

<b>Nom du fournisseur</b> <i>Supplier name</i>	Element Materials Technology		<b>Code fournisseur</b> <i>Supplier number</i>	MDM530911				
<b>Adresse</b> <i>Address</i>	9301 Innovation Drive, Suite 175 Daleville, IN 47334, USA		<b>Code Laboratoire</b> <i>Lab number</i>	AQPS506				
<b>Contact fournisseur</b> <i>Supplier contact</i>	<b>Nom :</b> Teent hoagland <i>Name:</i> Jennifer Tret		<b>Fonction :</b> Quality Assurance Manager <i>Title:</i> General Manager					
	<b>Adresse mail :</b> Teent.hoagland@element.com; Jennifer.tret@element.com <i>E-mail address:</i>							
<b>Nature Audit</b> <i>Audit Purpose</i>	<b>Sur site</b> <i>On-site audit</i>	<input type="checkbox"/>	<b>Sur Dossier(DQ)</b> <i>On DQ</i>	<input checked="" type="checkbox"/>	<b>Autre*</b> <i>Other*</i>	<input type="checkbox"/>	<b>Date :</b>	/
	<b>Evaluation</b> <i>Evaluation</i>	<input type="checkbox"/>	<b>Qualification initiale</b> <i>Initial approval</i>	<input type="checkbox"/>	<b>Surveillance</b> <i>Monitoring</i>	<input checked="" type="checkbox"/>	<b>Autre*</b> <i>Other*</i>	<input type="checkbox"/>
	<b>*Si Autre préciser :</b> Audit <i>* If other, please detail:</i>							
<b>Thème Audit</b> <i>Scope of Audit</i>	Monitoring action - extension							

N°PS <i>SP No.</i>	Code essai <i>Lab test code</i>	Procédés <i>Processes</i>	Référentiel Technique <i>Technical specification</i>	Décision <sup>(1)</sup> <i>Decision <sup>(1)</sup></i>	PS/SP: Installation OU / OR Labo/Lab: Restriction technique/ <i>Technical limitation</i>	Accréditation Nadcap <i>Nadcap accreditation</i>
8.00.00.03	G	Métaux - Dosage du Carbone / Metals - Carbon determination	ASTM E1019 ASTM E1941	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.04	H	Métaux - Dosage du Soufre / Metals - Sulfur determination	ASTM E1019	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.05	I	Métaux - Dosage de l'hydrogène / Metals - Hydrogen determination	ASTM E1447	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.06	J	Métaux - Dosage de l'azote / Metals - Nitrogen determination	ASTM E1019 ASTM E1409 ASTM E1937	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.07	K	Métaux - Dosage de l'oxygène / Metals - Oxygen determination	ASTM E1019 ASTM E1409	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.08	F1	Métaux - Fluorescence X / Metals - X Ray Fluorescence	ASTM E1085 ASTM E1621 ASTM E322 ASTM E539 ASTM E572	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.10	F2	Métaux - Spectrométrie d'émission plasma (SEP) / Metals - Inductively Coupled Plasma Spectrometry (ICP)	ASTM E1097	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.12	F3	Métaux - Spectrométrie d'émission optique par étincelle / Metals - Spark Optical emission spectrometry	ASTM E1086 ASTM E1251 ASTM E415	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.00.00.14	F5	Métaux - Spectrométrie d'Absorption Atomique Four / Metals - Graphite Furnace Atomic Absorption Spectrometry	ASTM E1184	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.01.00.02	Z2	Métaux - Usinage des éprouvettes hors fatigue / Metals - Specimen machining except fatigue	ASTM23 ASTM E292 ASTM E139 ASTM E8	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)

8.02.00.01	A	Métaux - Traction à température ambiante / Metals - Tensile test at room temperature	ASTM A370 ASTM B557 ASTM E8	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.02.00.02	B	Métaux - Traction à température élevée / Metals - Tensile test at elevated temperature	ASTM E21	Qualifié/ Qualified	Restriction regarding Young Modulus (not requested by SAFRAN)	Accrédité/ Accredited (eAuditnet)
8.02.00.05	XA	Métaux - Fluage allongement / Metals - Creep elongation test	ASTM E139 ASTM E292 NASM 1312	Qualifié/ Qualified	With strain gauging on inconel material	Accrédité/ Accredited (eAuditnet)
8.02.00.17	M1	Métaux - Dureté Brinell / Metals - Brinell hardness	ASTM A370 ASTM E10	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.02.00.18	M2	Métaux - Dureté Vickers / Metals - Vickers hardness	ASTM E382; ASTM E92	Qualifié/ Qualified	Range 200-1000	Accrédité/ Accredited (eAuditnet)
8.02.00.19	M3	Métaux - Dureté Rockwell / Metals - Rockwell hardness	ASTM A370 ASTM E18 NASM 1312-8 SAE J429	Qualifié/ Qualified	HRc only	Accrédité/ Accredited (eAuditnet)
8.02.00.20	M4	Métaux - Dureté Knoop / Metals - Knoop hardness	ASTM E382 ASTM E92	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.02.00.04	C	Métaux - Fluage rupture / Metals - Stress rupture creep test	ASTM E139 ASTM E92	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.03.00.01	L1a	Métaux - Taille de grains / Metals - Grain size	ASTM E112 ASTM E883 ASTM E930	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.03.00.02	L1b	Métaux - Taux d'inclusions (Hors Maraging 250 et ML340) / Metals - Inclusion content (Except Maraging 250 and ML340)	ASTM E45	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.03.00.03	L1f	Métaux - Taux de porosités / Metals - Porosity content	ASTM B328	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.03.00.05	L1g	Métaux - Taux de phase (alpha sur titane; ferrite sur Aciers) / Metals - Phasis content (alpha for titanium, ferrite for steels)	AMS H 6875 ASTM E1077 SAE J121 ASTM E1245	Qualifié/ Qualified	Alpha on titanium only	Accrédité/ Accredited (eAuditnet)
8.03.00.06	L1h	Métaux - Détermination de profondeur par microdureté (Nitruration, cémentation, décarburation...) / Metals - Case depth determination by microhardness (Nitriding, carburizing, decarburizing...)	ASTM B578 ASTM E384 NASM 1312 ASTM E1077 SAE J121 ASTM G79 ISO 2639 SAE ARP 1341	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)
8.03.00.11	L1e	Métaux - Examen sur soudure, brasage / Metals - Examination on welding, brazing	Méthode fournisseur / Supplier method; PTP1007 PTP1055 GEAE P3TF19 GEAE P3TF32	Qualifié/ Qualified	Contrôle soudure/Weld inspection only DM0043, DMP0045, DMP0025	Accrédité/ Accredited (eAuditnet)
8.03.00.13	L4	Métaux - Microdureté (< 300g) / Metals - Microhardness (<300g)	ASTM B578 ASTM E384 NASM 1312 ASTM E92	Qualifié/ Qualified	Range 200-300	Accrédité/ Accredited (eAuditnet)
8.03.00.07	L1i	Métaux - Examen sur usinage non conventionnel (Laser, EDM) / Metals - Examination on non conventional machining (Laser, EDM)	Méthode Fournisseur / Supplier method PTP 1010 ASTM F2111 GEAE P29TF34,	Qualifié/ Qualified	BLRF091601	Accrédité/ Accredited (eAuditnet)

8.03.00.08	L1e	Métaux - Examen sur usinage conventionnel (Rectification, brochage...) / Metals - Examination on conventional machining (Grinding, broaching...)	Méthode Fournisseur / Supplier Method PTP 1010 ASTM F2111 GEAE P29TF34	Qualifié/ Qualified	BLUF080301	Accrédité/ Accredited (eAuditnet)
8.03.00.09	L1k	Métaux - Examen fonderie / Metals - Examination on castings	Méthode Fournisseur / Supplier requirements PTP 1049 PTP 1072 DMC0090	Qualifié/ Qualified	DMF90522,	Accrédité/ Accredited (eAuditnet)
8.03.00.99	L1e	Métaux – Examen micro autre / Metals Optical Micrography Examination	Méthode Fournisseur / Supplier requirements PTP 1010 ASTM F1854 DMC0090	Qualifié/ Qualified	BLUF080301, BLRF050301, BLUF080103	Accrédité/ Accredited (eAuditnet)
8.03.00.16	XL3	Métaux - Examens macrographiques / Metals - Macrographic examinations	ASTM E340	Qualifié/ Qualified		Accrédité/ Accredited (eAuditnet)

- (1) :- **Audit de qualification : Qualifié, Refusé, Suspendu, Qualifié provisoirement, Qualifié avec restriction(s), Autorisé avec surveillance** / *Qualified, Failed, Withdrawn, temporary qualified, qualification with technical restriction(s), authorized with enhanced monitoring*  
 - **Audit de surveillance : Qualifié, Qualifié avec restriction(s), Qualifié avec DAC à clôturer, Qualifié avec DAC à clôturer et restriction(s), Suspendu, Autorisé avec surveillance** / *Qualified, qualification with technical restriction(s), Qualified with NCR to close, Qualified with NCR to close and restriction(s), Withdrawn, authorized with enhanced monitoring*

<b>Bilan des écarts et recommandations (Voir statut des écarts page 3)</b> <i>Findings and recommendations balance (See findings status page 3)</i>		
<b>Majeur(s) :</b> 4 = 0 <i>Major(s) :</i>	<b>Mineur(s) :</b> 0 <i>Minor(s) :</i>	<b>Recommandation(s) :</b> 3 <i>Recommendation(s) :</i>

<b>Fournisseur</b> <i>Supplier</i>			<b>Représentant Safran</b> <i>Safran representative</i>		
Date :	Nom / Name :	Visa :	Date :	Nom / Name :	Visa :
			2021/08/30	SPÄTH Nadine	NS

<b>Fonction</b> <i>Title</i>	<b>Nom</b> <i>Name</i>	<b>Société</b> <i>Company</i>	<b>Catégorie de l'auditeur (Safran)</b> <i>Auditor level (Safran)</i>
Monitoring Manager	SPÄTH Nadine	Safran Transmission Systems	Safran
Quality Assurance manager	HOAGLAND Teent	Element Daleville	
General manager	TRET Jennifer	Element Daleville	

<b>Spécifications de l'audit / Audit Specifications</b>	
<b>Référentiels techniques Safran</b> <i>Safran technical specifications</i>	Référentiels SAFRAN : GRM-0123, GRP-0087
<b>Autres référentiels</b> <i>Other specifications</i>	ISO 17025, ASTM Standard tes Methods

<b>Produits audités</b> <i>Products audited</i>
NA

<b>Points Forts</b> <i>Positive points</i>	<b>Points Faibles</b> <i>Weak points</i>
<p>Nadcap MTL accreditation with Merit 18 months (audit 190547 expiry 30-11-2021)</p> <p>Ilac A2LA accreditation (0174.01 &amp; 0174.02 expiry 08-31-2022)</p> <p>Test personal well training and experimented</p> <p>Regular participation to PTP with CAR analysis in due time when requested</p> <p>IRR between operators (RCA and Nadcap NRC)</p> <p>Regular use of aerospace prime specifications</p>	<p>Even if SAFRAN is prime subscriber, no job audit performed according to SAFRAN requirements (level 2 supplier) in the last job audit tracker.</p>

<b>Observations éventuelles Fournisseur</b> <i>Supplier Remarks (if needed)</i>	
	Supplier Signature (si observations / if remarks only)

<p><b>Motivation de la décision</b> <i>Roots of the decision</i></p>
<p><b>Action de surveillance à réaliser / Monitoring action to realize:</b> <b>Audit :</b> 26/04/2018: presentation of STS requirement regarding gears and shaft</p>
<p><b>Actions de surveillances réalisée / Monitoring action realized:</b> Correlation on report performed by Element on PGI's request for Safran Transmission Systems : Coversheet R-MPE-20-0084 on transfershaft 91D00805 21/06/2021 : New MAQ rev 9 =&gt; No impact on results (documentation and administrative modifications)</p>
<p><b>Conclusions :</b></p> <p><b>Impact sur l'AQPS / AQPS impact :</b> Extension : Micrographic inspection performed after conventional machining (8.03.00.08 – L1e) or EDM machining (8.03.00.07 - L1i), Optical Micrography Examination other (8.03.00.99 – L1e) Micrographic inspection fo casting product (8.03.00.09 – L1k) Correction from previous AQPS506 : Microhardness for deep profile after nitriding, carbonizing ... (8.03.00.13 – L4 and M2) : suppressed in last revision and replaced by L1h by still performed according to reports that have been analysed. Range of scale 200 to 1000. 8.02.00.20 – M4 : Knoop hardness test was also audited during last renewal (added by e-mail sent by Pierre-luc Belanger) Modification of the specifications for codes I, J and K (to many specification in comparison with the right corresponding documents)</p>
<p>Pièces Jointes / Attachments : DQ6999 V4.3 signed AQPS Usinage Machining_Z2 20210429 signed</p>

<b>Eléments analysés</b> <i>Items reviewed</i>			
1	DQ6999 V4.3 – dated 04/27/2021 & Extension SLS/STS	2	Correlation on report D20031265 Rev01 performed by STS according to coversheet R-MPE-20-0084 (04/2020)
3	Counter-expertise on report n° D20010835 date of issue 2/3/2020 tensile test results performed for SAE on behalf of Doncasters Groton	4	Nadcap Audit 190547 aand associated documents (Scope, Checklist, Jobtracker, results and NCR)
5	PTP Element reports for 2018-2020 with RCAs	6	A2LA 0174.01 & 0174.02 certificate and associated documents (scope of qualification)
7	Report fo Internal audit for Element 12-14/Octobrer/2020	8	Quality Manual Ed2 Revision 9 05/03/2021
9	Organization Chart	10	Safran specification listing
11	Skill Matrix 2021-04-12	12	Tests reports for Tensile, Micrographic examinations, Creep Tests

<b>Tableau des écarts</b> <i>Findings table</i>						
N° de l'écart <i>Finding No</i>	Niveau <sup>(2)</sup> <i>Level <sup>(2)</sup></i>	Procédé <i>Process</i>	Description de l'écart <i>Description of the finding</i>	Responsable <i>Responsible</i>	Délai <i>Time limit</i>	Statut <i>Status</i>
200011418	Ma	Tensile test	Tensile test at room temperature, specimen Id. aera 1. Before the Yield (0.2% offset) and UTS, while the speed of testing was at a controlled strain rate, the	Teent Hoagland	10/02/2020	Open Closed 01/14/2021

			crosshead suddenly moved violently of 0.055" in a few seconds, with a direct impact on the applied load. The Lab did not report the incident and did not discard the test.			
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(2) : m = mineur/ minor      M = Majeur/ Major

<b>Tableau des recommandations</b> <i>Recommendations table</i>		
<b>N° de la recommandation</b> <i>Recommendation No.</i>	<b>Procédé</b> <i>Process</i>	<b>Description</b> <i>Description</i>
N°1	Quality system	Element shall refer SAFRAN as a prime on Nadcap web site in order to get check according to SAFRAN specification when audited by Pri (no reference of SAFRAN subscriber in the job audit tracker neither in 2020 nor in 2018)
N°2	Tensile tests	Element has to provide tensile test curves on all tests performed for SAFRAN (final customer) => not done on CPP Syracuse reports Report n° : D20111003
N°3	PTP Participation	Slight decrease in PTP results for years 2019 and 2020 (weak signal)

- **General Comments :**

Independant lab mainly used by level 1 suppliers  
First SAFRAN qualification occured in 2007 (under Sherry Lab name, change following acquisition by Element Materials Technology in March 2013).

- **General Documents :**

Documents are regularly revised.Document control system belonging to Element general processus (commun documentation shared by all Element's sites)  
Report of Internal audit performed from 12 to 14 October 2020

- **Nadcap and ILAC Accreditations**

Last Nadcap audit performed in 2020 with 2 CARs (1 Major and 1 Minor)  
Both are closed, based on documents provided to Nadcap auditor  
Reaccreditation has been pronounced, expiry date end Nov 2021, with merit 18 Months renewal  
The Nadcap accreditation scope covers all qualified code mentionned in the AQPS506.  
**Recommandation n°1** : SAFRAN has to be declared as a prime subscriber in order to have job audit on SAFRAN products (direct or undirect purchasing order).

**Element has also a ISO17025 accreditation delivered by A2LA**

0174.01 and 0174.02 certificate (revised 09/2020, valid to August 31, 2022)  
Scope of qualification covers all qualified code mentionned in the AQPS506

- **Report analysis :**

Reports from Element has been counter-checked with coversheet on transfershaft examination done at SAFRAN Transmission Systems. The countercheck is compliant with Element results for all the tests

(macro and micro examination, nitriding layer evaluation, hardness ...) => D20031265 Rev 01 + associated SAFRAN coversheet R-MPE-20-0084

Same has been performed on casting product and is also compliant for micro examination on Doncasters Groton request according to DMF23271.

This counter-analysis lead to validate Element methods regarding extension request for microexamination (8.03.00.07, 8.03.00.08, 8.03.00.99)

Tensile test report D20111003 for CPP Syracuse : Tests and results are compliant to specifications (ASTM E21 and DMF23230). Nevertheless, Element is requested to provide corresponding tensile test curves when tensile tests are requested for SAFRAN (final customer) => **Recommandation n°2**

Tensile test report :

A CAR has been opened in Sept2020 regarding tensile results due to a cross-head sudden movement (root cause performed by Element leads to material origin

CAR 200011418 closed by tensile technical expert January 2021 (attached evidence of the investigation)

• **Regular participation to PTP and RCA provided in due time**

The total scope is covered by PTP kits.

Additionally, Element is performed some internal round robin based on Element group policy and IRR provided by PTP team.

Summary of participation for the last 5 years :

PTP Element participation	Number of kits OK	Details of kits OK	Number of kits NOK	Details of kits NOK
2015	21	Mechanical : 1-1 ; 1-2 ; 2-1 ; 3-1 ; 5-1 ; 5-2 Microexam 10-1 ; 10-2 ; 10-3 ; 10-4 ; 10-7 Hardness 6-1 ; 6-2 ; 6-3 Corrosion 7-1 ; 7-3 Chemistry 8-1 ; 8-3 Others 4-1 ; 9-2 ; 12-2	7	Mechanical : 1-3 ; 3-2 Microexam 10-5 ; 10-6 Chemistry 8-2 ; 8-4 Others 12-3
2016	13	Mechanical : 3-1 ; 3-2 ; 3-3 Microexam 10-1 ; 10-2 ; 10-3 ; 10-4 ; 10-5 ; 10-6 Hardness 6-1 ; 6-2 ; 6-3 Others 9-3	7	Mechanical : 1-2 ; 1-3 ; 2-1 ; 5-2 Chemistry 8-1 ; 8-6 Others 4-1
2017	7	Mechanical : 1-2 ; 5-2 Microexam 10-1 ; 10-3 ; 10-6 ; 10-9 Corrosion 7-1	5	Mechanical : 1-2 ; 1-3 ; 2-1 Microexam 10-6 Chemistry 8-3
2018	10	Mechanical : 1-2 ; 1-3 ; 3-1 ; 3-2 Microexam 10-2 ; 10-3 ; 10-5 Hardness 6-1 ; 6-2 ; 6-3	5	Mechanical : 2-1 ; 3-2 Microexam 10-6 Chemistry 8-1 ; 8-3
2019	10	Mechanical 3-1 ; 5-2 Microexam 10-1 ; 10-2 ; 10-4 ; 10-5 Hardness 6-3 ; 6-4 Corrosion 7-2 + IRR corrosion	11	Mechanical : 1-1 ; 2-1 ; 3-2 ; KCV Hardness 6-3 Corrosion 7-2 + IRR Corrosion Chemistry 8-1 ; 8-2 ; 8-3 ; 8-4
2020	8	Mechanical : 1-1 ; 3-1 ; 3-3 ; 5-2	12	Mechanical : 1-3 ; 2-1 ; 3-2 Microexam 10-4 ; 10-6

		Microexam 10-2 ; 10-3 ; 10-5 Hardness 6-3		Hardness 6-2 Corrosion 7-2 Chemistry 8-1 ; 8-2 ; 8-3 ; 8-4 ; 8-6
2021	In progress – Registration OK			

Note that more kits present outlier results for year 2019/2020 compared to previous years =>  
**Recommandation n°3**

### Annex : Scope of Nadcap Accreditation :

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)

- (D) Wet Chemistry (Gravimetric)
- (F) Atomic or Optical Emission Spectroscopy (AES or OES)
- (F1) Atomic Emission Spectroscopy – Direct Current Plasma (DCP–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)
- (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
- (B) Elevated Temperature Tensile
- (C) Stress Rupture
- (N) Impact
- (XA) Creep
- (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
- (L3) Near Surface Examinations – Oxidation/Corrosion
- (L4) Near Surface Examinations – Casting (Mold) Reactions Layers
- (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  
(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)  
(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  
(Z3) Cast Specimens  
(Z4) Special Preparation  
AC7101/9 Rev C - Nadcap Audit Criteria for Materials Testing Laboratories – Specimen Heat Treating (to be used on/after 15 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 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)  
Supplement E – Bend Test Evaluation of Electron Beam and Laser (for other testing purposes)  
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)  
U10 GE Aviation  
U11 The Boeing Company  
U13 Bombardier  
U2 Pratt & Whitney  
U20 GKN Aerospace – Sweden  
U3 Rolls–Royce plc  
ISO/IEC - Currently accredited by an ILAC approved source  
Lab Type - Lab Type  
Independent

**Nadcap audit summary :**

Audit Documents: a. Were uploaded to eAuditNet at least 30 days prior to the audit.  
b. Contained appropriate document references.  
Personnel: Experienced, well qualified trained employees with appropriate technical degrees or training for the work being performed.  
Equipment: Primarily well-maintained equipment with computer controls.  
Negative Issues during the audit: None  
Non-Conformances: a. Total = 2  
b. Major = 1  
c. Minor = 1  
Supplier and Auditor post Audit reporting requirements were reviewed during closing meeting.