6th International Carbon Composites Conference
Arcachon – June 4 to 6, 2018

Presented by:

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a SOGECLAIR company

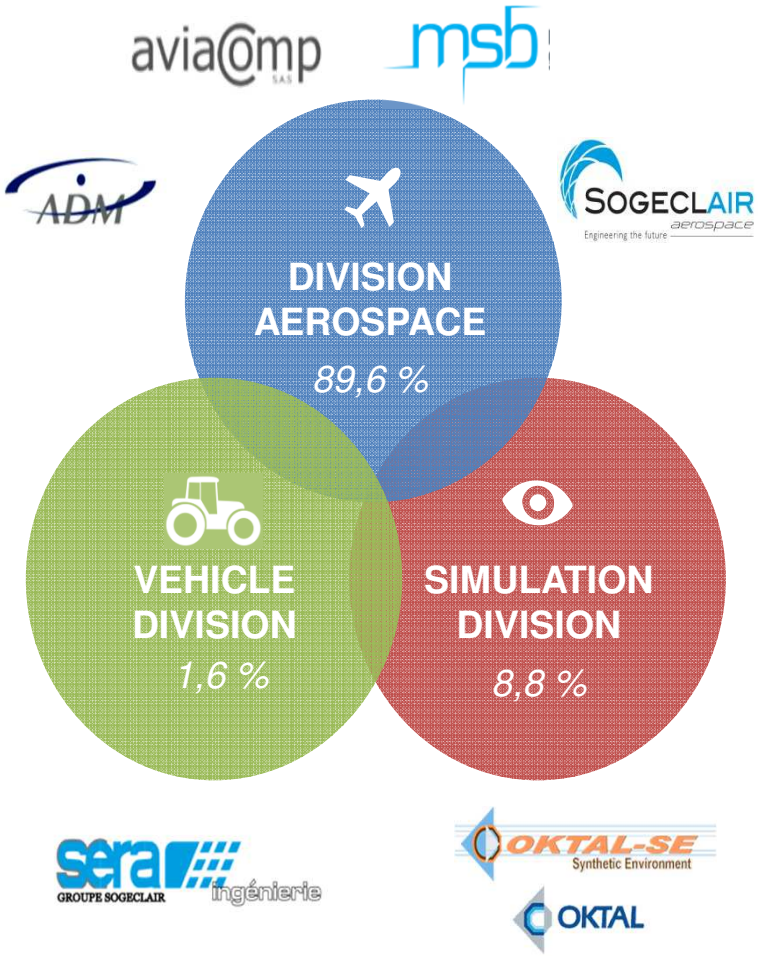
SOGECLAIR overview

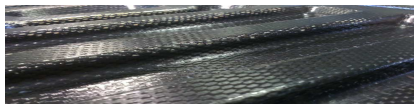
CA of 147,3 millions euros in 2017

Growth of 7,9% since 2017

1 400 employees

Familial company listed on NYSE Euronext Paris





Aviacomp's historical

- Creation on May 2008
- Installation in Launaguet : June 2009
- Win A350 XWB FTACs WP: November 2009
- Win Bombardier FTAPs WP : November 2010
- Win A350 XWB Floor program : June 2013
- Installation in Saint Martin : November 2015
- Shareholder : 100% SOGECLAIR – April 2016
- All means in Aviacomp manufacture: 2016
- All means qualification : 2017

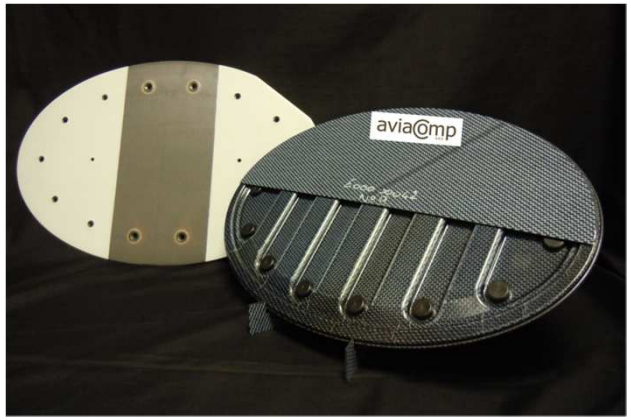
afaq ISO 9001 Qualité AFNOR CERTIFICATION

afaq EN/AS/JISQ 9100 Aéronautique AFNOR CERTIFICATION

EASA European Aviation Safety Agency

Federal Aviation Administration

FR.21.G.0253



2015

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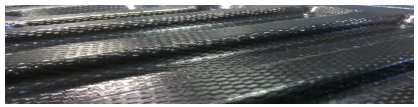
Tel. 05 31 08 16 67 Fax.05 62 79 87 88
www.aviacomp.fr



AVIACOMP network

Aviacomp part of Thermoplastic Aeronautical and spacial French Industrial group (GIFAS)

AIRBUS STELIA SAFRAN arianeGROUP DASSAULT AVIATION

Spécification and Validation

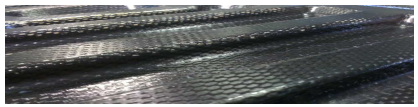
Ecoconception and products manufacturing

Recycling

Manufacturing and assembly technologies

TP Semi products + continuous fibres

New TP matrix



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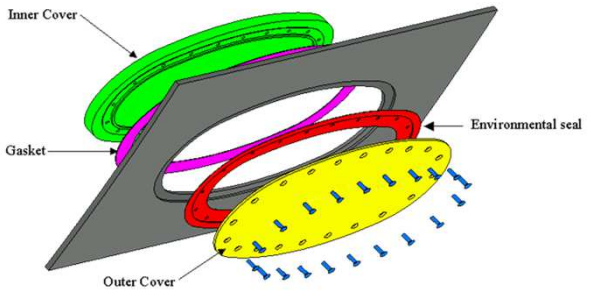
Fuel Tank Access Doors

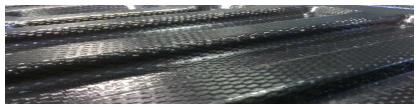
Origin : EADS.com

A350 Wing Lower Cover



Fuel Tank Access Doors using composite carbon fiber with thermoplastic matrix and induction welding technology
Around delivery 1000 sets per month

CS25 fully compliant with carbon wings



End to end solutions

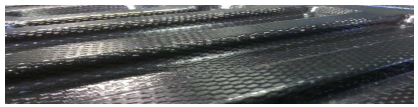
The company expertise involves :

Design
- Innovative and Complex architecture
- Design to cost approach and cost/weight trade-off
- Stress analysis: Static, Fatigue, FEM

Industrialization & Processes
- Innovative Processes
- Processes Qualification

Product qualification
- Development of tests and means
- Support for FAA and EASA certification

Serial Production
- High rate production

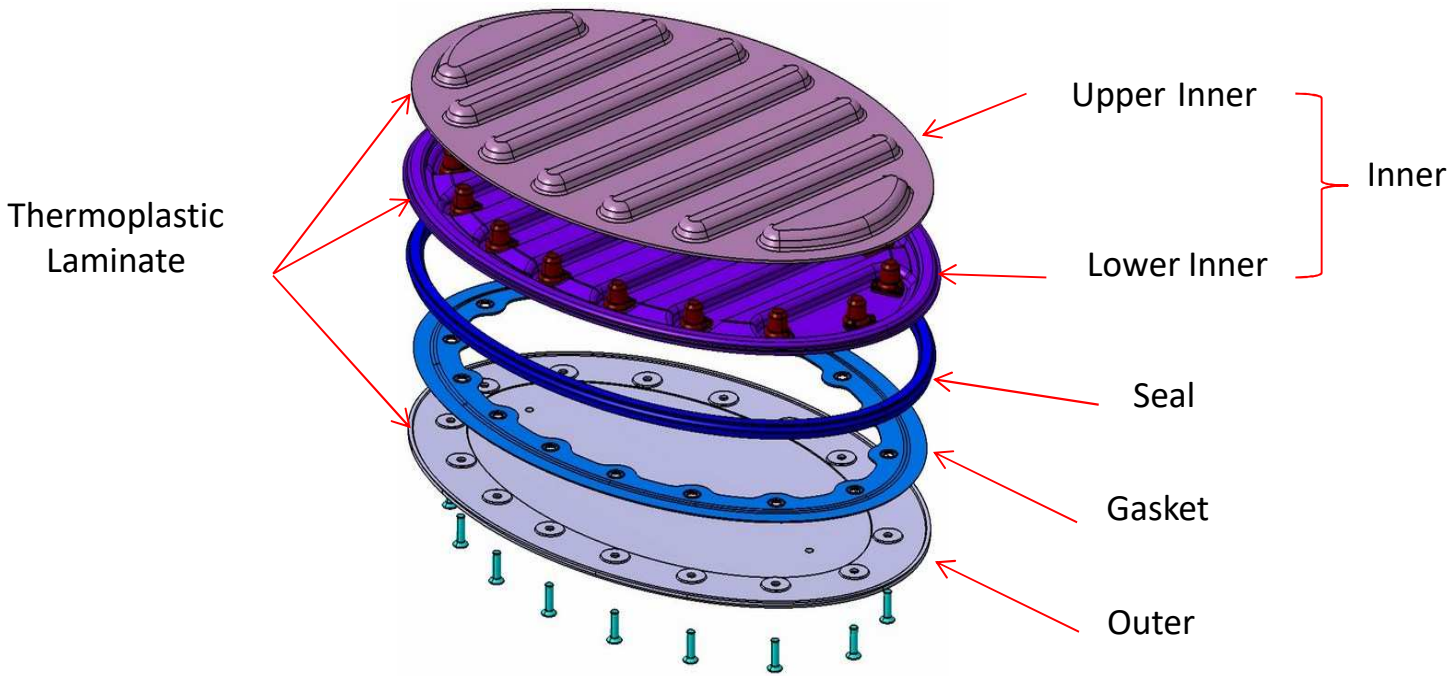


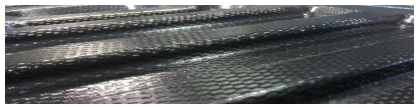
FTACs Design

Design

- Innovative and Complex architecture
- Design to cost approach and cost/weight trade-off
- Stress analysis: Static, Fatigue, FEM

Design develop by AVIACOMP:





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FTACs processes

Industrialization & Processes

- Innovative Processes
- Processes Qualification

Non Destructive Inspection

Thermostamping

Consolidation Out of autoclave

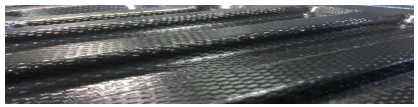
Waterjet cutting

Overmolding

Manual lay up

Induction Welding

Thermal Welding



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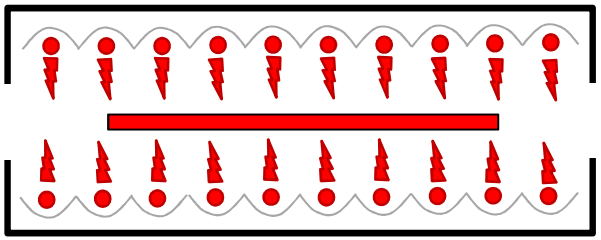
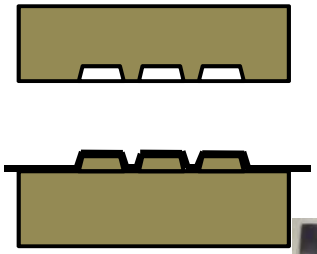
SOGECLAIR

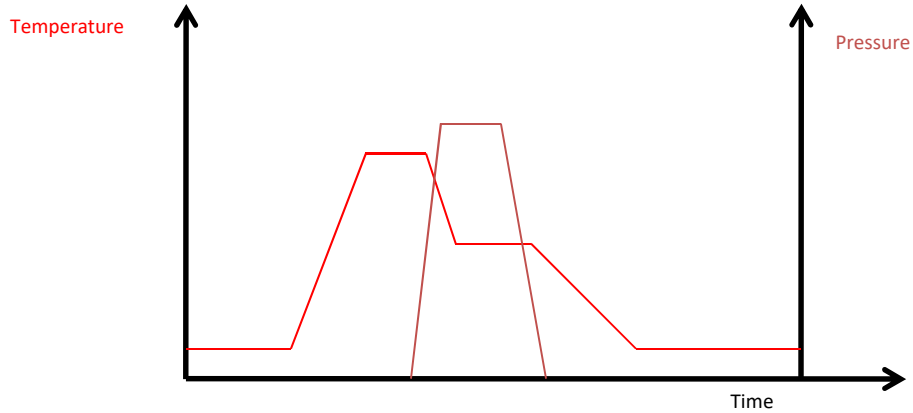
Thermo-stamping

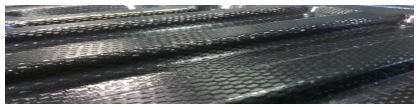
IR-Oven



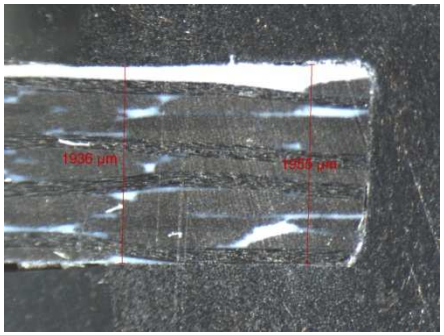
Press

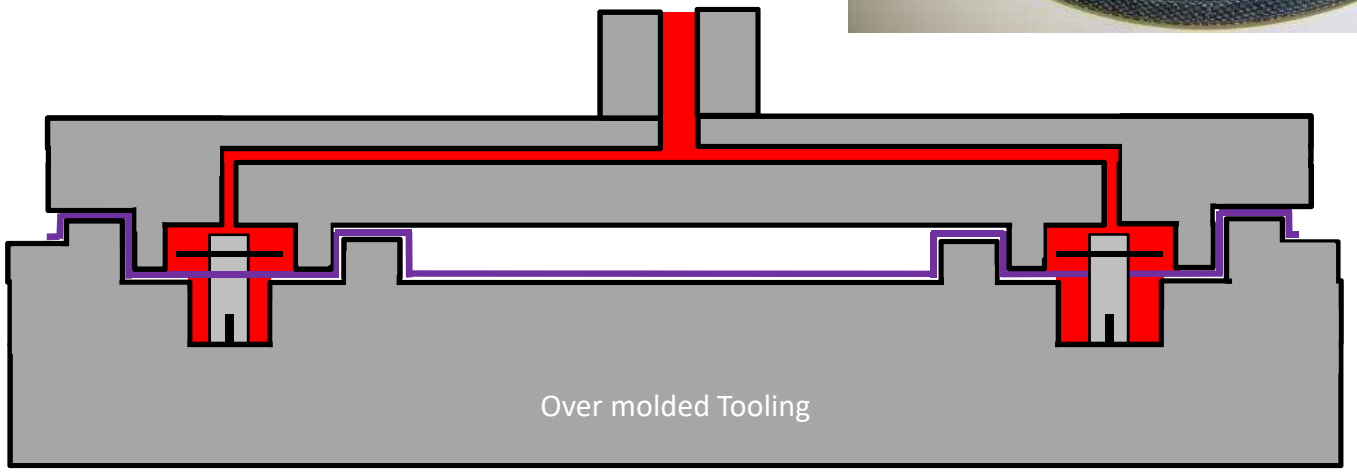


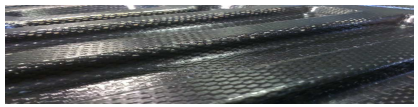




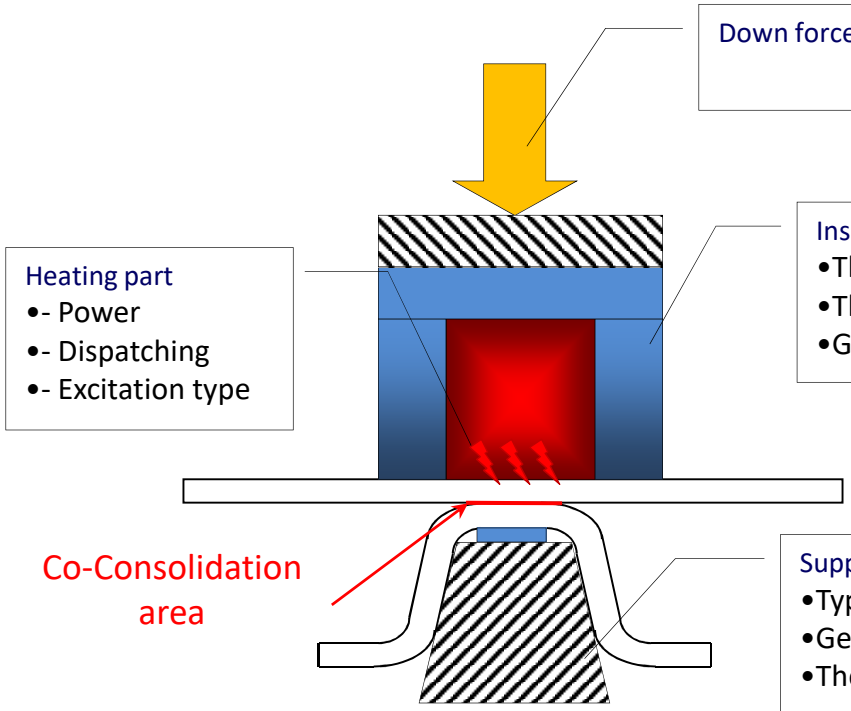
PEEK/CF Over-molded injection principle

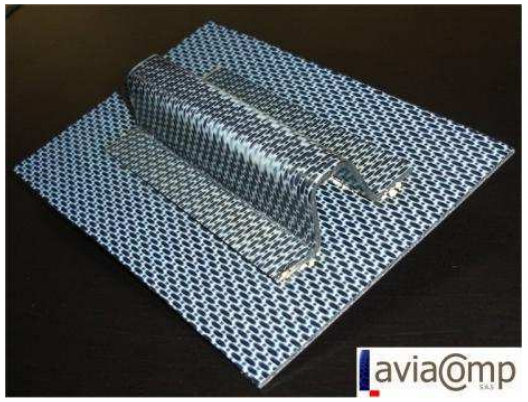


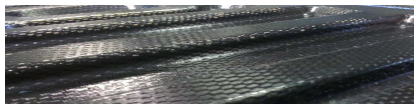




Thermo-welding





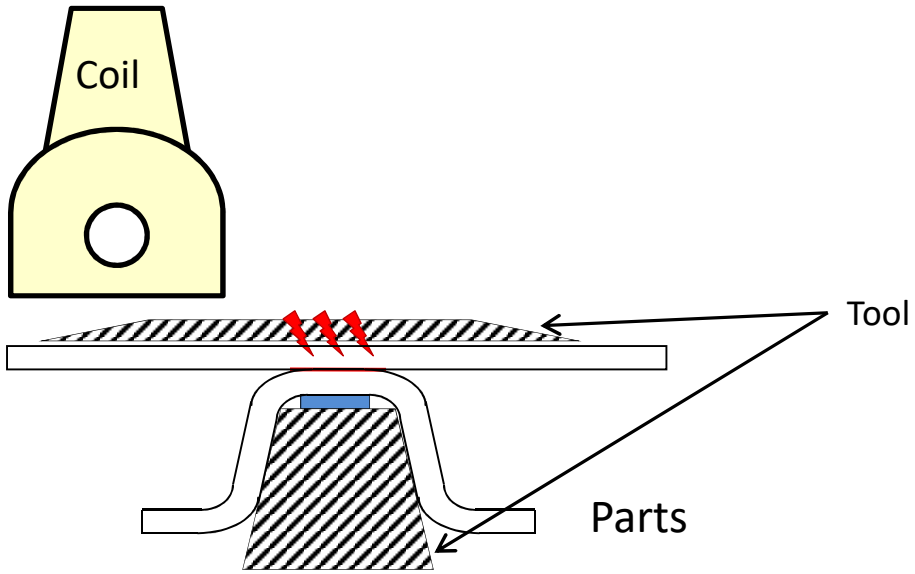


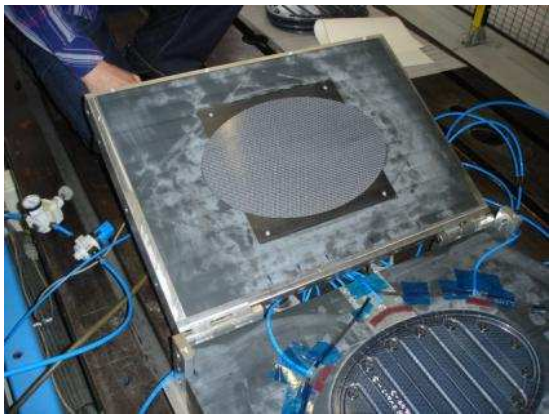
Induction welding

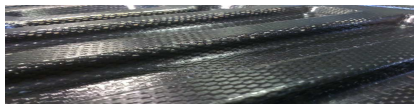
The robot move the coil according to trajectory defined by the welded area.

Process under patent and developed in collaboration with KVE

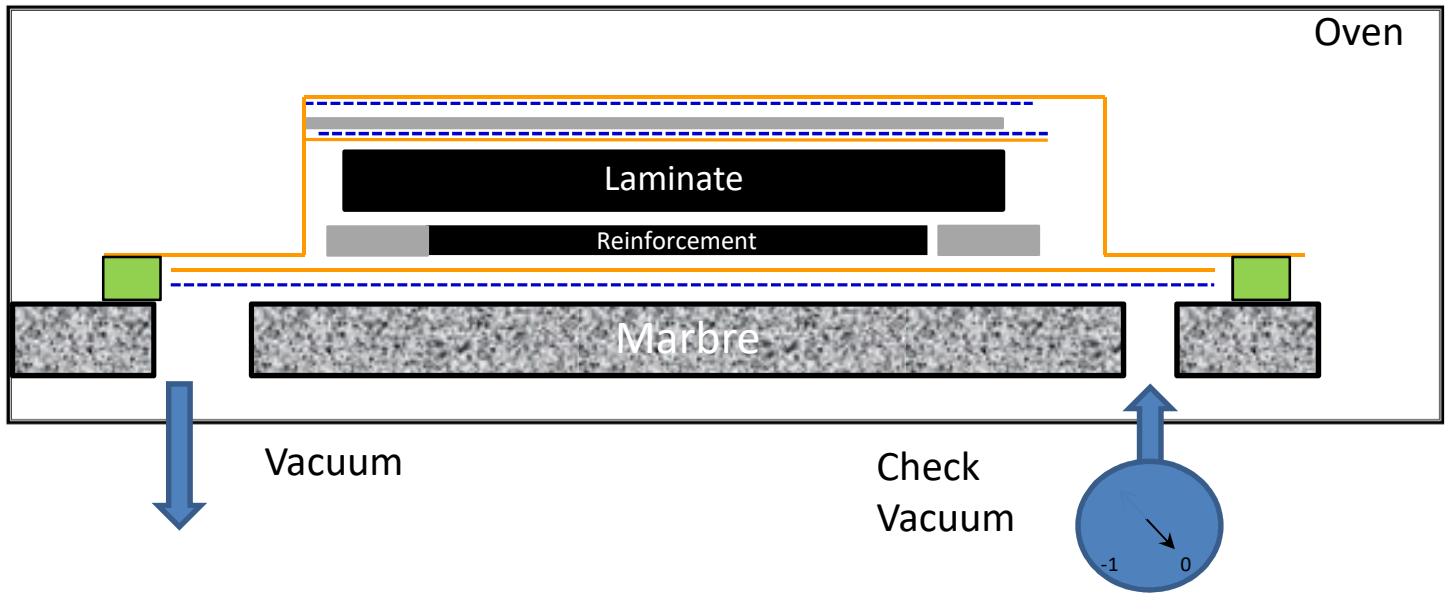
KOK & VAN ENGELEN COMPOSITE STRUCTURES BV

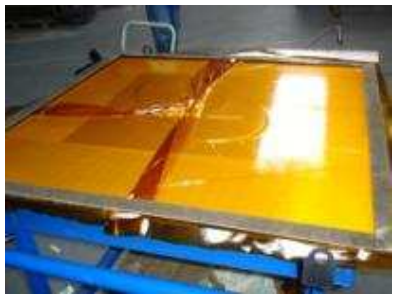


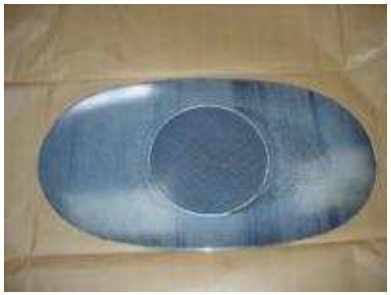


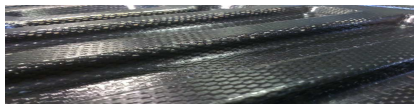


Consolidation out of autoclave







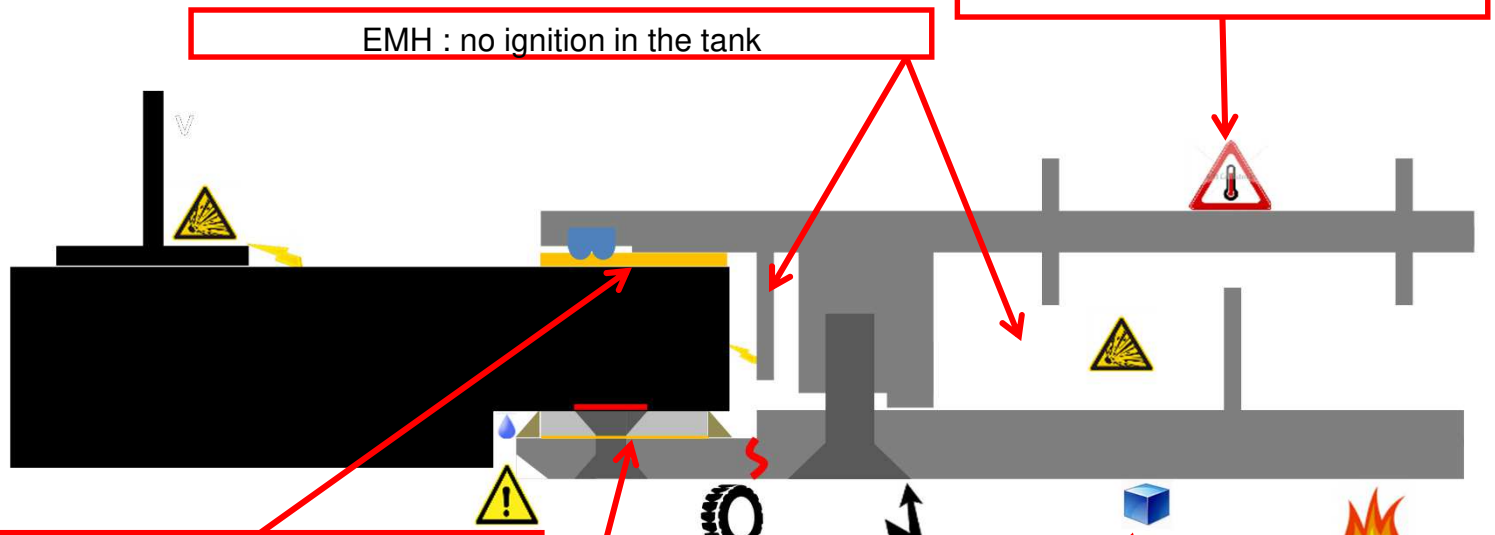


Main FTACs requirements

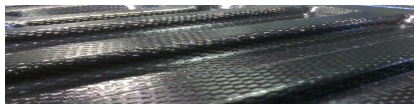
Product qualification

- Development of tests and means
- Support for FAA and EASA certification

Main impact depending on wing location :



Certification skills on complete delegation from Airbus



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Main FTACs requirements

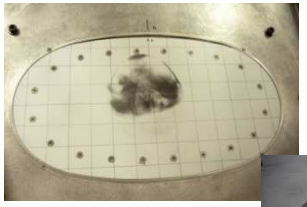
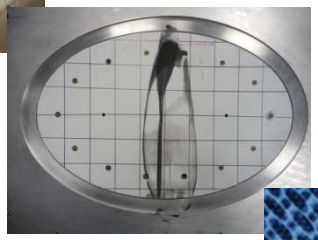
Product fully qualify by tests

Aviacomp have developed tests and means with collaboration of laboratories to qualify FTACs

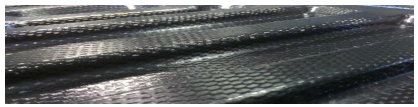
- Tyre Impact
- Uncontained Engine Rotor Failure
- Fire Test
- Lightening strike test

Certification skills on complete delegation from Airbus





Thank for you attention

For any question do not hesitate to contact me:

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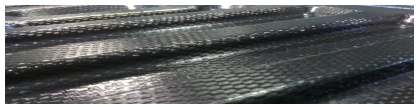

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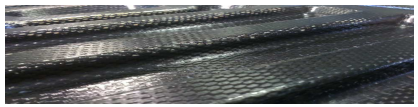

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Aviacomp facilities

Manufacture of thermoplastics composites

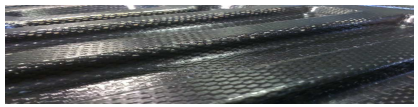
Thermo stamping
450°
175 Tonnes

Fully automatized
Thermo stamping
450°
200 Tonnes

Thermo welding
450°
175 Tonnes

Thermo welding
350°
15 Tonnes

Automatized
Induction Welding
Robot 6 axis
Accuracy 0,3 mm



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Aviacomp facilities

Manufacture of thermoplastics composites

Consolidation
Out of Autoclave
450°
10 m^3

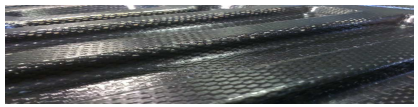
Consolidation
Out of Autoclave
450°
10 m^3

Consolidation
Out of Autoclave
450°
1 m^3

Fully automatized
Water jet cutting
Pressure > 4000 bar

- 6 x 2 m
- 4 x 2 m

Manual lay up
2 rooms
100 m^2



Control of thermoplastics composites

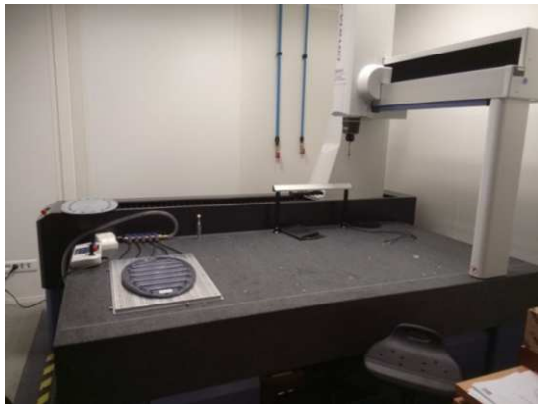
Automatic Cscan

Size : Length 2 m x Width 1 m

Manual Ascan

Automatic 3D Control

- Size : Length 1,6 m x Width 0,7 m x Height 0,6 m
- Maximum weight part : 1,5 T



Manual 3D Control

- Size : Radius 1,8 m