



# Trusted protective coatings

For the wind energy industry

Fast, advanced protection from a trusted supplier

# World-leading coatings supplier

Hempel was founded in 1915 and is today one of the world's leading manufacturers and suppliers of protective coatings. We offer advanced high-performance solutions to the protective, decorative, marine, container and yacht industries – and have worked with the wind energy industry since the 1980s.

From wind turbines and power stations to some of the world's most famous bridges and buildings, our coatings can be found around the world, protecting valuable structures and equipment from corrosion. As well as a complete range of high-performance coatings and trusted technologies, we provide customers with expert technical service and support to ensure our coatings add real value to their business.

## Proven performance in the wind energy industry

A supplier to the wind energy industry since the very beginning, we have delivered coating systems to many of the world's best-known wind farms. Over the years, we have built up a vast experience and knowledge of the industry, and our proven track record makes us the trusted coatings partner for wind turbine manufacturers around the world.





**Global presence**

With 80 offices, 27 ISO-certified production units and 10 Research & Development centres across the globe, we are uniquely placed to serve the global demands of the wind energy industry. We can deliver high volumes anywhere on the globe and tailor our global solutions to meet your local needs.



**Research and development**

Our R&D teams are committed to the continuous development of innovative and effective coatings. With local R&D teams in key wind energy locations, we tailor our solutions to your specific needs and local conditions to ensure you get long-term reliability, reduced maintenance costs and high production throughput.



**Professional support**

From planning and specification through to application and maintenance, we have key people to support you both off and onsite. Our multinational coordination teams work with you every step of the way to ensure that your coating project runs smoothly from start to finish, and our renowned technical service teams are on-hand to assist with correct and efficient application.



# The wind energy industry's leading coatings supplier

**From the North Sea to the Indian mountain ranges, Hempel's coatings are trusted the world over to protect wind turbines and components from the corrosive forces of nature.**

At Hempel, we have worked with many of the wind energy industry's leading players to develop a specialist coatings assortment that covers all wind turbine components, from onshore towers and nacelles to offshore foundations and blades. Our focus on low total cost of ownership ensures you get prolonged service life and little or no maintenance.

## **Reducing your overall cost per kilowatt hour**

In order to help the wind energy industry reduce the overall cost per kilowatt hour, we work with applicators to bring down manufacturing costs, and partner with customers to develop ever more cost-effective solutions. Our quick-drying coating systems, for example, reduce manufacturing bottlenecks to vastly increase production speeds and cut drying hall costs.

## **Specialist support for applicators and production lines**

In a competitive environment, success requires more than just technology. You need people with skills, knowledge and experience in your industry to help turn that technology into a value-adding solution. This is where Hempel stands out.

Many of our highly qualified coating advisors and engineers are specialised in wind energy production. Their job is to ensure your coating system meets or exceeds expectations. They work closely with you from initial specifications through to on-going maintenance, and can visit your production line or construction site to improve efficiency by adjusting application procedures and training applicators.





**At a glance**

Tower type	All types
Location	China

## 20,000+ Hempel coated wind towers in China

**Serving the biggest**

China is the world's largest producer of wind turbines, and produces turbines and components for both local companies and large multinationals. With extensive local presence and understanding, Hempel supplies coatings for around 50 per cent of the wind turbines produced in the country.

**Local and global knowledge**

Since the very beginning of the industry in China, Hempel has worked closely with Chinese manufacturers and global companies to develop a range of locally adapted coating systems that can meet any anti-corrosive need. Hempel's Technical Service teams also work closely with local fabricators to ensure application quality and give onsite advice to increase efficiency and lower costs.



# Experience across the wind energy industry

Whether you are constructing onshore or offshore,  
Hempel has the experience, expertise and  
technology to make a real difference.



### Unrivalled experience in offshore protection

Hempel coatings were used on the world's first offshore wind farm in Thunoe Knob in Denmark in 1995, and since then we have developed unrivalled expertise in offshore wind farm protection. Today, our coatings protect more than 50 per cent of offshore and onshore towers around the globe, as well as many foundations. The world's first offshore wind farm is still going strong. The ten 500kw turbines were inspected in 2014 and the coating system was found to be in near perfect condition. It should last another 5-10 years, giving it a total lifetime of more than a quarter of a century.



### Pioneering solutions for onshore wind turbines

Over the years, Hempel has pioneered many solutions for onshore wind turbines that have gone on to become industry standards. We launched the world's first two-coat system for onshore wind towers in 2008, for example, to help manufacturers increase production speeds. Today, around 80 per cent of wind tower producers using a two-coat system choose Hempel.



### Speciality coatings for concrete towers

With many years' experience of producing coatings for both concrete and steel, Hempel is uniquely placed to assist in the development of the fledgling concrete tower industry. Concrete towers are cheaper to produce than steel ones, but they require specific coatings. Hempel's range includes specially developed waterborne coatings for concrete towers that offer long-term protection and can be robot-spray applied.



# Vestas V164: the world's tallest wind turbine



## The challenge

Standing at an impressive 140 metres tall, Vestas' new V164 8MW wind turbine can supply electricity to around 7,500 homes. Due to the tower's size, special vehicles are required to move the pieces.

## The solution

The customer chose a two-coat system that is used as standard on Vestas' wind towers. As well as excellent anti-corrosive performance and rapid application properties, the system delivers excellent abrasion-resistance to protect pieces during transportation and installation, and lasting weather and UV resistance. The first test turbine is now producing electricity at the Danish National Test Centre.

## At a glance

Customer	Bladt Industries A/S
Location	Denmark
Date	2014
Coating system	Hempadur 4774A Hempathane 5561B
Delivery to	Vestas A/S

# Special formulations for concrete towers



## The challenge

The 100-metre-high concrete towers are placed in windy and humid mountainous environments, and the customer needed an interior emulsion that could protect concrete in these conditions. The coating also had to be extremely cost-effective, optimised for airless sprays and delivered in 1,000 litre vats.

## The solution

Hempel developed a special version of its existing Plastimat emulsion – a fungus, algae and bacteria resistant coating that is ideal for high and humid locations. The viscosity was adjusted for airless sprays and it was specially formulated to ensure it would not produce sediment when stored in large containers.

## At a glance

Tower type	Concrete
Location	Portugal
Coating system	Plastimat





# Product systems

Hempel offers a complete range of coatings and coatings systems specifically for wind turbines, blades, nacelles and foundations.

All our products are ISO-certified and tailored to suit local needs, conditions and standards to ensure you get long-term performance and reliability.



## Product in focus

### Avantguard® redefining anti-corrosion

Certified to ISO 12944, our Hempadur Avantguard zinc epoxies use award-winning activated zinc technology to deliver significantly better galvanic protection than traditional zinc epoxies. This enables you to reduce the metallisation layer on a wind tower, significantly reducing your surface preparation costs.

### 3-coat systems

Delivering the ultimate protection in tough environments, our three-coat systems are hard-wearing, long-lasting and easy to apply. A typical three-coat system may include:

- Hempadur Avantguard**
- Hempadur Mastic 45880/W**
- Hempathane HS 5561**



### 2-coat systems

Designed to reduce the overall cost of wind tower production, our two-coat systems dry up to 30 per cent faster than equivalent three-coat systems. A typical two-coat system may include:

- Hempadur 4774D**
- Hempathane 5561B**



### Maintenance solutions

We provide a full range of specialist maintenance solutions to keep your wind energy installation running smoothly 24/7.



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, Blome International Inc, Schaepman and Jones-Blair.

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