

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

### Element Teesside

Holwick Road Middlesbrough, Ts2 1Qs United Kingdom

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: 10605192746 Expiration Date: 31 January 2022 Accreditation Length: 24 Months

Merit

Michael JHO

**Michael J. Hayward** Executive Vice President & Chief Operating Officer

Merix

Merit

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



#### SCOPE OF ACCREDITATION

#### **Materials Testing Laboratories**

Element Teesside Holwick Road Middlesbrough, Ts2 1Qs United Kingdom

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:

### 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 on/after 22 March 2015)

(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)

Specify the Alloy Base for Accreditation

- Al Base
- Co 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

(B) Elevated Temperature Tensile

(N) Impact

(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
- (L13) Replication
- (L2) Near Surface Examinations Alloy Depletion
- (L5) Near Surface Examinations Microindentation (Surface–Case Depth)
- (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
- (M3) Vickers Hardness

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

- (Q1) Detecting susceptibility to intergranular attack in austenitic stainless steel
  - (Q1–1) Oxalic Acid Etch Test
  - (Q1-4A) Copper-Copper Sulfate- 16% Sulfuric Acid Test "Strauss test" (bend test)

### 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
- (Z4) Special Preparation

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

#### 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 E – Bend Test Evaluation of Fusion Welds (for other testing purposes)

Supplement E – Bend Test Evaluation of Welder/Welding Operator Qualification Welds

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

U20 GKN Aerospace – Sweden U8 Airbus

#### ISO/IEC - Currently accredited by an ILAC approved source

Lab Type - Lab Type Independent