SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

IMR TEST LABS - LOUISVILLE
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MECHANICAL

Valid To: June 30, 2026 Certificate Number: 1140.03

In recognition of the successful completion of the A2LA evaluation, accreditation is granted to this laboratory to test on the following materials and products: adhesives, aerospace and automotive products, aluminum alloys, brass and bronze, cables, carbon steel, cast iron, ceramics, coatings, copper alloys, elastomers, fasteners, labels, low alloy steel, nickel, paints, plastics, powder metals, power and hand tools, rubber, stainless steel, superalloys, titanium alloys, zinc alloys, thermal spray, oil and oil products:

Test:	**Test Method(s):**
Mechanical Properties - General	
Bend	ASME Section IX; ASTM A370, E190, E290
Impact (Charpy)	ASTM A370, E23; JIS Z 2242; ISO 148-2
Room Temperature Tension <= 30000 lbs (UTS, YS, EL, R/A)	ASTM A48/A48M, A370, B557, E8/E8M, F606/ F606M; ISO 6892; API-5L; JIS Z 2241, JIS Z 2201 (Superseded 2012)
Elevated Temperature Tension <=30000 lbs (UTS, YS, EL, R/A)	ASTM E21
n-Value (Strain Hardening Exponent)	ASTM E646; JIS Z 2253
r-Value (Plastic Strain Ratio)	ASTM E517; JIS Z 2254
Stress Rupture	ASTM E292
Coatings and Platings	
Coating Adhesion	ASTM D3359; ISO 2409
Coating Testing and Evaluation (Scribe, Degree of Rusting, Blistering, Cross-cut & Scratch Adhesion, Subsurface Corrosion/Rust, Creep/Infiltration, Thickness)	ASTM D609, D610, D714, D1654; DBL 7381, 7391, 7399, 8451, 8461, 9440, 7382, 8440; GS 90010, 90011; ISO 4628-2, 4628-3; 20567-1; MIL-DTL-5541, 53072; MBN 10494-1, 2, 3, 4, 5, 6; ASM-QQ-P-416; DIN 50018 AHT 2.0S; PV1210
Microhardness of Coatings (100 gf)	ASTM B578
Thickness by SEM	ASTM B748
Thickness by Cross Section	ASTM B487; MIL-STD-1312-12 (Superseded 2012); NASM 1312-12
Thickness by the Magnetic Method	ASTM B499
Wet Tape Adhesion	MIL-DTL-5541F; ASTM D 3359

Test:	**Test Method(s):**
Corrosion/Environmental Testing	
Cyclic Corrosion	ISO 11997-1; VDA 621-415L
Humidity, Condensation/Water Fog	ASTM D1735, D2247; DIN 50017; ISO 6270-2, 4628-3
Hydrogen Embrittlement	ASTM F519
Salt Spray	ASTM B117, D610, G85 (Except A4); DIN 50021; HES 6501; ISO 9227; MIL-STD 1312-1 (Superseded 2010); NASM 1312-1
Electrical Conductivity	ASTM E1004
Fasteners	
Coating Thickness	MIL-STD-1312-12 (Superseded 2012); NASM 1312-12
Discontinuities	ASTM F788, F812
Proof (External Threads)	ASTM A370, F606/F606M; MIL-STD-1312-8 (Superseded 2011); NASM 1312-8; SAE J429, J995
Tensile (Axial and Wedge)	ASTM A370, F606/F606M; MIL-STD-1312-8 (Superseded 2011); NASM 1312-8; SAE J429, J995
Hardness	
Brinell (1500, 3000) Kgf	ASTM A370, E10
Rockwell and Superficial (A, B, C, E, F, 15N, 30N, 45N, 15T, 30T, 45T)	ASTM A370, E18, F606/F606M; MIL-STD-1312-6 (Superseded 2013); NASM 1312-6; SAE J429, J995
Microhardness	
Knoop (100, 500, 1000) gf	ASTM E384, B933; E92; ISO 6507; MIL-STD 1312-6 (Superseded 2013); NASM 1312-6
Vickers (100, 300, 500, 1000) gf	ASTM E384, B933; E92; ISO 6507; MIL-STD 1312-6 (Superseded 2013); NASM 1312-6
MacroVickers (5000, 10,000) g	ASTM E92
Metallographic Examination	
Preparation of Samples	ASTM E3
Alpha Case	FLP-062; GE P3TF19
Case Depth	ASTM B934; SAE J423
Depth of Decarburization	ASTM E1077; SAE J121, J419
Dezincification	ISO-6509-1, 6509-2
Grain Size	ASTM E112; E50TF133
Inclusion Content	ASTM E45 (Method A)
Intergranular Attack	ASTM A262 (A&E), A923; SAE AMS-H-6088 (Superseded 2014)
Microstructure – Cast Iron	ASTM A247
Microetching	ASTM E407
Macroetching	ASTM E340, E381

Test:	**Test Method(s):**
Metallographic Examination continued	
Microstructure Examination	ASM Metals Handbook Volume 9
Manual Phase Volume Determination	ASTM E562
Pipeline Integrity (Steel Pipe) (Bend, Tensile, Visual, Chemical)	49 CFR Part 192 (App. B & C)
Welder and Procedure Qualification Testing	Using the methods listed above in accordance with: ABS Rules for Welding Part 2; ASME Section IX; API RP 582; API Std.1104; AWS C1.1, C1.4, D1.1, D1.2, D1.5, D17.1; SAE; AMS-W-6858A; NAVSEA S9074-AQ-G1B-010/248; ISO 15614, 895, 910, 148-1
Failure Analysis	Using the test methods listed above and on scope 1140.04, referencing the ASM Handbook; ASTM E620, E678, E860, E883 and E1188

Accredited Laboratory

A2LA has accredited

IMR TEST LABS - LOUISVILLE

Louisville, KY

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 30th day of April 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1140.03
Valid to June 30, 2026
Revised April 21, 2026

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