



**Embraer  
Empresa Brasileira  
de Aeronáutica S.A.**

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Brasil

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## Supplier Qualification Report

**Supplier:** Exova Toulouse

Address: 3 avenue André Marie Ampere  
ZAC du Perget  
31770 Colomiers, France

**Embraer's Quality Representative:** Kilder Alves Gouveia

**Supplier's Representative:** Gérard Maraval

**Period:** 13<sup>th</sup> and 14<sup>th</sup> of November of 2014

**Registered to ISO 17025:**  Yes  No

### Results:

Embraer recognizes Exova Toulouse as approved supplier for material testing services.

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

This Approval is given after complete evaluation of test processes above and examination of all quality system, management system, equipment, technical staff and accreditations (i.e. NadCap).

## List of Approved Test and Services

### **-Metallic materials – Mechanical, Metallographic and Corrosion Testing:**

- Tension
- Compression
- Bearing
- Shear
- Bending, Flexure
- High Cycle Fatigue
- Low Cycle Fatigue
- Fatigue Crack Growth
- Fracture Toughness - KIC, K-R Curve
- Fasteners and Joints (tensile, fatigue and shear)
- Charpy impact
- Metallographic/Metallurgical Analysis
- Hardness
- Microhardness
- Salt Spray
- Chemical Composition determination
- Specimen Preparation
- Specimen inspection
- Failure Analysis

### **-Non-metallic materials / Composites –Mechanical Testing:**

- Tensile Strength and Modulus
- Compression Strength and Modulus
- In plane shear
- Interlaminar Shear
- Flexure (Bending)
- Fatigue
- Fracture toughness (GIC)
- Bearing
- Pull-through
- Single and double lap shear
- Peel metal-metal
- Micrographic (up to 1000x), Image Analysis system
- Specimen Conditioning
- Specimen Preparation (cutting and machining )
- Specimen inspection
- Failure Analysis

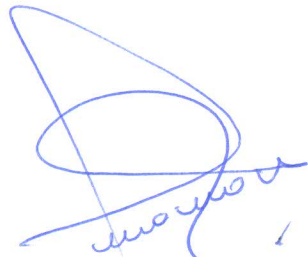
### **-Non-metallic materials/Composites –Physical/Chemical Testing and Thermal Analysis:**

- Thermal analysis (DMA)

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

Notes:

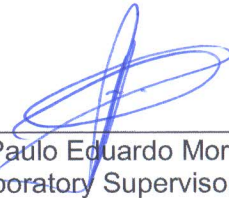
- As EMBRAER S.A approved supplier, Exova Toulouse will be audited periodically.
- This approval may be cancelled in case of major incidents detecting on one or more test methods.



Maurisergio Moraes  
Gerência da Qualidade  
Embraer

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Maurisergio Moraes de Melo  
Product Quality Manager - Embraer



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Paulo Eduardo Moreira  
Quality Laboratory Supervisor - Embraer