



Information

LONGEVITY OF SUP'AIR GLIDERS

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45°54.024'N / 06°04.725'E

Sup'Air constantly follows up on the longevity of its products. Thanks to our partnership with Rip'Air and our proximity to a large pool of users, we have been able to track the evolution of a SORA tandem point by point over the course of its life. This document presents our conclusions from controls performed on several gliders, some of which had exceeded 1,000 professional tandem flights.

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>> Visual aspect of the material

As soon as it leaves the factory, the fabric starts to age. However one must distinguish between the alteration in the colours and that of the fabric's own qualities.

In the production process, Sup'Air places the enduction coating on the inside of the wing. This allows the glider to retain its qualities over a greater period since the enduction layer is not subject to abrasion, however it may lead the colour of the fabric to alter over time.

The photograph below shows the evolution of our « EARTH » colour between a brand new SORA tandem and a glider with over 1,000 flights.

The effects of aging are generally more pronounced on light colours :

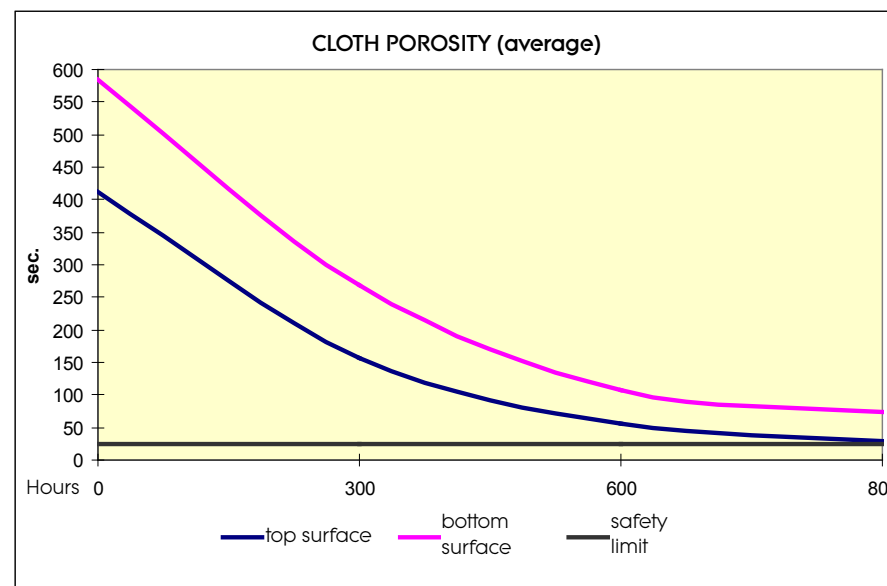


>> Preserved enduction

In spite of inevitable alteration of the colour over time, the preservation of the enduction layer allows the fabrics to retain its qualities in the long run. The graph below shows the evolution of average porosity readings on a SORA tandem from 0 to 800 flight hours.

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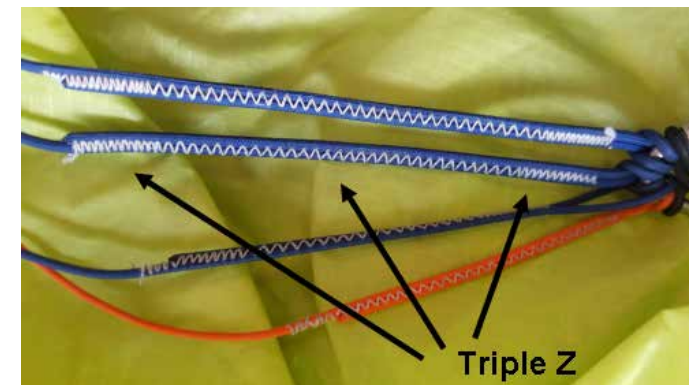
After 800 flight hours on the test sample, porosity readings were still at 29 seconds, slightly above the value where a glider must be decommissioned, which is at 25 seconds.



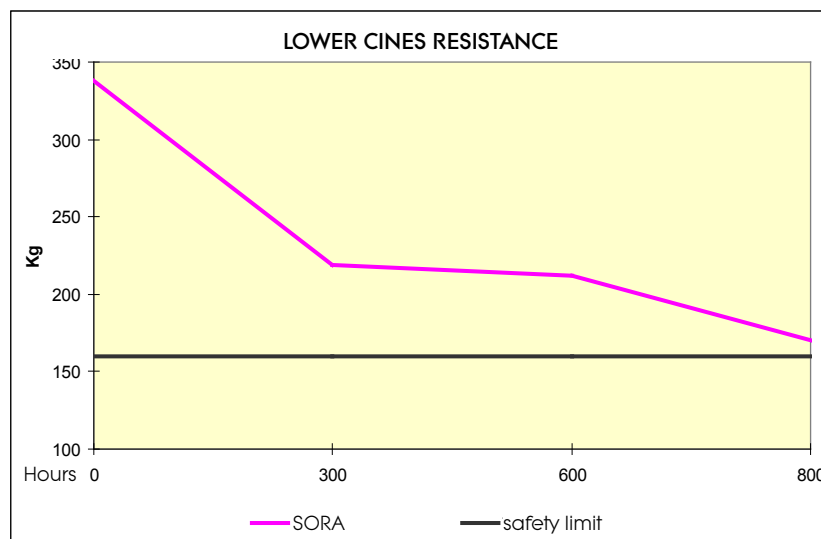
>> High resistance with « triple z » stitching

The nominal resistance of the fibre fitted in the lower lines of a SORA is 420kg (manufacturer's data). According to the type of stitching used, it may vary by a factor of 2 in the final sown-up line in production.

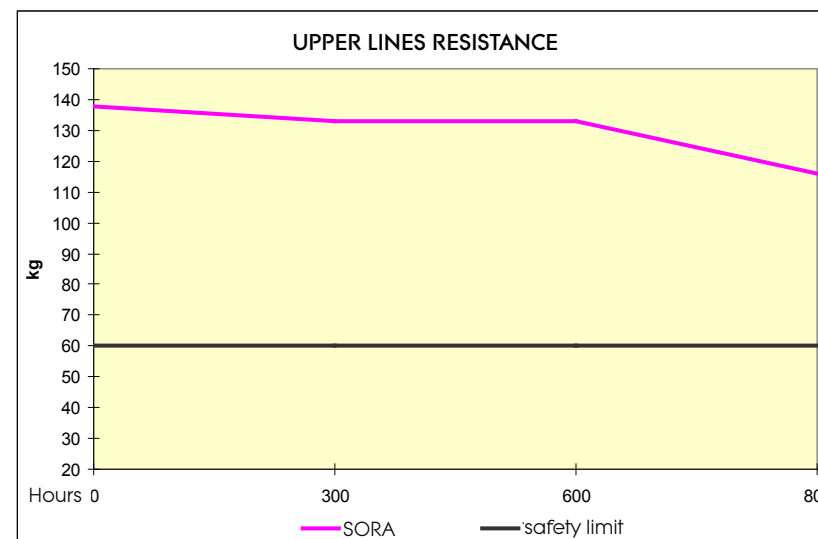
Sup'Airs « triple Z » stitching has totally proved its resistance over time. The photograph below shows this technique on lines with more than 800 light hours.



The results of our follow-up on line strength is shown in both tables below, which illustrate test findings on SORA gliders up to 800 hours of professional use.



Values in the graph above show an average of measurements taken on our test sample. On some SORA gliders with more than 1,000 flights the readings on lower lines were more than 200kg, well above the 160kg safety limit.

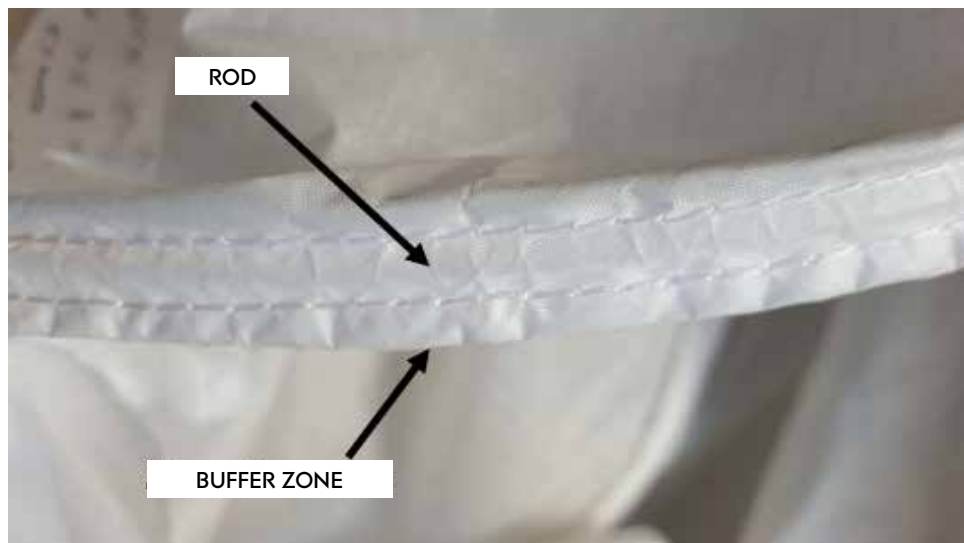


Resistance levels on upper lines throughout the life of a glider remain well above safety requirements. Even after 800 hours, the lineset of our test sample displayed values of double the safety limit (120kg vs 60kg).

>> built to last

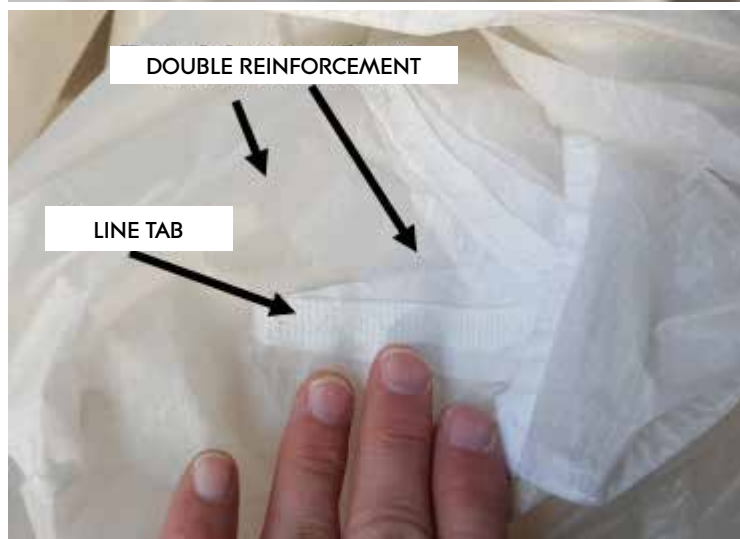
In all Sup'Air gliders, plastic rods in the leading edge are isolated from the top surface of the glider by a « buffer zone » in order to prevent the rod from eventually wearing through the cloth. Tension in the rod itself is also optimised in order to reduce that risk.

Obviously, the way in which the glider is used (frequent cobra-style inflation for example) and the nature of the ground on take-off and landing (rocks, twigs, etc) will greatly influence the aging of the glider's leading edge.



The result is better preservation of this critical part of the glider, even after intensive use, as shown in the photographs taken on a glider with more than 1,000 flights.

CONSTRUCTION



Anchors for line attachments have been generously proportioned in order to ensure structural stability of the glider over time. They are further strengthened by a double reinforcements of the cell wall.

These techniques are used on all gliders in the Sup'Air range and allow use to ensure long flight hours to our pilots.

Naturally, wear on a glider will greatly depend on the conditions in which it has been used and maintained. However, the choice of materials, design and manufacturing options have an impact over the longevity of the product.

Sup'Air's choice is clearly to offer gliders that are built to last. Our proximity to end-customers and permanent follow-up of the products in real-life usage allow us to ensure that it is indeed the case.

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