



ADDITIVE MANUFACTURING TESTING CENTER



WE MAKE YOU FEEL SURE

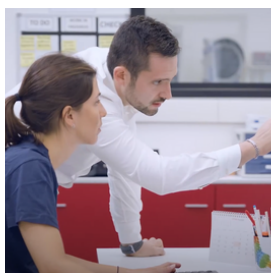
TEC Eurolab is a competent, independent and impartial third-party industrial laboratory, accredited UNI CEI EN ISO/IEC 17025:2018, 17024:2012 and 17065:2012 standards, which guarantee its competence, independence and impartiality. NADCAP accreditation and UNI EN 9100:2018 certification also attest to its expertise in the aerospace and defence industry.

Since 1990, with over thirty years of experience, we have become a multidisciplinary centre of excellence for materials analysis, non-destructive testing, training and certification. We assist manufacturing companies in gaining and verifying the maximum performance of products and processes, with safety and quality.

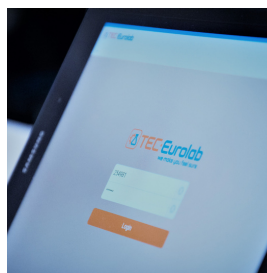
We are here to help you find the best solution to your needs.



TESTING

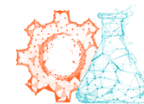


TRAINING



CERTIFICATION

ADDITIVE MANUFACTURING TESTING CENTER



YOUR CHALLENGE

Additive technologies are acquiring an increasing importance in the industrial production and in different fields of application.

This is possible thanks to the numerous potentials they offer in terms of design freedom, speed, absence of molds. However, to have quality products, their use as a manufacturing system requires the development of all the numerous aspects that contribute to the result:

- material used
- validity check of the printing parameters
- piece arrangement in the work chamber

OUR SOLUTION

In a sector not yet regulated or standardized such as the Additive Manufacturing, knowledge of the technology represents an important opportunity for companies that want to guarantee the quality of their 3D printing products and processes. TEC Eurolab supports companies in the transition from traditional industrial processes to additive manufacturing, following them along the entire process of experimentation, industrialization and qualification.

For instance, TEC Eurolab can provide companies with valuable support both in the characterization of materials, through multiple static and dynamic tests, and in the analysis of the finished component. Thanks to the consolidated experience and the synergy with which the various departments operate and the provision of advanced instrumentation, the center provides specific information, performs tests that comply with standards, accompanies the customer in evaluating the results of the analysis and suggests possible improvements to be made to the project or additive manufacturing process settings. The support offered to companies begins already in the pre-analysis phase, when the project is started together with the customer, to continue in the test phases and, subsequently, with the analysis of the test results.

QUALITY ACCREDITATIONS

NADCAP: SAE Aerospace Standard AS7003 for Material Testing, Non Destructive Testing, Aerospace quality systems

EN 9100:2018 for test laboratory for the aeronautical and aerospace industry - UNI EN ISO 9001:2015 (SAI GLOBAL)

UNI CEI EN ISO/IEC 17025:2018 - material testing laboratory UNI CEI EN ISO/IEC 17024:2012 -UNI CEI EN ISO/IEC 17065:2012 , certification of personnel and services (welding, ATP, NDT, F-Gas, ISO 3834) - (ACCREDIA)

NOTIFICATION BODY NB2770: as per Regulation (EU) 305/2011 for FCP Certification.

CUSTOMER APPROVALS

GE AVIATION

SAFRAN LANDING SYSTEM

LEONARDO SPA

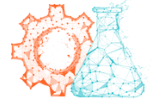
AVIO AERO

AVIO SPA

ELBIT SYSTEMS

THE BOEING COMPANY

ADDITIVE MANUFACTURING TESTING CENTER



TEC Eurolab can support customers in every step of their productive process, from the concept to the finished product, thanks to R&D, Testing and Certification services.

CUSTOMER PROCESS AND OUR SOLUTIONS

CONCEPT

- GUIDELINES
- SUPPORT
- TRAINING

DESIGN

- DESIGN FOR ADDITIVES
- FEA SIMULATION
- TOPOLOGICAL OPTIMIZATION
- DEFINITION OF THE CRITICAL DEFECT
- TECHNICAL SPECIFICATION
- SUPPORT FOR PLATING

INDUSTRIALIZATION

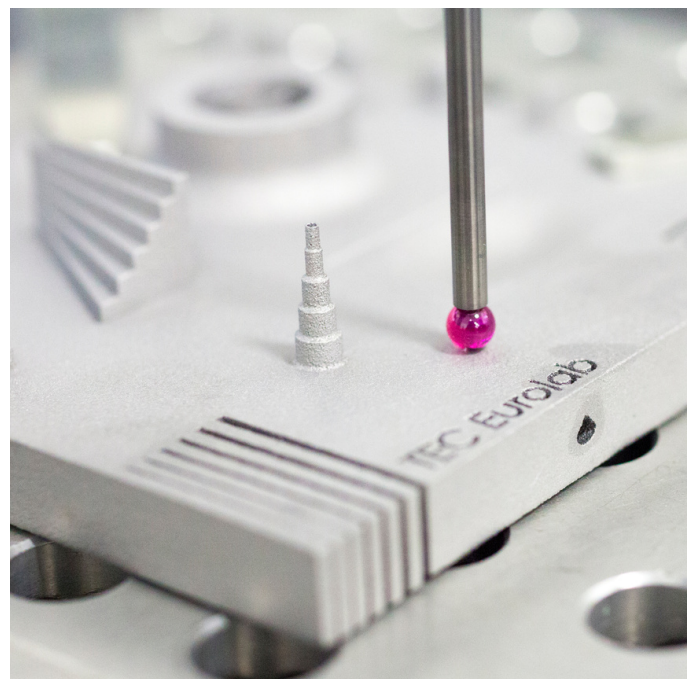
- MATERIAL TESTING
- NON DESTRUCTIVE TESTING
- DEFECT ANALYSIS
- LIFE EXPECTANCY IN SERVICE
- FUNCTIONAL TESTS

PRODUCTION

- POWDER ANALYSIS
- PROCESS QUALITY MANAGEMENT
- PROCESS CERTIFICATION
- IDENTIFICATION OF REPAIR PROCEDURES
- SERVICES

PERSONNEL QUALIFICATIONS

- UT-Pulse Echo and UT-Phased Array checks performed by qualified personnel at the II and III level ISO 9712 (general industry)
- RT Film and RT Non Film (Computed Radiography / Computed Tomography) checks performed by qualified personnel at the II and III Level ISO 9712 (general industry) - NAS 410 / EN 4179 (aerospace)



NON-DESTRUCTIVE TESTING INDUSTRIAL TOMOGRAPHY

6 MeV tomography system (LINAC)

450KV tomography system (minifocus)

240KV tomography system (microfocus)

Qualitative and quantitative defect analysis

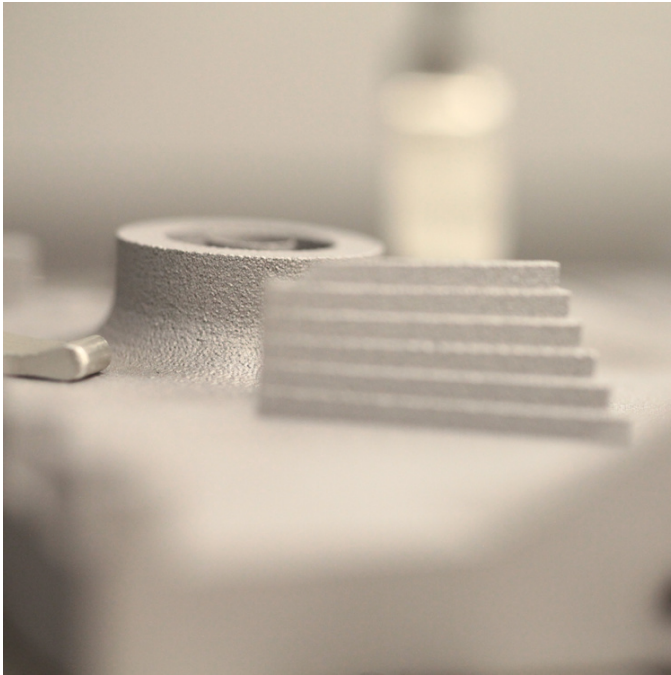
Dimensional analysis

Wall thickness

NON-DESTRUCTIVE TESTING FEM ANALYSIS

Static analysis

Dynamic analysis



NON-DESTRUCTIVE TESTING RADIOGRAPHIC INSPECTION

160KV and 320KV Radiographic inspection (RT, CR, DR)

2D X-ray NADCAP inspection system

NON-DESTRUCTIVE TESTING METROLOGICAL AND DIMENSIONAL ANALYSIS

Quality check

Surface roughness analysis

Dimensional surveys by CMM and Laser

Controls according to ISO / ASTM 52902 (Geometric capability assessment of additive manufacturing systems)

Reverse Engineering

Gage R&R

Statistical process control (SPC)

FUNCTIONAL TESTING

Test Engineering (fluid dynamics, pneumatics, oleodynamics, thermal dynamics) and customer technical support for defining test specifications.

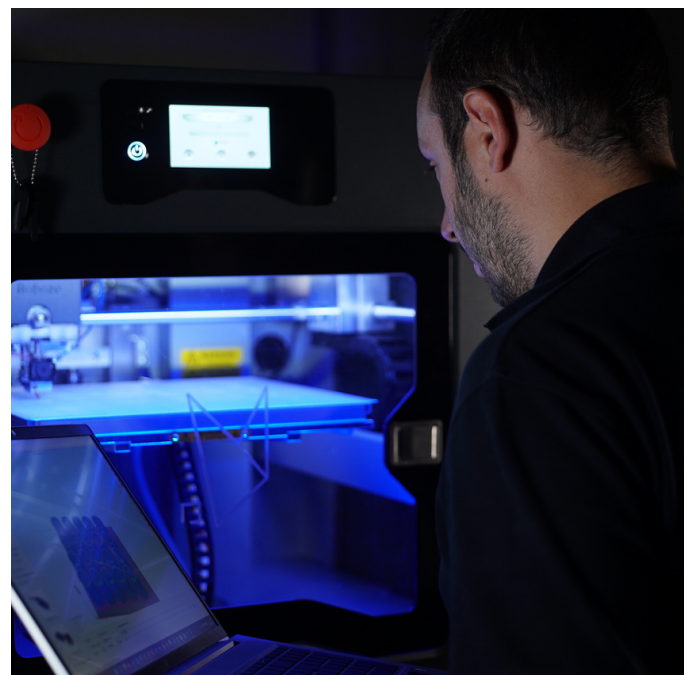
Environmental and functional tests

Mechanical-dynamic Endurance tests on finished or developing components

Endurance tests by pneumatic and hydraulic pressurization with leak check

Deformation analysis by Strain Gauges on components

Thermal shock



CHEMICAL AND PHYSICAL ANALYSIS

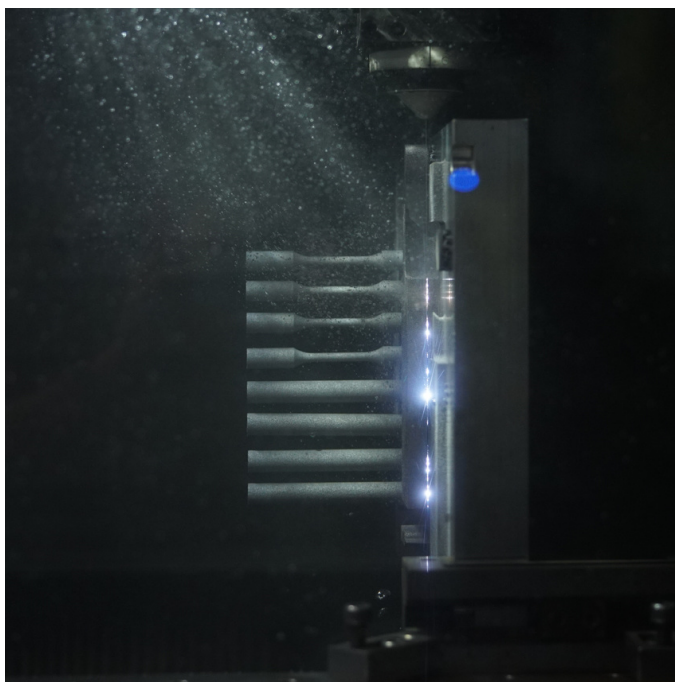
Specific chemical analysis (ICP + Combustion + NOH + CS)
X-Ray fluorescent (XRF)

Granulometric distributions (laser + sieves) ASTM B822
Flow rate ASTM B213

Tap density / Apparent density ASTM B212

Humidity content determination

Density according to ASTM B962



MECHANICAL WORKINGS

Preliminary cutting stations with automatic and semiautomatic equipment

Automatic and semiautomatic lathes and milling machines

CNC workstation

EDM wire cutting

Longitudinal polishing (custom machine)

METALLOGRAPHIC TESTING

Automatic Metallographic Polishing System

Analysis with optical microscopy

Metallography Inspection

SEM metallography and comparative microanalysis
Residual stress

Evaluation of the HIP and HT effects

Macro and micrographic examinations

Brinell hardness test ASTM E10

Rockwell hardness test ASTM E18

Failure Analysis

MECHANICAL TESTING

Resilience tests according to ISO 148-1, ASTM E23 and ASTM A370

Static tensile tests @RT ASTM E8 / E8M, ISO 6892-1

Tensile test from -40 ° to 1200 ° C ASTM E21, ISO 6892-2

Fatigue test @RT a 1200°C ASTM E466, ASTM E 468, ASTM E606, ISO 1099, ISO 12106

Bearing strenght test ASTM E238

Shear strenght test ASTM B769

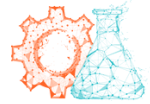
Compression strenght test ASTM Eg

Fracture mechanics tests even at temperature according to ASTM E647, ASTM E1820 / E399, ISO 12737 and ISO 12108

Rapture and creep stress tests up to 1200 ° C according to ISO 204, ASTM E139, ASTM E292

Rotating bending @RT

ADDITIVE MANUFACTURING TRAINING AND CERTIFICATION



TEC EUROLAB ACADEMY TRAINING OFFER

TEC Eurolab Academy supports freelancers, quality control technicians, designers and engineers, with scheduled and custom training courses, with the aim of providing vertical skills based on the different phases of the 3D printing process in which they are involved.

The training program is divided into theoretical thematic modules, starting with the principles of additive technology, combined with practical modules related to risks, equipment cleaning and maintenance, up to specific modules for destructive and non-destructive testing.

THE CERTIFICATION IN THE FIELD OF ADDITIVE MANUFACTURING

The certification of skills represents an important opportunity for all those who intend to enrich and add value to their curriculum. A sector such as that of Additive Manufacturing, in which strong growth and expansion has produced considerable theoretical and application knowledge, requires certified figures who can guarantee the possession of skills in the sector.

WHO IS THE CERTIFICATION FOR?

The certification is aimed at companies in the sector that want to guarantee the qualification and specialization of their staff, ensuring a higher quality of services and products offered to the market. The different certification profiles are therefore aimed at designers, operators, quality control technicians, but also freelance consultants in the sector who want to increase their knowledge and enrich their curriculum.

CERTIFICATIONS

After passing the certification exam, a performance and competences certificate with the respective license will be issued. A certificate of participation will also be issued at the end of the attendance of each thematic module of the training course.



OUR SITES

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