

# Global Mercy

## Barnacle fouling protection during extensive static periods



# GLOBAL MERCY

outstanding protection against barnacles during extensive idling periods

In September 2020, the hull of the newbuild hospital ship, Global Mercy was coated with the premium antifouling coating SEAQUANTUM PRO ACE containing Selektope®.

Stena RoRo, the company appointed by Mercy Ships as project manager for Global Mercy, selected an antifouling coating containing Selektope that would protect the hull from hard fouling during its extensive static periods.

In support of the charity's vital work, I-Tech AB donated the required volumes of Selektope to Mercy Ships for use in the antifouling coating. The nature of the voluntary aid that Mercy Ships provides means that its hospital ships are often stationary in ports with warm water temperatures for up to 10 months at time at high risk of barnacle fouling. This barnacle fouling could be a costly nuisance for Mercy Ships, both due to increased fuel costs when the hospital ship is sailing between ports and any to costs associated with drydocking the ship to mechanically remove hard fouling, if required.

In this case study, we present evidence that the Selektope-contained antifouling coating has prevented barnacle fouling accumulation on Global Mercy's hull and niche areas, not only during an extended outfitting period in the shipyard but also during several lengthy static periods in port. In total, the vessel has been sat at anchor for over over 32 months to-date.

## Key information

- **Vessel Type:**  
Hospital ship
- **Name:**  
GLOBAL MERCY  
(IMO: 9726499)
- **Size:**  
37 000 GR Tonne  
174 m.
- **Antifouling coating applied:**  
September 2020
- **Antifouling coating:**  
SEAQUANTUM  
PRO ACE (Jotun)
- **Constructed at:**  
Tianjin Xingang  
shipyard, China
- **Total idling time to-date:**  
32 months

## The outfitting period

The outfitting period for Global Mercy was extensive. Since Global Mercy is the world's largest civilian hospital-ship, it took a long time for all the rooms and spaces to be fully purpose built and equipped.

The eight-month outfitting period served as the first test for the Selektope-containing coating as barnacles have ample time to establish themselves and colonise in extended static conditions. This is a growing problem faced by shipyards, particularly those located in warmer waters. The ship was delivered to Mercy Ships on in June 2021.

### Coated surfaces after 8 months in outfitting



*The propeller had some fouling, but the coated hull was completely free from barnacles.*

## Global Mercy enters into service

Global Mercy first sailed from Tianjin Xingang shipyard in Northern China to Antwerp, Belgium where the vessel stayed for 5 months. After spending a week docked in Rotterdam, the vessel sailed to the Granadilla de Abona Port in Tenerife and spent 63 days idling. In May, the average water temperatures around the island of Tenerife are in the range of 20° C.

Global Mercy then sailed to Dakar, Senegal where the vessel was docked for 35 days before returning to Tenerife. The average sea temperature for Dakar over the last 10 years is 25.71° C, with a low temperatures of around 23° C and high temperatures of around 27° C.

Therefore, it can be assumed that the biofouling risk is very high in waters around both ports.

# 1st Underwater Hull Inspection (>26 months total idle time)

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Global Mercy arrived at the Granadilla de Abona Port, Tenerife on 5 July 2022 and did not leave again until 10 February 2022 (7 months idling period). An underwater hull inspection was conducted a couple of days before the vessel departed to sail to Dakar.

This inspection confirmed that the hull and niche areas were free from barnacle fouling. Global Mercy's hull, propellers and niche areas had a very light coverage of green slime. The ship's azimuth propellers were covered with biofouling both soft and hard fouling species.

At this point, Global Mercy had spent an accumulated total of >26 months idling since the vessel was floated in the shipyard for outfitting.



*Coated vertical sides of the hull, uncoated bow thruster, uncoated azimuth propeller >26 months of idle time since ship delivery.*

# 2nd Underwater Hull Inspection (>32 months idle time)

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A second inspection of Global Mercy's underwater hull, propellers and niche areas was conducted in July 2023. At that point the vessel had been docked in Dakar since February 2023 (5 months idle time). Soft fouling was present on the hull, no barnacle fouling was present on the coated hull surfaces. However, significant barnacle growth was present on the bulbous bow in areas where the anchor chain has caused coating surface damage and on the propeller reflecting the high barnacle fouling pressure in the waters in which Global Mercy had sat at anchor for extended periods.



*Uncoated Azimuth propeller with heavy barnacle fouling, coated vertical sides with soft fouling and no barnacle fouling. >32 months of idle time since ship delivery.*

## Mercy Ships

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Mercy Ships operates hospital ships that deliver free surgeries and other healthcare services to those with little access to safe medical care. An international faith-based organization, Mercy Ships has focused entirely on partnering with African nations for the past three decades. Working with in-country partners, Mercy Ships also provides training to local healthcare professionals and supports the construction of in-country medical infrastructure to leave a lasting impact.

Each year, more than 3,000 volunteer professionals from over 60 countries serve on board the world's two largest non-governmental hospital ships, the Africa Mercy® and the Global Mercy™. Professionals such as surgeons, dentists, nurses, health trainers, cooks, and engineers dedicate their time and skills to accelerate access to safe surgical, obstetric and anesthetic care. Due to its planned extensive static periods in warm waters, the vessel is at high risk of marine growth on the hull.

## Contact:

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I-Tech is a global biotechnology company operating in the marine paint industry. The company has developed and commercialised the product, Selektope. With Selektope, I-Tech is uniquely the first company to ever apply principles from biotechnology research in the marine paint industry to keep ship hulls free from marine fouling.



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Selektope is an organic, metal-free active agent added to marine anti-fouling paints to prevent barnacles from settling on coated surfaces by temporarily activating the swimming behaviour of barnacle larvae. This bio-repellent effect makes Selektope the only type of technology of its kind available to the marine paint manufacturers.