

**The Appendix is an integral part of
Certificate of Accreditation No. 108/2024 of 06/03/2024**

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

Alleima CZ spol. s r.o.
CAB number 1364, Laboratory
Vítězslava Nezvala 5502, 430 01 Chomutov

Detailed information on activities within the scope of accreditation (determined analytes) is given in the section „Specification of the scope of accreditation“.

Tests:

Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Tested subject	Degrees of freedom ³
1	Corrosion resistance testing			
1.1	Pitting corrosion resistance test	ČSN EN ISO 17781, cl. 5.5; ASTM G48, cl. 8, 10, 12; ASTM G46; ASTM A923, cl. 14 až 20; Procedure WI-03807 (ASTM G48, cl. 8); Procedure WI-03808 (ASTM G48, cl. 8; ASTM G46)	Stainless steels and alloys	-
1.2	Test of susceptibility to intergranular attack – STRAUSS test	ČSN EN ISO 3651-2, cl. 6.1; ASTM A262, cl. 37 to 46; Procedure WI-03810 (ČSN EN ISO 3651-2, cl. 6.1; ASTM A262, cl. 37 to 46)	Stainless steels and alloys	-
1.3	Test of susceptibility to intergranular attack – HUEY test	ČSN EN ISO 3651-1; ASTM A262, cl. 26 to 36; Procedure WI-03811 (ČSN EN ISO 3651-1; ASTM A262, cl. 26 to 36)	Stainless steels and alloys	-
1.4	Test of susceptibility to intergranular attack – STREICHER test	ASTM A262, cl. 14 to 25; ASTM G28, cl. 3 to 10; ASTM A763, cl. 11 to 16; Procedure WI-13129 (ASTM A262, cl. 14 to 25; ASTM G28, cl. 3 to 10; ASTM A763, cl. 11 to 16)	Stainless steels and alloys	-
1.5	Test of resistance to intergranular corrosion	ČSN EN ISO 3651-2, cl. 6.2, 6.3; ASTM A763, cl. 17 to 29	Stainless steels	-
2	Hardness testing			
2.1	Hardness test acc. to Rockwell	ČSN EN ISO 6508-1; ASTM E18; ASTM A370, cl. 16 to 19; Procedure WI-03824 (ČSN EN ISO 6508-1; ASTM E18)	Metals	-

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2.2	Hardness test acc. to Vickers	ČSN EN ISO 6507-1; ASTM E92; Procedure WI-03812 (ČSN EN ISO 6507-1; ASTM E92)	Metals	-
3	Technological and mechanical tests			
3.1	Flattening test	ČSN EN ISO 8492; ASTM A1016/A1016M, cl. 18; ASTM A530/A530M, cl. 21; ASTM A999/A999M, cl. 20; ASTM A370, cl. A2.5.1.1; Procedure WI-03814 (ČSN EN ISO 8492; ASTM A1016/A1016M, cl. 18; ASTM A530/A530M, cl. 21; ASTM A999/A999M, cl. 20; ASTM A370, cl. A2.5.1.1)	Metallic tubes	-
3.2	Flaring test	ČSN EN ISO 8493; ASTM A1016/A1016M, cl. 21; ASTM A370, cl. A2.5.1.5; ASTM A789/A789M, cl. 9.2; ASTM B163, cl. 6.3; ASTM B829, cl. 5.1; Procedure WI-03814 (ČSN EN ISO 8493; ASTM A1016/A1016M, cl. 21; ASTM A370, cl. A1.5.1.5; ASTM A789/A789M, cl. 9.2; ASTM B163, cl. 6.3; ASTM B829, cl. 5.1)	Metallic tubes	-
3.3	Tension test at ambient (room) temperature	ČSN EN ISO 6892-1; ASTM E8; ASTM A370, cl. 7 to 15; ASTM A1058, cl. 5 to 12; Procedure WI-04168 (ČSN EN ISO 6892-1; ASTM E8; ASTM A370, cl. 7 to 15)	Metals	-

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Tested subject	Degrees of freedom ³
3.4	Tension test at elevated temperature	ČSN EN ISO 6892-2; ASTM E21; Procedure WI-04180 (ČSN EN ISO 6892-2; ASTM E21)	Metals	-
3.5	Notched bar impact test - Charpy method	ČSN ISO 148-1; ČSN EN ISO 17781, cl. 5.4; ASTM E23; ASTM A370, cl. 20 to 29; ASTM A1058, cl. 18 to 25; ASTM A923, cl. 8 to 13; Procedure WI-04182 (ČSN ISO 148-1; ASTM E23; ASTM A370, cl. 20 to 29)	Metals	-
3.6	Bend test	ASME Sec. IX, cl. QW-160, QW-161.2, QW-161.3, QW-161.4, QW-162, QW-163; Procedure WI-04157 (ASME Sec. IX, cl. QW-160, QW-161.2, QW-161.3, QW-161.4, QW-162, QW-163)	Welded joints of stainless-steel and alloy tubes	-
4	Metallographic assessment			
4.1	Determination of grain size estimation	ČSN EN ISO 643; ASTM E112; Procedure WI-03822 (ASTM E112)	Austenitic steels	-
4.2	Sigma phase content determination	ČSN EN ISO 17781, cl. 5.2; ASTM A923, cl. 3 to 7; Procedure WI-03817	Duplex steel tubes and welds	-
4.3	Ferrite/austenite volume fraction determination	ČSN EN ISO 17781, cl. 5.3; ASTM E562; Procedure WI-03816 (ASTM E562)	Duplex steel tubes and welds	-
4.4	Macroscopic examination of weld section	ČSN EN ISO 17639; Procedure WI-03937 (ČSN EN ISO 17639)	Welds of metallic tubes	-
4.5	Determination of content of non-metallic inclusions	ČSN ISO 4967; ASTM E45; Procedure WI-04175 (ČSN ISO 4967; ASTM E45)	Duplex and austenitic wrought steel	-

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Tested subject	Degrees of freedom ³
4.6	Test of resistance to intergranular corrosion - evaluation of microstructure	ASTM A262, cl. 4 to 13; ASTM A763, cl. 3 to 10	Stainless steels	-
5	Spectrometric analysis			
5.1	Determination of elements concentration by optical emission spectrometry	Procedure WI-04178 (ASTM E1086)	Highly alloyed steels and nickel alloys	-

- ¹ asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises
- 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 valid edition of the specified procedure is used (including any changes)
- ³ the laboratory does not apply a flexible approach to the scope of accreditation

Specification of the scope of accreditation:

Ordinal test number	Detailed information on activities within the scope of accreditation (determined analytes)
5.1	Al, B, C, Co, Cr, Cu, Fe, Mn, Mo, N, Nb, Ni, P, Pb, S, Si, Ta, Ti, V, W

Explanations:

WI-xxxx – Internal procedure of the laboratory