



MADE IN EUROPE

**DVELAS**  
LIVING SAILS

UPCYCLED SAILS

ECO-ECONOMY

ECO SPEED

GENUINELY LIVING

WWW.DVELAS.COM

TYPE OF SAIL: *SPIRIT OF THE C*

WEIGHT: *FRANCE DE MARQUE*

TYPE OF SAIL: *Main Sail*

DESIGNED BY: *DVELAS LIVING SAILS*

DATE: *2017*

**DVELAS®**

**ECOSAIL.**

SHADE SAILS THAT PURIFY  
THE AIR AND GENERATE  
CLEAN OXYGEN INTO THE  
ATMOSPHERE

[www.dvelas.com](http://www.dvelas.com)

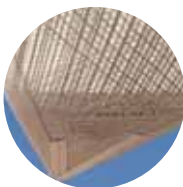
## OUR SHADE SAILS



We use **recovered** boat sails from modern Maxi Yachts.

The fabric normally used is Dyneema® Membrane, an incredibly resistant and ultralight fiber used in sectors that demand extreme resistance.

The Dyneema membrane of these sails is armed with Aramid and Carbon fibers. This backlit material is spectacular as it provides both a dense shade and a beautiful glow effect on the sail. It is a highly resistant and high-tech material whose appearance is reminiscent of traditional natural heather ceilings.



There is the possibility of applying fireproof treatment obtaining the classification C-s2, d0, of the Eurocode suitable for interior occupied areas in buildings.

## TRACEABILITY LABEL

The origin of each shade sail is identified by a label that details the port of origin, the ship, the type of sail, the type of fabric and the original manufacturer.



## CERTIFICATE OF ORIGIN

In some cases where significant ships are involved, DVELAS provides a certificate of origin with the most characteristic data of provenance.



## ECOSAIL® TREATMENT

DVELAS has developed together with an engineering and a Technological Center specialized in nanotechnology, an R+D+I project that consists of obtaining a chemical product in nanoparticles that can be applied by micro nebulization on the surface of fabrics.

Once the product is applied, when sunlight falls on the sail, photocatalysis occurs, which is a chemical **reaction that causes the polluting gases that are floating in the air we breathe to decompose and release new and clean oxygen to the atmosphere.**



## ECOSAIL LABEL

Sails treated with this product are identified with a label that provides estimated oxygen production data and the date of completion of the treatment.

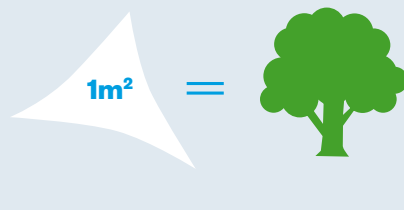


## ECOSAIL TECHNOLOGY ACTIVATED BY LIGHT PURIFIES THE AIR CREATING A HEALTHIER ENVIRONMENT.

A single application, either at the factory or as an after-sales application, works for years.

It generates enough oxidizing power to keep shade sails cleaner, longer and is effective even on cloudy days.

A 1m<sup>2</sup> sail is capable of generating the same reduction in polluting substances as a tree.



## CONSEQUENCE



In the same way as in photosynthesis, the treated surfaces transform the usual pollutants in the atmosphere such as CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub> into oxygen and salts. This happens thanks to an oxidation process **activated by solar energy. Oxygen is released** into the atmosphere and salts are deposited on the surface of fabrics and act as a **self-cleaning agent when it rains on them.**

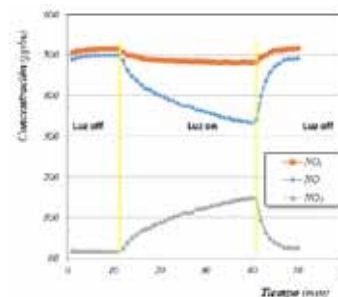
Our sails, once treated, **decompose and remove bad smells, bacteria and other air pollutants in the presence of sunlight**, promoting the well-being and safety of people, improving the environment.

## RESULTS OF THE TESTS CARRIED OUT BY THE LABORATORY OF THE FACULTY OF CHEMISTRY OF THE UNIVERSITY OF NAVARRA



Abatement results where an initial plateau is observed, corresponding to the stabilization period prior to lighting. At 10 minutes the sample is illuminated with solar radiation and a drop in NO concentration is observed. In parallel, and as a consequence of the photocatalytic oxidation process, part of the degraded NO was converted into NO<sub>2</sub>. The increase in the concentration of nitrogen dioxide is noted, which shows a strong photocatalytic activity.

At around 40 minutes the light was switched off, allowing the system to evolve to initial concentration values.



The sample treated with ECOSAIL® presented a maximum abatement of NO of 33.5% and a maximum abatement value of 6.75% with respect to the abatement of NO<sub>x</sub>.

Drawing a parallel with ceramics and photocatalytic precast concrete, contemplated in the UNE-ISO 22197-1 and UNE 127197-1: 2013, the tested sample, where appropriate, would be classified as Class 2 (air purification performance comprised between 6% and 8%).