SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ANALYTICAL PROCESS LABORATORIES, INC.
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MECHANICAL

Valid To: September 30, 2017 Certificate Number: 0431.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on metals and fasteners:

Test:	**Test Method(s):**
Bend Test	ASTM E190
Hardness:	
Brinell (500 & 3000 Kg)	ASTM E10, E110; ISO 6506-1
Microhardness (Knoop, 500 g)	ASTM E384
Rockwell (B, C, 30N, 30T, E)	ASTM E18
Vickers (10 Kg)	ASTM E384
Impact (V-notch and U-notch)	ASTM E23; DIN 10045-1(*Withdrawn 2010*)*; ISO 148-1; JIS-Z-2242
Metallographic Evaluation:	
Depth of Decarburization (Microscopic & Microhardness)	ASTM E1077
Evaluation of Graphite in Fe Castings	ASTM A247
Inclusion Content	ASTM E45 (Method A)
Intergranular Attacks	ASTM A262 (Practice B, E and F)
Grain Size (Comparison and Intercept Methods)	ASTM E112 (Sections 10 and 13)
Macroetch	ASTM E340, E381
Microetch	ASTM E407
Photography using SEM (Qualitative)	APL 83
Plating Thickness	ASTM B487
Plating Mass per Unit Area	ASTM B767
Preparation	ASTM E3
Physical Properties/NDT:	
Density	ASTM B311
Electrical Conductivity	ASTM E1004
Liquid Penetrant Inspection (Visible)	ASTM E165/E165M
Salt Spray	ASTM B117

Test:	**Test Method(s):**
Tensile	ASTM A370, E8/E8M; DIN 10002-1(*Withdrawn 2009*)*; ISO 6892-1; JIS-Z-2241
Weld Operator and Weld Procedure Qualifications (Tensile, Bend, Impact, Macroetch)	ASTM A488/A488M; ASME Section IX; AWS B4.0, D1.1; NAVSEA S9074-AQ-G1B-10/248
Chemical Tests:	
Chemical Analysis by EDS (Semi-quantitative with SEM) Detectable Elements Down to Boron	ASTM E1508
Chemical Analysis by OES Carbon and Low Alloy Steel: (C, Mn, Si, P, S, Cr, Ni, Mo, Cu, V, W, Nb, Co, Al, Ti, Sn, Pb, B) Stainless Steel: (C, Mn, Si, P, S, Cr, Ni, Mo, Cu, V, W, Nb, Co, Al, Ti, Sn) Aluminum Alloys: (Mn, Si, Cr, Ni, Cu, Ti, Fe, Sn, Zn, Pb, Mg) Cast Iron: (C, Mn, Si, P, S, Cr, Ni, Mo, Cu,V, Al, Ti, Sn, Mg, Pb, B) Copper Alloys: (Mn, Si, P, S, Ni, Al, Fe, Zn, Pb, Sn, Co, Nb)	ASTM E415, E1086, E1251, E1999; APL 43
Chemical Analysis by XRF Slags: (CaO, SiO_2, FeO, MnO, P_2O_5, S, Al_2O_3, MgO, Cr_2O_3, TiO_2, V_2O_5, K_2O, Na_2O, CuO, SrO, ZrO_2, Nb_2O_5) Trace Elements: (Ca, Bi, As, Sb, Se, Ag, Ce, Zr, Zn, Ta, Te, La)	ASTM E1621
Combustion:	
C, S, N and O	ASTM E1019
H in Titanium	ASTM E1447
Failure Analysis	Using the methods listed above in accordance with the ASM Handbook Volume 11
Melt Preparation for OES	ASTM E1306

** This 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

ANALYTICAL PROCESS LABORATORIES, INC.

Milwaukee, WI

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *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 8 January 2009*).

Presented this 8th day of October 2015.

President & CEO
For the Accreditation Council
Certificate Number 0431.02
Valid to September 30, 2017

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