTM E18; BS EN ISO 6508-1; BS EN ISO 6508-2); ASTM E18; BS EN ISO 6508-1	Metallic materials	D
1.8	Vickers hardness test	EL-AEE-OP-MEC-PL-MD27069 (BS EN ISO 6507; BS EN ISO 9015-1; MSRR9969; ASTM E384; ASTM E92); ASTM E92; ASTM E384; BS EN ISO 6507-1	Metallic materials	D
1.9	Impact test	EL-AEE-OP-MEC-PL-MD27071 (BS 131 part 1); EX-AE-OP-MEC-PL-MD27073 (BS EN ISO 148-1; BS EN ISO 148-2; BS EN ISO 148-3); EX-AE-OP-MEC-PL-MD27085 (ASTM E23; ASTM A370, section 20-32) ASTM E23; ASTM A370, section 20-32; BS 131 part 1; BS EN 10045-1:1990; BS EN ISO 148-1; ASTM A370, section 20-32; BS 131 part 1; BS EN 10045-1:1990; BS EN ISO 148-1	Metallic materials	D

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
1.10	Tensile test of ropes	EL-AEE-OP-MEC-PL-MD102863 APP D (BS EN 12385-1+A1); BS EN 12385-1+A1	Steel wire ropes	D
1.11	Tensile test of chains	EL-AEE-OP-MEC-PL-MD102863 APP E (BS EN 818-1+A1); BS EN 818-1+A1	Short link chains for lifting purposes	D
1.12	Tensile test of slings	EL-AEE-OP-MEC-PL-MD102863 APP E (BS EN 1677-1+A1); BS EN 1677-1+A1	Components for slings	D
1.13	Fatigue test	EL-AEE-OP-FE-PL-MD27089 (BS 3518, Part 1 and 3; ASTM E466; ASTM E467; ASTM E468, EN 6072); EX-AE-OP-FE-PL-MD27090 (ASTM E606; BS 3518 Part 1 and 3; BS 7270; GE E50TF148); BS 3518-1; BS 3518-3; BS 7270; ASTM E466; ASTM E606/606M	Metallic materials	D
1.14	Fracture toughness test	EL-AEE-OP-FE-PL-MD27061 (ASTM E399; ASTM B645; BS EN ISO 12737; BS 7448:Part 1; ASTM E561); ASTM E399; ASTM E561; BMS 7-323	Metallic materials	D
1.15	Stress Relaxation in tension	ASTM E328, A method	Metallic materials	D
1.16	Isothermal Stress Relaxation in tension	EL-AEE-OP-MEC-PL-MD27034 (BS 5896; BS EN ISO 15630-3; ASTM A416/A416M; ASTM E328); BS EN ISO 15630-3, section 8; ASTM A416/ A416M	Prestressing steel and steel for the reinforcement and prestressing of concrete	D

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
2	Metallography			
2.1	Metallographic determination of inclusion content	EL-AEE-OP-MET-PL-MD27082 (ASTM E45; ISO 4967; DIN 50602:1985); ASTM E45; ISO 4967; DIN 50602:1985	Steels	D
2.2	Metallographic determination of grain size	EL-AEE-OP-MET-PL-MD27064 (ASTM E112; ASTM E1181; ASTM E930; BS EN ISO 643); ASTM E112; ASTM E1181; ASTM E930; BS EN ISO 643	Steels	D
2.3	Metallographic assessment of macrostructure and grain flow	EL-AEE-OP-MET-PL-MD27084 (ASTM E381); ASTM E381; ASTM A604/A604M	Metallic materials	D
2.4	Metallographic determination of depth of decarburisation and depth of carburized and hardened cases	EL-AEE-OP-MET-PL-MD27052 (ASTM E1077; BS EN ISO 3887); EX-AE-OP-MET-PL-MD27058 (BS EN ISO 2639)	Steels	D
2.5	Metallographic determination of alpha case	EL-AEE-OP-MET-PL-MD27065; (GE P3TF19; BS EN 2003-009); GE P3TF19; BS EN 2003-009	Wrought Ti-alloys	D
2.6	Metallographic determination of phase volume fraction	EL-AEE-OP-MET-PL-MD27077; EL-AEE-OP-MET-PL-MD27077 APP 1 (ASTM E562); EL-AEE-OP-MET-PL-MD27077 APP 2 (AMS 2315); EL-AEE-OP-MET-PL-MD27077 APP 3 (BS EN 3683; BS EN 3684)	Metallic materials	D
2.7	Metallographic determination of microstructure	EL-AEE-OP-MET-PL-MD27053	Metallic materials	D

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
2.8	Metallographic determination of resistance to intergranular corrosion	EL-AEE-OP-MET-PL-MD27047 (ČSN 03 8169:1984,; GOST 6032-2003, method AM); ASTM A262, method E; GOST 6032-2003, method AM; ISO 3651-2, method A	Steel	D
2.9	Evaluation of IGO / IGA (intergranular oxidation/intergranular attack)	EL-AEE-OP-MET-PL-MD30934	Metallic materials	D
3	Chemical analysis			
3.1	Determination of hydrogen content in titanium and titanium alloys by thermal conductivity detection	EL-AEE-OP-CH-PL-MD27078 (ASTM E1447); ASTM E1447	Ti and Ti-alloys	-
3.2	Determination of oxygen content in titanium and titanium alloys by infrared detection (IR)	EL-AEE-OP-CH-PL-MD 30949 (ASTM E1409); ASTM E1409	Ti and Ti-alloys	-
4	Destructive tests on welds			
4.1	Macroscopic and microscopic examination of welds	EL-AEE-OP-MET-PL-MD27084 (BS EN ISO 17639; BS EN ISO 5817; BS EN ISO 15614-1+A1); BS EN ISO 17639; BS EN ISO 5817; BS EN ISO 15614-1+A1	Metallic materials	D
4.2	Transverse tensile test	BS EN ISO 4136	Metallic materials	D
4.3	Longitudinal tensile test	BS EN ISO 5178	Metallic materials	D
4.4	Bend test	EL-AEE-OP-MEC-PL-MD27032 (BS EN 910:2010; ISO 7438); BS EN ISO 5173+A1	Metallic materials	D
4.5	Hardness test	EL-AEE-OP-MET-PL-MD27039 (BS EN 1043 Part 1:2011); BS EN ISO 9015-1	Metallic materials	D
4.6	Impact test	BS EN ISO 9016	Metallic materials	D
5	Plastics and composites tests			
5.1	Uniaxial creep test in tension and Stress rupture test	EL-AEE-QU-MEC-PL-MD27038 (ASTM D2990; ASTM D3039; ASTM D7337; BS EN ISO 899-1)	Continuous and Discontinuous fibre- reinforced polymer matrix composites	D

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
6	Testing of textile web lashings and roundslings			
6.1	Tensile test of roundslings	EN 1492-2+A1	Roundslings made of man-made fibres	D
6.2	Tensile test of webbings and of complete web lashings	EN 12195-2, Section 6.3, 6.4	Web lashing made from man-made fibres	D

¹ asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises; the numerical index at the test ordinal number identifies the location carrying out the test (the identification of the locations is given on the first page of this document)

² if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

³ degrees of freedom: A – Flexibility concerning materials/products (subject of the test), B – Flexibility concerning components/parameters/characteristics, C – Flexibility concerning the performance of the method, D – Flexibility concerning the method

The laboratory can modify the test procedures with the specified degree(s) of freedom in the scope of accreditation while maintaining the principle of measurement. If no degree of freedom is specified, the laboratory cannot apply a flexible approach to the scope of accreditation for the test.

Explanations:

EL-AEE-OP - AS, P, ME	Internal procedure
ASTM	American Society for Testing and Materials
BS	British Standard
BMS	Boeing Material Specification
GE P3TF19	GE Aircraft Engines Specification
AMS	Aerospace Material Specification
GOST	Standard of the Euro-Asian Council for Standardization Metrology and Certification
MTL	Technical Specifications for MTU Aero Engineer