

Aerospace Environmental Control Systems



ITT

ENGINEERED FOR LIFE

Engineering Capabilities

ITT provides broad and complete engineering analysis, design and test capabilities to support our electric heaters, conveyance and noise control product lines.

Our engineering staff is built on a heritage of innovation in order to deliver enduring custom solutions to the global aerospace industry.

Engineering Design and Analysis

- Complex CAD modeling (Catia V5 and Solidworks)
- Acoustic silencer analysis, design and development
- Thermal analysis
- Pressure drop and flow analysis
- Air and material heater design

Advanced Manufacturing Techniques

- Pattern making
- Heated circuit etching
- Complex shaped composite layup methods
- Honeycomb bonded structures
- Composite-elastomeric-metal hybrid assemblies
- Innovative insulation operations
- Advanced sheet-metal assembly
- Welding (fusion and resistance)

Testing Capabilities

- Spectrum analysis and acoustics
- Acoustic attenuation and insertion loss
- Pressure drop
- Electrical and impedance
- Environmental
- Thermal
- Pneumatic and hydraulic pressure
- Radiologic inspection
- Ultrasonic inspection of composites
- Mechanical properties of materials
- CMM inspection

AS1900(c) and ISO9000:2008 registered and certified
FAA and EASA approved repair stations EFKR738K
NADCAP welding approved

Materials

Acoustic

- Acousti-Flo®
- Feltmetal
- Perforated Metal
- Absorptive Foams

Elastomeric

- Silicone
- Fluorosilicone
- Neoprene
- Nitrile
- Viton
- Buna

Composite

- Epoxy
- Phenolic
- Polyester
- Polyimide
- Graphite
- Bismaleimide

Carrier

- Fiberglass
- Nylon
- Niomex
- Dacron
- Kevlar
- Cotton

Metals

- Superalloys
- Aluminum
- Stainless Steel
- Titanium



Environmental Control Systems

Heaters

Freeze and Ice Protection

Applications

- Waste and water freeze protection
 - Valve heaters, in-line heaters
 - Tank heaters, wrap heaters
- Ram air inlet ice protection
- Wing and tail ice protection
- Propeller de-icing
- Drain masts

Air and Surface Heaters

Applications

- Door heaters
- Crew rest heaters
- Galley heaters
- Space heaters
- Floor heaters
- Foot warmers

Programs

- Airbus A380
- Boeing 737, 747, 757, 767, 767, 777, 787
- Bombardier CSeries
- Comac C919
- Embraer ERJ 135, 145, 170, 175, 190, 195
- Sukhoi SuperJet 100
- DeHavilland DHC-7/8
- Bombardier Lear 40, 45, 60, Challenger
- Dassault 7X, 900, 2000, SMS
- Gulfstream 280, 400, 500, 550, 600, 650
- Military C5, C17, F-18, V-22

Dielectrics

- Silicone
- Neoprene
- EPDM
- Teflon
- Kapton
- Polymides
- RTV
- Composites

Resistance Wire Heater Elements

- Copper and Bronze
- Balco
- Evanohm
- Stainless Steel

Etched Foil Heater Elements

- Copper/Nickel
- Inconel
- Monel
- Stainless Steel



We have the world's broadest set of product choices for aircraft environmental control systems.

Conveyance

ECS Elastomeric Hoses and Connectors

Product Capabilities

- Flexible hoses
 - SCAT, SCEET, CAT, CEET
 - AS504, 1544
 - MIL-H-52079, MIL-H-62028, MIL-H-62217
- Flexible duct connectors
- Specialty shapes and transitions
- Coupling covers
- Insulation and Insulation covers
- Rigid and flexible integrated parts

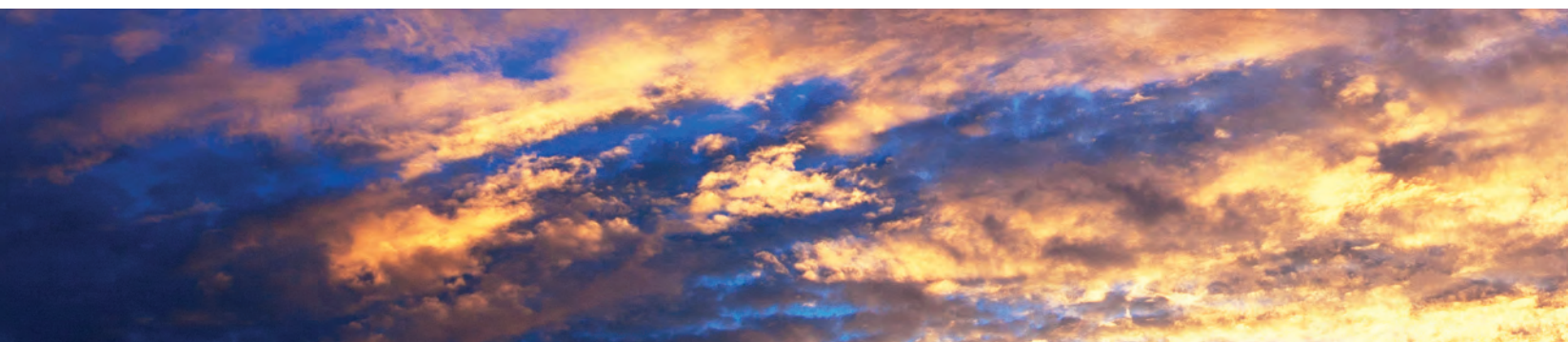
Composites

Product Capabilities

- Rigid ducting
- APU inlets
- Plenums
- Structural components
- Hybrid composite and aluminum
- Hybrid composite and elastomeric

Programs

- Airbus A320, A330, A340, A350, A380
- Boeing 737, 747, 757, 767, 767, 777, 787
- Bombardier CSeries, Q400
- Embraer ERJ 170, 175, 190, 195
- Honda HondaJet
- Bombardier Challenger 605
- Beechcraft King Air, Baron, Bonanza
- Embraer Legacy 450, Legacy 500
- Gulfstream 500, 600
- Piper Malibu, Meridian
- Military Apache, B2, C17, C-130, F-16, F-18, F-35, J-Pats, P-8



Noise Control

Silencers and Acoustic Treatment

Product Capabilities

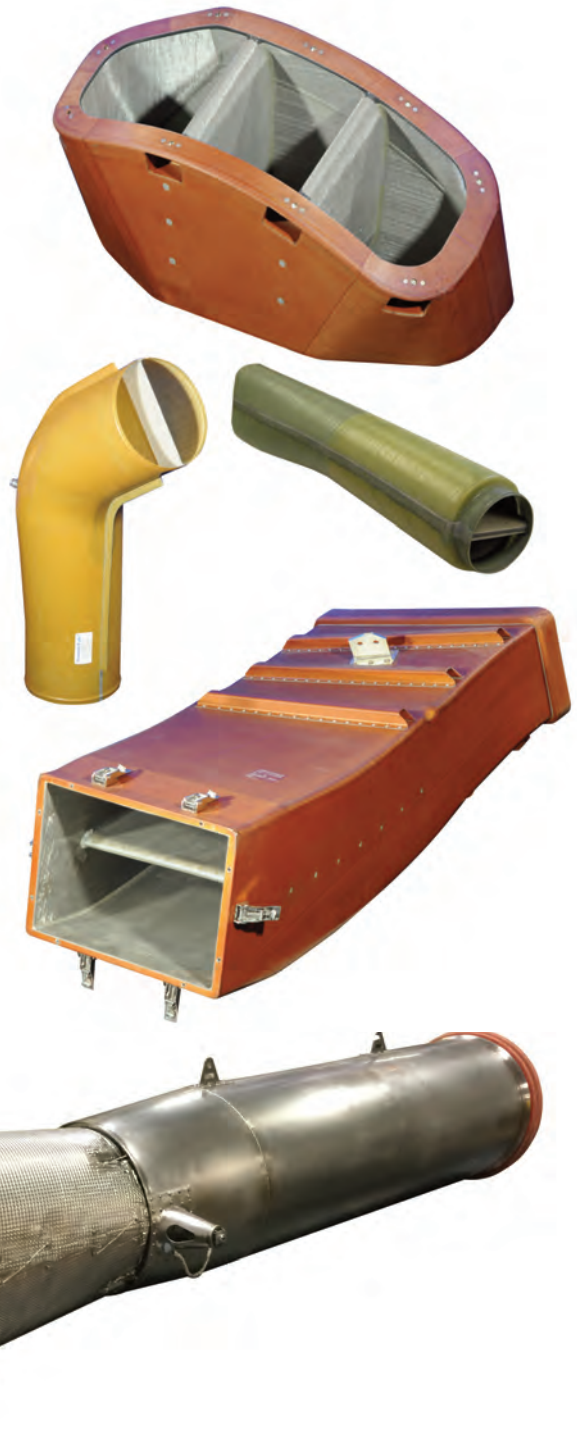
- APU inlets with noise treatment
- APU exhausts with noise treatment
- ECS silencers
- Acoustic panels
- Acoustic enclosures
- Acoustic-Flo® materials

APU Programs

- Boeing 787
- Bombardier CSeries, Q400-8, Lear 85
- Comac ARJ 21
- Embraer ERJ 135, 145, 170, 175, 190, 195, 175E2, 190E2, 195E2
- Mitsubishi MRJ

ECS Programs

- Space Station
- Hawker 800, 4000
- Cirrus Cirrus Jet
- Embraer Legacy 450, Legacy 500
- Bombardier Global 7000/8000
- Gulfstream G500, G600
- Honda HondaJet





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