

Annex to declaration of accreditation (scope of accreditation)  
Normative document: EN ISO/IEC 17025:2017  
Registration number: **L 063**

of **Element Materials Technology Rotterdam. B.V.**  
**Laboratory**

This annex is valid from: **07-12-2020** to **01-09-2024**

Replaces annex dated: **27-07-2020**

**Location(s) where activities are performed under accreditation**

**Head Office**

Voorerf 18  
4824 GN  
Breda  
The Netherlands

<b>Location</b>	<b>Abbreviation/ location code</b>
Voorerf 18 4824 GN Breda The Netherlands	BR
Schutterstraat 27B 6191 RZ Beek The Netherlands	BE
Zekeringstraat 33 1014 BV Amsterdam The Netherlands	AM
Jan Tinbergenstraat 128 7559 SP Hengelo The Netherlands	HE
Kapitein Nemostraat 12 7821 AC Emmen Nederland	EM
On-site	O

This annex has been approved by the Board of the  
Dutch Accreditation Council, on its behalf,

J.A.W.M. de Haas

of **Element Materials Technology Rotterdam. B.V.**  
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No.	Material or product	Type of activity <sup>1</sup>	Internal reference number	Location
<b>Sample preparation and sample selection</b>				
a.	Metals, metal alloys and weld connections	Aging Sensitivity Unalloyed Carbon steel	SOP 10-20 DIN 17102 par.7.4.1.5, EN 10225	BR
b.		Destructive testing of qualifying welds for weldmethod-qualification and welder-qualification	SOP 10-40 AD Merkblatt HP2/1, AD Merkblatt 5/3, 5/2, BS 4515, Vd TÜV 1158, TRD 201, Stoomwezen regels T0112, -T0101, -T0120, -T0205, -T0210, -T0215, ASME VIII, ASME IX, API 1104, API 1107, AWS D1.1, AWS D1.2, AWS D1.6, AWS D1.9, Lloyd's Reg. Rules, DNV-rules for M.O.U., EN 287, ISO 15614 (serie), ISO 9606 (serie), EN 13445, EN 12732, ASME B31.1, ASME B31.3, NEN 3650	BR, BE, AM, HE, EM
c.		Fracture mechanical research: Heat treatment Temperature up to 1373K	SOP 50-04 In-house method	EM
d.	Coating	Immersion (water)	SOP 93-02 ISO 2812-2, ISO 12944-6, ISO 12944-9, ISO 20340, ISO 21809-2, ISO 21809-3, NACE SP0394, NACE TM0104, NACE TM0204, NACE TM0304, NACE TM0404, NORSOK M-501	AM
e.		Flexibility	SOP 93-03 ISO 1519, ISO 21809-1, ISO 21809-2, NACE SP0394, NACE TM0104, NACE TM0204, NACE TM0304, NACE TM0404	AM
f.		Porosity	SOP 93-04 ISO 21809-2, NACE SP0394	AM
g.		Interface Contamination	SOP 93-05 ISO 21809-2, NACE SP0394	AM
h.	Impact	SOP 93-07 ASTM D2794, ASTM G14, EN 12068, ISO 6272-1, ISO 6272-2, ISO 21809-1, ISO 21809-2, ISO 21809-3, NACE SP0394, NACE TM0304, NACE TM0404	AM	

<sup>1</sup> If there is a referral to a code starting with NAW, NAP, EA or IAF, this concerns a scheme mentioned on the [RvA-BR010-lijst](#).  
 If no date or version number is mentioned for a normative document, the accreditation concerns the most current version of the document or scheme.

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i.	Coating	Adhesion testing of Coatings	SOP 93-08 ASTM D3359, ASTM D4541, ASTM D5179, EN 12068, ISO 2409, ISO 4624, ISO 6272-1, ISO 12944-6, ISO 12944-9, NORSOK M-501, ISO 21809-1, ISO 21809-2, ISO 21809-3	AM
j.		Thermal Aging / Cycling	SOP 93-09 NACE TM0304, NACE TM0404, EN 12068, ISO 12944-6, ISO 12944-9, ISO 21809-1, ISO 21809-3, NORSOK M-501	AM
k.		UV/ Condensation Exposure	SOP 93-12 ASTM D4587, ASTM D5894, ISO 11507, ISO 12944-6, ISO 12944-9, ISO 16474-1, ISO 16474-3, ISO 20340, NACE TM0404, NACE TM0304, NORSOK M-501	AM
l.		Condensation (Humidity)	SOP 93-17 ASTM D4585, ISO 6270-1, ISO 6270-2, ISO 12944-6, ISO 12944-9, NORSOK M-501, EN 12068, ISO 21809-1, ISO 21809-3	AM

### Mechanical testing

1	Metals, metal alloys and weld connections	Tensile Test at ambient temperature 283 K – 308 K	SOP 10-01 EN 10002 1:2001, ASTM A370, ASTM E8, ASTM B 557, ISO 6892-1, ISO 9018, ISO 4136, EN 895:1995, EN 2002-001, ISO 22674, ISO TR 6892-5	BR, BE, AM, HE, EM
2		Tensile Test at elevated temperature 293 K – 1173 K	SOP 10-02 EN 10002-5:1992, ASTM E21, ISO 6892-2, ISO 783:1999	BR, AM
3		Impact Test at temperatures between 76 K – 493 K	SOP 10-03 NEN-EN 10045-1:1990, ISO 148-1, ISO 9016, ASTM A370, ASTM E23, EN 875:1995	BR, BE, AM, HE, EM
4		Bending Test	SOP 10-04 NEN 3650, ISO 7438, ISO 5173, ISO 9017, ISO 9606, ISO 15614, ISO 5177, ASTM A370, ASTM A615, ASTM E190, ASTM E290, ASME IX, AWS D1.1, AWS D1.2, AWS D1.6, AWS D1.9, EN 287, EN 910, EN 12732, EN 13445	BR, BE, AM, HE, EM

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5	Metals, metal alloys and weld connections	Flattening Test	SOP 10-10 ISO 8492, ASTM A370, ASTM A530	BR, AM, EM
6	Metals, metal alloys and weld connections	Drift Expanding Test	SOP 10-11 ISO 8493, ASTM A370, ASTM A450	BR, AM
7		Ring Expanding Test	SOP 10-12 ISO 8495	BR, AM, EM
8		Ring Tensile Test	SOP 10-13 ISO 8496	BR, AM
9		Flanging	SOP 10-14 ISO 8494	AM
10		Shear Test	SOP 10-15 DIN 50162, DIN 50141, ISO 9018, ASME IX, ASTM A263/264, ASTM A265	BR, AM
11	Cladded material	Shear Test	SOP 10-16 DIN 50162, AD 2000-Merkblatt W8, ASTM A 264	AM, HE
12	Metals, metal alloys and weld connections	Single Edge Notched Bend (SENB) specimens Temperature limits: 76 K – 673 K	SOP 10-18 BS 7448 part 1-4, ASTM E1290, ASTM E1820, ASTM E339, ISO 12135, ISO 15653, API 1104, DNV-OS-F110	BR, EM
13		Single Edge Notched Tensile (SENT) specimens Temperature limits: 76 K – 523 K	SOP 10-19 ISO 15653, BS 7448 part 1-4, BS 8571, DNV-OS-F101, DNV-RP-F108	BR
14		Pellini Drop Weight Test Temperature Range 77 K – 505 K	SOP 10-21 ASTM E208	EM
15		Drop weight shear test Energy up to 20kJ Temperature range 77 K – 505 K	SOP 10-23 API RP 5L3, ASTM E436, EN10274	EM
16		Hardness Test; Brinell	SOP 10-30 ISO 6506-1, ASTM A370, ASTM E10	BR, BE, AM, HE, EM

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17	Metals, metal alloys and weld connections	Hardness Test; Vickers Load between 49 N – 294 N	SOP 10-31 ISO 6507-1, ISO 9015, ASTM E92	BR, BE, AM, HE, EM, O
18	Metals, metal alloys and weld connections	Hardness Test; Rockwell	SOP 10-32 ISO 6508-1, ASTM A370, ASTM E18, NASM1312-6	BR, BE, AM, HE, EM
19		Hardness measurement on location with portable devices	SOP 10-33 In-house method	BR, BE, HE, EM, O
20		Micro Hardness measurement: Knoop, Vickers, load (0,049 – 29,4) N	SOP 10-34 ISO 6507-1, ISO 9015, ISO 4545, ISO 4516, ASTM E384	BR, BE, AM, HE, EM
21		Break Test on welds	SOP 10-42 API 1104, API 1107, ASME VIII, ASME IX, ISO 9606, AD Merkblatt HP3, EN 287, EN 13445	BR, BE, AM, HE, EM
22		Fillet weld break Test	SOP 10-43 ASME VIII, ASME IX, API 1104, AWS D1.1, AWS D1.2, AWS D1.6, AWS D1.9, EN 287-1, Vd TÜV 1158, ISO 9606	BR, BE, AM, HE, O, EM
23		Clad welding Bend Test	SOP 10-44 DIN 17100 par.9.5.7, SEP 1390	BR, BE
24	Reinforced steel bars	Tensile testing	SOP 10-52 NEN-6008, BRL 0504, ISO 15835-1 en ISO 15835-2	AM, EM
25		Shear testing	SOP 10-53 NEN-6008, BRL 0503	EM
26		Shear stress measurements of welds	SOP 10-54 NPR-2053, BRL 0512, ISO 17660-1, ISO 17660-2, ISO 15630-1, ISO 15630-2	EM
27		Fatigue testing	SOP 10-55 and SOP 10-57 EN 10080, NEN 6008, BRL 0504 en BRL 0501	AM
28		Dimensional inspection	SOP 10-56 NEN-6008, ISO 15630-1, EN 10080, BRL 0503 en ISO 15630-2	EM

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29	Hoisting hook	Load Test	SOP 10-80 In-house method	AM

#### Chemical analysis

30	Metals, metal alloys and weld connections	Semi-quantitative material analysis; X-ray fluorescence measurement (PMI)	SOP 20-01 ASTM E 1476	BR, BE, AM, HE, EM, O
31		Chemical Composition; Optical Emission Spectrometry	SOP 20-02 In-house method	BR, AM, HE, EM, O

#### Metallography

32	Metals, metal alloys and weld connections	Ferrite Measurement: Inductive method	SOP 30-01 In-house method	BR, BE, AM, HE, EM, O
33		Ferrite Measurement: Manual Point Count	SOP 30-02 ASTM E562	BR, BE, AM, HE, EM
34		Grain size determination	SOP 30-03 ISO 643, ASTM E112, AFNOR NFA 04-102	BR, BE, AM, HE, EM
35		Microstructure on location: microscopic and / or electron microscope research on replica's (magnification up to 1000x)	SOP 30-04 In-house method	BR, BE, AM, HE, EM, O
36		Microstructures analysis (magnification up to 1000x)	SOP 30-05 ASTM E 3, 45, 112, 247, 381, 384, 562, 883, 930, 1077, SAE J422, ISO 26146	BR, BE, AM, HE, EM
37		Fracture analysis	SOP 30-07 In-house method	BR, BE, AM, HE, EM, O
38		Creep analysis by microstructure	SOP 30-08 Stoomwezen Regels T0102, -T0204, Vd TÜV Merkblatt 451, ASTM E 1351, ISO 3057, VGB-TW507, VGB-S517	BR, BE, AM, HE, O, EM

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39	Metals, metal alloys and weld connections	Degree of purity Non-metallic inclusions	SOP 30-22 DIN 50602, ASTM E45	BR, BE, EM
40		Ferrite measurement: Magne-Gage	SOP 30-30 In-house method	BR, AM, EM
41	Metals, metal alloys, weld connections and corrosion products	Scanning Electron Microscopy (SEM)	SOP 30-40 In-house method	BR, BE, AM, HE, EM
42		Energy Dispersive X-Ray Analysis (EDX)	SOP 30-40 In-house method	BR, BE, AM, HE, EM

### Corrosion testing

43	Metals, metal alloys and weld connections	Salt Spray Test (mass up to 250 kg; size approximately 1.75 m x 1 m)	SOP 40-01 ASTM B117, ASTM B 368, ASTM G 85, DIN 50021, ISO 10289, ISO 9227, NEN 10068, ISO 12944-9	BR, AM
44		Inter-granular Corrosion Test Strauss-Test	SOP 40-10 ASTM A262 practice E, ISO 3651-2, DIN 50914	BR, BE, AM, HE, EM
45		Inter-granular Corrosion Test Streicher-Test	SOP 40-11 ASTM A262 practice B, ASTM G28	BR, BE, AM, HE, EM
46		Inter-granular Corrosion Test Huey-Test	SOP 40-12 ASTM A262 practice C, ISO 3651-1	BR, BE, AM, HE, EM
47		Inter-granular Corrosion Test Oxalic acid Test	SOP 40-13 ASTM A262 practice A	BR, BE, AM, HE, EM
48		Pitting-corrosion Test	SOP 40-14 ASTM G48, ASTM G46, ASTM A923	BR, BE, AM, HE, EM
49		Metals	Hydrogen Induced Cracking Test	SOP 40-20 NACE TM-0284
50	Sulfide induced Stress Corrosion Test		SOP 40-21 NACE TM-0177	AM

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<b>Physical properties</b>				
51	Metals, metal alloys and weld connections	Surface roughness (Ra, Rz value)	SOP 50-01 NEN 3635	BR, O
52		Coating thickness measurement: microscopic	SOP 50-02 ISO 1463	BR, BE, EM
53		Image analysis	SOP 50-03 In house method	AM, HE, EM
<b>Visual Testing</b>				
54	Metals, metal alloys and weld connections	Visual inspection of welds including macro-structure and weld geometry	SOP 60-01 AD Merkblatt HP2/1, AD Merkblatt 5/3 en 5/2, TRD 201, ASME VIII, ASME IX, AWS D1.1, AWS D1.2, AWS D1.6, AWS D1.9, API 1104, API 1107, BS4515, ASME B31.1, ASME B31.3, EN 287, EN13445, EN 12732, BS 4515, NEN 3650, Vd TÜV 1158, ISO 9606 (series), ISO 5817, ISO 15614 (series), ISO6520-1	BR, BE, AM, HE, EM, O
<b>Polymer testing</b>				
55	Thermoplastics	Deformation Bend Test	SOP 80-01 DVS 2203 Teil 1 + 5	BR
56	Epoxyhars	Pressure Test on Pedding-, Cushioning materials; (load up to 1200 kN)	SOP 80-02 In-house method	BR
<b>Coating testing</b>				
57	Coating	Salt Spray	SOP 40-01 ASTM B117, ASTM B368, ASTM D5894, ASTM G85, DIN 50021, ISO 9227, ISO 10289, ISO 12944-6, ISO 20340, NEN 10068-2-52, NORSOK M-501	AM
58		Cathodic Disbondment	SOP 93-01 ASTM G8, ASTM G42, ASTM G95, CSA Z245.20, CSA Z245.21, ISO 12944-6, ISO 12944-9, ISO 15711, ISO 20340, ISO 21809-1, ISO 21809-2, ISO 21809-3, NACE SP0394, NACE TM0104, NACE TM0204, NACE TM0304, NACE TM0404, NORSOK M-501, EN 12068	AM



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59	Coating	Indentation test	SOP 93-06 EN 12068, ISO 21809-1, ISO 21809-3	AM
60		Holiday detection	SOP 93-10 ISO 21809-1, ISO 21809-3	AM
61		Coating Film Thickness	SOP 93-11 ASTM D7091, ISO 2808, ISO 19840	AM
62		Evaluation of Coating Defects	SOP 93-21 ASTM D610, ASTM D714, ASTM D5894, ISO 4628-2, ISO 4628-3, ISO 4628-4, ISO 4628-5, ISO 4628-6, ISO 12944- 6, ISO 12944-9, ISO 20340, NACE TM0104, NACE TM0204, NACE TM0304, NACE TM0404, NORSOK M-501, EN 12068, ISO 21809-1, ISO 21809-2, ISO 21809-3	AM
63		Differential Scanning Calorimetry	SOP 93-26 ASTM D3418, ISO 11357 (parts-1-7), ISO 21809-1, ISO 21809-2, ISO 21809-3	AM

#### Opinions & Interpretations

64	Metals, metal alloys and weld connections	Failure analysis, using the tests as given in this list	SOP 30-06 In-house method	BR, BE, AM, HE, EM, O
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