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Testing laboratory Approval
for Independent Laboratory

MEMO Nº: AM-LAB-0007-11 Rev.10 **Approval Date:**13 April 2011

SUBJECT: INDEPENDENT TESTING LABORATORY APPROVAL **Revision Date:** 03 September 2020

SCOPE: See Annex 1.

Centro Tecnológico de Miranda de Ebro (CTME)
Polígono Industrial de Bayas
C/ Montañana R 60-61.
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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:

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
2014-TAQO-0181	Airbus DS Doc.	Initial Approval Audit Report
MTQM-A-130702-01	Airbus DS Doc.	Initial Approval Audit Report

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

SUMMARY OF ACREDITATIONS
- **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**

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APPROVED SCOPE (CONT.)

- ***COMPOSITES***

TEST	METHOD/TEST PROCEDURE
Determination of the glass transition temperature (Tg) 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 preimpregnates of carbon fiber and glass textile fiber.	UNE-EN 2557 UNE-EN 2329
Determination of volatile substances content in preimpregnates 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 preimpregnates 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 preimpregnates 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 (Gic Test).	AITM 1-0053

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APPROVED SCOPE (CONT.)

- ***SANDWICH AND CORE MATERIALS***

TEST	METHOD/TEST PROCEDURE
Determination of properties of flatwise tensile of sandwich panel.	AITM 1-0025

- ***PLASTICS***

TEST	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 preimpregnates of carbon fiber and glass textile fiber	UNE-EN ISO 868

- ***ELASTOMERS***

TEST	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	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 (Gic Test).	AITM 1-0053

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APPROVED SCOPE (CONT.)

- ***SEALANTS***

TEST	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 debonding test	AITM 2-0013

- ***SOLUTION ANALYSIS***

TEST/ ANALYSIS	METHOD/TEST PROCEDURE	INTERNAL PROCEDURE
TURCO 3878 LF NC	Manufacturer's procedure	IO-813
TURCO 4215 NC	Manufacturer's procedure	IO-814
TURCO 4215 NC-LT	Manufacturer's procedure	IO-814
Determination of Free Hydroxide and Aluminium in Alkaline Baths	AITM 3-0034	IO-814
TURCO ALUMINECTH nº 2	Manufacturer's procedure	IO-815
TURCO ALUMINECTH nº 3	Manufacturer's procedure	IO-815
TURCO SMUT GO nº 4	Manufacturer's procedure	IO-816
Determination of Hydrogen Ions in Surface Treatment Baths	AITM3-0036	IO-835
[Nitric Acid]	Potentiometric titration	IO-816
ALODINE 1200 S	Manufacturer's procedure	IO-817
Nitric acid and hydrofluoric acid content In fluor-nitric solution	AIPI 09-02-005	IO-818
[Nitric Acid]	Potentiometric titration	IO-819
[Sodium Dichromate]	Potentiometric titration	IO-820
[Alumina] Anodizing of aluminium processes	Potentiometric titration	IO-821
[Total chromic acid] Anodizing of aluminium processes	Potentiometric titration	IO-821
[Chromic acid] (Free) Anodizing of aluminium processes	Potentiometric titration	IO-821
[Sulfuric acid] Anodizing of aluminium processes	Potentiometric titration	IO-823

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APPROVED SCOPE (CONT.)

TEST/ ANALYSIS	TEST METHOD	INTERNAL PROCEDURE
Determination of Chloride in water	ASTM D 512	IO-825
Determination of Chloride Contaminations in Baths	AITM3-0035	IO-825
[$FeCl_3$]	Potentiometric titration	IO-826
[Fe(II)]	Potentiometric titration	IO-826
[HCl]	Potentiometric titration	IO-826
[F^-]	SM 4500-F- C (Ion-Selective Electrode Method)	IO-827
[SO_4]$^{2-}$	Gravimetric method	IO-828
Low-Level Total Silica in water	ASTM D 4517 (Flameless Atomic Absorption Spectroscopy)	IO-829
Titration of Sulphuric and Tartaric Acid in Anodizing Electrolytes	AITM3-0030	IO-834
TURCO SMUT GO NC	Manufacturer's procedure	IO-835
Determination of Iron (III) in acid baths	AITM3-0029	IO-835
Analysis of metals in galvanic bathes (Cu, Cr, Zn, Si, Fe, Ni, Al, Ti, SiO_2)	ASTM D4691 (ICP-spectroscopy)	IO-839
TURCO 6849	Manufacturer's procedure	IO-841
ARDROX 295 GD	Manufacturer's procedure	IO-842
[Boric Acid]	Potentiometric titration	IO-844
[Sulfuric Acid]	Potentiometric titration	IO-844 IO-845
[Phosphoric acid]	Potentiometric titration	IO-845
[Na_2CO_3]	Potentiometric titration	IO-846
[Rochelle salt] (Sodium tartrate)	Manual tritation	IO-846
Detection of fungal contamination in TSA anodisation baths	AITM7-0009	IO-848
pH of water	ASTM D 1293	IO-850
M-AERO	Manufacturer's procedure	IO-853
[HCl]	Potentiometric titration	IO-854
POLICLEAN 251	Manufacturer's procedure	IO-856
[Fe (II)] (Turco Liquid Smut GO-NC)	Manufacturer's procedure	IO-857
Electrical Conductivity and Resistivity of water	ASTM D 1125	IO-858 / IO-860
TURCO 5578	Manufacturer's procedure	IO-859

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APPROVED SCOPE (CONT.)

TEST/ ANALYSIS	TEST METHOD	INTERNAL PROCEDURE
Surface tension	AIPI 09-02-005	IO-861
TURCO ALUMIGOLD	Manufacturer's procedure	IO-862
Total water hardness	SM 2340 C	PR-809
Dissolved solids	UNE 77031	PR-825
Determination of Non-Volatile-Residue	AITM3-0038	PR-825

- ***METALLIC MATERIALS AND COATINGS***

OTHERS	
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 ASTM 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, pulvurence and visual inspection	IO-421 In house method
Metallographic preparation	ASTM E3