



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

IMR TEST LABS  
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MECHANICAL

Valid to: April 30, 2012

Certificate Number: 1140.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the tests listed below on adhesives, aluminum alloys, brass & bronze, cables, carbon steel, cast iron, ceramics, coatings, composites, copper alloys, electronics, elastomers, fasteners, labels, low alloy steel, nickel, paints, plastics, powder metals, power and hand tools, rubber, stainless steel, super alloys, titanium alloys, zinc alloys, thermal spray, oil and oil products for the following industries: aerospace, automotive, nuclear, medical device, consumer products and industrial goods, metal production, general manufacturing, utilities, petrochemical and power generation.

TEST:

TEST METHOD:

Mechanical Properties

Tension (TS, YS, EL, RA) (up to 160,000 lbs.)

ASTM A48, A370, B557, E8, E8M, E345, F606, F606M

Tensile Elevated Temperature (up to 1800°F)

ASTM E21

n-Value (Strain Hardening Exponent)

ASTM E646

Young's, Tangent, and Chord Modulus

ASTM E111

Compression (0 to 30,000 lbs.)

ASTM E9

Lap Shear

ASTM D1002, D2919, D3163, D3528

Shear (Single and Double)

ASTM B565

Bend

ASTM D522, A370; ASME Section IX

Ductility (Bend and Flaring)

ASTM E190, E290, B490; SAE AS4330

Impact (Charpy) ((-320 to 400) °F)

ASTM A370, E23

Surface Roughness

ANSI/ASME B46.1

Strain Gaging

MAP-047; ASTM E1237

r-Value (Plastic Strain Ratio)

ASTM E517

Dimensions of Thermoplastic Pipe

ASTM D2122 (except 8.1.1, 9.1.2)

Hydrogen Embrittlement (Flat Plate)

GM 3661P; SAE/USCAR-7

Volume Resistivity

ASTM B193

Hardness

Rockwell & Superficial (A, B, C, F, 15N, 30N, 45N, 15T, 30T, 45T, E, Y, 15Y)

ASTM A370, E18, F606, F606M; SAE J429, J995

Brinell

ASTM A370, E10

Microhardness (Knoop & Vickers)

ASTM E384

TEST:

Metallurgical Exam

Preparation of Specimens  
Microstructure  
Microetching  
Macroetching  
Grain Size  
Photomicrography  
Depth of Decarburization  
Case Depth/Carburization  
Inclusion Content  
Intergranular Attack  
Alpha Case

TEST METHOD:

ASTM E3  
ASTM A247, E1268; ISO 945  
ASTM E407  
ASTM E340, E381  
ASTM E112, E1382  
ASTM E883  
ASTM E1077; SAE J121, J419  
SAE J423  
ASTM E45, E1245  
ASTM A262, G110; AMS-H-6088, AMS 2772  
GE P3TF19

Coatings & Platings

Surface Evaluation (Dubpernell Active Site Test)  
Thickness by SEM  
Thickness by Cross Section  
Coating Thickness by XRF  
Microhardness of Coatings  
Adhesion  
Wet Tape Adhesion  
Adhesion or Cohesion Strength of Thermal Spray  
Coatings  
Tension Testing of Calcium Phosphate and Metal  
Coatings

ASTM B456 (Appx. 4)  
ASTM B748  
ASTM B487  
ASTM B568  
ASTM B578  
ASTM B571 Method 7 and 8, D3359  
Fed-Std-141 Method 6301; MIL-C-53072  
ASTM C633  
  
ASTM F1147

Fatigue

Axial (0 to 55 kip) & Torsional (0 to 177 in-lb)  
  
Fatigue Testing on Metallic Tibial Tray  
Components (Knees)  
  
Fatigue Testing of Metallic Hip Stem Components

MAP-046; ASTM E606, E466, F1160  
  
ASTM F1800; MAP-056  
  
ASTM F1440; ISO 7206-4; MAP-055

Fasteners

Tensile (up to 160,000 lbs.)  
Axial & Wedge (up to ½ in.)  
  
Proof (Internal & External Threads)  
  
Shear  
Stress Durability (Hydrogen Embrittlement)  
  
Coating Thickness  
Hardness

ASTM A370, E8, F606, F606M; MIL-STD-1312-8; SAE J429, J995  
ASTM A370, F606, F606M; MIL-STD-1312-8; SAE J429, J995  
ASTM F606, F606M; NASM 1312-13  
ASTM F606, F606M; GM3661P; SAE/USCAR-7; MIL-STD-1312-5; CHRYSLER PS-9500  
ASTM B568  
ASTM F606, F606M

Fracture Mechanics

ASTM E399

Non-Metallic Testing

Conditioning  
Abrasion (Taber)

ASTM D618  
ASTM C501, D968, D4060; GM 9911P; MIL-A-8625; SAE J365



TEST:

Non-Metallic Testing (continued)

Pressure Sensitive Adhesive Coated Tapes

Tensile/Elongation

Flexural Properties of Plastics

Compressive Properties

Tear Resistance of Films & Sheeting

Tear – Rubbers & Elastometers

Non-Metallic Hardness – Rockwell (R, M)

Durometer (A, D, M)

Flammability

Compression Set

Impact

Gardner

Melt Index

Polymer Aging (Air, Liquids)

Brookfield Viscometry

Pipe Testing

Polymer Composite Materials Testing

Conditioning of Polymer Composites

Climbing Drum Peel Strength of Adhesives

Short Beam Strength

Tensile Properties of Polymer Composites

Shear Properties of Polymer Materials

Open Hole Tensile Testing

Open Hole Compression

Compressive Properties with Unsupported Gage

Section by Shear Loading

Core Shear Properties of Sandwich Construction by

Beam Flexure

Filled Hole Tension & Compression Testing of

Polymer Matrix Composite Laminates

In Plane Shear Response

Corrosion/ Environmental Testing

Salt Spray

Humidity (Relative Humidity 95%)

Condensing (Relative Humidity 100%)

Acetic Acid

CASS

Accelerated Corrosion

TEST METHOD:

ASTM D1000 (Sections 11-20, 21-27, 37-45, 46-53, 104-109, 110-115, 116-122, 129-139), D3330, D3330M

ASTM D638, D412, D882, D3575 (Suffix T); ISO 37 (Method 13.1), 527 (Parts 1-5)

ASTM D790; ISO 178

ASTM D695, D3575 (Suffix D)

ASTM D1004

ASTM D624, D3575 (Suffix G); ISO 34-1 (Method B)

ASTM D785, E18

ASTM D2240; ISO 868

ASTM D5132; FMVSS 302; GM 9070P; SAE J369; ISO 3795; UL94 (except section 10-radiant panel)

ASTM D395 (Method B), D3575 (Suffix B)

ASTM D2794, D5420

ASTM D1238

ASTM D471, D543, D573, D3575 (Suffix S)

ASTM D2196

ASTM D2412, F405 (except section 8.7);

AASHTO M 252

ASTM D5229

ASTM D1781

ASTM D2344

ASTM D3039

ASTM D4255

ASTM D5766

ASTM D6484

ASTM D3410

ASTM C393

ASTM D6742, D6742M

ASTM D3518, D3518M

ASTM B117, D610, G85; GM 4298P; MIL-STD-1312B-1; SAE/USCAR-1; ISO 9227; DIN 50 021; JIS Z 2371; Toyota TSH1552G; Nissan M0140; MIL-C-53072

GM4465P; ASTM D1735; MIL-STD-1312-3

ASTM D2247; FLTM BI 104-01; DIN 50 017

DIN 50 021; JIS Z 2371; ISO 9227; ASTM G85

ASTM B368; DIN 50 021; JIS Z 2371

ASTM B380, G34; GM 9540P (except cycle N)



TEST:

TEST METHOD:

Corrosion/ Environmental Testing (continued)

Cyclic  
Potentiodynamic Corrosion  
QUV  
  
Gravelometer (Chip Resistance)  
Susceptibility to Stress Corrosion Cracking in  
Copper Alloys  
Chemical Passivation Treatments for Stainless  
Steel Parts

GM 9505P; GMW14872  
ASTM G5, G59  
ASTM D4587, D5208, G53-96 (Withdrawn  
2000)<sup>1</sup>, G154; GM9125P  
ASTM D3170; GM9508P; SAE J400  
ASTM B858  
  
ASTM A967

Weld Testing

ASME Section IX, AWS D1.1, D1.2, D1.5

Hydrostatic Leak Testing

ASTM E1003

Steel Tubing for Fluid Handling

GM 123M & GM 124M

Paint & Coatings

Adhesion  
Dime Scrape  
Cure  
Pencil Hardness  
Coefficient of Friction  
Mandrel Bend  
Corrosion Creepback  
Thumbnail Hardness  
Cracking  
Blistering  
Gasoline Resistance, Solvent Wipe  
Knife Crosshatch  
Decorative Chromium Plating  
Water Break Test

ASTM D3359; FLTM BI 106-01; GM9071P  
GM9506P  
GM9509P  
ASTM D3363  
ASTM D1894  
GM9503P  
ASTM D1654; GM9102P; GMW15282  
GM9507P  
ASTM D661  
ASTM D714  
GM9500P, 9501P; MIL-C-53072  
GM9502P  
GM4373M (except 3.2)  
MIL-C-53072

Powdered Metals

Tensile Properties  
Microhardness  
Case Depth  
Charpy Impact

MPIF 10; ASTM E8  
MPIF 51; ASTM E384  
MPIF 52  
MPIF 59; ASTM E23

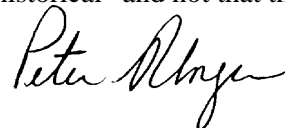
Failure Analysis

Failure Analysis using the test methods listed above, referencing the ASM handbook, ASTM E620, E678, E860 and E1188.

\*Also using industry and customer driven specifications specifically related to the testing listed above.

\*\* The accredited test methods listed above are used in determining compliance with any material specifications included on this scope; 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. Only the methods listed above on this Scope are accredited.

<sup>1</sup>NOTE: 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.





The American Association for Laboratory Accreditation

World Class Accreditation

# Accredited Laboratory

A2LA has accredited

## IMR TEST LABS

*Lansing, NY*


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 19th day of May 2010.



  
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President & CEO  
For the Accreditation Council  
Certificate Number 1140.01  
Valid to April 30, 2012

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