

# ENGINEERED ANTIVIBRATION SYSTEMS FOR ON-BOARD VIBRO-ACOUSTIC COMFORT

**M**echanical vibrations, as well as shocks and structure-borne noise, are among the biggest problems for comfort on board, both in yachts and passenger ships. The wide range of anti-vibration systems offered by Pantecnica® for the nautical sector, also certified in the tear-proof version, can satisfy every application requirement to improve comfort on board. In order to achieve this ambitious objective, it is necessary to isolate and dampen the vibrations and noises originated by on-board operating auxiliary machinery, such as:

- Structure-borne noise: any vibrating device transmits mechanical energy to every structure to which it is connected;
- Airborne noise which propagates to adjacent rooms.

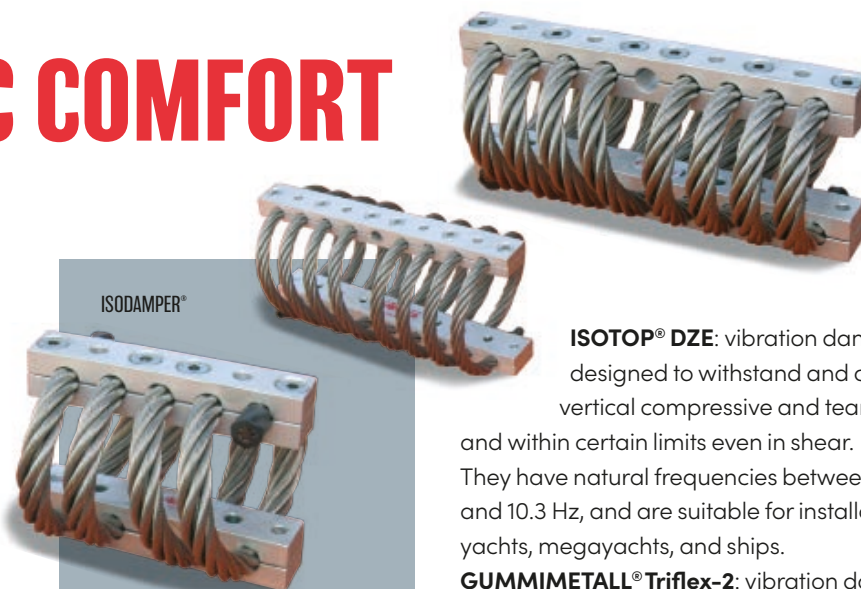
Vibration isolation of on-board power supplies is a must to reduce wave propagation and increase comfort. Whenever, in addition to mechanical vibrations, you want to reduce the associated structural noise, a high-damping isolator is recommended.

## TECHNICAL APPLICATION KNOW-HOW FOR SHIPBUILDING INDUSTRY

**ISODAMPER®**: these elements, consisting of an AISI 304 steel wire spring with peculiar characteristics and qualities, have high elastic deflections that allows them to achieve low natural frequencies and high degrees of insulation of instruments, GPS, engines, generators.



GUMMIMETALL®  
Triflex-2



ISODAMPER®

**ISOTOP® DZE**: vibration dampers designed to withstand and control vertical compressive and tear stress, and within certain limits even in shear.

They have natural frequencies between 6.6 and 10.3 Hz, and are suitable for installation on yachts, megayachts, and ships.

**GUMMIMETALL® Triflex-2**: vibration dampers, with an elastomer body vulcanized directly onto steel parts, designed to control vibrations on three axes with three different degrees of stiffness. They are internally protected against jolts, shocks, and overloads for insulation of machines and engines.

**SILENTFLEX®**: insulator-dampers with capable of working both in traction and compression. They are made entirely of metallic materials (including the AISI 304 stainless steel wire cushion) which are resistant to oxidation and aggressive environments and guarantee absolute fire resistance without toxic emissions.

TO IMPROVE COMFORT ON BOARD, PANTECNICA® OFFERS THE NAUTICAL SECTOR A WIDE RANGE OF SYSTEMS AGAINST VIBRATION, WITH AN EYE TO CIRCULAR ECONOMY



ISOTOP DZE®



SILENTFLEX®

## BLUE TECHNOLOGIES AND CIRCULAR ECONOMY

Still in the field of vibroacoustic comfort but with an eye to the circular economy, in collaboration with its partner Phononic Vibes, Pantecnica® developed the "MetaLow Frequency & MetaPanel Absorbing"

**Acoustic Shields** specifically calibrated to isolate and absorb airborne noise transmitted on board (such as that generated by engines). Lastly, as supporters of the **One Ocean**

**Foundation**, the company has embraced a code of ethics aimed at safeguarding the marine environment with particular attention to all innovations inspired by these principles with an active Research and Development department: the patented **SonicBoat®** and **BubbleBoat®** solutions, also presented at the Blue Economy Summit in Genoa 2020 within the 'Blue Technologies for Shipbuilding and Marinas' section, are designed to prevent the so-called 'Fouling', without using the extremely toxic anti-fouling paint.