



## Hempaguard<sup>®</sup> delivers significant fuel savings for U.N. Ro-Ro

U.N. Ro-Ro is the fourth largest freight Ro-Ro operator in Europe, with a fleet of 12 roll-on roll-off (Ro-Ro) vessels. As with many shipping companies, U.N. Ro-Ro's largest operating expense is fuel, so the company began a project to reduce fuel consumption and associated CO<sub>2</sub> emissions in 2013.

As part of the project, U.N. Ro-Ro approached a number of coating companies and asked them to provide a hull coating solution that would enable its vessels to reduce fuel use. Our solution was Hempaguard X7, the only hull coating on the market to combine the smooth surface of silicone with the controlled release of biocides. U.N. Ro-Ro applied Hempaguard X7 to UND Ege in September 2013. Two-and-a-half years later, Hempaguard X7 had clearly outperformed all the other hull coatings tested by U.N. Ro-Ro.

In the period 2013-2017, the three U.N. Ro-Ro vessels using Hempaguard X7 saw significant fuel consumption decrease compared to the period 2011-2013. As a result, U.N. Ro-Ro decided to upgrade its vessels to Hempaguard and carry out test of this coating for longer period of 5 years docking cycle.

"Hempaguard X7 is succesful in terms of fuel efficiency, and clearly performed better than any other hull coating we tried so far. We will swap our vessels to Hempaguard X7 in order to take advantage of the fuel savings Hempaguard X7 generates and continue to follow-up innovations in hull coating solutions."

Kemal Bozkurt, COO at U.N. Ro-Ro

## Significant fuel savings over three years

### The challenge

U.N. Ro-Ro offers the largest intermodal infrastructure between Europe and Turkey, and is the fourth largest freight Ro-Ro operator in Europe. It operates 12 Ro-Ro vessels from six ports in the Mediterranean, carrying all types of rolling cargo, from vehicles and machinery to project and heavy cargo. As with many shipping companies, U.N. Ro-Ro's number one operating expense is fuel, so the company began a fuel-saving project in 2013 to reduce both fuel consumption and associated CO<sub>2</sub> emissions.

Hull coatings save fuel by combatting fouling. When fouling organisms, such as barnacles and biological slime, attach to a vessel's hull, the extra drag they create means additional fuel is needed to move the ship. Therefore, as part of its fuel-saving project, U.N. Ro-Ro approached a number of coating companies and asked them to supply a hull coating that can keep fouling at bay.

### The solution

We recommended U.N. Ro-Ro to try Hempaguard X7, our most advanced hull coating to date. Most hull coatings use either the controlled release of biocides or the friction-reducing properties of silicone to combat fouling. Hempaguard is the only hull coating on the market to combine the two mechanisms in a single coating. U.N. Ro-Ro applied Hempaguard X7 to three Ro-Ro vessels – UND Ege, UND Birlik and UND Atilim – from September 2013 to August 2014. In the period starting from 2013 to 2017, Hempaguard X7 had clearly outperformed all the other hull coatings that U.N. Ro-Ro tried.

In the two-and-a-half years after application of Hempaguard, fuel consumption by the three vessels decreased significantly compared to the previous service period between 2011 and 2013. When the vessels returned to dock in 2016, the hulls were clean with no fouling present.

According to U.N. Ro-Ro, Hempaguard was the only coating to achieve such good results. As a result of the cost savings, U.N. Ro-Ro has decided to upgrade the rest of its fleet to Hempaguard X7, including two vessels that are being extended to increase capacity.



At a glance			
Vessel owner:	U.N. Ro-Ro		
Location:	Istanbul		
Vessels:	Vessel name	Application date	Second drydock
	UND Ege	September 2013	August 2016
	UND Birlik	June 2014	January 2017
	UND Atilim	August 2014	August 2016
Coating system:	Hempaguard X7		
Vessel areas:	Underwater areas		

### The Hempel Group Head Office

Hempel A/S, Lundtoftegaardsvej 91, 2800 Kgs. Lyngby, Denmark  
 Tel: +45 4593 3800 Email: [hempel@hempel.com](mailto:hempel@hempel.com) **hempel.com**