

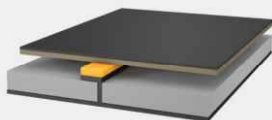
Case Study

Floating floor for the superyacht 'M.Y. Red Sapphire I' (NL)



» Outstanding vibration isolation and optimised acoustics

» Virtually no change to the efficacy of Sylomer® after more than 20 years



getzner
engineering a quiet future

Renovation of the floating floor on the superyacht 'M.Y. Red Sapphire I'

Description of the project

The superyacht 'Red Sapphire I' was built in 1998 by Heesen Yachts in the Netherlands. It is 39.1 metres long and 7.98 metres wide. The semi-displacement aluminium hull enables a maximum speed of 35 knots. The exclusive interior, designed by James McFarlane, provides space for ten people in five cabins.

Maximum comfort

In 2018, the yacht was completely overhauled. One key design objective was to offer guests and crew the highest possible level of comfort while travelling. With that in mind, it was of paramount importance to provide maximum isolation for the vibrations caused by the engines, pumps and drive systems and to prevent footfall noise. To achieve this, the internal structures were decoupled from vibrations using an elastic bearing on the ship's flooring. This also reduces the occurrence of secondary airborne noise, ensuring a quiet atmosphere aboard the 'M.Y. Red Sapphire I'.

Superior long-term behaviour

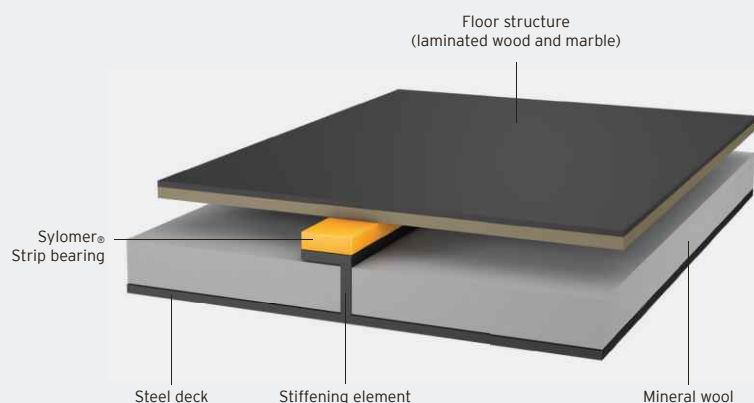
In order to meet the demanding comfort requirements, a professional vibration solution was essential. The outfitter Autore, located in the United Arab Emirates, opted for Getzner's proven floating floors, as they had done when the yacht was first fitted

out in 1998. The floors are mounted on elastic bearings to ensure that most of the vibrations generated by the yacht are not transmitted to the floor, and to reduce noise in the cabins in the long term.

It was the excellent long-term behaviour of Sylomer® that impressed Autore the most. When the outfitters removed the high-tech material as part of the renovation work, it had almost the same properties that it had when it was installed more than twenty years prior. "The static and dynamic material characteristics had remained

virtually the same despite the effects of salt water, salty air, oil and dirt," says Omar Malas, the project manager responsible at Getzner, confirming the results of the laboratory analysis. The thickness of the material also remained practically unchanged due to the outstanding creep behaviour under permanent load. This demonstrates the long-term efficiency of the material in terms of reducing vibrations.

Schematic showing the structure of the ship's floor





Floating floor of ship made from Sylomer® strips

The Getzner Solution

For optimal vibration protection, the hull and walls were clad with 12.5 mm strips of the Getzner material Sylomer® thus decoupling the internal shell from the ship's hull. The ship's flooring, which consists of laminated wood and marble, was bedded accordingly.

Alongside its stable temperature and outstanding residue behaviour, the high dynamic effectiveness with low deflection is a key benefit of the high-tech material. Sylomer® is also extremely easy to work with and bonds perfectly with steel, aluminium and wood.



Consistent long-term behaviour of Sylomer®

Sylomer® maintains consistent material behaviour for more than 20 years:

- Virtually unchanged material characteristics for static and dynamic permanent load
- The thickness of the material is virtually unchanged
- Low creep behaviour
- Temperature resistance of the material
- Excellent residue behaviour
- High dynamic effectiveness with low deflection

Furthermore:

- Easy to work with
- Bonds well to steel, aluminium and wood
- Resistant to salt water, salty air, oil and dirt
- Successfully used around the world to bed ship floors in large shipyards

Facts and figures at a glance

Restoration of the superyacht 'M.Y. Red Sapphire I'

Year of construction:	1998
Shipbuilder:	Heesen Yachts, Netherlands
Architect/exterior designer:	Diaship Design, Netherlands
Interior designer:	James McFarlane, USA
Length (LOA)/width:	39.1 metres/7.98 metres
Type:	Motor yacht
Max. speed:	35 knots

Renovation:

Client:	Ali Property Investment
Retrofitters:	Autore, United Arab Emirates
Vibration isolation:	Getzner Werkstoffe GmbH
Scope:	60m ² floating floor using Sylomer® SR55
Duration of renovation project:	9 months
Completion:	2018

Getzner Werkstoffe GmbH

Founded:	1969 (as a subsidiary of Getzner, Mutter & Cie)
Chief Executive Officer:	Juergen Rainalter
Employees:	490 (of which 360 in Buers)
Turnover in 2019:	EUR 114.1 million
Business areas:	Railway, construction, industry
Headquarters:	Buers (AT)
Locations:	Berlin (DE), Melbourne (AU), Munich (DE), Stuttgart (DE), Lyon (FR), Amman (JO), Tokyo (JP), Paris (FR), Pune (IN), Kunshan (CN), Beijing (CN), Charlotte (US)
Ratio of exports:	93 percent

Further information can be found in the fact sheet 'Comfort on board ships and yachts - vibration suppression and reduction of airborne noise in shipbuilding'.

This can be downloaded from www.getzner.com/downloads/broschueren/ or is available in printed form from Getzner.