SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MIAMI VALLEY MATERIALS TESTING CENTER, LLC
4155 Lisa Drive
Tipp City, OH 45371
Craig Riviello Phone: 937 669 4500

CHEMICAL

Valid To: November 30, 2017 Certificate Number: 2633.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on aerospace components, metals, metal fasteners, paper, plastics, office furniture, rubber, windows/doors, and wood:

Tests	Test Methods[1]
Spectroscopy:	
Inductively coupled plasma (ICP) (Al, As, B, Be, Bi, Cr, Cu, Fe, Ga, Mg, Mn, Mo, Nb, Ni, P, Pb, Sb, Se, Si, Sn, Ta, Te, Ti, V, W, Y, Zr)	MVMTC WI-16; ASTM E1479
Optical Emission Spectroscopy (OES):	
Aluminum and Aluminum Alloys (Be, Bi, B, Ca, Cr, Co, Cu, Ga, Fe, Pb, Li, Mg, Mn, Ni, P, Si, Na, St, Sb, Ti, V, Zn)	ASTM E1251
Cast Iron (C, Cr, Cu, Mn, Mo, Ni, P, Si, S, Sb, Ti, V)	ASTM E1999
Copper Based	MVMTC WI-6
Low Alloy Steels and Cast Irons (Less Nitrogen) (Al, As, B, Ca, C, Cr, Co, Cu, Mn, Mo, Ni, Nb, P, Si, S, Sb, Ti, Zr)	ASTM E415
Stainless Steel (Less Nitrogen) (Cr, Ni, Mo, Mn, Si, Cu, C, P, S)	ASTM E1086
Zinc Based	MVMTC WI-6
Nickel Based	MVMTC WI-6
Titanium (Less Oxygen, Hydrogen, Nitrogen) (Al, Fe, V)	MVMTC WI-6
Combustion:	
Combustion LECO (C, S)	ASTM E1019
Failure Analysis:	Using the test methods listed above and evaluation of data methods: ASTM E620, E678, E860, E2332 (Withdrawn 2004)[2]

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[1]*The laboratory is accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material specifications listed below; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification or procedure. Only the methods listed above on this Scope are accredited.*

Test Specifications:

Specification for Stainless Steel 316 (Surgical Implants)	ASTM F138
Specification for Titanium 6 – 4 (Surgical Implants)	ASTM F136
Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products	ASTM A751

[2] *This laboratory's scope contains withdrawn methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.*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

MIAMI VALLEY MATERIALS TESTING CENTER, LLC

Tipp City, OH

for technical competence in the field of

Chemical 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 6th day of November 2015.

President & CEO
For the Accreditation Council
Certificate Number 2633.02
Valid to November 30, 2017

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

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MIAMI VALLEY MATERIALS TESTING CENTER, LLC
4155 Lisa Drive
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Craig Riviello Phone: 937 669 4500

MECHANICAL

Valid To: November 30, 2017 Certificate Number: 2633.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on aerospace components, metals, metal fasteners, paper, plastics, office furniture, rubber, windows/doors, and wood:

Tests	Test Methods[1]
Metallurgical:	
Hardness:	
Rockwell Hardness & Rockwell Superficial Hardness (B, C, 15T, 30T, 15N, 30N)	ASTM E18
Microindentation	
Knoop (500g)	ASTM E384
Vickers (500g)	ASTM E384
Tensile:	
Grey Iron Tensile Testing	ASTM A48
Mechanical Properties of Fasteners, Washers and Rivets	ASTM F606, F606M *(Except 3.5 – Wedge)*
Mechanical Testing of Steel Products	ASTM A370 (Sections 5-15, 17)
Stress Durability (Hydrogen Embrittlement)	SAE/USCAR-7; SAE J78, J81, J1237; GM512M, GM6010M, GM6171M; GMW4205, GMW15170
Tension Testing of Metallic Materials (1,124 and 56,000 lbs)	ASTM E8
Plastic Strain Ratio – Drawability (r-value)	ASTM E517
Tensile Strain - Hardening - Formability (n-value)	ASTM E646
Tension Testing Wrought & Cast Aluminum Products	ASTM B557
Metallographic Evaluation:	
Preparation of Metallographic Specimens	ASTM E3
Case Depth	SAE J423
EDS (Energy Dispersive Spectroscopy)	ASTM E1508
Determining Average Grain Size	ASTM E112 (Comparison and Intercept)
Estimating Depth of Decarburization of Steel Specimens	ASTM E1077

Accredited Laboratory

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MIAMI VALLEY MATERIALS TESTING CENTER, LLC

Tipp City, OH

for technical competence in the field of

Mechanical Testing

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Presented this 6th day of November 2015.

President & CEO
For the Accreditation Council
Certificate Number 2633.01
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For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.

Tests	Test Methods[1]
Metallographic Evaluation (continued):	
Evaluating Graphite Microstructure in Iron Castings	ASTM A247
Macroetching	ASTM E381
Microetching	ASTM E407
Reflected Light Photomicrography	ASTM E883
SEM Beam Characterization	ASTM E986
Density:	
Wet Density	ASTM B311
Coating Characterization:	
Coating Weight	ASTM A90, Honda HES D2008; Honda 5100Z-SGO-A000; Honda 5100Z-SEO-000; Honda 5100Z-TR0-6001
Qualitative Adhesion Testing of Metallic Coatings	ASTM B571 (Sections 3, 4, 5), JDQ 117; Honda HES D2003 (3.4), D6001 (4.4)
Coating Thickness Measurement by Microscopical Exam	ASTM B487, JDQ 117, JDM F15; Honda HES D2003 (3.3), D2008, D2021, D2016, D2028, D6001 (4.2), D6501 (3.2); Honda 5100Z-TR0-6001
Acid Resistance	ASTM D1308; Honda HES D6001, D2016, D2021, D6501 (3.25, 3.28); Honda 5100Z-SGO-A000 (6-15); Honda 5100Z-SEO-000 (6-14); Honda 5100Z-TR0-6001
Alkali Resistance	ASTM D1308; Honda HES D2008, D2016, D2021; Honda 5100-SGO-A000 (6-14); Honda 5100-SEO-000 (6-13); Honda HES D6501 (3.24, 3.28); Honda 5100Z-TR0-6001
Fuel Resistance	Honda HES D2016, D2021; Honda 5100Z-SGO-A000 (6-17); Honda 5100Z-SEO-000 (6-16); Honda 4251Z-SEP-A000 (5); Honda HES D6501 (3.21, 3.28); Honda 5100Z-TR0-6001
Oil Resistance	Honda HES D2008, D2016, D2021, D2028, D6501 (3.23, 3.28); Honda 5100Z-SGO-A000 (6-16); Honda 5100Z-SEO-000 (6-15); Honda 4251Z-SEP-A000 (6); Honda HES Honda 5100Z-TR0-6001
Degree of Blistering	ASTM D714

Tests	Test Methods[1]
Coating Characterization (continued):	
Degree of Rusting	ASTM D610
Evaluation of Painted/Coated/Plated Specimens	ASTM D1654
Water Immersion	Honda HES D2008, D2016, D2021, D2028; Honda 5100Z-SGO-A000 (6-8, 6-10); Honda 5100Z-SEO-000 (6-7, 6-9); Honda 4251Z-SEP-A000 (Section 5); Honda HES D6501 Sections 3.18, 3.37; Honda 5100Z-TR0-6001
Coating Adhesion	ASTM D3359; Honda HES D2008, D2016, D2021, D2028, D6501 (3.6); Honda 5100Z-SGO-A000; Honda 5100Z-SEO-000; Honda 5100Z-TR0-6001
Environmental Simulation:	
Salt Spray (Fog)	ASTM B117; JDM F15, F15X1; Honda HES 6501 Sections 3.15.1, 3.15.2; Honda HES: D2003 (3.2), D2008, D2016, D2021, D2028, D6001; Honda 5100Z-SEO-0000 Section 6-2-1; Honda 5100Z-SGO-A000 Section 6-2-1; Honda 5100Z-TR0-6001; JDQ 115; JDQ 117
Hot Salt Water Resistance	Honda 5100Z-SGO-A000 (6-3); Honda 5100Z-SEO-000 (6-3); Honda 5100Z-TR0-6001

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Test Specifications:

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Specification for Titanium 6 – 4 (Surgical Implants)	ASTM F136
JDM F15 Addendum – Zinc Clear Chromate C Requirements	BOSSARD CSS3