Nadcap℠
Administered by PRI

This certificate is granted and awarded by the authority of the Nadcap Management Council to:

Westmoreland Mechanical Testing and Research, Inc.

221 Westmoreland Drive
Youngstown, PA 15696
United States

This certificate demonstrates conformance and recognition of accreditation for specific services, as listed in www.eAuditNet.com on the Qualified Manufacturers List (QML), to the revision in effect at the time of the audit for:

Materials Testing Laboratories

Certificate Number: 3445211973
Expiration Date: 31 March 2025
Accreditation Length: 24 Months

Jay Solomond
Executive Vice President & Chief Operating Officer

Performance Review Institute (PRI) | 161 Thorn Hill Road | Warrendale, PA 15086-7527

SCOPE OF ACCREDITATION

Materials Testing Laboratories

Westmoreland Mechanical Testing and Research, Inc.
221 Westmoreland Drive
Youngstown, PA 15696

This certificate expiration is updated based on periodic audits. The current expiration date and scope of accreditation are listed at: www.eAuditNet.com - Online QML (Qualified Manufacturer Listing).

In recognition of the successful completion of the PRI evaluation process, accreditation is granted to this facility to perform the following:

AC7000 - AUDIT CRITERIA FOR NADCAP ACCREDITATION

AC7101/1 Rev G - Nadcap Audit Criteria for Materials Testing Laboratories – General Requirements for All Laboratories (to be used on audits BEFORE 10-Dec-2023)

AC7101/2 Rev E - Nadcap Audit Criteria for Materials Testing Laboratories – Chemical Analysis (to be used on audits on/after 30 August 2020)

(F) Atomic or Optical Emission Spectroscopy (AES or OES)
- (F2) Atomic Emission Spectroscopy – Inductively Coupled Plasma (ICP–OES/AES)
- (F3) Atomic Emission Spectroscopy – Spark/Arc (S/A–OES)

(G) Elemental Analysis (Combustion or Fusion)
- (G1) Carbon
- (G2) Hydrogen
- (G3) Nitrogen
- (G4) Oxygen
- (G5) Sulfur

(S) X–Ray Fluorescence (XRF)

(V) Mass Spectrometry

(W) Atomic Absorption
- (W2) Graphite Furnace (GFAA)

Specify the Alloy Base for Accreditation
- Al Base
- Co Base
- Cu Base
- Fe Base
- Mg base
- Ni Base
- Ti Base

AC7101/3 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Mechanical Testing (to be used on audits on/after 4 December 2016)

(A) Room Temperature Tensile
(A1) Room Temperature Tensile with Elastic (Young's) Modulus
(B) Elevated Temperature Tensile
(CT) Compression Testing
(KR) Curve (Resistance to Fracture) Testing
(N) Impact
(O) High Cycle Fatigue
(P) Fracture Toughness
(XE) Crack Propagation/Crack Growth Testing
(XN) Bend Testing
(Y) Low Cycle Fatigue

AC7101/4 Rev F - Nadcap Audit Criteria for Materials Testing Laboratories – Metallography and Microindentation Hardness (to be used on/after 14 August, 2016)

(L0) Metallographic Evaluation
(L1) Microindentation (Interior)
(L10) Near Surface Examinations – Carburization / Decarburization
(L11) Grain Size
(L12) Inclusion Rating
(L2) Near Surface Examinations – Alloy Depletion
(L3) Near Surface Examinations – Oxidation/Corrosion
(L4) Near Surface Examinations – Casting (Mold) Reactions Layers
(L5) Near Surface Examinations – Microindentation (Surface–Case Depth)
(L6) Near Surface Examinations – Nitriding
(L7) Near Surface Examinations – IGA, IGO
(L8) Near Surface Examinations – Alpha Case: Wrought Titanium
(L9) Near Surface Examinations – Alpha Case: Cast Titanium
(XL) Macro Examination

AC7101/5 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Hardness Testing (Macro) (to be used on audits BEFORE 07-May-2023)

(M1) Brinell Hardness
(M2) Rockwell Hardness
(M3) Vickers Hardness

AC7101/6 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Corrosion (to be used on/after 1 July 2018)

(Q) Salt Spray
(Q1) Detecting susceptibility to intergranular attack in austenitic stainless steel

(Q1–1) Oxalic Acid Etch Test
(Q1–2) Ferric Sulfate–Sulfuric Acid Test “Streicher test” (mass loss)
(Q1–3) Nitric Acid Test “Huey test” (mass loss)
(Q1–4A) Copper–Copper Sulfate– 16% Sulfuric Acid Test “Strauss test” (bend test)
(Q1–4B) 35% sulfuric acid/copper sulfate test (bend test)
(Q1–4C) 40% sulfuric acid/ferric sulfate test (bend test)
(Q1–5) Copper–Copper Sulfate–50 % Sulfuric Acid Test (mass loss)
(Q2) Alternate immersion stress corrosion testing – ASTM G 44
(Q2–1) ASTM G 49
(Q2–2) ASTM G 39
(Q2–3) ASTM G 38
(Q2–4) ASTM G 30
(Q3) ASTM G 34

AC7101/7 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Mechanical Testing Specimen Preparation (to be used on audits on/after 15 May 2016)

(Z) Standard Specimen Machining
(Z1) Low Stress Grinding
(Z2) Low Stress Grinding and Polishing
(Z3) Cast Specimens
(Z4) Special Preparation

AC7101/9 Rev C - Nadcap Audit Criteria for Materials Testing Laboratories – Specimen Heat Treating (to be used on/after15 January 2017)

AC7101/11 Rev C - Nadcap Audit Criteria for Materials Testing Laboratories – Fastener Testing (to be used on audits on/after 25 October 2015)

(11) Fatigue
(13) Shear Strength – Double Shear
(14) Stress Durability – Internal Threads
(18) Tensile Test – Elevated Temperature Tensile
(40L10) Metallography – Decarburization / Carburization
(40L2) Metallography – Alloy Depletion
(40L25) Metallography – Grain Size
(40L3) Metallography – Oxidation / Corrosion
(40L7) Metallography – IGA / IGO
(40L8) Metallography –Alpha Case: Wrought Titanium
(5) Stress Durability – External Threads
(6–L5) Hardness – Microindentation Hardness
(6–M2) Hardness – Rockwell
(6–M3) Hardness – Vickers

(8–A) Tensile Test – Axial Tensile
(8–P) Tensile Test – Proof Load (nuts / screws)
(8–W) Tensile Test – Wedge Tensile
(Q) Corrosion – Salt Spray
(QF) Corrosion – Copper Sulfate

ISO/IEC - Currently accredited by an ILAC approved source

Lab Type - Lab Type
Independent

Nadcap℠
Administered by PRI

This certificate is granted and awarded by the authority of the Nadcap Management Council to:

Westmoreland Mechanical Testing and Research, Inc.

14 Bayhill Drive
Latrobe, PA 15650
United States

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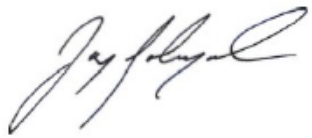
Materials Testing Laboratories

Certificate Number: 11237211974
Expiration Date: 31 March 2025
Accreditation Length: 24 Months



Jay Solomond
Executive Vice President & Chief Operating Officer

SCOPE OF ACCREDITATION

Materials Testing Laboratories

Westmoreland Mechanical Testing and Research, Inc.
14 Bayhill Drive
Latrobe, PA 15650

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(B) Elevated Temperature Tensile
(C) Stress Rupture
(CT) Compression Testing
(KR) Curve (Resistance to Fracture) Testing
(N) Impact
(O) High Cycle Fatigue
(P) Fracture Toughness
(XA) Creep
(XE) Crack Propagation/Crack Growth Testing
(Y) Low Cycle Fatigue

AC7101/4 Rev F - Nadcap Audit Criteria for Materials Testing Laboratories – Metallography and Microindentation Hardness (to be used on/after 14 August, 2016)

(L0) Metallographic Evaluation
(L10) Near Surface Examinations – Carburization / Decarburization
(L11) Grain Size
(L12) Inclusion Rating
(L13) Replication
(L2) Near Surface Examinations – Alloy Depletion
(L3) Near Surface Examinations – Oxidation/Corrosion

(L4) Near Surface Examinations – Casting (Mold) Reactions Layers
(L6) Near Surface Examinations – Nitriding
(L7) Near Surface Examinations – IGA, IGO
(L8) Near Surface Examinations – Alpha Case: Wrought Titanium
(L9) Near Surface Examinations – Alpha Case: Cast Titanium
(XL) Macro Examination

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(Z1) Low Stress Grinding
(Z2) Low Stress Grinding and Polishing

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AC7101/11 Rev C - Nadcap Audit Criteria for Materials Testing Laboratories – Fastener Testing (to be used on audits on/after 25 October 2015)
(10) Stress Rupture
(11) Fatigue
(14) Stress Durability – Internal Threads
(18) Tensile Test – Elevated Temperature Tensile
(40L10) Metallography – Decarburization / Carburization
(40L2) Metallography – Alloy Depletion
(40L25) Metallography – Grain Size
(40L3) Metallography – Oxidation / Corrosion
(40L7) Metallography – IGA / IGO
(40L8) Metallography –Alpha Case: Wrought Titanium
(5) Stress Durability – External Threads
(6–M2) Hardness – Rockwell
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ISO/IEC - Currently accredited by an ILAC approved source

Lab Type - Lab Type

Independent