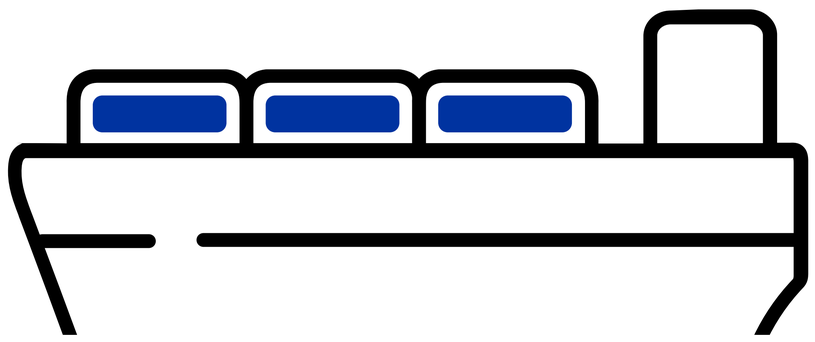
HEMPEL
Trust is earned

Debunking myths about **high-performance silicone coatings**

Bulkers and tankers constitute **30%** of all applications



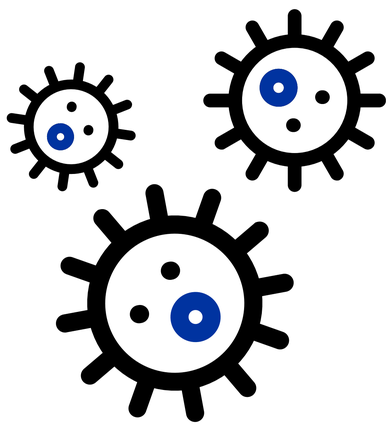
MYTH #1

High-performance silicone coating is working well for containers but not for bulkers & tankers

FALSE

A ship's hull constitutes around 70% of its total structure, making biofouling prevention a key energy efficiency measure across all vessels, regardless of ship type or trading areas. Interestingly, in the case of Hempaguard, bulkers and tankers constitute 30% of all applications, while containers make up 20%, passenger ships account for 16%, and other types of vessels comprise 34%.

95% less amount of **biocides**



MYTH #2

Ten years ago, silicone coatings failed to prevent biofouling accumulation throughout the in-service period

TRUE

In the past, silicone-based coatings lacked the technology to prevent slime accumulation. Today, with the development of a new generation of coating technologies, such as Hempel's Actiguard, it's possible to prevent biofouling growth on the hull and ensure optimised performance for the full-service period.

Hempaguard provides a unique solution for vessels to control and repel biofouling, and especially early stage microfouling and slime. Hempaguard is a silicone-based antifouling system with Hempel's Actiguard technology with a very low amount of biocidal content - specifically 95% less amount of biocides compared to market-average antifouling system.

Investment pays back within a year or less

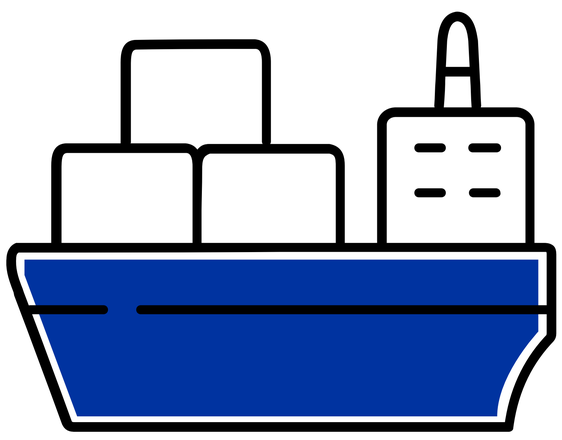
MYTH #3

High-performance silicone coatings, such as Hempaguard, are more expensive than SPC antifoulings

FALSE

The upfront cost for a high-performance silicone antifouling, like Hempaguard, is higher than a Self-Polishing Coating (SPC), but the total savings make up for the higher initial costs in a very short time frame. Investment usually pays back within a year or less, thanks to higher fuel savings, immediate speed gain, and a lower speed-loss in the long term. Additionally, Hempaguard requires less maintenance in the form of in-water hull cleaning, resulting in lower total costs during the docking cycle.

Prevent biofouling **growth**



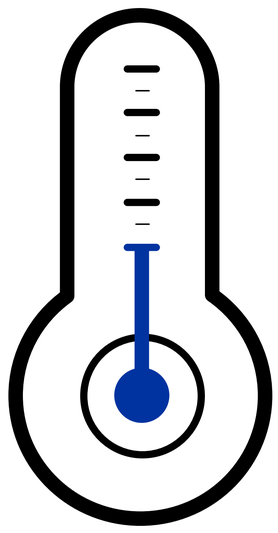
MYTH #4

A full blast is always required before applying high-performance silicone coatings

FALSE

If the existing antifouling coating is in good condition and the hull surface is intact, a full blast isn't necessary. However, similar to other high performance coatings, you get the best performance results with a fully blasted hull.

Down to
0°c



MYTH #5

It’s not possible to apply silicones during winter

TRUE & FALSE

While the application of e.g., Hempaguard is naturally affected by winter temperatures, it's important to know that it remains applicable even in very cold conditions, as low as 0 °C. With Hempel’s new ‘Flex’-system for silicone coatings, we have introduced a system that allows the application to be done from 0 to 10 °C. The system is based on a primer that no longer needs to be applied in one go, and thus benefits from an extended overcoating interval. This means we have increased the flexibility and robustness during the application, which reduces time and costs associated with silicone winter applications.

Silicone coating is now applied on a **global scale**

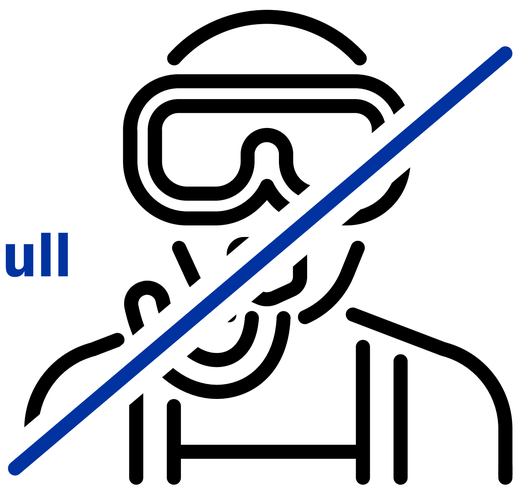
MYTH #6

Shipyards don’t provide silicone application services

FALSE

In the past, only a limited number of shipyards offered silicone applications. However, with the widespread adoption of high-performance silicone coatings, and the increased expertise of shipyard personnel, silicone coating is now applied on a global scale. In China alone, more than 100 shipyards conduct silicone dockings.

Minimal
to **Zero**
In-Water Hull
Cleaning
Required



MYTH #7

High-performance silicone coatings require little-to-no in-water hull cleaning throughout the in-service period

TRUE

By design, the Hempaguard system requires no in-water hull cleaning (IWC). This means that if a vessel is staying within the operational specifications, it can maintain performance without the need for IWC during the in-service period. The need for IWC may arise when vessels change trade profile outside the initial specification, in cases of extensive mechanical damages, or in cases where the coating application doesn't conform to standard procedures. For such situations, Hempel has developed guidelines to ensure IWC interventions have a minimal impact to the performance of the coating system.

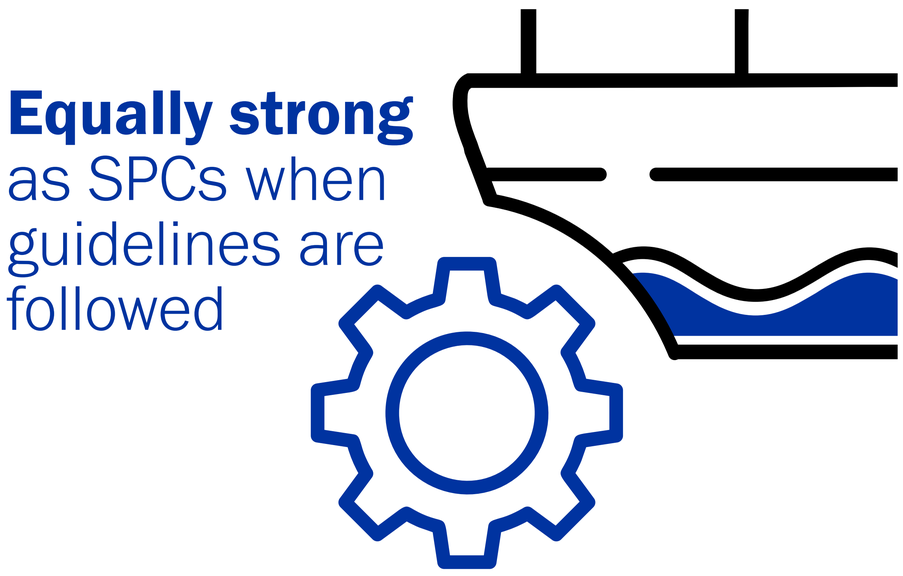
Hempel
specific
cleaning
guidelines

MYTH #8

Silicone coatings can't be cleaned as the cleaning will destroy the paint

FALSE

The methodology of cleaning is very important, and in Hempel we have developed specific cleaning guidelines that ensure optimal results and no mechanical damage to your low-friction silicone coating. The risk of damage is not unique to silicone coatings, as you can also risk damage to your SPC if not cleaned properly.

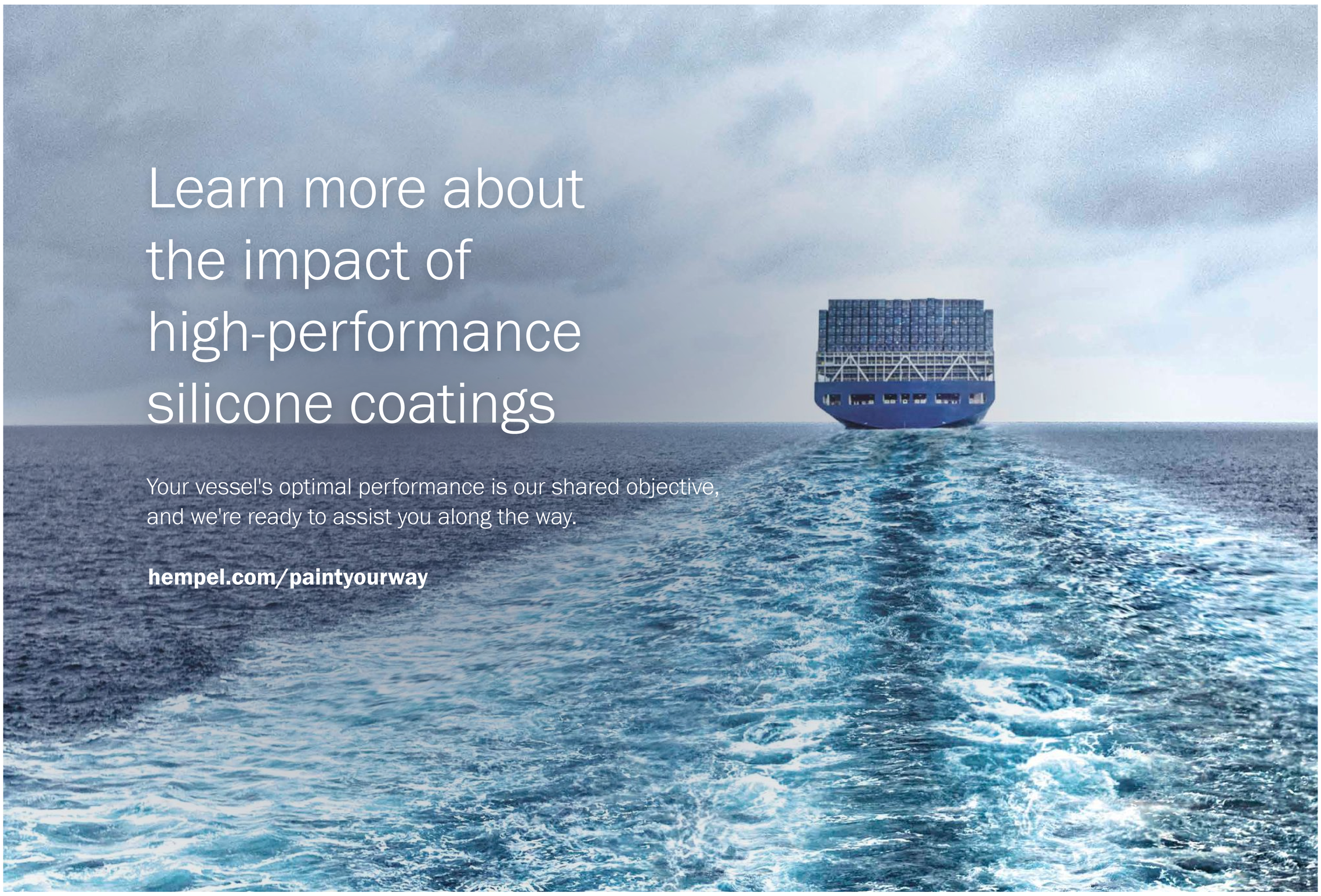


MYTH #9

Silicone based coatings are prone to getting mechanical damaged more easily than SPCs due to low mechanical strength

TRUE

Silicone-based antifoulings are more sensitive to mechanical damage if guidelines are not followed or when the vessel trades in certain regions. Therefore, we always recommend a vessel specific review where the features and operational patterns of your vessel are assessed. It may be that the best solution is combining a silicone coating with other low friction solutions. In Hempel we offer vessel-specific assessments, where we, based on your vessel and operational patterns, advice on the best solution in terms of both operational, regulatory and environmental measures.



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