Tecnologie Avanzate

PRE-PREGS 3 AXIS CUTTING

These CNC machines are used for high speed and continuous automatic cutting of pre-preg materials, allowing T.A. to improve cutting process time and optimize the raw materials scrap.

CLEAN ROOMS

Due to the characteristics of the operations to be performed, Tecnologie Avanzate has special areas in which the FOD risk is minimized. Temperature, humidity, internal pressure ant powders content are continually kept under control.
In these areas the level of cleanliness is ensured daily and all parts introduced and the bearing structures are made so as to minimize the release of contaminating particles.
The people who work in this area have a special training addressed not only to the normal production activities but also behavioral norms and clothing to use.
In these areas are made the activities of bonding and layering on composite materials for manufacturing of composite parts until the completion of the final bag.

The staff is highly specialized and trained in the manual and automatic lay-up process of all composite materials. Especially in the handling of carbon fiber, glass and Kevlar.

AUTOCLAVES

Six autoclaves with several dimensions that are able to polymerize at low (130 ° C) and high temperature (up to a maximum of 450 ° C) with applicable pressures up to 10 bar and vacuum during the cure process up to -0.9 bar.
The cure process could be performed with nitrogen gas or air and the instruments panels allows continuous monitoring of all parameters.
These autoclaves allow Tecnologie Avanzate to cure parts with dimensions up to 48 ft x 11 ft x 11 ft.

THERMOPLASTIC CAPABILITY

Tecnologie Avanzate has the know-how and equipment to produce parts with long fiber and high temperature with thermoplastic technologies.
Thanks to a partnership with Leonardo Helicopter Division, we can manufacture aeronautic structural parts with this technology.
Tecnologie Avanzate is able to:
Thermoplastic raw materials' characterization and tests
Ancillary materials' characterization and tests
Complex prototypes
Production of final parts with PRESS or AUTOCLAVE process starting from pre-consolidate materials (PEEK and PEKK PPs)
Production of preconsolidate materials

TECNOLOGIE AVANZATE

CHIMICHAL TREATMENT

Thanks to the available technologies and to fully automatic machines, Tecnologie Avanzate can carry out the chemical surface treatment of Aluminum, Titanium and Steel, both as a finishing treatment and as a surface preparation for bonding. These processes could adapted to the various customers' needs.

NDI ULTRASONIC INSPECTIONS

Our organization has equipment able to perform non-destructive inspections of any parts made with composite materials with several geometries.
The inspections that can be performed are:
Bonding/porosity inspection with pulse-echo method.
Bonding/porosity inspection with trough transmission and phased array methodWith our equipment we can inspect parts with no limit on dimensions.

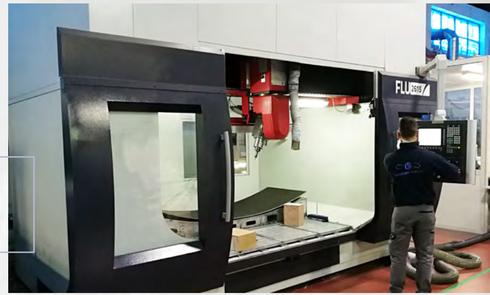
Tecnologie Avanzate

TRIM AND DRILL CNC OPERATIONS

Tecnologie Avanzate is equipped with several 5 axis cnc machines that allow the trim and drill operation on parts with dimensions up to 48 ft x 8,5 ft x 3 ft.
The mechanics who work in this department are highly skilled and able to carry out all the trim and drill operations on solid laminated, honeycombs or metallic parts.
These machines are also used for the production of molds and equipment for the processing of composite materials, foam, epoxy resins and some metals.

LABORATORY CAPABILITIES

Our laboratory has a full NADCAP certification and Boeing qualifications.
The staff who work in this department are highly skilled and they can use advanced equipment to perform:
Acceptance and upgrading of pre-preg materials (unidirectional or woven) as fiberglass, carbon fiber, kevlar, molding compounds, paste film and liquid adhesives.
Destructive tests on samples taken from sacrificial production details.
The laboratory can perform all Mechanical and Chemical test required for aerospace industries.



Engineering Capability

First part qualification
CAD analysis and design
CNC Programming
Reverse Engineering
FEM analysis
Manufactory process definition end FAI
CNC Programming
Manufactory plan
Tool design

Tecnologie Avanzate

Main Mission

Tecnologie Avanzate s.r.l. is an Italian company with twenty-year reputation, expertise and technologies for the production of structural and not structural parts made with composite materials for the aerospace industry.

The main production targets are:
Complex laminates made with carbon or glass fiber and epoxy resin
Composite Shim and fillers
Sandwich structures with honeycomb core and carbon glass skins
Hybrid parts made with metal and composite
Assemblies of major and minor aerospace structures

QUALITY CERTIFICATIONS

Third Part Certificate	Issued by
✓ UNI – EN 9100 : 2016	SAI Global S.r.l.
✓ UNI – EN ISO 9001 : 2015	SAI Global S.r.l.
✓ AC7114, AC7114S – AC7114/3, AC7114S	Nadcap NDT
✓ AC7118	Nadcap Composite
✓ AC7122/1/2/3/4/P	Nadcap NMMT

Second Part Certificate	Issued by
PROCESSOR BAC5578 - BAC5317 - BAC5980	Boeing
✓ CMP-025 Realization of composite parts ✓ DMF-001 Medium Level DMFG Capability ✓ MCG-000 General Machining ✓ MCG-006 Composite Machining ✓ SVP-007 Material Laboratory Service	Leonardo Helicopters Division
✓ H3: Suppliers of production workers Milling (Shims 787) ✓ C2:Subcontracting applicant materials directly purchased ✓ C3: Subcontracting applicant materials co/work ✓ D1: Design and manufacture of equipment ✓ G1: Laboratory test	Leonardo Aerostructures Division

REFERENCE

ThalesAlenia Space

AVIO ADVANCED VISION INTO ORBIT

BOEING

Kawasaki

LEONARDO ...and other

Tecnologie Avanzate

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twenty-year of reputation,
expertise and technologies for the production
of structural and not structural parts made with
composite materials for aerospace industries