



Materials Characterization

MECHANICAL TESTING
PHYSICOCHEMICAL CHARACTERIZATION
FATIGUE
AGEING/DURABILITY



Accreditation N°1-1995.
Scope available on www.coefrac.fr



Mechanical Testing

(-120 °C to +560 °C)



Tensile

- Young modulus
- Shear modulus
- Poisson ratio
- Yield strength

Traction on composites

Bending (3P&4P)

Compression

Test on bonded assemblies

- Shear, QC
- Peeling
- Spalling

Interlaminar shear

Impulse strength

Abrasion test

Hardness testing

Paint strength, etc.



Endurance Tests on Materials and Assemblies

Service or strain tests

Low-cycle endurance tests

Wohler curve

Creep

Relaxation

Test in temperature

(-120 °C to +560 °C), etc.



Tests are based on NF, ISO, ASTM, and DIN;

Thermomechanical and Physicochemical Analysis

Porosity

Density

Fiber and resin content

Moisture content

Measurement of Tg, Tg δ , E', E" by DMA

Measurement of Tg, Cp by DSC

Mass loss = f(T) by TGA

CTE by TMA

Thermal diffusivity and conductivity = f(T)

Electrical conductivity

Control of prepreg (Kinemat)

Residual monomers

Lubricating controls

Control of resins

Control of polymerization rate

Control of fluids



Weathering

Thermal cycling/Moisture cycling

UV A and B ageing

Saline spray test

Thermal shock

Heat Recovery Ventilator (HRV)

Immersion

- Fuels
- Fluids (Skydrol, etc.)
- Acids
- Bases



Automobile and Aeronautic standards

Production and Preparation of Specimens

Specimen machining

Production of bonded assemblies

Rapid prototyping

Supply of all test materials

- Steel
- Aluminum
- Composites
- Plastic and rubber
- Glass
- Concrete
- Wood, etc.

Surface preparation and treatments

- Sandblasting
- Cryogenic sandblasting
- Plasma
- Laser
- Flame treatment
- Corona
- AOC, AOS, etc.



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Accreditations:

NF EN ISO/CEI 17025: 2005

NADCAP «Non Metallic Materials Testing»

Certifications

ISO 9001: 2008

Qualifications:

AIRBUS

SAFRAN (FAL N° 518)

General Electric

*Court-appointed expert by first instance
and commerce court of Bordeaux*



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