Accelerating success in a rapidly changing world

100 years young!
Excitingly predictable
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For things to remain the same everything must change

Our recent 100-year anniversary provided an opportunity to reflect on how much Hempel has changed over the years. Driven by our ambition to become the best in the coatings business – and the desire to meet the changing needs of our customers – we have never stood still.

Looking back on our journey one thing particularly stands out. To keep the same reputation for delivering the market’s most trusted solutions, we need to stay committed to challenging ourselves - and evolving with our customers.

And it’s this commitment that underpins much of what you’ll discover in this newsletter. It’s why we have adopted a new global identity. And it lies behind the development of our solutions that anticipate and meet new market needs, like Hempasil X3+.

I hope you enjoy our newsletter.

Kind regards,

Christian Ottosen
Group Vice President, Group Marine Marketing
# Trusted solutions for 100 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1915</td>
<td>The Hempel Group is established in Denmark by J.C. Hempel. The first order of ready-mixed paint is for the barges that ply their trade along the canals of Copenhagen.</td>
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<tr>
<td>1916</td>
<td>The company opens its first factory, in Amager in Copenhagen, Denmark. The skipper logo is introduced, an image that will remain almost unchanged for the next 100 years.</td>
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<tr>
<td>1917</td>
<td>Hempel releases its first antifouling coating for ships’ hulls and starts working with its first overseas agent (in Spain). Later in the year, J.C. Hempel meets A.P. Møller and agrees to create a special colour for the Maersk shipping fleet.</td>
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<tr>
<td>1929</td>
<td>The company expands internationally and has offices in Denmark, Sweden, Norway, Spain and Belgium.</td>
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<tr>
<td>1948</td>
<td>J.C. Hempel establishes the Hempel Foundation. He transfers all his shares to the Foundation, making it the sole owner of the company. The primary purpose of the Hempel Foundation is to maintain a solid economic base for the Hempel Group. Its secondary purpose is to support causes for the common good around the world.</td>
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<tr>
<td>1957</td>
<td>Hempel introduces its first tank linings.</td>
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<td>1972</td>
<td>Hempel introduces its first silicone coatings.</td>
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<tr>
<td>1980s</td>
<td>Hempel introduces fibre-reinforced coatings that increase the mechanical strength of a coating without increasing its dry film thickness. Hempel also introduces the world’s first three-coat system for container exteriors and the world’s first FDA-compliant two-coat system for container interiors. Both systems are still widely used today.</td>
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<tr>
<td>2009</td>
<td>Hempasil X3 is launched. A revolutionary new anti-fouling coating based on hydrogel technology, Hempasil X3 offers customers the industry’s first fuel-saving guarantee.</td>
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<tr>
<td>2013</td>
<td>Hempel moves into new headquarters in Lundtofte, just outside Copenhagen. It launches Hempaguard, the world’s first fouling defence coating to come with a customer satisfaction guarantee.</td>
</tr>
<tr>
<td>2015</td>
<td>Hempel celebrates its 100th anniversary. The company has over 5,200 employees working in more than 80 countries. It has 25 ISO-certified factories, 11 R&amp;D centres and 150 stock points around the globe – and nearly 700 litres of Hempel coatings are applied somewhere in the world every minute.</td>
</tr>
<tr>
<td>2015</td>
<td>Hempel introduce a new identity to reflect the global company we have become over the last century. Here’s to the next 100 years!</td>
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Celebrating Hempel’s 100th anniversary all over the world

In July 2015, our 100th anniversary was celebrated in style in our home town of Copenhagen, Denmark. Over 700 guests from 45 countries were there to say “happy birthday” and see the launch of our exciting new brand logo.

Our employees across the globe have also been staging their own events locally to mark this hugely significant milestone in our company history. Thank you, everyone!
Today, our customers operate all over the world. So they want us to operate as one brand all over the world. Mindful of this, we have developed a new identity that builds on our traditional values. This reflects the company we are today: one global business, bound together by one vision and one culture.

New identities invariably bring new questions. Here Malte V. Eggers, Group Branding and Communication Director, aims to anticipate any potential questions about the new Hempel identity and the retirement of the popular Skipper logo.

Q: Why is the new identity being introduced?

A: To meet the current needs of our customers while reflecting who we have become. Hempel has changed and grown dramatically in recent years – as has our customer base. We have added new companies, new brands and expanded into new markets. And as our expansion continues, the importance of one brand around the world becomes even more significant.

Q: So the new identity reflects how Hempel is evolving?

A: Yes. The world in which we work has become more connected. So we have focused on consistently creating value for customers by aligning our solutions and expertise across industries and regions. This is crucial if we are to continue to secure trust and loyalty, and drive greater efficiencies in the way we work.

Q: What are the main goals behind the new identity?

A: To highlight that we offer trusted solutions that deliver the highest level of performance and efficiency. And to present us as a business in constant progress, whilst also reflecting connections we are creating across our company; where teams work together to deliver greater value and innovation.

Q: Was the new identity linked to the 100-year anniversary?

A: No. The timing was just a happy coincidence. But while it represents a new chapter for us, it is inspired by our history and heritage. However, we needed a new global identity that shows we are a confident, contemporary business that has diversified away from our solely Marine solutions.

Q: Will you keep using the Skipper?

A: The Skipper will take pride of place at the Hempel museum. But, in future, the new logo will be used in all our applications. The Skipper, designed to evoke our promise to protect, has been a fine servant and figurehead for our business but now he hands over to the Helix.

Q: But does the Skipper’s spirit live on?

A: The Skipper’s spirit of mastery and dedication – always central to the success of Marine – will remain at the heart of the Hempel business. The Skipper may be gone but his ‘DNA’ very much lives on through the new identity.
Say ‘hello’ to the Helix

The continuous form of the Helix reflects that we are a business that never stands still, constantly challenging ourselves to be the best in the coatings business; the interlocking colours within the Helix signify how we are connecting with customers to form an integrated partnership; blue represents the colour of trust, whilst red the colour of inspiration, and in combination with our impactful typeface they are inspiring confidence.
Excitingly predictable

Reduce fuel consumption and associated CO₂ emissions in the first year? New Hempasil X3+ guarantees it.

Dependably higher fuel savings, CSR (Corporate Social Responsibility) and insurers’ demands for efficient ships provided the inspiration for Hempasil X3+, a third generation fouling release coating.

Biocide-free, Hempasil X3+, an evolution of Hempasil X3, offers a green alternative. It is proven to provide excellent self-cleaning and fuel efficiency gains – while significantly reducing the carbon footprint of a vessel.

This makes Hempasil X3+ ideal for fleets in the many coastal and inland areas where legislation on biocides is becoming increasingly stringent in today’s GHG-driven environment.

In a nutshell:
• No negative impact on the environment
• Greater fuel efficiency
• Excellent self-cleaning properties
• High level of protection against fouling

Invisible technology, clear advantages
The advanced hydrogel that Hempasil X3+ relies on may be invisible, but the commercial advantages it brings are anything but. So how does it work?

The green alternative
One end of the Hempasil X3+ polymer absorbs water to create a water-like Hydrogel layer that stops protein and bacterial organisms from attaching to the hull.

The other end of the polymer ensures the Hydrogel is firmly attached to the paint surface providing stable performance over time.
When the Grimaldi Group decided to move towards more energy-efficient and greener operations, reducing fuel consumption – and associated emissions – from its vessels was the obvious place to start.

Since then, the Group has applied Hempasil X3 or Hempaguard X7 to a number of freighter cruisers, roll-on/roll-off ferries and passenger ferries since 2011. They have recorded significant reductions in fuel bills and associated CO₂ emissions as a result.

Our team of coating advisors worked closely with the Grimaldi Group throughout, from initial specifications to final application on each vessel, to ensure a fast and efficient coating process.

In September 2014 six Grimaldi vessels were coated with Hempaguard X7 in one month.

“In a nutshell:
- 35 vessels coated from Nov 2011 till January 2016
- 120 Hempel coating advisors involved
- 34,460 litres of Hempasil X3 applied
- 35,240 litres of Hempaguard X7 applied

“As a sign of our long-term commitment to more energy-efficient operations, we have invested over EUR 100 million in green refitting technology, including silicone paint.”

Grimaldi Group
Euronav test proves Hempaguard®’s fuel-saving promise

Remarkable performance during a 45-month patch test convinced Euronav to switch vessels to Hempaguard.

Hempaguard has developed a reputation across the industry for delivering significant fuel savings compared to conventional antifoulings. As the only hull coating on the market to combine the low surface friction of silicone with efficient fouling preventing biocides, the coating has seen more than 400 full-ship applications since its full launch in September 2013. But back in 2011 it was a very different story.

At that time, Hempaguard was still in development and we were looking for companies to trial the new technology. Euronav, one of the global leaders in the shipping of crude oil, had been using our silicone coatings on its tankers since 2007. The company was keen to try the new technology, but wanted to patch test it on a vessel in active service before making any full-ship applications.

Outperforming the SPC antifouling

“Maintaining a smooth and fouling-free underwater hull surface during the entire service period is vital for the efficient operation of our vessels,” explains Theodore Mavraidis, Fleet Technical Manager, Euronav Ship Management (Hellas) Ltd. “We tested Hempaguard using a (300m²) test patch on our VLCC Famenne, which trades in fouling-aggressive warm waters.”

According to Theodore Mavraidis, the results were impressive. Famenne was using a standard SPC coating and the Hempaguard test patch clearly outperformed the standard SPC antifouling in terms of smoothness and low surface friction.

“A diving inspection after 23 months in service, and again after 45 months in service, confirmed and documented that Hempaguard is still delivering slime and fouling-free performance,” he says.

Excellent performance despite extensive idle periods

The Famenne mainly trades in Asia and the Middle East, but over the test period it traversed most of the globe, including stints in southern Europe and North America. In addition, Famenne experienced a number of relatively long idle periods during the test.

Torben Rasmussen, Global Key Account Manager, Marine Marketing, Hempel, explains that long idle periods are an area where Hempaguard clearly outperforms other hull coatings, especially SPC antifoulings: “One of the key benefits of Hempaguard is its ability to maintain its antifouling performance despite long idle periods,” he says. “Thanks to the combination of silicone and biocides, Hempaguard guarantees continued fouling resistance during idle periods of up to 120 days – which is much longer than other hull coatings. This was clearly demonstrated during the Euronav test.”

Impressive results lead to full-scale applications

Following the positive results of the test and the projected fuel savings that Hempaguard is expected to deliver, Euronav intends to switch a number of vessels to Hempaguard. Three vessels are already lined up to receive full-scale Hempaguard applications this year, including the Suezmax Devon and the VLCCs Hakone and Hirado.

We would like to take this opportunity to thank Euronav for taking part in the test and allowing us to share the results.

“A diving inspection after 23 months in service and again after 45 months in service confirmed and documented that Hempaguard is still showing a slime and fouling-free performance.”

Theodore Mavraidis, Fleet Technical Manager, Euronav Ship Management (Hellas) Ltd.
In comparison, the standard SPC antifouling coating suffered from heavy fouling. This high fouling build-up was largely due to relatively long idle periods during the test.

After 23 months of trading in warm and fouling-aggressive waters, the hull of the Famenne was inspected in the United Arab Emirates. The Hempaguard test patch was still exceptionally smooth.

After 45 months, the Hempaguard test patch was inspected during a night dive in Singapore. The Hempaguard test patch was still smooth and fouling free. This ‘remarkable’ performance has convinced Euronav to complete full-scale Hempaguard applications on a number of vessels, starting with the Suezmax Devon.

**About Hempaguard**

Integrating silicone-hydrogel and full diffusion control of biocides in a single coat, Hempaguard coatings release 95 per cent less biocide than traditional antifoulings and yet still deliver better fouling control – to give you higher fleet efficiency and better environmental performance. Also, unlike regular hull coatings that are usually specified according to the vessel’s speed and activity level, Hempaguard coatings retain effectiveness when switching between slow and fast steaming – so your vessel can change sailing routes and trading patterns without losing performance.

- Average fuel savings of 6 per cent over the entire docking interval
- Excellent fouling resistance for idle periods of up to 120 days
- 95 per cent less biocide than traditional antifoulings
- Vessels complying with a full Hempaguard X7 specification get a performance satisfaction guarantee

**At a glance**

**Company:** Euronav Ship Management (Hellas) Ltd

**Vessel name:** Famenne

**Vessel type:** Very Large Crude Carrier

**IMO number:** 9233272

**Deadweight:** 298,412

**Coating:** Hempaguard
Onwards and upwards

Just two years after its launch, Hempaguard is protecting over 400 vessels.

Rising bunkering costs and tightening environmental regulations led to the development of Hempaguard. Our first product to use our proprietary Actiguard technology, it launched in September 2013.

As word spread about Hempaguard’s excellent fouling prevention, it quickly became sought after. It also gained attention by winning Shipping Efficiency’s Environmental Technology award in 2014.

“We are delighted with the success of Hempaguard. It really is a strong endorsement of the protection properties of our product. The combination of silicone-hydrogel and biocide science has revolutionised fouling defence to deliver excellent fouling prevention – including up to 120 days during idle periods – plus fuel savings of six per cent on average.”

Claes Skat-Roerdam, Marketing Manager, Fouling Control, Hempel A/S
New cooperation with DNV GL

Greater knowledge brings greater power. With this in mind, we are collaborating with DNV GL to provide state-of-the-art analysis of fleet performance.

To reap the full benefits of efficiency improvements, reliable measurements and accurate analytics are essential – both to set baselines and calculate returns. Our collaboration with DNV GL is built on this idea.

The agreement enables us to use DNV GL’s Eco Insight fleet performance management portal to provide clear, comprehensible and verifiable analytics of hull and propeller performance.

Delivering reliability and proven success

ECO Insight can offer superior performance baselines and demonstrate a more explicit relationship between hull and propeller performance, and the actual fuel consumed. This makes it easier to quantify return on investment while enabling us to further optimise our coatings.

The potential for improvements in hull and propeller performance on the energy efficiency of vessels is significant. Estimates of potential fuel and greenhouse savings point to a figure of ten per cent.

Using analytics to ensure optimal value

Christian Ottosen, Group Vice President, Group Marine Marketing: “At Hempel, we place great importance in being close to our customers and providing the best individual service. With the data analysed by DNV GL, we will be able to optimise our customers’ fuel performance, improving hull performance matching specifications precisely to individual needs and trade, dry dock intervals and technical service in dock.”

A vote of confidence

Hempaguard has won the prestigious IBJ Innovative Technology Award (Marine), triumphing against stiff competition.

In the relatively short time Hempaguard has been on the market, it has made a big impact. This most recent award recognises that coating represents a significant, innovative step forward for the marine industry.

A glittering gala

IBJ (International Bulk Journal magazine) received more entries than ever this year for the event, which was started seven years ago. This time round, the awards ceremony was held at the Hilton in Antwerp, Belgium.

The event was hosted by Belgian tennis champion Kim Clijsters, a former World Number One in both singles and doubles who has won four Grand Slam singles titles.

An inspiring win

Christian Ottosen, Group Vice President, Group Marine Marketing: “We are very pleased to not only have been shortlisted; but also to have won the prestigious IBJ innovation award. This endorsement of Hempaguard by our peers is a source of great pride for us at Hempel.”

On the night, Hempel was represented by Mr. Piet Vermeer (in the center) and Tino Rikkert of Hempel Benelux.
New operational patterns require solutions that offer a new level of flexibility
Today’s ‘new normal’

... requires premium coatings that work well at slow speeds and during long idle times.

**Overcapacity and high earnings: a paradox?** The tanker fleet has increased by 50% since 2005 and seaborne trade has increased by 5%. Yet despite the tonnage surplus, the tanker market is thriving. For instance, earnings for VLCCs hit a major ‘milestone’ of USD 100,000/day in October 2015 – the first time they have risen that high in five years.

Other practices, are restricting the supply of vessels to the market. Notably, floating storage (which keeps vessels idle), longer travel routes, and the large number of ships booked into dry dock before the end of the grace period of the BWTS regulations.

**A pressing need for premium coatings**

Ship owners recognise that the ‘new normal’ means their vessels need premium hull coatings that work well at low speeds and during long idle periods more than ever. Reflecting this, they are investing heavily in products like Hempaguard and Globic 9000 – products which reflect our commitment to anticipate and meet market needs.

The current market situation is driving demand for premium hull coatings.
The answer is yes. Now what’s the question?

You define the exact level of partnership you want with our technical service team. We make it happen.

If you can outsource non-core operations to a trusted partner you have a competitive advantage. And that’s where our technical service team can help. Highly trained, we offer you specialised end-to-end partnership for today’s increasingly specialised coatings market.

Free-up time to focus on business-critical decisions
With over 600 FROSIO/NACE-certified coating advisors around the globe, we ensure your coatings are applied as efficiently as possible and perform as promised. We guarantee you benefit from high-quality surface preparation and application – and, because we take care of the entire coating process for you, you are free to concentrate on other docking tasks.

Choose the service package that suits you
Our new project management programme lets you get the exact level of technical service you desire. And, in addition to our standard technical service packages, you can also choose from a number of additional services.

• Paint consumption optimisation
• Tailor-made specifications
• Daily maintenance advice
• Onboard inventories
• Maintenance training for crew and management
• General condition surveys

“Our customers want end-to-end partnership tailored to their specific needs. So that’s exactly what our technical service team offers.”

Bo Kruse,
Technical Service Director, Europe, Hempel A/S
Expert support every step on the way

- Advising on paint consumption management
- Project planning
- Checking on non-conformities & advising on corrective actions
- Making detailed inspections & recommendations, ensuring best results
- Matching specifications to conditions & fine tuning for optimal performance
- Advising on paint consumption management

Did you know: 95% of coating failures are caused by incorrect surface preparation, incorrect application, or a combination of the two.
Customer perspective:

Uni-Tankers

Jan Rindebæk, CTO at Uni-Tankers explains why partnering with our technical service team is very different to a typical buyer/supplier relationship.

“In 2012, we increased our fleet from 5 to 17 vessels and were very interested in implementing cost-saving initiatives on our ships. We first used Hempaguard in September 2013 on Fionia Swan, an A2 double-hulled oil and chemical tanker.

Hempel ensured the vessel was perfectly prepared and the entire coating process was completed inside four days. Hempel’s very alert and cooperative technical service team oversaw the entire process, which meant our onsite superintendent was able to concentrate on other docking tasks.

Fionia Swan docked again in September 2015. Except for mechanical damage, the hull looked like new and we estimate Hempaguard has delivered fuel savings of approximately 4%. Due to these good results, we have decided to use Hempaguard on most of our other vessels.

Hempel treat us as an important partner who contributes to the continuous development of hull products. We are very comfortable with this relationship!”

Jan Rindebæk, CTO, Uni-Tankers

In a nutshell

Coating system: Hempaguard X7
Date of application: September 2013
Location: Remontowa Shipyards, Poland
Vessel areas: Flat bottom and vertical sides
Technical service agreement: Premium

“As a Hempel customer, we are not just seen as an end-consumer – we are treated as an important partner who contributes to the continuous development of hull products.”

Jan Rindebæk, CTO, Uni-Tankers
Upcoming events

Hope to see you there!

Seatrade Cruise Global
FORT LAUDERDALE FLORIDA. **14-17 March 2016**
Seatrade Cruise Global is the premier global event for the cruise industry. Offering a multi-track conference program, it brings together every facet of the business including: cruise lines, suppliers, travel agents and partners from across the world. Stand No Seatrade Cruise Global 2607-Hall D.

Asia Pacific Maritime (APM)
SINGAPORE, MALAYSIA. **16-18 March 2016**
Asia Pacific Maritime is one of Asia’s biggest exhibitions and conferences focusing on shipbuilding, marine, workboat and offshore. It brings together key members from the global maritime and offshore community platform to buy, sell, network and learn. Stand A-R2, Level 1 Hall A.

Navalia
VIGO, SPAIN. **24-26 May 2016**
Navalia – the international shipbuilding exhibition – is one of the top maritime trade fairs. Around 750 companies from 90 countries are expected to attend, along with about 25,000 visitors. Stand C16.

Posidonia
ATHENS, GREECE. **6-10 June 2016**
Posidonia continues its strong international growth. 2014 saw a record 1,843 exhibitors and 20,000 buyers from 96 countries, a massive additional audience for products or services. This is the largest gathering in the international shipping calendar.
Trusted solutions

Since 1915 Hempel has been producing protective coatings that help customers to safeguard their assets whilst keeping them looking their best. Today we are a world-leading supplier of trusted solutions in the Protective, Decorative, Marine, Container and Yacht markets. Employing over 5,000 people, across 80 countries worldwide, with 27 factories and more than 150 stock points globally. This includes many recognised brands like Crown Paints, Schaepman and Jones-Blair.