EMBRAER

Embraer
Empresa Brasileira
de Aeronáutica S.A.

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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: 13th and 14th 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)
- Chapy 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
- Pell 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.

Maurisérgio Moraes
Gerência da Qualidade
Embraer

Maurisergio Moraes de Melo
Product Quality Manager - Embraer

Paulo Eduardo Moreira
Quality Laboratory Supervisor - Embraer