



# Engineered antivibration and sealing systems R&D & Innovation – Blue Technologies



Industrial Invention Patent  
No. 102020000021769 issued  
by the Ministry of Economic  
Development on 26.09.2022



## Facts & Figures

Offices and Warehouse:	Rho (MI), Italia
Year of establishment:	1968
Ownership:	Fatigati Family
Employees:	32
Associated companies:	1
Turnover 2022:	≈ € 10,0 mio



## Quality Management System



### MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: CERT-08910-2001-AG-ML-SINCERT     Initial certification date: 18 July 2001     Valid: 24 July 2021 – 23 July 2024

This is to certify that the management system of  
**PANTECNICA S.p.A.**  
Via Magenta, 77/14 A - 20017 Rho (MI) - Italy

has been found to conform to the Quality Management System standard:  
**ISO 9001:2015**

This certificate is valid for the following scope:  
**Design and trade, also under own trademark, of anti-vibration Systems, fluid seal systems and technical industrial items (IAF 29, 14, 17)**

Place and date:  
Vimercate (MB), 04 February 2022



REQUISITI DI AIA. Emissione di questo Certificato in base al regolamento RECA, 2019/250, art. 11, lett. c) e art. 12, lett. a), e al regolamento RECA, 2019/250, art. 11, lett. c) e art. 12, lett. a).

For the issuing office:  
DNV - Business Assurance  
Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

*Claudia Baricini*

**Claudia Baricini**  
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.  
ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 03 99 9105, www.dnv.it



### MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 119662-2012-AG-ITA-ACCREDIA     Initial certification date: 19 July 2012     Issue Date: 19 July 2021     Expiry Date: 18 July 2024

This is to certify that the management system of  
**PANTECNICA S.p.A.**  
Via Magenta, 77/14 A - 20017 Rho (MI) - Italy

has been found to conform to the Quality Management System standards:  
**EN 9120:2018 and ISO 9001:2015**  
(technically equivalent to AS9120B and SJAC9120:A)

and has been audited in accordance with the requirements of EN 9104-001:2013 and ACCREDIA Technical Regulation RT-18.

Type of certification structure: Single Site

This certificate is valid for the following scope:  
**Parts and materials marketing for aviation, space and defense industry. Commercializzazione di parti e materiali per l'industria aeronautica, dello spazio e della difesa.**

IAF Sector(s) : 29, 14, 17

Place and (re-)issue date:  
Vimercate (MB), 14 July 2021



REQUISITI DI AIA. Emissione di questo Certificato in base al regolamento RECA, 2019/250, art. 11, lett. c) e art. 12, lett. a), e al regolamento RECA, 2019/250, art. 11, lett. c) e art. 12, lett. a).

For the accredited unit:  
DNV - Business Assurance  
Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

*Zino Bellratti*

**Zino Bellratti**  
Management Representative

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## Cluster & Associations



ADERENTE AL SISTEMA  
CONFEDERALE



## Corporate Social Responsibility



## Focus on Customers' technical needs

Technical and application engineering consultancy for the design, development, production and supply of systems and components for the isolation and damping of vibrations and impacts in any type of industrial application, in addition to some specialized civil environments, and fluid sealing systems and components, also with a certification of materials and process systems



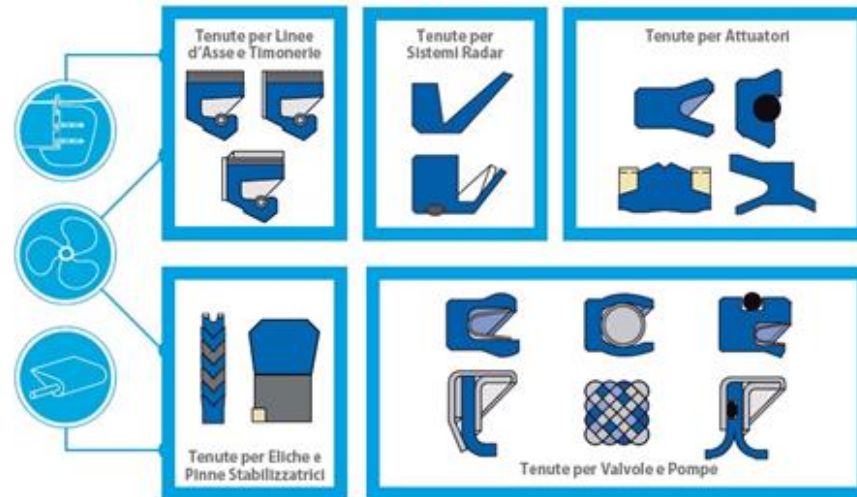
## Technical and application know-how Antivibration systems and Blue Technologies for shipbuilding industry



## Technical and application know-how Sealing systems and solutions for shipbuilding industry



Engineered  
Sealing  
Systems

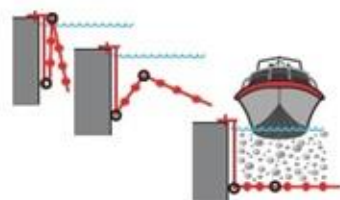


[www.pantecnica.it](http://www.pantecnica.it)

## R&D & Innovation Blue Technologies Circular Economy

SONICBOAT®

BUBBLEBOAT®



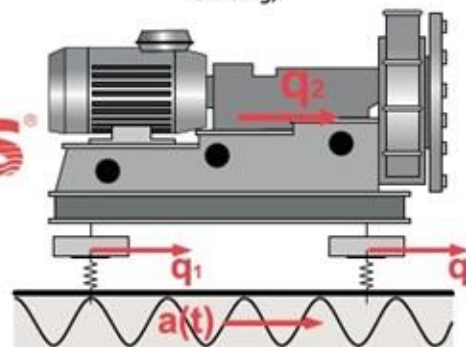
Sonicboat® e Bubbleboat® - Tecnologie antifouling, in linea con l'obiettivo Sustainable Development Goal 14 dell'Agenda ONU 2030.



Siamo partner di Manta Aircraft nello sviluppo di HEV/STOL (Hybrid Electric Vertical Short TakeOff and Landing).

DAFiReS®

Dispositivo Antivibrante con Fissaggio a Resistenza Sismica.





## R&D & Innovation Blue Technologies Circular Economy

### ACOUSTIC SHIELDING



Schermature Acustiche per il Settore Navico  
Metalow Frequency & MetaPanel Absorbing

### NoViDamp®



**NoViDamp®** metatecnologie innovative brevettate per isolare le vibrazioni in ambito civile, industriale e infrastrutturale.



In partnership con:



## Technical and application know-how Blue Technologies for shipbuilding industry



**SONICBOAT**<sup>®</sup>



## Background

“**Fouling**” is a natural phenomenon that emerges with the formation of an invisible biofilm, which is rapidly colonized – according to light, temperature and nutrient richness of the water - by parasitic organisms. Unfortunately, the fairing of a boat shell is critical because a smooth hull offers less resistance to movement, increasing boat speed and reducing its fuel consumption (1 to 2 mm of algae or organisms fixed on a shell causes a 15% loss of speed).



## Negative consequences for the marine environment (and beyond...)

The boat's fairing maintenance is something that cannot be avoided in order to protect it from corrosion (for metals), musty and rot (for woods), osmosis (for plastics) and especially from aquatic organisms' settlement.

Ten's thousands tons of extremely toxic "anti-vegetative" coating (or anti-fouling paint) are used every year to protect the boat hull from sea organisms (algae, shellfish...). The EU has banned the use of Biocides since December 2017 and, finally, Glyphosate since 2019.



## Costs for shipowners

Steps to follow for a new fairing:

- Boat towage with a crane or other suitable means;
- Hull cleaning from all shellfish and algae with a high-pressure cleaner;
- Fairing sanding with a suitable method;
- Application of a base layer;
- First layer of antifouling paint (to protect against shellfish colonies);
- Second layer of antifouling paint.

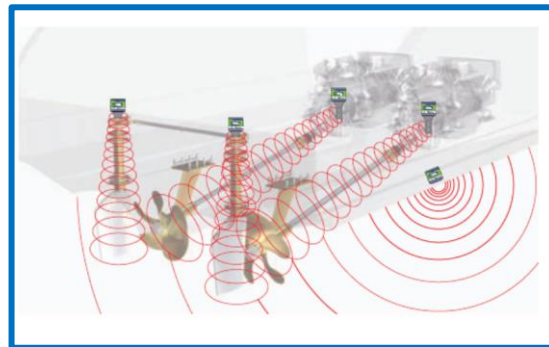


*For a 45-feet boat cost is estimated to be around € 2,000 ~ € 3,000, while for a 90-feet superyacht cost rises to about € 8,000 ~ € 10,000, and for professional ships it is approximately several ten's thousands euros.*

*And this is done at varying intervals (one, two or three years) depending on the effective period spent in port.*

## SonicBoat<sup>®</sup> solution: operating principle

Vibratory waves are sent to the hull by ultrasonic waves with one or more high-frequency power generator(s). Some transducers (from a minimum of 4, up to 6 or 8 sensors, depending on the size of the boat) are glued on the internal shell of the boat, in precise locations chosen for great performance. Generator(s) send(s) vibratory impulses to transducers at a very high frequency; the sonic vibrations generated are transferred outside the boat, causing the formation of micro bubbles in water immediately in contact with the hull (water molecules suddenly pass into vapor phase due to the high vibrational energy they receive), which implode due to the pressure of water and sudden cooling, causing ultrasonic shocks that prevent the formation of microorganisms on the fairing itself.



**SONICBOAT**<sup>®</sup>

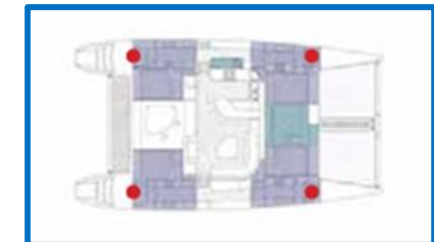
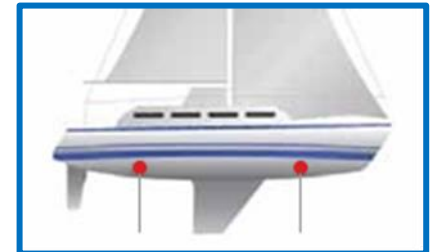


## SonicBoat® solution: overview

The device is composed of 1 or more GENERATOR(S) and some TRANSDUCERS (IP65).

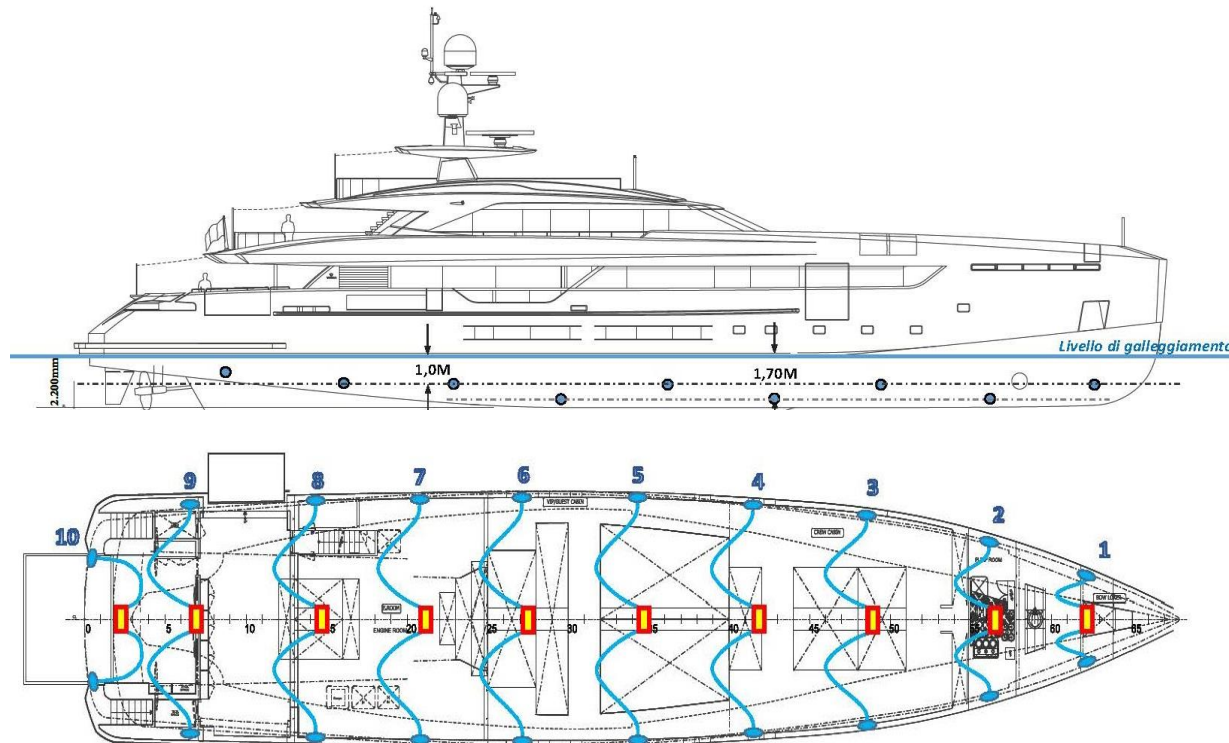
It is required to connect it (them) to an electrical power outlet to make it run.

It is necessary to install at least one transducer approximately every 6 meters of hull to have an optimal efficacy on a yacht or a boat (Please note: to obtain total body coverage underwater, the number of transducers depends also on the width of the submerged part of the hull).



## SonicBoat<sup>®</sup> solution: overview

For example, for a superyacht of 160 feet length and about 38 feet wide at the waterline, 10 generators and 20 transducers are required.





## SonicBoat® solution: efficacy

Comparison of results on two hulls moored in the same port after one year  
**WITH ANTIFOULING PAINT**



## SonicBoat<sup>®</sup> solution: benefits

- ✓ The cost is amortized over a period of 1 / 3 years, depending on type of boat and dock time.
- ✓ Fuel consumption is reduced, as the boat is no longer held back by a fairing full of parasites.
  - ✓ Eco-friendly: it does not damage sea life or people.
  - ✓ It doesn't make any noise while in use, even at night.
- ✓ Working on 12V or 24V, it can be powered by wind turbines and/or solar panels.



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## Warranty

### 1. WARRANTY

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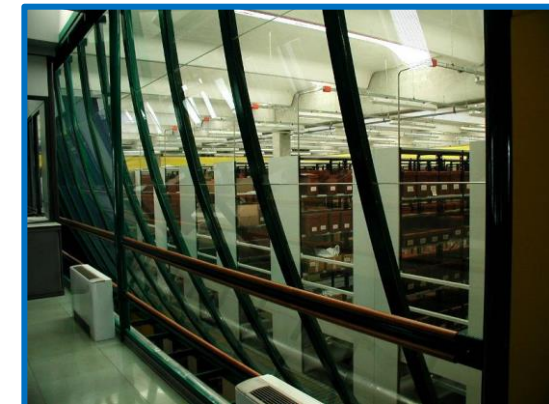
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**Technical application know-how  
Blue Technologies for shipbuilding industry**



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attention!  
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*“Let our love for the sea be a metaphor for the love of future generations.”*

Dott. Davide Fatigati - Executive Chairman - Pantecnica S.p.A.