

Superyacht fouling control

Yacht Pro

Forget everything you knew about antifouling

Superyachts are made to be perfect, stunning and breathtaking with **nothing** on their hull **but water...**

Sea environment is what they are created for, but instead of the beautiful synergy of the sea water and a superyacht, we often talk about fouling accumulation that create drag and corrosion, costing owners time and money. Consequently, this increases fuel consumption, affects cruising speed and impacts the environmental footprint.

In today's world of **sustainability awareness**, reducing the impact on the environment is crucial for every boat owner.

Let us introduce you to **new, innovative** but above all **efficient solutions** that a superyacht deserves.



Hempel's proven efficiency solutions will help you utilise the **full potential** of your superyacht

One of the most essential decisions to make is choosing the right painting solution to ensure every part of the superyacht looks exceptional and impressive.

- > Reduce emissions
- > Increase speed
- > Optimise your fleet efficiency
- > Ensure flawless underwater appearance

Hempel's range of innovative hull coatings provide best in class protection for your superyacht, whilst reducing fuel consumption, minimising greenhouse gas emissions and keeping the hull free of fouling, all with minimal maintenance.



Combining the knowledge on different technologies, Hempel has created **Fouling defence** and **Fouling release** solutions for you to choose from:

Fouling defence

Our unique Actiguard technology gives you the best of two worlds: silicone-hydrogel and diffusion control of biocides, all in a single fouling defence coat. You can expect 6 per cent fuel savings compared to best-in-class antifoulings over the entire service interval, regardless of trading patterns and sailing speed, and a clean hull over an idle period of up to 120 days. The result is exceptional fouling control performance and lower CO₂ emissions over docking intervals of up to 60 months.

Fouling release

Our fouling release technology is based on biocide-free silicone and hydrogel, giving you a smooth hull surface that makes it difficult for fouling organisms to attach. The result is less drag, fuel savings averaging 5 per cent and lower CO₂ emissions, increasing the efficiency of your fleet and offering superb return on investment. You can use our fouling release technology on any type of yacht, even those currently using another type of fouling control coating.



Fouling control coating overview

	Fouling defence	Fouling release
	Hempaguard X7	Hempasil X3
Biocide-free	✗	✓
Instant effect on water contact	✓	✓
High activity level	✓	✓
Low activity level	✓	✗
Up to 120 days idle time	✓	✗
Possible to switch from tropical to colder waters	✓	✓
Easy overcoating	✓	✓
Application in warm environment	✓	✓
Full return on paint investment	✓	✗
No fouling cleaning needed	✓	✗
Products suitable for touch ups, repairs and supporting small vessels	 Silic Pro*	 Silic One
Suitable for propellers	✓	✓

* Only available in certain countries

Fouling defence

Hempaguard® X7

Expect nothing on your hull but water

Hempel's premium, industry-leading, coating solution for maximum energy efficiency and a glossy, smooth look below the waterline.

A unique fouling defence coating

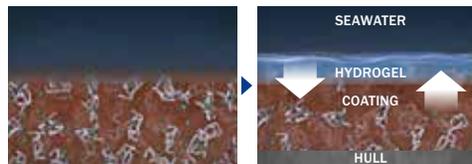
Hydrogel silicone solutions and classical biocidal antifoulings each have their pros and cons. That is why we combined the best of both worlds in a single product. Hempaguard uses groundbreaking Actiguard technology in a unique fouling defence coating. It has been applied to more than 2,000 vessels, including over 20 Superyachts, with unmatched performance results.

What it does for a Superyacht?

Hempaguard coatings integrate silicone hydrogel and full biocide diffusion control in a truly unique fouling defence system that delivers best-in-class fuel savings and performance during idle periods. It delivers an average of **6 per cent fuel savings** from smoothness of the technology and maximum 1.4 per cent speed loss over five years, with correspondingly lower CO₂ emissions. You can also expect the same exceptional performance in both warm and cold waters or when switching from slow to fast speeds, giving you the same performance anywhere and anytime. With its unique combination of silicone hydrogel and biocide diffusion, Actiguard technology gives you all these benefits and can be applied on any Superyacht currently using another hull coating.

How it works

Upon immersion of the low-friction silicone coating, a hydrogel microlayer forms at the silicone-water interface, where it acts as a physical fouling defence. Actiguard technology enables controlled release of biocide through the active hydrogel micro layer. The biocide-activated hydrogel reinforces the fouling defence, significantly extending the fouling-free period and effectively improving fuel efficiency.



Actiguard, Hempel's patented low-friction fusion technology, makes it possible to combine hydrogel fouling release with biocides. An active microlayer forms a barrier between the solid silicone binder and fouling organisms. This establishes a highly effective **fouling defence** barrier with a significantly longer effect than either conventional antifouling or fouling release solutions.

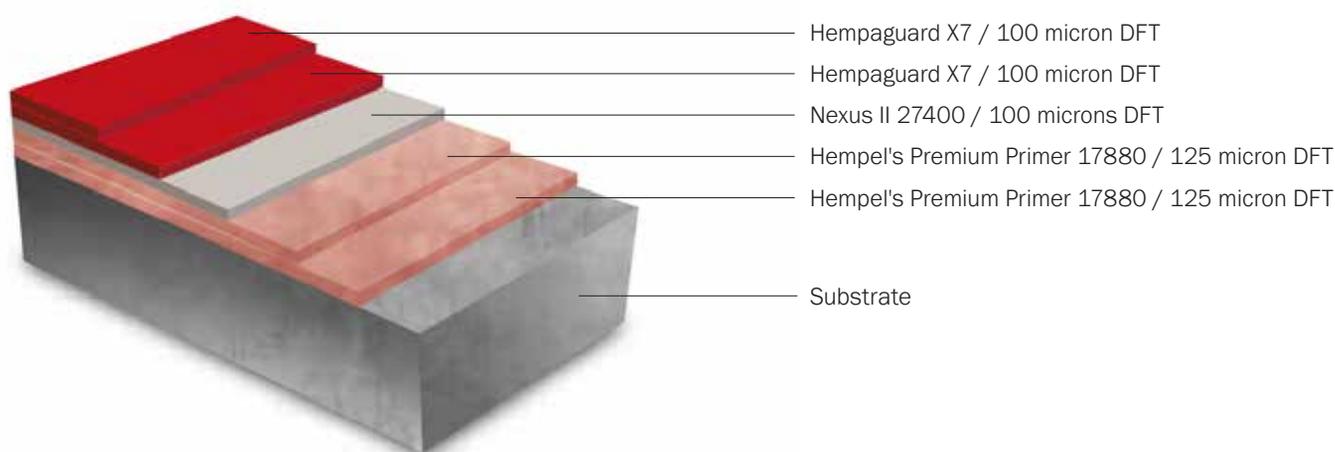
✓	Excellent performance on both hull and propellers for up to 60 months
✓	Fuel saving without the inconvenience of regular cleaning, meaning no downtime and no added costs
✓	Guaranteed* 60 days idle time , with up to 120 days achievable
✓	Best fouling prevention performance with no speed loss guarantee*
✓	Durable, yet easy repairable
✓	Reduced environmental impact

Shades and can sizes

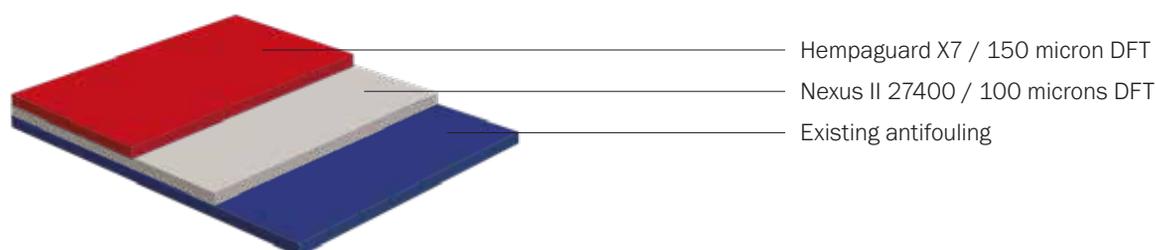


* Terms and conditions apply

Full system for new and bare hull – 5 year scheme



Converting from the existing antifouling system – 3 year scheme



Damaged areas

If you need to repair damages and the substrate is visible, simply use the full system for new and bare hull (5 years scheme shown above) but instead of 2 final layers of Hempaguard X7, apply only 1 layer Hempaguard X7/150 micron DFT.



We are really happy with the silicone product Hempaguard and have almost no growth on the hull even while sitting in Antigua for 3 months. «

Jason Geale
Captain SY G2





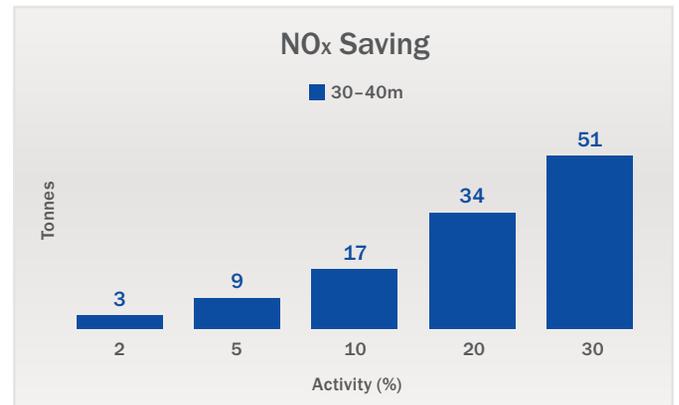
How much more sustainable can your Superyacht be?

Whether you are a private owner who uses the Yacht infrequently or an active Yacht charter with daily usage while globally cruising, the Hempaguard X7 system can make a difference.

Emission savings examples:

Hempaguard X7 ensures fuel savings without the inconvenience of regular cleaning, meaning no downtime and no additional costs. Regardless the size of your Yacht this can make a real impact on emissions. The saving examples showed on these pages are based on a 5 year scheme, something an ordinary antifouling can't even achieve, but Hempaguard X7 can.

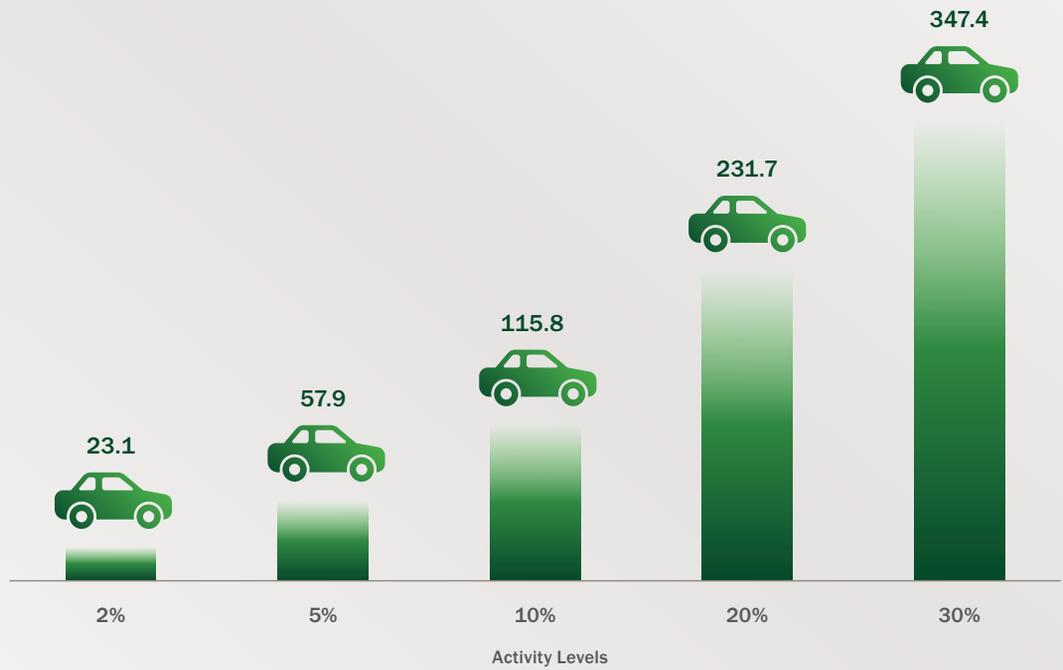
30-40m



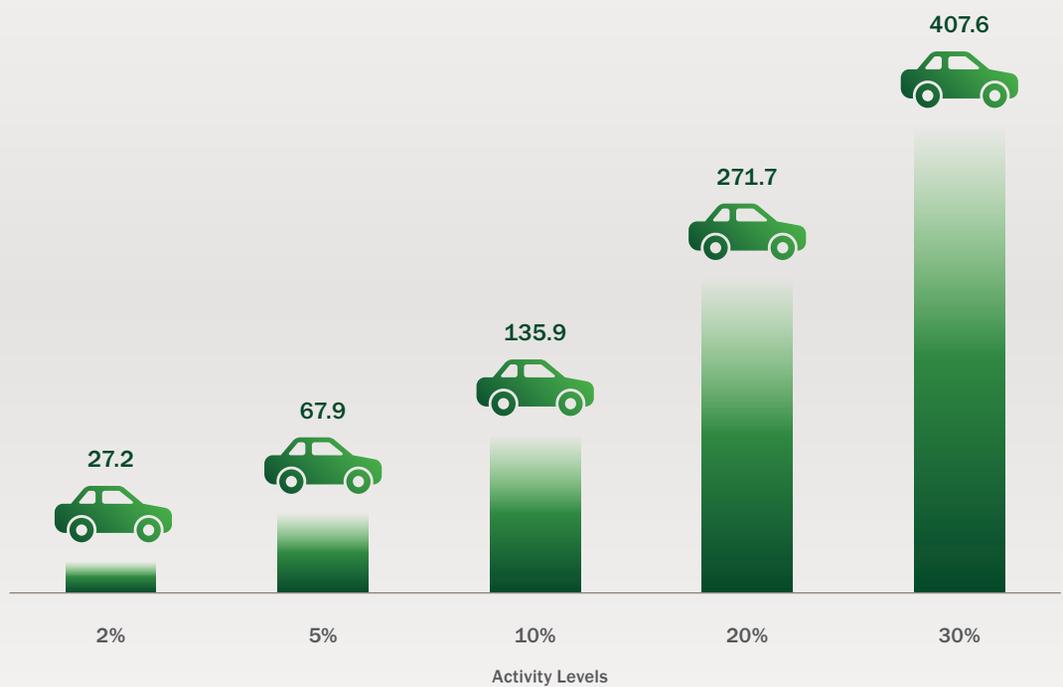
90-100m



Equivalent no. of diesel cars removed from roads for 5 years



Equivalent no. of diesel cars removed from roads for 5 years





Hempaguard X7 is a superior product than all of the others I have ever known. Even the colour (which at the time was a source of discord) the owners like much more now. <<

Captain SY Missy 33





Fouling release

Hempasil X3+

Biocide-free silicone enhanced hydrogel

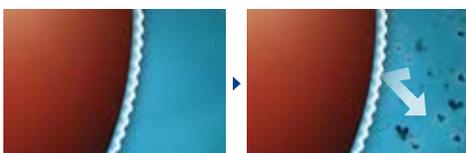
Hempasil X3+ is the leading fouling release solution when it comes to reducing fuel consumption. Based on a smooth silicone binder it utilises an invisible silicone-based hydrogel microlayer that makes it very difficult for organisms to attach to the hull.

What it does for a Superyacht?

Hempasil X3+, our fouling release flagship, is completely **biocide-free**. Not only does Hempasil X3+ **reduce fuel consumption and other GHG over the entire service interval**, it also cuts CO₂ emissions. It can be used on any superyacht or yacht, even on yachts currently using another hull coating. Hempasil X3+ can be applied on existing antifouling and fouling release coatings.

How it works

Together with the pure silicone composition, the unique hydrogel technology sets Hempasil X3+ apart from conventional fouling release coatings. The hydrogel tricks fouling organisms into "thinking" the hull is a liquid instead of a solid surface, thus greatly reducing their ability to settle. The inherent self-cleaning properties of the silicone beneath the hydrogel layer keep the hull surface smooth over the entire service interval.



Unique, non-reactive polymers form a hydrogel layer between the substrate and seawater.

Fouling organisms perceive the hull as a liquid and are consequently unable to attach to the hull.

✓	Instant effect on contact with water
✓	High activity level
✓	Effective even in tropical waters
✓	Easy overcoating
✓	Full return on paint investment
✓	Fuel savings guaranteed
✓	Application possible in warm environments but also down to 0°C
✓	For any type of yacht and superyacht
✓	Completely biocide-free
✓	Durable yet easily repairable

Shades and can sizes



19990

Black
20L



30170

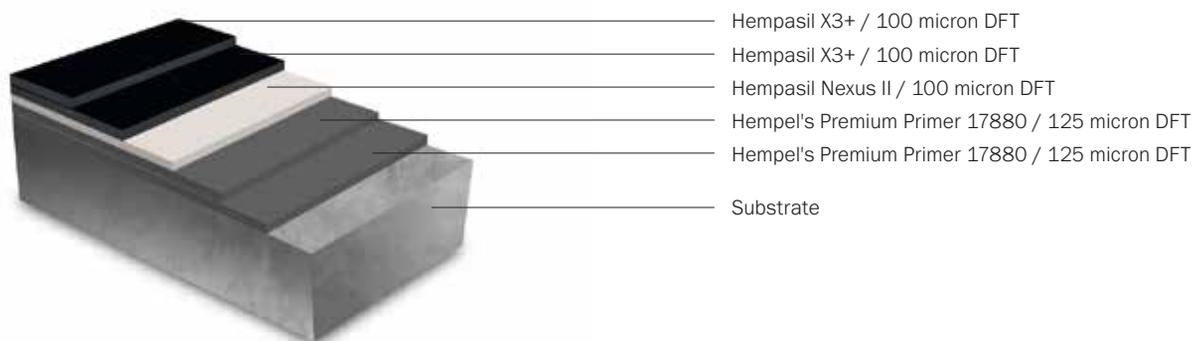
Blue
20L



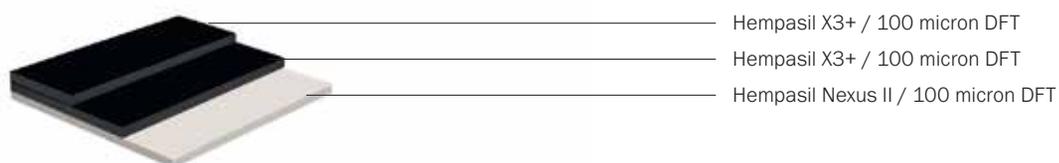
59161

Red
20L

Full system for new and bare hull – 3 year scheme



Converting from the existing antifouling system – 3 year scheme



Damaged areas

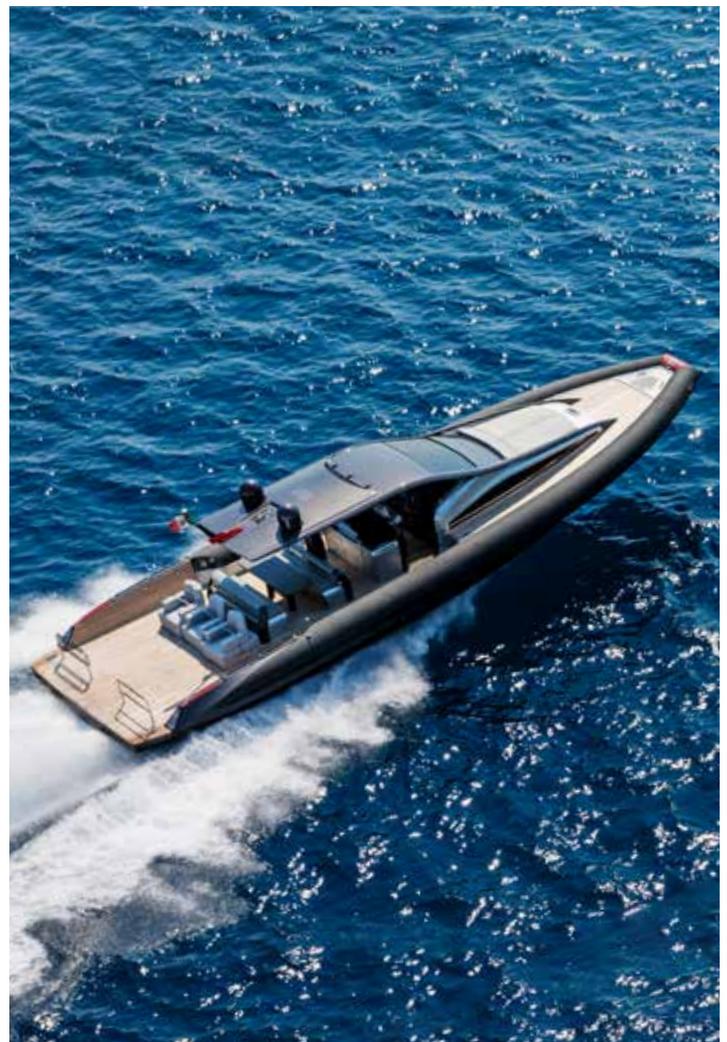
If you need to repair damages and the substrate is visible, simply use the full system for new and bare hull shown above.



Superyacht chase boats and tenders

Total coverage and underwater protection across your whole fleet with Hempel's Silic One & Silic Pro.

Not only can your Superyacht benefit from the unique silicone hydrogel technology, with Hempel's Silic One & Silic Pro systems, so can your chase boats and tenders. Based on the same unique, non-reactive polymers that make our Hempaguard X7 and Hempasil X3+ systems so effective, Hempel's Silic One & Silic Pro are the ideal choice.



	Fouling Defence	Fouling Release
	Silic Pro*	Silic One
Biocide-free	✗	✓
Instant effect on water contact	✓	✓
Suitable for fast and slow vessels	✓	✓
Self-cleaning**	✓	✓
Use on aluminium, GRP and carbon fibre	✓	✓
Suitable for tropical and colder waters	✓	✓
Easy application by brush & roller	✓	✓
Application in warm environment	✓	✓
Fuel savings	✓	✓
Speed improvements	✓	✓
2-year performance	✓	✓
Easy touch-up & repair	✓	✓
Suitable for propellers	✓	✓

* Only available in certain countries

** On motor boats

Our long history with Silicone technology

**Hempel's first
silicone patent.**

1972

2000

2005

2008

**Hempel's Nexus II
tiecoat technology**

Enabling overcoating
of existing antifouling
and effective repair
solutions.

**Hempel's complete
silicone system.**

Hempasil X3 with
Hydrogel technology.
A revolution in
silicone coatings.

Hempasil X3+

2nd generation hydrogel technology with improved performance.

Hempel's Silic One & Silic Pro

Class-leading silicone coatings for the brush/roller market.

2010

2013

2014

2021

Hempaguard X7
Patented Actiguard technology, industry leading performance.

Hempel's Nexus X-Primer. Advanced primer and repair coat.

Total peace of mind

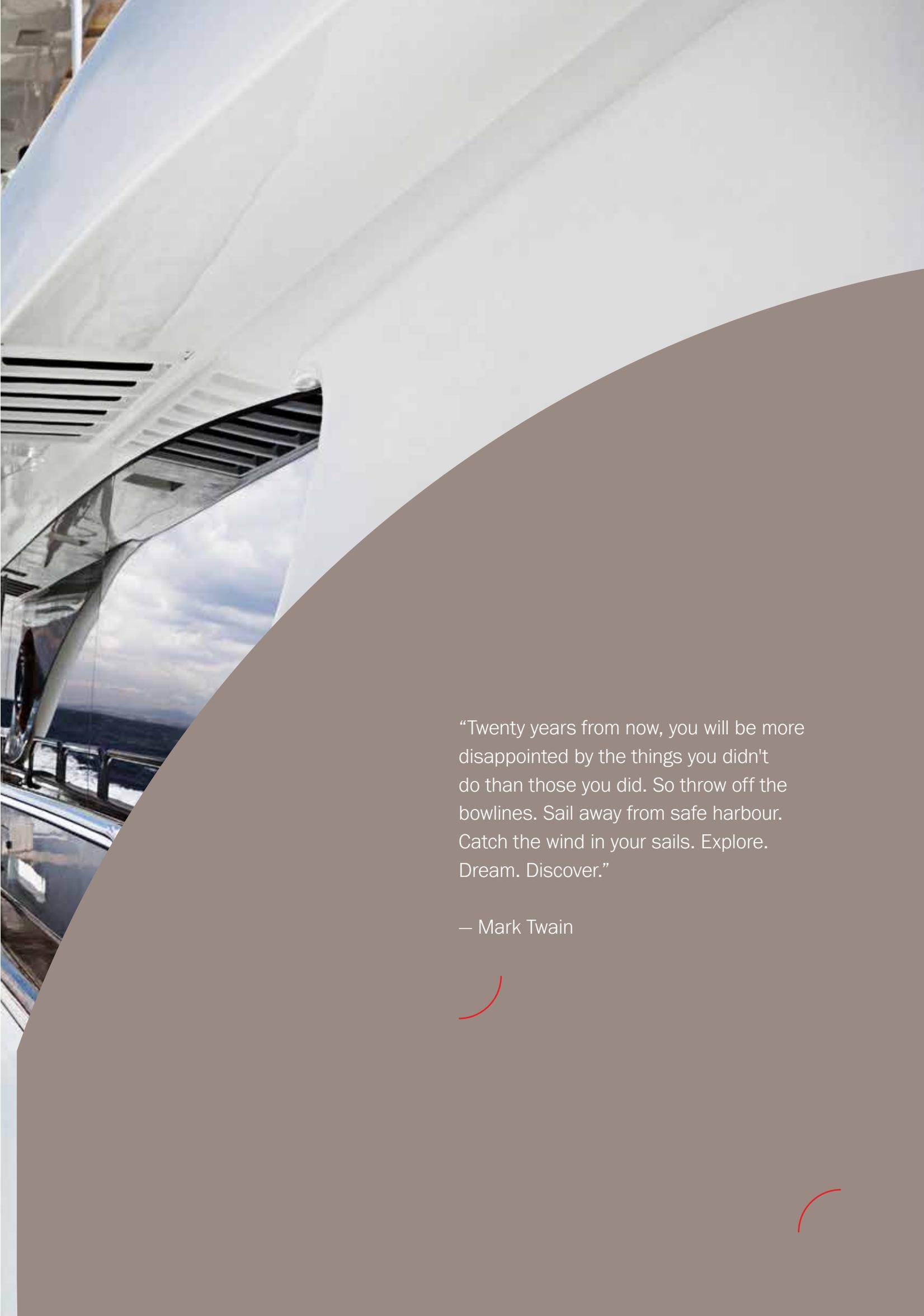
With more than 100 years' experience in producing antifoulings... Hempel is a trusted partner for superyacht owners and operators all over the world seeking a solution for the impeccably clean underwater hull.

All Hempel products are sold with the Hempel service and support required from the initial specification stage to completion of the paint system.

Technical service staff will be available on site during application to ensure the product is applied as per specification – so you get the best possible finish and performance for your yacht.

Because we believe the only thing on your hull should be water.





“Twenty years from now, you will be more disappointed by the things you didn't do than those you did. So throw off the bowlines. Sail away from safe harbour. Catch the wind in your sails. Explore. Dream. Discover.”

— Mark Twain



Yacht Pro

Products for professional use
2021/2022

As a world-leading supplier of trusted coating solutions, Hempel is a global company with strong values, working with customers in the protective, marine, decorative, container and yacht industries. Hempel factories, R&D centres and stock points are established in every region.

Across the globe, Hempel's coatings protect surfaces, structures and equipment. They extend asset lifetimes, reduce maintenance costs and make homes and workplaces safer and more colourful. Hempel was founded in Copenhagen, Denmark in 1915. It is proudly owned by the Hempel Foundation, which ensures a solid economic base for the Hempel Group and supports cultural, social, humanitarian and scientific purposes around the world.

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