



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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MECHANICAL

Valid To: November 30, 2022

Certificate Number: 6526.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on cast, forged, welded, or pressed metal components:

<u>Test(s):</u>	<u>Test Method(s):</u>
<u>Chemical</u>	
Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen, and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Inert Gas Fusion Techniques	ASTM E1019
Chemical Analysis of Carbon, Low-Alloy & Stainless Steel and Aluminum and Aluminum Alloys by OES (Optical Emission Spectroscopy) Quantitative Analysis: Aluminum Alloys Carbon and Low Alloy Steels	CHEM-1 ¹ ; ASTM E1251; ASTM E1086; ASTM E415
Analysis of Metals and Metal Alloys - THERMO ICAP 6500 Aluminum Alloys Carbon and Low Alloy Steels Cast Irons Cobalt Alloys Copper and Brass Alloys Nickel Alloys Stainless Steels Titanium Alloys Tool Steels Zinc Alloys	CHEM-1004 ¹ ; ASTM D1976 ¹

<u>Test(s):</u>	<u>Test Method(s):</u>
Analysis of Oxygen, Nitrogen and Hydrogen by Eltra ONH2000 Combustion Analysis of Hydrogen in Steel and Ferrous Alloy Carbon and Low Alloy Steels Cast Irons Cobalt Alloys Nickel Alloys Stainless Steel Titanium and Titanium Alloys Tool Steels	CHEM-20 ¹ ; ASTM E1409; ASTM E1147; ASTM E1937 ¹ ; ASTM E1019 ¹
<u>Mechanical:</u>	
Tension	ASTM A370, B557/557M, E8/E8M (<i>except for Annexes 2 & 10</i>); ASTM A770/A770M
n – Value	ASTM E646
r – Value	ASTM E517
Impact (Charpy)	ASTM E23
Hardness Rockwell (A, B, C, E, F, 15N, 30N, 45N, 15T, 30T, 45T) Brinell (500kg to 3000kg) Pencil	ASTM E10; ASTM E18; ASTM D3363
Mechanical Properties of Fasteners, Washers, and Rivets	ASTM F606/F606M (<i>except Sections 5 & 6</i>)
Stress Rupture	ASTM E139; ASTM E292
Hydrogen Embrittlement	ASTM F519 (<i>except Annex A5</i>)
Shear Testing	ASTM B769
<u>Metallographic Evaluation</u>	
Metallographic Preparation	ASTM E3
Inclusion Ratings by Image Analysis	ASTM E1245
Intergranular Corrosion	ASTM A262
Coating Thickness	ASTM B487; ASTM B499; ASTM B244; ASTM D1186; ASTM E376; ASTM D7091; ISO 2808; ASTM B504
Macroetching	ASTM E340; ASTM E381
Microetching	ASTM E407
Inclusion Content	ASTM E45
Microstructure of Cast Iron	ASTM A247
Dendrite Arm Spacing	SAE ARP 1947

<u>Test(s):</u>	<u>Test Method(s):</u>
<u>Metallographic Evaluation continued</u>	
Density	ASTM B962; ASTM B963
Moist SO ₂	ASTM G87
Abrasion	ASTM D4060
Visual and Macroscopic Evaluation of Welds	ISO 5817 (<i>excluded: beam welds</i>); AWS D1.2 (Sections 3.6, 3.7, 3.8, 5.14, 5.2, 6.4, and 6.4.5.5); CSA-W47.1 (Sections 9.9, 9.10, 9.11, 9.14, 11.6, 11.7); CSA-W47.2 (Sections 10.4, 10.5, 10.6, 10.7)
Determination and Acceptance of Boiler and Pressure Vessel Code (Sections II only)	SA-193/SA-193M; SA-194/SA-194M; SA-213/SA-213M; SA-240/SA-240M; SA-325, SA-370; SA-450/SA-450M; SA-530/SA-530M <i>Except for: section 20</i> ; SA-540/SA-540M; SA-962/SA-962M; III, Section VIII Only for: UG-84 and Section IX Only for: QW-144, QW-150, QW- 160, QW-184, QW-194, QW-462.1, QW- 462.4, QW-462.5, QW-462.12 ASME Section II Part A, Section II Part B, Section VIII, Section IX
Microhardness Knoop (25g to 1000g) Vickers (50g to 1000g) Macrohardness Vickers (5kg to 30kg)	ASTM E384 ASTM E92 ASTM E92
Standard Test Methods and Definitions for Mechanical Testing of Steel Products	ASTM A370; ASTM A450; ASTM A53
Bend	ASTM E190; AWS D1.1
Ferrite Testing	ASTM A800/A800M; ASTM A799; ASTM E562
Case Depth	ASTM E1077, SAE J419
Grain Size	ASTM E112
<u>Coating Testing</u>	
Coating Weight	ASTM A428/A428M; ASTM A90; ASTM B767; FLTM AQ101-01
Evaluation of Coatings	ASTM B456
<u>Environmental/ Corrosion Testing</u>	
Corrosion	ASTM C1617; ASTM C692; ASTM B858; Chrysler LP-463PB-52-01; LP463PB-22-01; ASTM D5894; ASTM D2803; FLTM BI123-01; FLTM BI123-03; GMW14872; Ford CETP 00.00-L-467; GMW 14124; SAE J2334; GMW 15288; ASTM A923/ASTM A1084



Test(s):	Test Method(s):
<u>Environmental/ Corrosion Testing continued</u>	
Salt Spray Testing	ASTM B117; FLTM BI103-01; ISO 9227; JISZ2371; NES M0140; SAE USCAR-1; TSH 1552G; DIN 50021; ISO 7253; GMW 3286; ASTM B368; BQ 105-01; GMW 14458; NES M0158 CCT#1, #2, #4; ASTM G85; SAE J2334; VDA621-415; MIL-STD-810 (Method 509.6); TSH 1555G; GMW14872; GMW14124 (<i>except Cycle H, N, R, T</i>)
Water Resistance of Coatings	ASTM D870; FLTM BI 104-01
Pitting Corrosion	ASTM G48
Humidity	ASTM D1735, ISO 6270-1; GMW 14729; ASTM D4585; ASTM D2247; FLTM BI-104-02; FLTM BJ 107-03; DIN 50017
Color	ASTM D2244; ASTM E1164
Chip or Gravel Resistance	ASTM D3170; SAE J400; GMW 14700
Adhesion	ASTM D3359; FLTM BI 106-01; GMW 14829; ASTM D522; ISO 2409
Gloss/Haze Measurements	ASTM D523
Color Measurement	SAE J1545
Evaluations	ASTM D610; ASTM D714; GMW 15356; GMW 15357; GMW 15358; GMW 15359; ASTM D1654; GMW 15282
Water Immersion	ASTM D870; FLTM BI 104-01
Fuel Resistance of Automotive Exterior Materials and Components	GMW 14333; GMW 14334; Chrysler 463PB-31-01
Coatings Performance	GMW 14671 (Sections 3.9.1 & 3.9.2)
Coating Durability	HES D6501

¹ Modified Method



Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY CANADA INC.

Cambridge, Ontario, Canada

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 September 2021.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 6526.01
Valid to November 30, 2022

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