

ELEMENT MATERIALS TECHNOLOGY - TEESSIDE

Holwick Road, Riverside Park,
TS2 1QS Middlesbrough
United Kingdom

FOR THE ATTENTION OF

Stuart Abbs Director, Aerospace Materials Europe
Andy Archer Business Development Director Europe
Iain Dixon Operation Manager
Alan Gale Quality Manager
Jon Skjelhaug Metallurgical Engineer
Emma Stowell Chemistry Supervisor

CERTIFICATE PREPARED BY
NUNEZ Cesar

YOUR QTML FOCAL POINT
NUNEZ Cesar

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DATE
11/12/2020
OUR REFERENCE
SUR2020.0061 Ind. E
ARP-ID of the External Shop
318843

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In case of PTP results out of tolerances, the couples qualification can be downgraded to an authorisation to proceed or withdrawn and the PTP participation frequency is reduced to one year, subject to acceptance by Airbus of your Root Cause Analysis and associated Corrective Actions.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
ASTM A262	Standard practices for detecting susceptibility to intergranular attack in austenitic stainless steels	Low	Qualified			Austenitic and Duplex Stainless Steels
ASTM A604	Standard Practice for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets	Low	Qualified			Fe-alloy
ASTM B557	Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products	Low	Qualified	2021		
ASTM E10	Standard Test Method for Brinell Hardness of Metallic Materials	Low	Qualified	2021		
ASTM E1077	Standard test methods for estimating the depth of decarburization of steel specimens	Low	Qualified			Fe-alloy
ASTM E112	Determining average grain size	Low	Qualified	2021		
ASTM E18	Standard Test Methods for Rockwell Hardness of Metallic Materials	Low	Qualified	2021		
ASTM E21	Standard test methods for elevated temperature tension tests of metallic materials	Low	Qualified	2021		
ASTM E3	Standard guide for preparation of metallographic specimens	Low	Qualified			Metallic materials
ASTM E340	Macroetching metals and alloys	Low	Qualified			Metallic materials
ASTM E384	Microindentation hardness of materials	Low	Qualified	2021		Metallic materials
ASTM E407	Microetching metals and alloys	Low	Qualified			Metallic materials
ASTM E45	Determining the inclusion content of steel	Low	Qualified	2022		Limited to methods A and D
ASTM E562	Determining Volume Fraction by Systematic Manual Point Count	Low	Qualified			
ASTM E8	Tension testing of metallic materials	Low	Qualified	2021		Metallic materials
ASTM E92	Vickers Hardness and Knoop Hardness of Metallic Materials	Low	Qualified	2021		
ASTM E930	Standard test methods for estimating the largest grain observed in a metallographic section (ALA grain size)	Low	Qualified			

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EN 2002-1	Tensile testing at ambient temperature	Low	Qualified	2021		Metallic materials
EN 2002-2	Tensile testing at elevated temperature	Low	Qualified	2021		Metallic materials
EN 2003-9	Titanium and titanium alloys - Part 9: Determination of surface contamination (method A: Micrographic examination / Method B: Hardness testing)	Low	Qualified	2022		Titanium
ISO 148-1 (low temp.)	Charpy pendulum impact test (low temperature)	Low	Qualified	2021		Metallic materials
ISO 148-1 (room temp.)	Charpy pendulum impact test (ambient temperature)	Low	Qualified	2021		Metallic materials
ISO 17639	Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds	Low	Qualified			Metallic materials
ISO 5173	Destructive tests on welds in metallic materials - Bend tests	Low	Qualified			Weldments
ISO 6506	Metallic materials - Brinell hardness test	Low	Qualified	2021		
ISO 6507	Metallic materials - Vickers hardness test	Low	Qualified	2021		
ISO 6508	Metallic materials - Rockwell hardness test	Low	Qualified	2021		
ISO 6892	Metallic materials - Tensile testing - Part 1: Method of test at room temperature / Part 2: Method of test at elevated temperature / Part 3: Method of test at low temperature	Low	Qualified	2021		Metallic materials
Z_Combustion	Analysis by combustion	None	Qualified with limitations	2021		- C determination in refractory & reactive metals & their alloys according to ASTM E1941
Z_Combustion	Analysis by combustion	None	Qualified with limitations	2022		C, N, O determination in steel, Fe, Ni & Co alloys according to ASTM E1019
Z_Corrosion	Corrosion	None	Qualified			Austenitic and Duplex Stainless Steels
Z_ICP-AES	ICP-AES	Low	Qualified with limitations	2021		Ti & Ti alloys by atomic emission plasma spectrometry according to ASTM E2371
Z_IGF	Inert Gas Fusion	Low	Qualified with limitations	2021		- O & N determination in Ti alloys according to ASTM E1409

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Z_IGF	Inert gas fusion	None	Qualified with limitations	2021		- H determination in Ti alloys according to ASTM E1447
Z_Metal. Spec. prep	Metallic specimen preparation (for mechanical testing)	None	Qualified			Metallic materials
Z_Opt. metallo.	Optical metallography	None	Qualified			Metallic materials
Z_Other	Other test - Specify in Remark	None	Qualified with limitations			According to ABP 2-4099 - Approval of Welding and brazing operators Restricted to: - Chapter 6.6.1 - Examination of Welded test pieces - Chapter 6.6.2 - Examination of Flame brazed test pieces. *Qualified on 10/12/2020
Z_Other	Other test - Specify in Remark	None	Qualified with limitations			According to ABP 2-4100 - Electric Resistance Welding Restricted to: - Appendix C - Process Control Testing - Appendix D - Acceptance Standard for Spot & Seam Welded Joints *Qualified on 10/12/2020
Z_Spectro	Analysis by spectrometry (others)	None	Qualified with limitations			According to ASTM E2465 -Nickel based alloys (XRF)
Z_Spectro	Analysis by spectrometry (others)	None	Authorised to Proceed March 2021	2021		Aluminum, Cobalt, Nickel, Ferrous Based - Low Alloy & Stainless Steel, Titanium & Titanium Aluminide Alloys (XRF). All of the above alloys for ICP-OES, XRF in brackets
Z_Spectro. OES	Spectrometry: optical emission (OES)	None	Qualified	2022		Ferrous Based - Low alloy & Stainless Steel

* 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.