

**ELEMENT MATERIALS TECHNOLOGY -  
CHARLOTTE**

1200 Westinghouse Blvd Ste A  
NC 28273 Charlotte  
USA

**FOR THE ATTENTION OF**

Tom AUGUSTIN General Manager  
Charles BEASLEY Quality Assurance Manager  
Matt GIESLER Divisional Director

**FROM**  
BOUVIER Mélanie

**DATE**  
09/01/2017

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+33 5 61 18 49 69

**OUR REFERENCE**  
SUR2016.0391 Ind. B

**ARP-ID of the External Shop**  
310769

**TYPE of External Shop**  
Independent

**Attestation letter for Qualification on Test Methods**

Dear Madam, Dear Sir,

We herewith inform that the couples <Test Methods / External Shop> as detailed in the Appendix have been either registered or modified in the Official Airbus Qualified Test Methods List (QTML) Database.

The latest valid status of all qualified <Test Methods / External Shop> couples is published by regular QTML reports:

- On Airbus homepage for Suppliers (<http://www.airbus.com/tools/airbusfor/suppliers/>) - Only Independent Labs.
- On Airbus Supply Portal A2QS - All External Shops.

A qualified couple is not linked to a specific product. It is the proof that the External Shop is meeting the requirement of the AP5262: Qualification Process of Couples <Test Method / External Shop>.

We remind you that the maintenance of your Test Methods Qualification depends on your monitoring on quality and technical aspects and is surveyed by Airbus on a regular basis, every year or every 2 years.

- On a quality aspect: we kindly ask you to indicate us any modification which could have a quality impact.
- Concerning technical requirements:
  - \* We kindly ask you to participate at least every 2 years to the PTP organized by Exova for the tests you perform on Airbus Products (see Appendix for details on next PTP participation requirements).  
You can find all necessary information about PTP participation process on the website: <https://ptp.exova.com>.  
In case of PTP results out of tolerances, the couples qualification can be downgraded to an authorisation to proceed or withdrawn and the PTP participation frequency is reduced to one year, subject to acceptance by Airbus of your Root Cause Analysis and associated Corrective Actions.
  - \* On the other hand, you shall supply at least every 2 years the results of your Internal Homogeneity Studies per Test Families.

Airbus reserves the right to withdraw or suspend the qualification at any time for specific reason, e.g.

- Any major incident(s) detected on one or several Test processes
- Lack in quality
- Evidence non-compliance with the AP5262
- Loss of Airbus Supplier Approval
- Stop of the Business

Yours faithfully,

**BOUVIER Mélanie**  
Test Methods Qualification Engineer - POMDT



**MALHOMME Muriel**  
Test Methods Qualification Manager - POMDT



Appendix: Matrix of qualified Couples <Test Methods / External Shop>

## APPENDIX: Matrix of qualified Couples <Test Methods / External Shop>

We hereby declare the External Shop:

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Qualified or Authorised to proceed for the following Test processes:

Test Standard(s) *	Test label	Complex.	Qualif. Status	Next PTP part. **	Remark
	Metallic specimen preparation (for mechanical testing) (method to be defined)		Qualified		
	Combustion (method to be defined)		Qualified	2017	Leco Carbon / Sulfur Analyzer
	Spectrometry: optical emission (OES) (method to be defined)		Qualified	2017	Al, Co, Cu, Fe, Ni, Ti
	Inert gas fusion (method to be defined)		Qualified	2018	Leco Hydrogen Analyzer
AITM 4-0002	Microstructural characterization of welded aluminium structures	Low	Qualified		
AMS 2315	Determination of delta ferrite content		Qualified		Fe
ASTM A262	Standard practices for detecting susceptibility to intergranular attack in austenitic stainless steels	Low	Qualified		
ASTM A604 (EN 2003-7)	Macroetch testing of consumable electrode remelted steel bars and billets	Low	Qualified		
ASTM B117	Standard practice for operating salt spray (Fog) apparatus	Low	Qualified	2017	Various
ASTM E112	Determining average grain size	Low	Qualified	2018	Various
ASTM E139	Creep, creep-rupture, and stress-rupture tests of metallic materials (Legacy programs only)	Low	Qualified	2018	Fe, Ni, Ti
ASTM E1409	Determination of oxygen and nitrogen in titanium and titanium alloys by the inert gas fusion technique	Low	Qualified	2018	Fe, Ni, Co, Ti
ASTM E1447	Determination of hydrogen in titanium and titanium alloys by inert gas fusion thermal conductivity / infrared detection method	Low	Qualified	2018	Ti base alloy
ASTM E3	Standard guide for preparation of metallographic specimens	Low	Qualified		Cu, Ni, Sn
ASTM E34	Chemical analysis of aluminum and aluminum-base alloys	Low	Qualified	2017	Various
ASTM E340	Macroetching metals and alloys	Low	Qualified		
ASTM E384	Microindentation hardness of materials	Low	Qualified	2018	Various

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Test Standard(s) *	Test label	Complex.	Qualif. Status	Next PTP part. **	Remark
ASTM E407	Microetching metals and alloys	Low	Qualified		
ASTM E45	Determining the inclusion content of steel	Low	Qualified	2018	Fe
ASTM E8	Tension testing of metallic materials	Low	Qualified	2018	
EN 10247 (ISO 4967)	Micrographic examination of the non-metallic inclusion content of steels using standard pictures	Low	Qualified	2018	
EN 2002-1 (ASTM E8 / ASTM B557)	Tensile testing at ambient temperature	Low	Qualified	2018	Fe, Al, Cu, Ni, Ti and Various
EN 2002-2	Tensile testing at elevated temperature	Low	Qualified	2017	Fe, Al, Cu, Ni, Ti and Various
EN 2002-6	Metallic materials: Bend testing	Low	Qualified		Fe, Al, Cu, Ni, Ti and Various
EN 3114	Microstructure of ( $\alpha + \beta$ ) titanium alloy wrought products	Low	Qualified		Ti
EN 3683	Titanium alloy wrought products - Determination of primary $\alpha$ content - Point count method and line intercept method	Low	Qualified		Ti
EN 3684	Titanium alloy wrought products - Determination of $\beta$ transus temperature - Metallographic method	Low	Qualified		Ti
ISO 148-1 (ASTM E23)	Charpy pendulum impact test (low temperature)	Low	Qualified	2018	Fe, Ni, Ti
ISO 148-1 (ASTM E23)	Charpy pendulum impact test (ambient temperature)	Low	Qualified	2018	Fe, Ni, Ti
ISO 4516	Metallic and other inorganic coatings - Vickers and Knoop microhardness tests	Low	Qualified	2018	Various
ISO 6506 (ASTM E10)	Brinell hardness test	Low	Qualified	2017	Ni, Fe, Al, Cu, Ti and Various
ISO 6507 (ASTM E92 historical)	Vickers hardness test	Low	Qualified	2018	Ni, Fe, Al, Cu, Ti and Various
ISO 6508 (ASTM E18)	Rockwell hardness test	Low	Qualified	2018	Ni, Fe, Al, Cu, Ti and Various HRC only
ISO 9227 (ASTM B117)	Corrosion tests in artificial atmospheres - Salt spray tests	Low	Qualified	2017	

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Test Standard(s) *	Test label	Complex.	Qualif. Status	Next PTP part. **	Remark
NASM 1312-01	Fastener test methods - Method 1: Salt Spray	Low	Qualified		
NASM 1312-04	Fastener test methods - Method 4: Lap joint shear	Low	Qualified		
NASM 1312-05	Fastener test methods - Method 5: Stress durability	Low	Qualified		Various
NASM 1312-06	Fastener test methods - Method 6: Hardness	Low	Qualified		Various
NASM 1312-08	Fastener test methods - Method 8: Tensile strength	Low	Qualified	2018	Various
NASM 1312-10	Fastener test methods - Method 10: Stress rupture	Low	Qualified		
NASM 1312-12	Fastener test methods - Method 12: Thickness of metallic coatings	Low	Qualified		
NASM 1312-14	Fastener test methods - Method 14: Stress durability (internally threaded fasteners)	Low	Qualified		
NASM 1312-15	Fastener test methods - Method 15: Torque - Tension	Low	Qualified		
NASM 1312-18	Fastener test methods - Method 18: Elevated temperature tensile strength	Low	Qualified		
NASM 1312-23	Fastener test methods - Method 23: Tensile strength of panel fasteners	Low	Qualified		
NASM 1312-24	Fastener test methods - Method 24: Receptacle torque-out – Panel fasteners	Low	Qualified		
NASM 1312-26	Fastener test methods - Method 26: Structural panel fastener lap joint shear	Low	Qualified		
NASM 1312-27	Fastener test methods - Method 27: Panel fastener sheet pull-up	Low	Qualified		
NASM 1312-31	Fastener test methods - Method 31: Torque	Low	Qualified		
QVA-Z10-53-00	Metallographic test - Macroscopic examination - General information	Low	Qualified		Various

\* Unless otherwise specified, last issue of the standard shall apply.

\*\* Next PTP participation year is given for information - It is the External Shop's responsibility to check every year on the PTP Website (<https://ptp.exova.com/>) which kits are proposed.