

**GMA-WERKSTOFFPRUEFUNG GMBH  
NORDENHAM BRANCH**

Wertstrasse 1  
26954 NORDENHAM  
Germany

**FOR THE ATTENTION OF**

Klaus HOMBRINK Quality Assurance Manager  
Detlef KOHRING Branch Manager / Mechanical Lab Leader  
Tobias KRUSKA Chemical Lab Leader

**CERTIFICATE PREPARED BY**  
BOUVIER Mélanie

**YOUR QUALITY RESPONSIBLE DEPUTY**  
BOUVIER Mélanie

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+33 5 61 18 49 69

**DATE**  
08/03/2017

**OUR REFERENCE**  
SUR2016.0286 Ind. C

**ARP-ID of the External Shop**  
305214

**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In case of PTP results out of tolerances, the couples qualification can be downgraded to an authorisation to proceed or withdrawn and the PTP participation frequency is reduced to one year, subject to acceptance by Airbus of your Root Cause Analysis and associated Corrective Actions.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**  
**TM Qualification Engineer - TM PO Central Team**  
**Your Quality Responsible Deputy**



**MALHOMME Muriel**  
**TM Qualification Manager - TM PO Central Team**  
**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. **	Remark
	Metallic specimen preparation (for mechanical testing) (method to be defined)		Qualified		Al, Ti, Fe, NE-metals
	Other test - Specify in Remark		Qualified		QVA-Z10-61-00 - Determination of Particle Sizes Process baths Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		QVA-Z09-22-00 - Determination of Dry Residue Process baths Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		QVA-Z09-20-00 - Determination of water Hardness Process baths Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		80-T-35-0020: Alkaline Cleaning (Tendency of the bath to produce pitting) Restricted to Legacy Programs
	Composite specimen machining / cutting / tabbing		Qualified		CFRP / GFRP
	Other test - Specify in Remark		Qualified		QVA-Z09-23-00 - Determination of specific conductivity in aqueous media Process baths Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		QVA-Z09-19-01 - Determination of the ph value in aqueous media Process baths Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		QVA-Z09-11-01 - Inspection of polyalkylene glycol baths Process baths Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		QVA-Z09-11-00 - Analysis of Saltpetre Melts Restricted to Legacy Programs
	Optical metallography (method to be defined)		Qualified		Steel, Aluminium, Titanium, Beryllium-Copper
	Spectrometry: optical emission (OES) (method to be defined)		Authorised to Proceed June 2017	2016	
	Other test - Specify in Remark		Qualified		QVA-Z10-54-03 - Examination for Copper Diffusion in Cladding Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		

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Test Standard(s) *	Test label	Complex.	Qualif. Status	Next PTP part. **	Remark
	Other test - Specify in Remark		Qualified		80-T-35-2010: Determination of the weight of the coating (chapter 6.1.1) Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		80-T-34-5814 - Stuffer samples (connecting elements) Restricted to Legacy Programs
	Other test - Specify in Remark		Qualified		QVA-Z10-46-17 - Determination of compressive strength and modulus of fillings Restricted to Legacy Programs
AITM 1-0016	Determination of the effect of liquid cleaning agents upon the peel strength of heat cured film adhesive / bonding primer systems	Low	Qualified		
AITM 1-0017	Determination of the effect of liquid cleaning agents upon the adhesion of paint primers to adhesive bonding primers	Low	Qualified		
AITM 1-0019	Determination of tensile lap shear strength of composite joints	Low	Qualified	2017	
AITM 1-0021	Determination of the effect of liquid cleaning agents upon the properties of elastomeric materials	Low	Qualified		
AITM 1-0022	Wettability test	Low	Qualified		
AITM 1-0025	Fiber reinforced plastics - Flatwise tensile test of composite sandwich panel	Low	Qualified	2017	
AITM 1-0030	Sealants - Determination of lap shear strength	Low	Qualified		Sealants
AITM 1-0033	Sealants: Determination of the curing rate of sealing materials	Low	Qualified		
AITM 1-0047	Determination of apparent interlaminar shear strength of fibre metal laminates (Glare materials)	Low	Qualified		Composites (Glare)
AITM 1-0049	Tensile test method of fibre metal laminates (Glare materials)	Low	Qualified		Composites (Glare)
AITM 1-0060	T-Type tensile tests on welded joints	High	Qualified	TBD *	AI QCS141036
AITM 2-0011	Drying time	Low	Qualified		
AITM 3-0007	Drop (reaction) test on aluminium and aluminium alloys	Low	Qualified		Also according to QVA-Z10-58-01 and QVA-Z10-58-02 (Restricted to Legacy Programs)

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Test Standard(s) *	Test label	Complex.	Qualif. Status	Next PTP part. **	Remark
AITM 3-0013	Testing of susceptibility to exfolation corrosion in 2XXX and 7XXX series wrought aluminium alloy products	Low	Qualified		
AITM 3-0015	Determination of phosphoric acid content	Low	Qualified		
AITM 3-0029	Determination of iron (III) as reactive compound in acidic surface treatment baths	Low	Qualified		Process baths
AITM 3-0030	Titration of sulphuric and tartaric acid in anodizing electrolytes	Low	Qualified		Process baths
AITM 3-0032	Analysis of metals in galvanic bathes by ICP-spectroscopy	Low	Qualified		Process baths NCF V53D13013279 accepted
AITM 3-0034	Combined determination of free hydroxide and aluminium in alkaline surface treatment baths	Low	Qualified		Process baths
AITM 3-0035	Determination of chloride contaminations in surface treatment baths	Low	Qualified		Process baths
AITM 3-0036	Determination of hydrogen ions in surface treatment baths	Low	Qualified		Process baths
AITM 3-0037	Determination of phosphoric and sulphuric acid in anodizing electrolytes	Low	Qualified		Process baths
AITM 3-0038	Determination of non-volatile-residue	Low	Qualified		
AITM 4-0002	Microstructural characterization of welded aluminium structures	Low	Qualified		Al
AITM 5-0009	Determination of resistance to bond line corrosion	Low	Qualified		
AITM 7-0003	Sealants - Determination of application time of sealing materials	Low	Qualified		
ASTM B117	Standard practice for operating salt spray (Fog) apparatus	Low	Qualified	2018	
ASTM C363	Node tensile strength of honeycomb core materials	Low	Qualified		honeycomb
ASTM E112	Determining average grain size	Low	Qualified	2017	Al, Ti, Steel
ASTM E3	Standard guide for preparation of metallographic specimens	Low	Qualified		Al, Ti Also according to QVA-Z10-54-00 (Restricted to Legacy programs)

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ASTM E340	Macroetching metals and alloys	Low	Qualified		Steel, Aluminium, Titanium, Beryllium-Copper
ASTM E407	Microetching metals and alloys	Low	Qualified		Al, Ti
ASTM E8	Tension testing of metallic materials	Low	Authorised to Proceed June 2017	2017	
ASTM E9	Compression testing of metallic materials at room temperature	Low	Qualified	2016	
ASTM G110	Evaluating intergranular corrosion resistance of heat treatable aluminium alloys by immersion in sodium chloride + hydrogen peroxide solution	Low	Qualified		Also according to QVA-Z10-59-03 (Restricted to Legacy programs)
ASTM G34	Exfoliation corrosion susceptibility in 2XXX and 7XXX series aluminum alloys (EXCO Test)	Low	Qualified		Also according to QVA-Z10-59-04 (Restricted to Legacy programs)
EN 2002-1 (ASTM E8 / ASTM B557)	Tensile testing at ambient temperature	Low	Authorised to Proceed June 2017	2016	Also according to DIN EN ISO 6892-1: Tensile testing – Part 1: Method of test at room temperature Al, Ti, Fe, Beryllium-Copper, Steel
EN 2003-9	Titanium and titanium alloys - Part 9: Determination of surface contamination (method A: Micrographic examination / Method B: Hardness testing)	Low	Authorised to Proceed June 2017	2017	Method A
EN 2243-1	Structural adhesives - Part 1: Single lap shear	Low	Qualified	2017	Al/Epoxy
EN 2243-2	Structural adhesives - Part 2: Peel metal-metal	Low	Qualified	2017	Al / Epoxy
EN 2243-3	Structural adhesives - Part 3: Peeling test metal-honeycomb core	Low	Qualified	2017	Al / Epoxy /GFRP Also according to QVA-Z10-46-05 (Restricted to Legacy programs)
EN 2243-4	Structural adhesives - Part 4: Metal-honeycomb core flatwise tensile test	Low	Qualified	2017	
EN 2559	Carbon fibre preimpregnates - Test method for the determination of the resin and fibre content and the mass of fibre per unit area	Low	Qualified		
EN 2667-1 (PRen)	Foaming structural adhesives - Part 1: Tensile single-lap shear	Low	Qualified		ONLY according to QVA-Z10-46-01 (Restricted to Legacy programs)
EN 2667-2 (PRen)	Foaming structural adhesives - Part 2: Compressive tube shear	Low	Qualified		ONLY according to QVA-Z10-46-06 (Restricted to Legacy programs)

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EN 3114	Microstructure of ( $\alpha + \beta$ ) titanium alloy wrought products	Low	Authorised to Proceed June 2017			
ISO 1183-1	Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method	Low	Qualified			
ISO 14125	Fiber reinforced plastic composites - Determination of flexural properties	Low	Qualified			
ISO 1518	Paints and varnishes - Scratch test	Low	Qualified		Paints	
ISO 2409	Paints and varnishes - Cross-cut test	Low	Authorised to Proceed June 2017	2016	Paints	
ISO 2808	Paints and varnishes - Determination of film thickness	Low	Authorised to Proceed June 2017	2017		
ISO 2812-2	Paints and varnishes - Determination of resistance to liquids - Part 2: Water immersion method	Low	Authorised to Proceed June 2017	2016	Paints	
ISO 4578	Adhesives - Determination of peel resistance of high-strength adhesive bonds - Floating roller method	Low	Qualified			
ISO 4628-2	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering	Low	Qualified			
ISO 6270-2	Paints and varnishes - Determination of resistance to humidity - Part 2: Procedure for exposing test specimens in condensation-water atmospheres	Low	Qualified			
ISO 643	Steels - Micrographic determination of the apparent grain size	Low	Qualified	2017		
ISO 6506 (ASTM E10)	Brinell hardness test	Low	Qualified	2017	Al, Ti, Fe, Beryllium-Copper	ISO 6506 only
ISO 6507 (ASTM E92 historical)	Vickers hardness test	Low	Qualified	2017	Al, Ti, Fe	ISO 6507 only
ISO 6508 (ASTM E18)	Rockwell hardness test	Low	Qualified	2017	Al, Ti, Fe	ISO 6508 only

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ISO 7619-1	Rubber, vulcanized or thermoplastic - Determination of indentation hardness - Part 1: Durometer method (Shore hardness)	Low	Qualified		Rubber
ISO 8510-2	Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 2: 180° peel	Low	Qualified		
ISO 868 (ASTM D 2240)	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)	Low	Qualified		ISO 868 only
ISO 9227 (ASTM B117)	Corrosion tests in artificial atmospheres - Salt spray tests	Low	Qualified	2018	Also according to QVA-Z10-59-01 (Restricted to Legacy programs)
NASM 1312-08	Fastener test methods - Method 8: Tensile strength	Low	Qualified	2016	Fastener ( Al, Ti)
NASM 1312-13	Fastener test methods - Method 13: Double shear test	Low	Qualified	2018	Also according to the QVA-Z10-37-04: Double-Shear Test on Fasteners Made from Metallic Materials Fastener (Al, Ti)
NASM 1312-20	Fastener test methods - Method 20: Single shear	Low	Qualified		Fastener (Al, Ti)
QVA-Z09-07-27	Determination of Chromium (VI) in surface treatment baths	Low	Qualified		Process baths Restricted to Legacy Programs
QVA-Z09-07-31	Determination of Sulphate in surface treatment baths	Low	Qualified		Process baths Restricted to Legacy Programs
QVA-Z09-07-36	Determination of Hydroxide in alkaline cleaning baths	Low	Qualified		Process baths Restricted to Legacy Programs
QVA-Z09-25-00	Determination of removal rate of alkaline pickling baths	Low	Qualified		Process baths Restricted to Legacy Programs
QVA-Z10-53-00	Metallographic test - Macroscopic examination - General information	Low	Qualified		Al, Ti, Fe, CFRP

\* 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.