

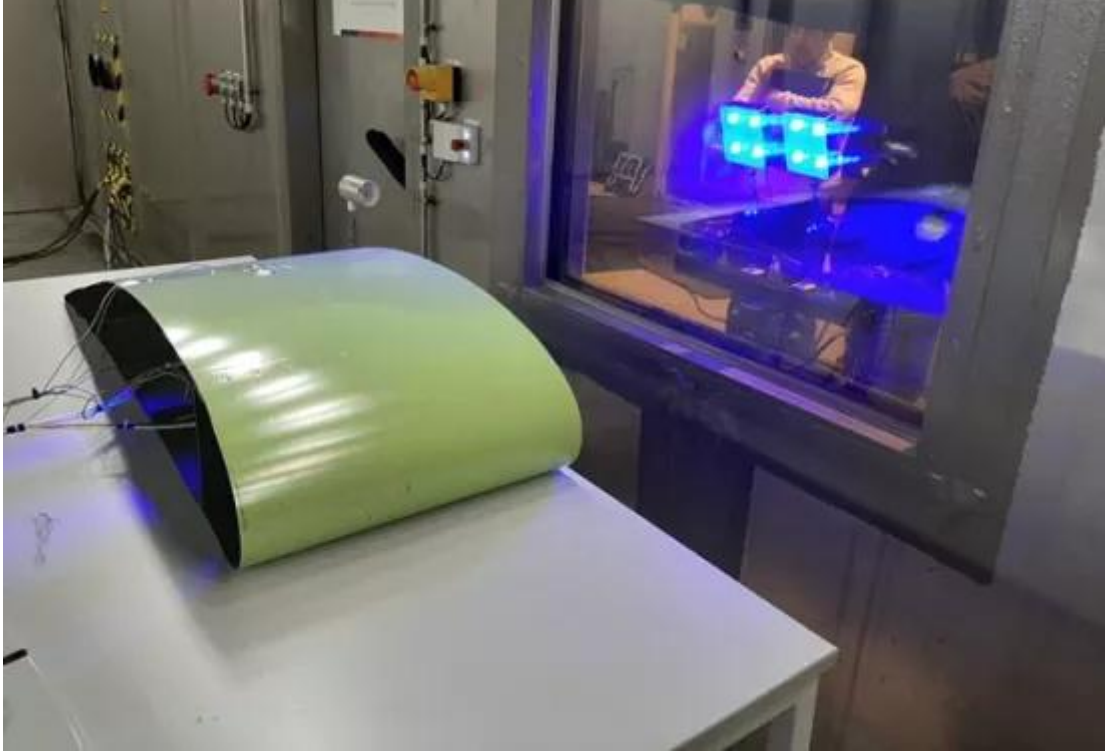
Sonaca tests aircraft components for thermal fatigue at extreme temperatures

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Sonaca, a Belgian manufacturer of parts and structures for the aerospace industry, is continuously searching for methods to improve their products. As a Tier 1 supplier of aircraft parts for renowned manufacturers such as Airbus, Boeing, Dassault, Embraer, Bombardier, Pilatus and Gulfstream, Sonaca (Société Nationale de Construction Aérospatiale) is a specialist in movable wing parts. Sonaca also supplies elements for the aircraft fuselage for a few companies and is active in the construction of aerospace structures. Extensive testing is essential to this manufacturer.

Structural aircraft components are exposed to harsh weather conditions and fluctuations in temperature. Sonaca needed to know about their impact on the materials they use. Samples from the flaps that part of the aircraft wings were exposed to extreme heat and cold (as low as -55 °C) during a number of temperature cycles in the large climatic test chamber, part of the Sirris site at the Port of Antwerp. Performing tests at temperatures as low as -60 °C is unique to the Sirris testing lab in Antwerp.



Exposing the aircraft flaps to these significant temperature fluctuations means testing for thermal fatigue and dimensional changes. A large number of strain gauges were added during the test procedure. Digital image correlation cameras were used to monitor the behaviour of the components and materials under various conditions.

This provided Sonaca with improved knowledge and certainty over the properties and behaviour of the materials used to manufacture their products under harsh weather conditions.

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