

## SCOPE OF ACCREDITATION

### Materials Testing Laboratories

#### Metals Engineering & Testing Lab

2040 W. Quail Avenue  
Phoenix, AZ 85027

This certificate expiration is updated based on periodic audits. The current expiration date and scope of accreditation are listed at: [www.eAuditNet.com](http://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:

#### **AC7006 Rev G - Audit Criteria Equivalent to ISO/IEC 17025**

##### Chemical Analysis

- CH- Atomic Emission Spectroscopy – Inductively Coupled Plasma (ICP) / ASTM E1479
- CH- Inductively Coupled Plasma (ICP)
- CH- OES Analysis of Carbon Alloy Steel / ASTM E415
- CH- OES Analysis of Carbon and Low-Alloy Steel / ASTM E415
- CH- OES Analysis of Stainless Steel / ASTM E1086
- CH- OES Analysis of Stainless Steel by the Point-To-Plane Excitation Technique / ASTM E1086

##### Mechanical Testing

- M- Bend Testing / ASTM E290
- M- Guided Bend Test for Ductility of Welds / ASTM E190
- M- Hardness Testing – Brinell Hardness / ASTM E10
- M- Hardness Testing – Rockwell Hardness / ASTM E18
- M- Metallography – Alpha Case / ASTM E3
- M- Metallography – Alpha Case / ASTM E407
- M- Metallography – Chord Method / ARP 1820
- M- Metallography – Decarburization / ASTM E3
- M- Metallography – Decarburization / ASTM E384
- M- Metallography – Effective Case Depth / ASTM E384
- M- Metallography – General / ASTM E112
- M- Metallography – General / ASTM E45
- M- Metallography – Grain Size (Nickel Alloys) / ASTM E112
- M- Metallography – Grain Size / ASTM E112
- M- Metallography – IGA/IGO
- M- Metallography – Inclusion Rating / ASTM E45
- M- Metallography – Macroetching / ASTM E3
- M- Metallography – Macroetching / ASTM E340
- M- Metallography – Macroetching / ASTM E381
- M- Metallography – Microcleanliness / ASTM E45

- M– Metallography – Microetching / ASTM E407
- M– Metallography – Standard Practice for Preparation of Metallographic Specimens / ASTM E3
- M– Microhardness Testing, Knoop / ASTM E384
- M– Microhardness Testing, Vickers / ASTM E384
- M– Room Temperature Tensile (Standard Test Methods of Tension Testing Wrought and Cast Aluminum– and Magnesium–Alloy Products) / ASTM B557
- M– Room Temperature Tensile / ASTM E8
- M– Salt Spray (Fog) / ASTM B117

**AC7101/1 Rev G - Nadcap Audit Criteria for Materials Testing Laboratories – General Requirements for All Laboratories (to be used on audits on/after 5 May 2019)**

**AC7101/2 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Chemical Analysis (to be used on audits before 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)

Specify the Alloy Base for Accreditation

- Al Base
- Fe 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
- (XN) Bend Testing

**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
- (L5) Near Surface Examinations – Microindentation (Surface–Case Depth)
- (L5X) Near Surface Examinations – Microindentation (Surface) (Chord Method ARP1820)
- (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 on/after 22 March 2015)**

(M1) Brinell Hardness  
(M2) Rockwell Hardness

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

(Q) Salt Spray

**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  
(Z3) Cast Specimens

**AC7110/13 Rev B - Nadcap Audit Criteria for Evaluation of Welds to be used ON OR AFTER 5 MAY 2013**

NOTE: IF YOU ARE SELECTING THE AC7110/13 CHECKLIST YOU MUST ALSO SELECT AC7101/4 – Nadcap Audit Criteria for Materials Testing Laboratories – Metallography and Microhardness. You must also select AC7110/13S

Supplement A – Metallurgical Evaluation of Welder / Welding Operator Qualifications (identify if this process is used)

Supplement B – Metallurgical Evaluation of Fusion Welds (identify if this process is used)

Supplement C – Metallurgical Evaluation of Electron Beam / Laser Welds (identify if this process is used)

Supplement D – Metallurgical Evaluation of Resistance Welds (identify if this process is used)

**AC7110/13S Rev D - Nadcap Supplemental Audit Criteria for Evaluation of Welds to be used on audits ON OR AFTER 11 January 2015)**

U11 The Boeing Company

**Lab Type - Lab Type**

Independent