

# Press Release

## Constellium pushes its AIRWARE™ technology to the next level

Paris, 20 June 2011: A year after the successful launch of its latest technology, AIRWARE™, Constellium is about to inaugurate two new foundries to industrialize production and accelerate innovation for future aerospace programs. Major aircraft manufacturers have already chosen AIRWARE™ for their new aircraft - AIRBUS for its A350-XWB and Bombardier for its CSeries. AIRWARE™ has also been selected for major research programs on eco-efficiency<sup>1</sup>.

In July 2010, Constellium revolutionized aluminium solutions for the aerospace industry with the launch of its AIRWARE™ technology, a complete range of products designed for all parts of aircraft structures (fuselage, wings or tail fins). A year in, Constellium will showcase its latest technology and the potential of aluminum solutions for tomorrow's aircraft at the Paris Air Show.

AIRWARE™ maximizes weight savings, optimizes costs by making it easier to manufacture parts and carry out maintenance, and at the same time reduces environmental impact. All this thanks to its unrivalled properties due to a complex structure developed from nanotechnology.

AIRWARE™ and its 3 outstanding benefits:

- 25% lighter: AIRWARE™'s mechanical properties make it possible to optimize the design of structural parts, consequently making significant weight savings and therefore reducing CO2 emissions.
- A 12-year heavy-maintenance cycle: AIRWARE™ guarantees the durability of parts due to greater resistance to fatigue and corrosion.
- 100% recyclable: Just like all aluminium solutions, AIRWARE™ can be recycled endlessly without losing any of its properties by using a patented recycling process. This technology contributes to the development of a sustainable aerospace industry.

AIRWARE™ is a benchmark technology for future aerospace programs and it is particularly suitable for the new single aisle aircraft. AIRWARE™ is a breakthrough technology with well-controlled risks, due to its intrinsic performance and properties, and the value chain's capacity to meet high build rates for this type of aircraft. For airlines, leasing and MRO companies, AIRWARE™ is a high performance technology that requires no further investment or structural changes to manage maintenance requirements (scheduled and non-scheduled). AIRWARE™ is also a solution for reducing fuel consumption.

1. OFELIA project for the recycling of AIRWARE™ - cf press release of 17 May 2011

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*« With AIRWARE™, we are the first to launch and industrialize a cutting edge technology that meets the challenges of producing ever lighter aircraft, with lower environmental impact that meets the industry's economic management criteria. Current programs make it clear that AIRWARE™ has a long way to go before reaching its full potential! There is still considerable room for improvement that Constellium is exploring through a major innovation program that will target future aircraft. We invite all our partners, both upstream and downstream, to join us in this venture »* said Christophe Villemin, President of Constellium's Global Aerospace Division.

Different vessel parts are on display at Constellium's booth at the Paris Air Show, highlighting AIRWARE™'s potential and the benefits this technology offers in terms of overcoming aircraft manufacturers' current and future challenges :

- Two fuselage parts built by Spirit AeroSystems, including a hydro-formed frame that highlights AIRWARE™ products' formability;
- A fuselage panel from the Bombardier CSeries that offers better performance and higher resistance to corrosion;
- A prototype of a monolithic fuselage frame manufactured by Constellium that confirms its excellent stability during machining.

AIRWARE™'s unique properties have already caught the attention of several aircraft manufacturers. Airbus will use AIRWARE™ metal sheets and forged parts to manufacture the key structural elements of the wings of the new wide-bodied, twin-engined A350-XWB. Bombardier will use this innovative solution as fuselage skin, stringer, frame and floor plates on its commercial CSeries planes.

As the result of ten years of R&D at Constellium's research center in Voreppe (Isère, France), AIRWARE™ highlights its commitment to developing the higher performance technologies needed to carry out the increasingly demanding programs of aircraft manufacturers.

Production has already started at the Ravenswood (USA) and Issoire (France) sites to deliver first orders. Production will be increased with the inauguration during the last quarter of the year of the two new French foundries at Issoire and at Voreppe. The Issoire site will be equipped with the world's first industrial foundry for producing AIRWARE™. The Voreppe Research & Development Site foundry will focus on developing new applications. These unique industrial and technological capabilities will be the key of AIRWARE™'s success on future aircraft programs.

### **Constellium at the Paris Air Show: Hall 2B – Booth B32**

#### **About Constellium**

Constellium, formerly Alcan Engineered Products, is a global sector leader that develops innovative, value added aluminium products for a broad scope of markets and applications, including aerospace, mass transportation, automotive, packaging, energy and building and construction.

With 9,500 employees located in 26 countries and a commercial presence in more than 60 markets, Constellium is structured in 4 divisions: Global Aerospace Transportation and Industry, Specialty Sheet, Extrusions & Automotive Structures and its international trading network AIN.

Constellium, with headquarters in Paris, is owned by Apollo Management (51%), Rio Tinto (39%) and the "Fonds Stratégique d'Investissement" FSI (10%). Constellium generated US\$ 4.4 billion of revenue in 2010.

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