



Testing laboratory Approval for Independent Laboratory

MEMO Nº: AM-LAB-0007-11 Rev.11

Approval Date: 13 April 2011

SUBJECT: INDEPENDENT TESTING LABORATORY APPROVAL

Revision Date: 18 June 2021

SCOPE: See Annex 1.

Centro Tecnológico de Miranda de Ebro (CTME)
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In accordance with CASA1400 is hereby approved as:

INDEPENDENT TESTING LABORATORY According to CASA-1400-55-FT

LIMITATIONS:

The approval is limited to the tests describe in Annex I.

COMPLEMENTARY ACTIONS TO BE PERFORMED BY CTME:

The Qualification Dossier has to be maintained by supplier as process owner.

REFERENCE DOCUMENTATION:

2014-TAQO-0181	Airbus DS Doc.	Initial Approval Audit Report
MTQM-A-130702-01	Airbus DS Doc.	Initial Approval Audit Report
Dossier para la aprobación por parte de Airbus Military como laboratorio externo de ensayos y análisis	CTME Doc.	CTME Certification Dossier
1-2014 Rev. 1	CTME Doc.	CTME Certification Dossier
1-2016 Rev. 0	CTME Doc.	CTME Certification Dossier
1-2018 Rev 0	CTME Doc.	CTME Certification Dossier
2-2018 Rev 0	CTME Doc.	CTME Certification Dossier
1-2020 Rev. 0	CTME Doc.	CTME Certification Dossier
2-2021 Rev. 0	CTME Doc.	CTME Certification Dossier
Accreditations	See Annex 2	See Annex 2

REMARKS:

Airbus Defence and Space does not consider as valid any deviation not expressly stated in this document.

	Name	Signature
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ANNEX 1.

Approved Scope

• **COMPOSITES**

Test / Analysis	Method/ Test Procedure
Determination of the glass transition temperature (T _g) of thermosetting materials by dynamic-mechanical analysis (DMA).	AITM 1-0003
Determination of the extent of cure of thermosetting materials by modulated differential scanning calorimetry (DSC and M-DSC).	PR-457. In house method based on: ASTM E 2602 AITM 3-0008
Determination of curing characteristics and glass transition temperature of non-cured thermosetting materials by differential scanning calorimetry (DSC).	AITM 3-0002
Qualitative and semi-quantitative analysis of organic compounds by infrared spectroscopy with Fourier transform (FTIR) by transmission.	AITM 3-0003
Determination of the glass transition temperature by modulated differential scanning calorimetry (MDSC).	ASTM E 2602 (Method A)
Determination of mass per unit area of pre-impregnates of carbon fiber and glass textile fiber.	UNE-EN 2557 UNE-EN 2329
Determination of volatile substances content in pre-impregnates of carbon fiber and textile glass fiber.	UNE-EN 2558 UNE-EN 2330
Determination of resin and fiber content and fiber mass per unit area of pre-impregnates of carbon and textile glass fiber.	UNE-EN 2559 UNE-EN 2331 (Methods A and C)
Determination of fiber and resin contents and porosity rate in carbon fiber laminates.	UNE-EN 2564 (Method B)
Determination of resin flow of pre-impregnates of carbon fiber and glass textile fiber.	UNE-EN 2560 UNE-EN 2332 ASTM D3531/D3531M I+D-E-242
Determination of gel time of resin in thermosetting resin system	AITM 3-0004 (Method C) ASTM D3532/3532M
Water Pick Up Test	AITM 2-0061
Determination of interlaminar shear strength of fiber reinforced plastic.	UNE -EN 2563 UNE-EN 2377 UNE-EN ISO 14130 ASTM D2344/D2344
Determination of tensile properties of fiber reinforced plastic.	UNE-EN 2561 UNE-EN ISO 527-1 UNE-EN ISO 527-4 UNE-EN ISO 527-5 ASTM D 3039/D 3039M
Determination of properties of compression parallel to fiber direction of fiber reinforced plastic.	UNE-EN 2850 (Method B) I+D-E-51
Determination of mode I fracture toughness energy of bonded joints (G1C Test).	AITM 1-0053

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- **SANDWICH AND CORE MATERIALS**

Test / Analysis	Method/ Test Procedure
Determination of properties of flatwise tensile of sandwich panel.	AITM 1-0025

- **PLASTICS**

Test / Analysis	Method/ Test Procedure
Determination of glass transition temperature, glass transition step height and melting and/or crystallization temperatures and enthalpies by differential scanning calorimetry (DSC).	AITM 3-0027 UNE-EN ISO 11357-1 UNE-EN ISO 11357-2 UNE-EN ISO 11357-3
Qualitative determination of plastic materials by infrared spectroscopy with Fourier transform and attenuated total reflectance (FTIR-ATR).	PR-460. In-house method based on: ASTM E573 ASTM E1252
Thermogravimetric analysis (TGA) of polymers.	UNE-EN ISO 11358-1
Determination of the density of non-cellular plastics using the immersion method.	UNE-EN ISO 1183-1 (Method A)
Determination of apparent viscosity by single cylinder type rotational viscosimeter test method.	UNE-EN ISO 2555
Determination of mass per unit area of pre-impregnates of carbon fiber and glass textile fiber	UNE-EN ISO 868

- **ELASTOMERS**

Test / Analysis	Method/ Test Procedure
Determination of the density of rubber vulcanized or thermoplastic using the immersion method.	UNE-ISO 2781 (Method A)
Determination of the indentation hardness by the Shore durometer method (Shore hardness).	UNE-ISO 7619-1 ASTM D2240 (Method A and D)



- **ADHESIVES**

Test / Analysis	Method/ Test Procedure
Determination of apparent viscosity by single cylinder type rotational viscosimeter test method.	ASTM D 2556
Single lap shear	UNE-EN 2243-1
Determination of Tensile Lap Shear Strength of Composite Joints	AITM 1-0019
Peel Metal-Metal	UNE-EN 2243-2
Determination of mode I fracture toughness energy of bonded joints (G1C Test).	AITM 1-0053

- **SEALANTS**

Test / Analysis	Method/ Test Procedure
Determination of application time	AITM 7-0003
Determination of the curing rate	AITM 1-0033
Determination of tack free time	AITM 2-0034
Determination of non-volatile content	AITM 3-0025
Determination of assembly time	AITM 1-0036
Determination of sealant adhesion by lineal de-bonding test	AITM 2-0013

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• **SOLUTION ANALYSIS**

Test / Analysis	Method/ Test Procedure
TURCO 3878 LF NC	IO-813. In house method based on Manufacturer's procedure
TURCO 4215 NC	IO-814. In house method based on Manufacturer's procedure
TURCO 4215 NC-LT	IO-814. In house method based on Manufacturer's procedure
Determination of Free Hydroxide and Aluminum in Alkaline Baths	AITM 3-0034
TURCO ALUMINECTH n° 2	IO-815. In house method based on Manufacturer's procedure
TURCO ALUMINECTH n° 3	IO-815. In house method based on Manufacturer's procedure
TURCO SMUT GO n° 4	IO-816. In house method based on Manufacturer's procedure
Determination of Hydrogen Ions in Surface Treatment Baths	AITM3-0036
[Nitric Acid]	IO-816. In house method IO-819. In house method
ALODINE 1200 S	IO-817. In house method based on Manufacturer's procedure
Nitric acid and hydrofluoric acid content in hydrofluoric-nitric solution	IO-818. In house method based on AIPi 09-02-005
[Sodium Dichromate]	IO-820. In house method
[Alumina]. Anodizing of aluminum processes	IO-821. In house method
[Total chromic acid]. Anodizing of aluminum processes	IO-821. In house method
[Chromic acid] (Free). Anodizing of aluminum processes	IO-821. In house method
[Sulfuric acid]. Anodizing of aluminum processes	IO-823. In house method
Determination of Chloride in water	ASTM D 512
Determination of Chloride Contaminations in Baths	AITM3-0035
[FeCl ₃]	IO-826. In house method
[Fe(II)]	IO-826. In house method
[HCl]	IO-826. In house method
[F] ⁻	IO-827. In house method based on SM 4500-F- C
[SO ₄] ²⁻	IO-828. In house method
Low-Level Total Silica in water	ASTM D 4517
Titration of Sulphuric and Tartaric Acid in Anodizing Electrolytes	AITM3-0030
TURCO SMUT GO NC	IO-835. In house method based on Manufacturer's procedure
Determination of Iron (III) in acid baths	AITM3-0029
Analysis of metals in galvanic bathes (Cu, Cr, Zn, Si, Fe, Ni, Al, Ti, SiO ₂)	ASTM D4691

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• **SOLUTION ANALYSIS (Cont.)**

Test / Analysis	Method/ Test Procedure
TURCO 6849	IO-841. In house method based on Manufacturer's procedure
ARDROX 295 GD	IO-842. In house method based on Manufacturer's procedure
[Boric Acid]	IO-844. In house method
[Sulfuric Acid]	IO-844. In house method IO-845. In house method
[Phosphoric acid]	IO-845. In house method
[Na ₂ CO ₃]	IO-846. In house method
[Rochelle salt] (Sodium tartrate)	IO-846. In house method
Detection of fungal contamination in TSA anodisation baths	AITM7-0009
pH of water	ASTM D 1293
M-AERO	IO-853. In house method based on Manufacturer's procedure
[HCl]	IO-854. In house method
POLICLEAN 251	IO-856. In house method based on Manufacturer's procedure
[Fe (II)] (Turco Liquid Smut GO-NC)	IO-857. In house method based on Manufacturer's procedure
Electrical Conductivity and Resistivity of water	ASTM D 1125
TURCO 5578	IO-859. In house method based on Manufacturer's procedure
Surface tension	IO-861. In house method based on AIPI 09-02-005
TURCO ALUMIGOLD	IO-862. In house method based on Manufacturer's procedure
Total water hardness	PR-809. In house method based on SM 2340 C
Dissolved solids	UNE 77031
Determination of Non-Volatile-Residue	AITM3-0038

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• **METALLIC MATERIALS AND COATINGS**

Test / Analysis	Method/ Test Procedure
Salt Spray Test	UNE-EN ISO 9227 ASTM B117
Determination of Hydrogen in Titanium and Titanium Alloys by Inert Gas Fusion Thermal Conductivity/Infrared Detection Method	ASTM E-1447
Pitting Corrosion	I+D-E 194 ASTM F2111
Measurement of Coating Mass per Unit Area on Anodically coated Aluminum	ASTM B 137 ISO 2106
Estimation of loss of absorptive power of anodic oxidation coatings after sealing	ISO 2143
Solvent Resistance Test	I+D-P 299 AITM 1-0024
Wet and dry adhesion test	UNE EN ISO 2409 ASTM D3359 I+D-E 103 FED-STD-141D Method 6301.3
Determination of resistance to liquids. Water immersion method and Method using an absorbent medium	UNE-EN ISO 2812-2 UNE-EN ISO 2812-3 UNE- EN ISO 4628-1 UNE- EN ISO 4628-2
Determinación del espesor de recubrimiento mediante microscopía en probetas metálicas y probetas de material compuesto	UNE-EN ISO 1463 UNE-EN ISO 2808 Método 6A
Measurement of coating Thickness (Eddy current)	UNE-EN ISO 2808 Método 7D UNE-EN ISO 2360 ASTM B244 AITM 6-6006
Determinación del espesor por capa de laminados de material compuesto mediante micrómetro	UNE-EN ISO 2808 método 4A ASTM D1005
Roughness	UNE-EN ISO 4288
Filiform corrosion resistance test	UNE-EN 3665
Appearance, pulvulence and visual inspection	IO-421 In house method
Metallographic preparation	ASTM E3
Tensile test (RT)	UNE-EN ISO 6892-1 ASTM E8/E8M UNE-EN 2002-001 ASTM B557M
Rockwell Hardness. Scales HRA, HRB, HRC, HR15N, HR30N, HR30T, HR15Y	UNE-EN-ISO 6508-1 ASTM E18
Vickers Hardness. Scales HV0.3, HV0.5, HV1, HV10, HV30	UNE-EN ISO 6507-1 ASTM E384 ASTM E92

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ANNEX 2.

Summary of Accreditations

- AC7122/1 - Nadcap Audit Criteria for Non Metallic Materials Testing – Mechanical Testing
- AC7122/2 - Nadcap Audit Criteria for Non Metallic Materials Testing – Physical Testing
- AC7122/3 - Nadcap Audit Criteria for Non Metallic Materials Testing – Chemical Testing
- AC7122/4 - Nadcap Audit Criteria for Non Metallic Materials Testing – Thermal Analysis
- NADCAP- Independent Testing Laboratories Chemical Processing AC7108/4
- 772/LE2003 - ENAC Accreditation