



MODERN INDUSTRIES, INC
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MECHANICAL

Valid To: January 31, 2024

Certificate Number: 2949.01

In recognition of the successful completion of the A2LA evaluation process (including compliance to R223 – Specific Requirements – GE Aviation S-400 Accreditation Program), accreditation is granted to this laboratory at the location listed above, as well as the one satellite laboratory location listed below¹, to perform the following tests on steel, stainless steel, cast iron, copper alloys, aluminum, nickel & cobalt alloys, titanium, miscellaneous metals, forgings, castings, machined components, billets, bars, ingot, powdered metals, fasteners, chain, and cable:

Test:

Test Methods:

Physical Testing:

Bend Testing (Less Tubing)

ASME Sec IX; ASTM A370, A489, D790, E190;
AWS B2.1/B2.1M, D1.1/D1.1M, D1.5/D1.5M

Compression

ASTM E9

Density

ASTM B311, B328-96(2003)e1 (Withdrawn 2009)²;
MPIF Standard 42

Flattening / Flaring

ASTM A530/A530M, A1016/A1016M

Hardness Testing

Brinell Hardness (500 kgf, 3000 kgf)

ASTM E10

Rockwell (A, B, C, F, 15N, 30N, 30T)

ASTM E18; MIL-STD-1312-6² (Withdrawn 1997,
replaced by NASM 1312-6); NASM 1312-6

Impact (Charpy) (-423 to +1000)°F

ASTM A370, E23; AWS D1.5/D1.5M

Jominy

ASTM A255

Proof (No Cone Proof)

ASTM F606/F606M

Shear, Single & Double

ASME QW196; NASM 1312-13

Stress Rupture

ASTM E139, E292

Tensile

Ambient Temperature to 1800 °F

ASTM A370, D638/D638M, E8/E8M, E21,
F606/F606M

Tensile (Axial / Wedge)

ASTM A370, F606/F606M

Metallographic Evaluation:

Preparation	ASTM E3
Conductivity	AMS 2658
Decarburization	ASTM E1077, ASTM F2328
Case Depth	SAE J423
Ferrite Rating	AMS 2315; ASTM E562
Grain Size (Comparison Method Only)	ASTM E112
Inclusion Rating / Cleanliness	ASTM E45 Methods A & D; SAE J422; SAE AMS2301, AMS2303
Intergranular Attack	ASTM A262 Methods A & E
Macroetch	ASTM A561, A604/A604M, E340, E381; AWS D1.1/D1.1M
Microhardness	ASTM E384, E92
Knoop (100-1000g)	
Vickers (100-1000g)	
Microstructure	ASTM E1268; ASM Metals Handbook, Volume 9
Microstructure in Cast Iron Graphite Evaluation	ASTM A247
Permeability	ASTM A342/A342M Method 3
Pitting and Crevice Corrosion and Intergranular Corrosion	ASTM G28, G48
Photomicrograph	ASTM E883
SEM (Semi-quantitative, Material Identification)	ASTM E1508
Weld Operator and Procedure Qualification Testing (less Radiography)	ASME Sec IX; AWS D1.1/D1.1M, D1.2/D1.2M, D1.5/D1.5M, D11.2
Nondestructive Testing Methods:	
Liquid Penetrant Examination	
Visible	ASTM E165/E165M, E1417/E1417M; MIL-STD-6866 ² (Canceled 1996, Replaced by ASTM E1417),
Fluorescent	MIL-STD-271F ² (Canceled 1998, Replaced by NAVSEA T9074-AS-GIB-010/271)
Magnetic Particle Examination	
Yoke – Visible (Dry)	ASTM E709, E1444/E1444M; MIL-STD-271F ² (Canceled 1998, Replaced by NAVSEA T9074-AS-GIB-010/271), MIL-STD-1949 ² (Canceled 1993, Replaced by ASTM E1444)
Bench (Fluorescent)	



Test:

Test Methods:

Physical Testing:

Compression	ASTM E9
Brinell Hardness (500 kgf, 3000 kgf)	ASTM E10
Rockwell (B, C, 15N, 30N, 30T)	ASTM E18
Impact (Charpy) -320°F to Ambient	ASTM A370, E23; AWS D1.5/D1.5M
Tensile Ambient Temperature	ASTM A370, E8/E8M

Metallographic Evaluation:

Preparation	ASTM E3
Decarburization	ASTM E1077; SAE J121
Case Depth	SAE J423
Ferrite Rating	AMS 2315; ASTM E562
Grain Size (Comparison Method Only)	ASTM E112
Inclusion Rating / Cleanliness	ASTM E45 Methods A & D; SAE J422
Microhardness Vickers (100g, 500g, 1000g)	ASTM E384, E92
Microstructure	ASTM E1268; ASM Metals Handbook, Volume 9
Microstructure in Cast Iron Graphite	ASTM A247
Weld Operator and Procedure Qualification Testing (Tensile and Charpy Only)	ASME Sec IX; AWS D1.1/D1.1M, D1.2/D1.2M, D1.5/D1.5M, D11.2

¹This accreditation covers testing performed at all laboratory locations listed on this scope of accreditation.

²This 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

MODERN INDUSTRIES, INC.

Erie, PA

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 laboratory also meets the requirements of R223 – Specific Requirements: GE Aviation S400 Accreditation Program. 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 29th day of October 2021.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2949.01
Valid to January 31, 2024

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