



Embraer
Empresa Brasileira
de Aeronáutica S.A.

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Supplier Qualification Report

Supplier: Applus Illescas
P.I. Las Carcavas II
Carretera de Toledo Km 33 Calle G
45200 ILLESCAS
Spain

Embraer's Representative:

-Luiz Edno Pereira

Supplier's Representative:

- Luís Guelbenzu de San Eustaquio (Quality Director)
- Elena O'Mullony Muñoz (Applus - Illescas Laboratory Manager)

Period: 25th and 26th of June of 2018

Registered to NadCap: Yes No

Registered to ISO 17025: Yes No

Results:

Embraer recognizes Applus - Illescas as approved supplier for material testing services.

In order to verify the supplier capability and expertise on materials testing, Embraer's Representative done a technical visit to Applus - Illescas facilities and evaluated all test related processes, including specimen preparation, dimensional inspection, instrumentation, testing execution, failure inspection and test reports.

Embraer issued this Approval after a complete evaluation of test processes above and examination of all quality system, management system, equipment, technical staff and international accreditations (NadCap and others).

List of Approved Test and Services

-Non-metallic materials / Composites –Mechanical Testing:

- Tensile Strength and Modulus
- Compression Strength and Modulus
- Compression After Impact
- Combined loading compression (CLC)
- Tension After Impact
- In plane shear
- Interlaminar Shear (ILSS)
- Bending/ Flexural
- Fracture toughness (G_{IC})
- Bearing Strength
- Single and double lap shear
- Climbing Drum Peel
- Flatwise Tensile
- Specimen Conditioning
- Specimen Preparation (Panel fabrication, cutting, machining, tabbing)
- Optical microscopy
- Mechanical testing environment: Ambient/Non Ambient

-Non-metallic materials/Composites –Physical/Chemical Testing and Thermal Analysis:

- Density/Specific Gravity
- Fiber, Resin, Void Volume Content
- Fiber Aerial weight
- Flow
- Volatile Content
- Viscosity Liquid Resin
- Thermal analysis (DSC, DMA)

-Non-Destructive Testing (Panels / Test Specimen)

- Ultrasonic inspection (A-Scan, C- Scan)

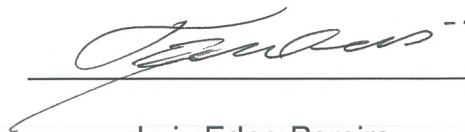
This approval includes the possible variations of these tests, covered by international standards (i.e. ASTM, EN), Nadcap Accreditations and according definitions of the Structures and Materials Engineering of EMBRAER S.A

Notes:

- As EMBRAER S.A approved supplier, Applus - Illescas can be audited periodically.
- Applus – Illescas shall supply NADCAP accreditation scope after each NADCAP audit or every 2 years, whichever occurs first.
- This approval may be cancelled in case of major incidents detecting on one or more test methods.



Toni Douglas da Gama de Souza
Laboratories Quality Manager Embraer



Luiz Edno Pereira
Materials Eng – Chief Engineering Office