AERONAUTICAL Qualification

Expertise - Reactivity - Availability

The Emitech Group is a major actor of the qualifications in the aeronautical sector. Known and recognized for their know-how, our laboratories are equipped with means and skills to lead complete qualifications. Our test capacities, allow us to control your deadline and schedule imperatives.

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EMITECH: laboratories with complementary activities

Emitech offers you a comprehensive service concerning your qualification needs in different fields such as: EMC, Electrical Tests, Lightning, Climatic, fire and Reliability. Our methods & technology are in accordance with the most demanding standards & specifications.

A support at every step of your projects

Emitech can help you to manage a key point of your qualification: the identification of costs & deadlines. Our services in Engineering intervene in all the steps of your project: from the training courses of your team to the specific missions such as file analyses, technical or normative researches, design assistance right up to the assistance with manufacturing.

Exceptional Tests Equipment & Closeness Services

Our aeronautical test equipments are spread throughout our centers in France, permitting Emitech to offer the highest level of service on the market. The whole equipment concerning the more specific demands (lightning, high intensity radiated field, tests benching 800 Hz, EMC Rooms, shakers 105kN, chamber 93m³, …) remains unique in Europe.

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ELECTROMAGNETIC COMPATIBILITY

- Voltage subtransients and specific waveforms by direct injection or by coupling
- Power supply interferences
- Electric (AC/DC) and climatic (.70°C/ 180°C) combined tests
- Low frequency immunity on power supply
- Feasible tests on AC and DC from 50 Hz to 800 Hz (rack 4SVA x3 according to AIRBUS, BOEING, DO 160/F/G section 16)
- Harmonic measurements

Lightning
- Amplifiers, transformers, inductors and generators according to:
  - RTCA DO 160 C/D/E/F/G, AC 20-136; ABD 0100.1.2
- Waves Generators, Multiple Stroke & Multiple Burst according to waveforms:
  - WF 1: 4 s, 6,4/70 µs - WF 5B: 50/500 µs
  - WF SA: 40/120 µs - WF 2: 0,1/6,4 µs
  - WF 3: 1 MHz and 10 MHz - WF 6: 0,244 / 4 µs - up to level 5 of DO 160 and even beyond in WFSF (ABD Airlevel)

Combined test chambers
- Number: 6
- Temperature: -70 up to +150 °C
- Rapid variation temperature: 20°C/min
- Relative humidity: 20 to 100 % Hr
- Software monitoring, remote alarms

Hydraulic shakers
- Number: 12
- Frequency: 0 to 300 Hz
- Force: 200 kN
- Displacement: 300 mm
- Table dimensions (mm): 3000 x 3000

Piezoelectric shakers
- Number: 2
- Frequency: 2 kHz to 50 kHz
- Force: 50 kN
- Max acceleration: 100 g

Salt spray chambers
- Number: 8
- Workspace: 0,4 to 13 m³

Climatic chambers
- Number: 60
- Workspace: from 0,1 to 93 m³
- Temperature range: -70 to + 650 °C
- Rapid variation temperature: 20 °C/min
- Relative humidity: from 10 to 100 % HR

Shock machines
- Number: 8
- Acceleration: 5 000 g* - 10 000 g **
- Max mass: 900kg *
- Table dimension (mm): 900 x 900 *
- * free fall **pyrotechnic shocks

Centrifuges
- Number: 4
- Acceleration: 400 g
- Max diameter (mm): 3000

Specific tests
- Contamination by fluid
- Sunlight
- Altitude and rapid decompression
- Solar radiation
- Cooling
- Wind-milling
- Wind and rain
- Sand and dust
- Icing
- Static mechanical tests up to 1500 kN
- Fire testing

Hydraulic
- Test means for equipment with various fluids* from -70 up to + 600 °C (ambient)
- Oil heater, hand-pumps, glycol refrigerated unit, ...
- Air heater, warm chamber, valves 454°C – 60 bar, ...

Air
- Pressure/vacuum bench: 0,1 to 2 bar
- 5 pressure/vacuum chambers
- Air boilers 250 to 300°C – 1 air boilers (fuel)
- 650 kW

Water
- 650 kW
- 1 pressure/vacuum bench: 0,1 to 2 bar
- 9 pressure/vacuum chambers
- Water boilers 250 to 300°C – 1 water boilers (fuel)
- 650 kW

Air
- Pressure/vacuum bench: 0,1 to 2 bar
- 5 pressure/vacuum chambers
- Air boilers 250 to 300°C – 1 air boilers (fuel)
- 650 kW

Specific measurements
- Voltage
- Current
- Rotation speed
- Micro curl
- Thermal camera
- Laser vibrometry
- Strain gauges

FLAME penetration cargo liner
Tests carried out according to standards: FAR25 Port 25 appendix F, FAR 25.855; AIRBUS METHODS ABD 0031, 2.0010

Fire Hazar test
We simulate fires in controlled environments to demonstrate the ability of the tested systems to maintain their operating conditions despite the presence of a fire in a specific area (hold, hydraulic sheet, passenger baggage compartment)

- In the design development process, by improving the product’s robustness being focused on the operating & destruction limits;
- In the manufacturing process, by removing the latent defects & validating the process & source of supply.

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