



## AEROSPACE COATINGS



*Innovative and highly functional  
surface designs*





Always prepared for large tasks: In the SGI works near Paris, France, medium sized and large aircraft parts (13 meters long) are functionally refined. Here the focus is mainly on the functional protection of aluminium and titanium. In total, the AHC Group offers more than 40 processes and 100 variants for a number of light-weight materials.



## Supply Chain Excellence: a perfect fit & reliable.

The aerospace industry relies on high performance suppliers who implement time sensitive, complex processes with the highest reliability-principles that the AHC Group has maintained for decades. AHC, with more than 20 of their own plants, is the surface engineering specialist within the global player Aalberts Industries (14,500 employees, 200 plants in more than 30 countries). The AHC Group collaborates closely with the French coating companies DEC and SGi, which also belong to Aalberts Industries and are experienced in working in the aerospace industry. Each of these companies is a quality service provider for highly functional finishing of components and component groups that are used worldwide by leading manufacturers in their aircraft, helicopters, satellites, rockets and space stations.





In technical discussion: In highly sensitive fields such as aerospace, functional safety and reliability are imperative.

The picture below shows a Eurocopter EC175, exhibited at the Paris Air Show. Parts of the seats as well as the drive equipment are functionally refined by the AHC Group.







# Innovative. Timely. Responsible.

Together we are strong: more than 1,000 highly qualified specialists, certified and seamlessly documented production processes, modern systems technology, technological development partnerships and, not least, On Time Delivery (OTD) for our market partners' optimal production scheduling.

**Together with DEC and SGI, we support you on important issues such as:**

- Coatings and processes for aerospace structural components: engines, fuselage components, wings and landing gear
- Functional security under extreme temperature fluctuations, climatic stresses, UV radiation
- Ice-reducing surface coatings
- High performance space-flight coatings
- Innovative coatings for future spacecraft
- Coatings and processes for new high-tech materials and composite materials
- Innovative coatings for reduction of fuel consumption and of CO<sub>2</sub> emissions



Europe's largest production facilities at SGI in France are designed for parts of up to 13 meters in length.



The SKIN PANEL of a FALCON, chromic acid anodised and painted.



## Certifications (incl. DEC and SGI):

- Nadcap, in accordance with SAE Aerospace Standard AC7108 Chemical Processing
- Nadcap, in accordance with SAE Aerospace Standard AC714 Non Destructive Testing
- EN 9100:2009
- ISO/TS 16949:2009
- ISO 14001:2004
- ISO 9001:2008
- ISO 50001:2011

## Processes (incl. DEC and SGI, a summary)

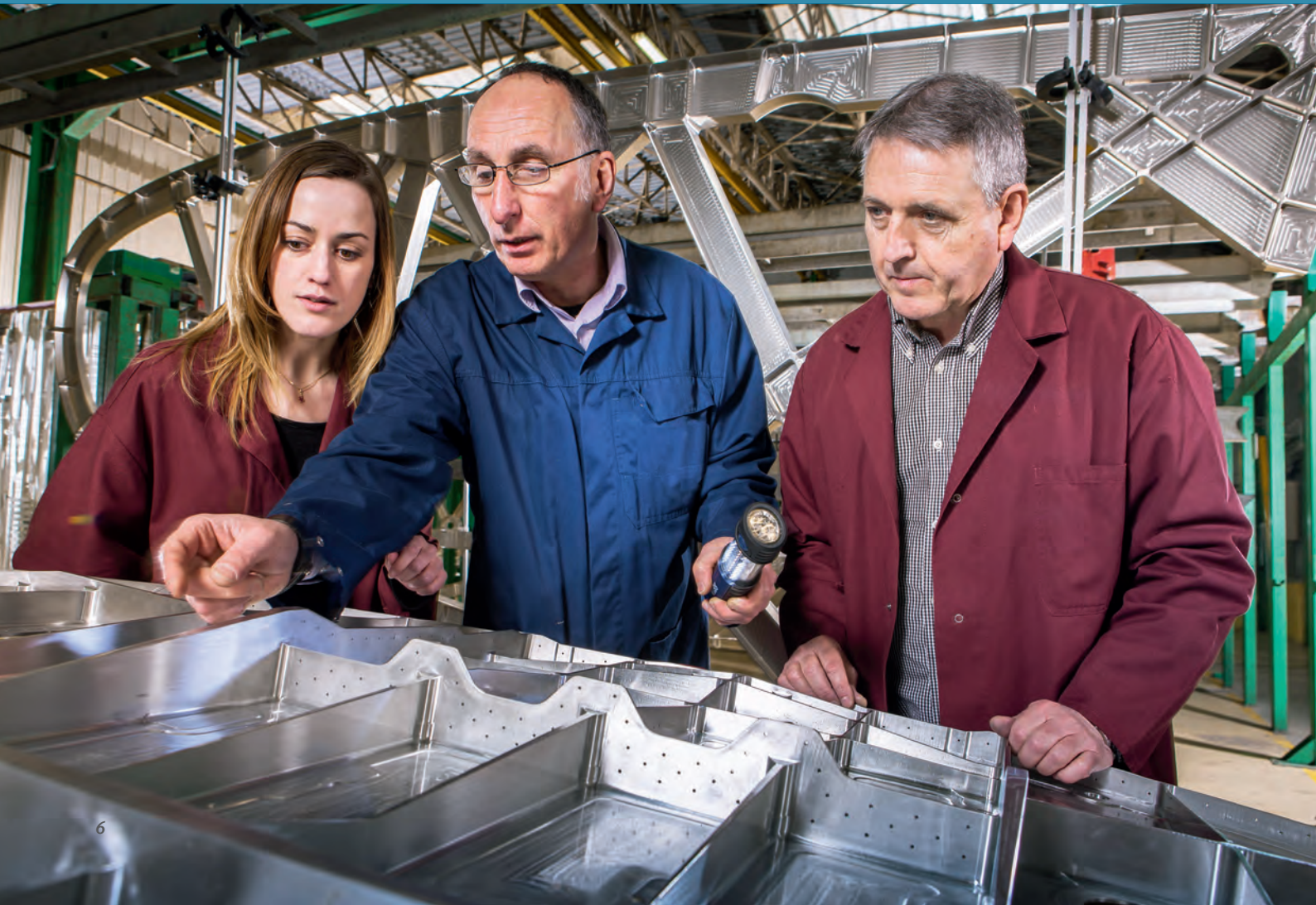
Hard anodising (HSA)  
Sulphuric acid anodising (SAA)  
Chromic acid anodising (CAA)  
Tartaric/sulphuric acid anodising (TSA)  
Aluminium yellow chromating  
Chromium-free passivation of aluminium and magnesium  
Electroless nickel plating  
Anti-friction coatings  
IVD aluminium coating





Technical discussion on the parameters of the fully automatic electroless nickel plant.

Transparent communication and maximum security: customers inspect a treated component during a quality check in the coating plant (picture below).





# Experienced. Vigilant. Jointly meticulous.

Transparent communication is an integral element of daily workflows in the AHC Group. Starting with expert consultation well before the project begins, through sample coatings, seamlessly documented production at the highest level, right through to rigorous quality assurance. The AHC Group has its own manufacturer of electrolytes. As a result, processes can be extremely rapidly manipulated down to the smallest detail. Amongst other things, discussions and inspections take place directly on the component in the AHC works. Together with DEC and SGI, we are proud to work for leading aerospace companies as a trusted full-service supplier.

## A selection of aerospace industry references (including DEC and SGI):

- AGUSTA WESTLAND
- AIRBUS group
- BOEING
- BOMBARDIER
- COBHAM
- DASSAULT AVIATION
- EMBRAER
- GOODRICH
- HAWKER BEECHCRAFT
- HONEYWELL
- LIEBHERR AEROSPACE
- MOOG AEROSPACE
- NASA
- PRATT&WHITNEY
- RATIER FIGEAC
- RAYTHEON
- ROLLS ROYCE
- SAFRAN
- SPIRIT AEROSYSTEMS
- THALES
- ZODIAC AEROSPACE



*A fuselage panel is checked (left), while behind, wing and structural components are masked for painting.*



*On the left, an aircraft wing is checked before delivery, whilst on the right a wing component is masked for application of a top coat.*



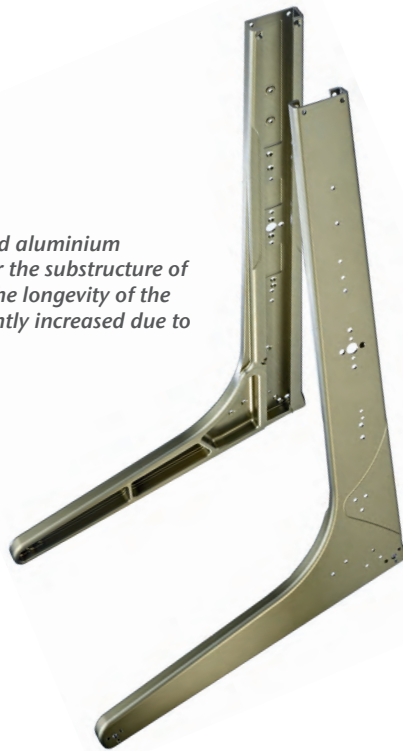




# Light. Robust. Extremely durable.

B/E Aerospace Fischer GmbH is a world leader in the sector of crash-proof and extremely lightweight helicopter seats. They comply with the highest international standards and in the required stress tests even withstand a vertical application of force of 30 g (!). The company counts on AHC Oberflächentechnik GmbH technology for the coating of aluminium structural parts for the substructure.

*HART-COAT® coated aluminium structural parts for the substructure of helicopter seats. The longevity of the system is significantly increased due to the coating.*



*In technical discussions with an AHC technical application consultant.*



*Lightness, comfort and high modularity distinguish the special energy absorbing and crash-resistant seats from B/E Aerospace Fischer. More than 6,000 seats leave the Bavarian town of Landshut each year.*



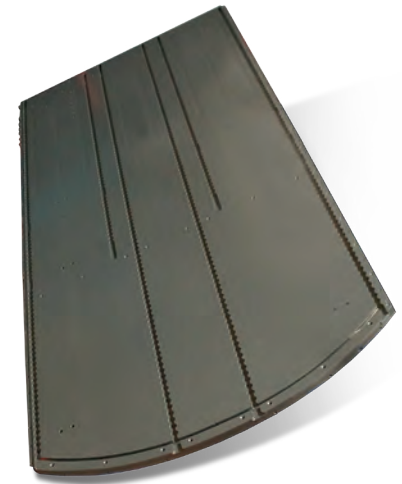




# Advanced Defence Technology. Immediately and permanently ready for use.

Defence, Intelligence and Security at national and international levels are sensitive areas in which, for example, transport systems are subjected to demanding stresses. AHC is a trustworthy and responsible defence technology partner.

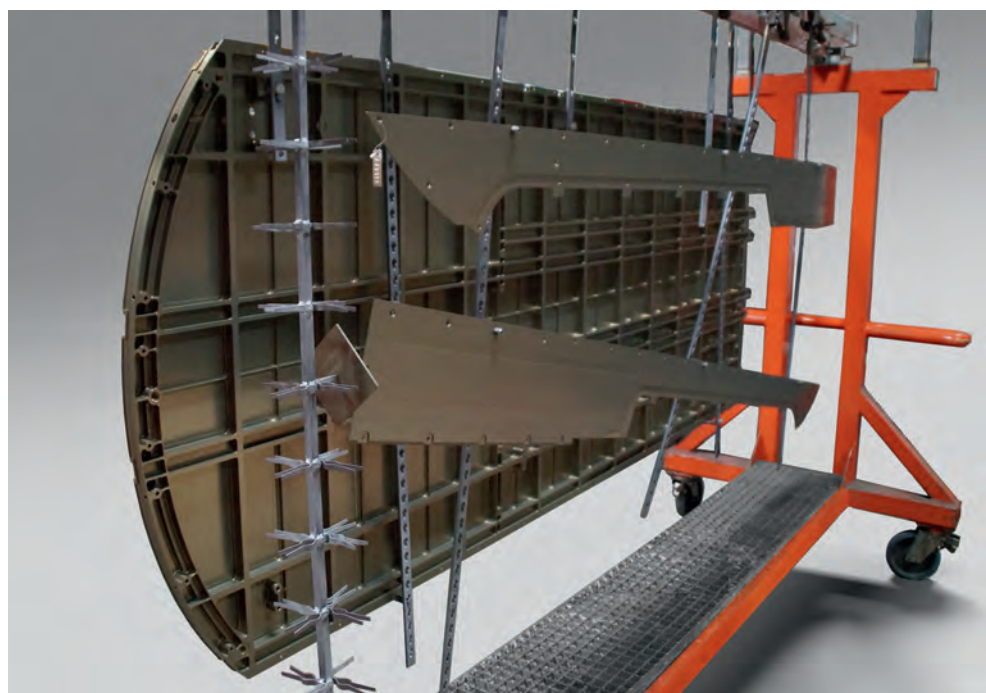
Surface technology from AHC is found in a number of helicopter and aircraft component groups. They have to serve different purposes and function perfectly and durably, even in extreme situations such as, for example, if military relief operations are flown in demanding geographical and climatic conditions.



*Light, stable and extremely wear resistant:  
This helicopter base plate (above) was  
HART-COAT® coated.*

## The AHC Group coats, for example:

- Components for complete systems in the cargo loading area on passenger and cargo aircraft (conversion systems, cargo loading systems, on-board baggage handling systems, spare parts)
- Robust and corrosion-resistant loading systems for helicopters



*Covers for helicopter cable ducts also seen on the coating frame.*





This check valve coated with PTFE-DURNI-DISP (right) controls the supply of liquid helium. The coating offers very good adhesive wear resistance and outstanding dry running characteristics. It is heatproof with excellent anti-friction and anti-adhesive properties and furthermore displays good corrosion resistance in combination with an intermediate layer. The dispersion layer combines valuable properties of DURNI-COAT® processing with the benefits of the fluoroplastic PTFE.



*PTFE-DURNI-DISP coated LHe check valve (Ariane 5)*



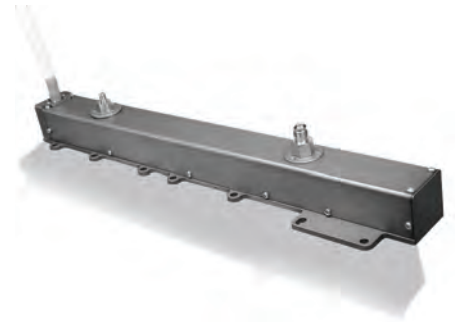


# Functional reliability under extreme conditions.

In space flight, mechanical demands under extreme temperature conditions are immense. Systems that fail in space are often beyond repair. In rocket technology, systems are necessary which, although only used once, must function at 100 percent in these few seconds. AHC Group's coating solutions are also the first choice for long-term functional reliability of component parts.

The airborne Stratospheric Observatory for Infrared Astronomy (SOFIA), jointly implemented by NASA and the German Aerospace Centre (DLR), made it possible for astronomers to observe the sky in the infrared wavelength range.

More recently, the airborne observatory has been overhauled, still remains in service and provides science with valuable data about the formation and evolution of stars and solar systems.



*High frequency amplifying tube for telecommunication satellites, coated with MAGPASS-COAT® chromium-free passivation for magnesium alloys.*



*KEPLA-COAT® coated titanium fittings for the mirror cells of the "SOFIA" IR telescope.*



*Titanium fittings and titanium pins located near the infrared beam path on the telescope structure. To minimise light scatter, they are provided with a deep black, light resistant, oxide ceramic coating (KEPLA-COAT® black).*





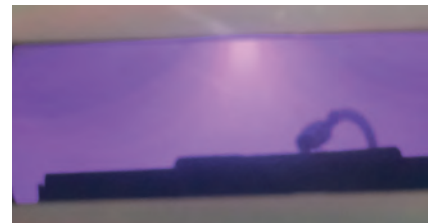
Care and precision: A plant operator during an electroless nickel coating process. The electrolytic quality is constantly checked.



# On Time Delivery (OTD) with the highest quality.

Timely delivery and high quality standards are crucial parameters in aerospace. The AHC Group takes these challenges into account on a daily basis. System and process availability are precisely coordinated to actual projects and our specialists operate with a keen eye on the quality of the functional finishing.

Together with DEC and SGI, AHC maintains a constant and reproducible finishing quality at the highest level. Automated operational procedures and certified quality management systems ensure the greatest possible reliability and exact surface qualities. Application-specific and cost-optimised coating solutions are implemented with a comprehensive range of patented and proprietary coating processes.



*IVD aluminium coating plant in Nottingham, England. Here, Acorn Surface Technology offers a broad spectrum of functional coatings for components in the aerospace industry.*

*A treatment plant at DEC in Cormenon, France.*



*Transparent communication and clear deadline setting: daily production team project meeting.*



*Every single component is checked before delivery.*





## AHC – a reliable partner for the aerospace industry.

A regional team of consultants with highly qualified and experienced specialists guarantees technical service in all aspects of material finishing. Utility and application-oriented process technology is of primary importance to the AHC Group. The AHC Group experts develop customised coating solutions for innovative products in the areas of surface technology and chemicals, in close dialogue with their customers.



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**AHC finishes components for the aerospace sector in more than 20 plants with more than 1,000 employees.**

**We will be delighted to assist you.**