

ELEMENT MATERIALS TECHNOLOGY - CLEVELAND

5405 E. Schaaf Road
44131 Cleveland
USA

FOR THE ATTENTION OF

Gregory CZNADEL Quality Specialist
Brent MARRIOT General Manager
Karen MEADOWS Order Entry Mgr
Bruce MEADOWS Operations Mgr
Jeffrey SMITH Quality Manager
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CERTIFICATE PREPARED BY
NUNEZ Cesar

YOUR QTML FOCAL POINT
NUNEZ Cesar

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DATE
08/02/2021

OUR REFERENCE
SUR2020.0431 Ind. B

ARP-ID of the External Shop
298998

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).

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

- On Airbus homepage for Suppliers (<https://www.airbus.com/be-an-airbus-supplier.html>) - 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 M20691.2: Perform Couple <Product/Supplier Site> Compliance and Maturity's Activities for Material Products Suppliers and/or M20691.3: Perform Couple <Product/Supplier Site> Compliance and Maturity's Activities for Aerostructure Parts Suppliers.

- 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 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://ptpscheme.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In case of PTP results out of tolerances, the couples qualification can be downgraded to an authorisation to proceed or withdrawn and the PTP participation frequency is reduced to one year, subject to acceptance by Airbus of your Root Cause Analysis and associated Corrective Actions.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 M20691.2 and/or M20691.3
- Loss of Airbus Supplier Approval
- Stop of the Business

Yours faithfully,

NUNEZ Cesar
Airbus Test Methods Auditor POMDS – CE
Your QTML Focal Point



SAUX Alexandra
Test Methods Coordinator POMDS– CE
Your Quality Responsible



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. **	QCS Ref.	Remark
AITM 4-0002	Microstructural characterization of welded aluminium structures	Low	Qualified			
AMS 2315	Determination of delta ferrite content	Low	Qualified			
ASTM A262	Standard practices for detecting susceptibility to intergranular attack in austenitic stainless steels	Low	Qualified			
ASTM A604	Standard Practice for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets	Low	Qualified			
ASTM B487	Measurement of metal and oxide coating thicknesses by microscopical examination of a cross-section	Low	Qualified	2020		
ASTM B557	Standard Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products	Low	Qualified with limitations	2021		- Flat coupon testing not authorised - Young's Modulus not included - All alloys
ASTM E10	Standard Test Method for Brinell Hardness of Metallic Materials	Low	Qualified	2021		
ASTM E112	Determining average grain size	Low	Qualified	2022		
ASTM E139	Creep, creep-rupture, and stress-rupture tests of metallic materials	Low	Qualified	2021	Ni	
ASTM E1409	Determination of oxygen and nitrogen in titanium and titanium alloys by the inert gas fusion technique	Low	Qualified	2022		
ASTM E1447	Determination of hydrogen in titanium and titanium alloys by inert gas fusion thermal conductivity / infrared detection method	Low	Qualified	2022		
ASTM E18	Standard Test Methods for Rockwell Hardness of Metallic Materials	Low	Qualified	2022		
ASTM E2371	Analysis of Titanium and Titanium alloys by atomic emission plasma spectrometry	Low	Qualified	2021		
ASTM E238	Pin-type bearing test of metallic materials	High	Disqualified	2019	151020	Disqualified on: 26/02/2020
ASTM E3	Standard guide for preparation of metallographic specimens	Low	Qualified			All alloys
ASTM E34	Chemical analysis of aluminum and aluminum-base alloys	Low	Qualified	2022		
ASTM E340	Macroetching metals and alloys	Low	Qualified			

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ASTM E384	Microindentation hardness of materials	Low	Disqualified	2019		Disqualified on: 03/09/2019
ASTM E399	Linear-elastic plane-strain fracture toughness K _{Ic} of metallic materials	High	Qualified	2022	180692	Qualified on: 28/08/2019
ASTM E407	Microetching metals and alloys	Low	Qualified			
ASTM E45	Determining the inclusion content of steel	Low	Disqualified	2019		Disqualified on: 23/03/2020
ASTM E8	Tension testing of metallic materials	Low	Qualified with limitations	2021		- Flat coupon testing not authorised - Young's Modulus not included - All alloys
ASTM E9	Compression testing of metallic materials at room temperature	Low	Disqualified	2018		Disqualified on: 19/11/2018 All alloys
EN 10276	Chemical analysis of ferrous materials - Determination of oxygen in steel and iron	Low	Qualified	2021		Fe
EN 2002-1	Tensile testing at ambient temperature	Low	Qualified with limitations	2021		- Flat coupon testing not authorised - Young's Modulus not included - All alloys
EN 2002-2	Tensile testing at elevated temperature	Low	Disqualified	2018		Disqualified on: 19/11/2018 Ni Without Young's Modulus
EN 2002-6	Metallic materials: Bend testing	Low	Qualified			Fe
EN 2003-10	Titanium and titanium alloys - Part 10: Sampling for determination of hydrogen content	Low	Qualified	2022		Ti
EN 2003-9	Titanium and titanium alloys - Part 9: Determination of surface contamination (method A: Micrographic examination / Method B: Hardness testing)	Low	Qualified with limitations	2021		Limited to Method "A"
EN 2832	Hydrogen embrittlement of steel - Notched specimen test	Low	Disqualified	2018		Disqualified on: 19/11/2018 Fe
ISO 148-1 (low temp.)	Charpy pendulum impact test (low temperature)	Low	Qualified	2021		Fe
ISO 148-1 (room temp.)	Charpy pendulum impact test (ambient temperature)	Low	Qualified	2021		Fe
ISO 6507 (ASTM E92)	Vickers hardness test	Low	Disqualified	2019		- Disqualified on: 03/09/2019 Limited to microhardness

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NASM 1312-13	Fastener test methods - Method 13: Double shear test	Low	Disqualified	2019		Disqualified on: 19/11/2018
Z_Combustion	Analysis by combustion	None	Qualified	2021		
Z_IGF	Inert gas fusion	None	Qualified	2021		Co, Cu, Fe, Ni, Ti
Z_Spectro. OES	Spectrometry: optical emission (OES)	None	Qualified	2021		

* 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://ptpscheme.com/>) which kits are proposed.