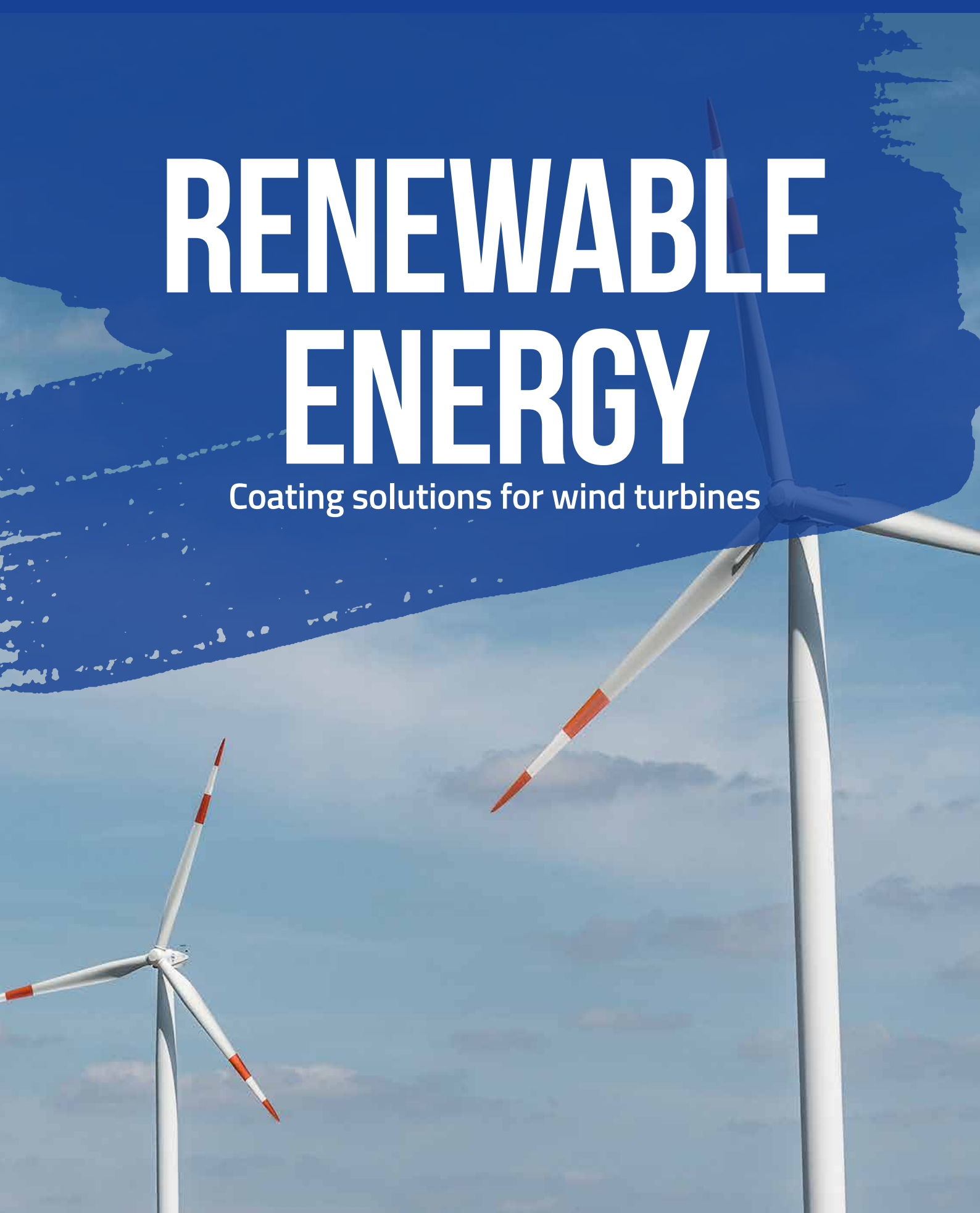


# RENEWABLE ENERGY

Coating solutions for wind turbines



# INNOVATIVE PAINTS AND COATING SOLUTIONS FOR WIND TURBINES

Teknos is a leading international industrial paint producer with decades of experience in corrosion protection. Our coatings protect wind turbine towers, bridges, steel structures, and other engineering works globally.

Teknos has been operating in the wind power industry for over 20 years, responding to the needs of our customers with innovative paints and coating solutions. Our portfolio comprises solutions for virtually all areas of wind turbines, from rotor blades and components to towers and offshore foundations. We offer solutions with compelling advantages: sustainable, low-VOC products, short process time, higher productivity and considerable cost-out.

#### GLOBAL-LOCAL SERVICE CONCEPT FOR OUR CUSTOMERS

Teknos is widely known as an innovative, technology-oriented and customer-focused company. Through our Global-Local service strategy, we strive to provide a high level of local customer service to ensure fast and accurate deliveries. Our service concept includes local sales, technical support and R&D service in the local language.

We offer our customers our very best service and all the benefits of our technically advanced and cost effective products.



Wind farm in Björkhöjden, Sweden, coated with TEKNODUR COMBI 3560

## OUR CUSTOMER PROMISES



#### QUALITY AND ENVIRONMENT

Continuous attention to environmental issues is one of the cornerstones of Teknos's business. We develop our products to make them more environmentally friendly and take sustainability into account in all our endeavours.

Teknos's production facilities are certified and operated in accordance with the quality and environmental management systems of the standards ISO 9001 and ISO 14001.

Teknos's core products are based on low-solvent or fully solvent-free formulations, all developed with the aim to minimize the impact on the environment and to ensure health and safety. Our compliance with the REACH chemicals legislation supports our fulfillment of safety requirements for both people and the environment.



# TEKNOS PAINT SYSTEMS FOR WIND TURBINE TOWERS AND STRUCTURES

Teknos has extensive experience in providing coating and painting solutions for the wind turbine industry. Alongside traditional solvent-based products, Teknos has developed alternative water-based and high solids solvent-based paints for turbine structure surfaces. The adoption of the EU's VOC directive on the restriction on solvent emissions has fostered this development.

A successful coating system requires systematic planning. That is why we develop our coatings to meet the new ISO12944 and Norsok M501 standards.

Teknos has an extensive product range and can provide the correct paint systems for structures in different environments, including onshore and offshore wind turbine structures.

Using our innovative products from the range below, we can tailor solutions to meet your requirements, offering benefits such as increased production speed, cost reductions or low VOC for increased sustainability.

## PRIMERS

TEKNOZINC

## PRIMERS/INTERMEDIATES

INERTA 205

TEKNOPLAST PRIMER 7

## TOP COATS

TEKNODUR 0050

TEKNODUR COMBI 3560

## PRIMER FINISHES

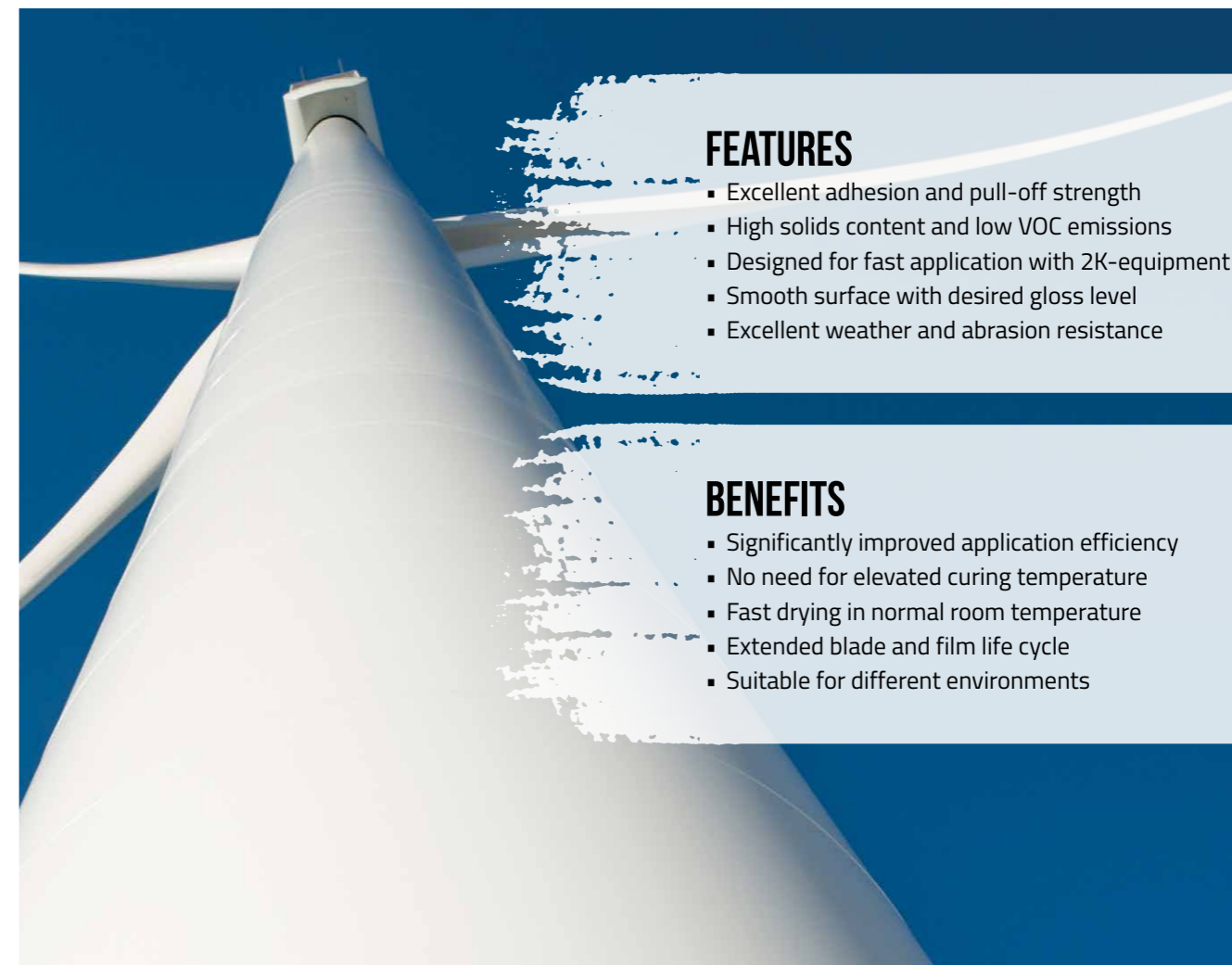
TEKNODUR COMBI 3560

Inerta 205 for low VOC solutions  
Teknos primer 7 for cost competitive solutions  
TEKNODUR COMBI 3560 for fast curing system



We offer solutions to cover all environments from a single coat C3 solution to a two coat C5 High system and beyond.

Low VOC  
Fast curing  
Cost competitiveness



## FEATURES

- Excellent adhesion and pull-off strength
- High solids content and low VOC emissions
- Designed for fast application with 2K-equipment
- Smooth surface with desired gloss level
- Excellent weather and abrasion resistance

## BENEFITS

- Significantly improved application efficiency
- No need for elevated curing temperature
- Fast drying in normal room temperature
- Extended blade and film life cycle
- Suitable for different environments

# TEKNODUR COMBI 3560

## LOW VOC EMISSIONS

Thanks to its high solids content, which can be adjusted to a full 100%, the TEKNODUR COMBI 3560 series emits less VOC compared to water-borne polyurethane paint products.

## FAST THROUGHPUT BY RAPID CURING

Curing time at room temperature can be adjusted, starting with less than one hour. This significantly shortens the throughput time in the paint shop, while saving time, improving productivity and lowering energy costs.

## FEWER LAYERS, DIRECT TO METAL SOLUTIONS

The TEKNODUR COMBI 3560 product family contains anti-corrosion pigments and fulfills the ISO 12944 requirements for single layer paint systems. For outer surfaces of wind turbine structures, two-layer systems are available up to corrosivity category C5-M/High. With a three-layer system, it is possible to reach NORSOK M-501 requirements.

## APPEALING LOOKS THAT LAST

The TEKNODUR COMBI 3560 coatings are tough with high impact resistance, effectively reducing the need for touch-up repair work.

# TEKNOS SOLUTIONS FOR TURBINE FOUNDATIONS

Offshore turbine foundations are a critical area for high durability. The best possible paint and coating solutions are needed for protecting immersion and splash zones in offshore wind farms.

Teknos is an expert on protecting assets in a marine environment. We are familiar with the challenges of high humidity, low temperature and maximum salt content, and are accustomed to developing solutions for these harsh conditions.

Our TEKNOMASTIC PRIMER 80 protective coating system offers excellent resistance against corrosion and mechanical forces for offshore wind foundations, designed to prolong the expected lifetime and to lower operational and maintenance costs.

- Internal and external coating systems for offshore wind foundations according to EN ISO 12944-5 CX offshore environments and NORSOK M-501
- Polyurea systems to protect from mechanical impacts
- Coating solutions for foundation repair
- Teknos offers full project support from early stage design to final application: our technical service professionals have vast experience in the wind energy sector



# EXTREMELY DURABLE POLYUREA TO PROTECT FOUNDATIONS AGAINST IMPACTS

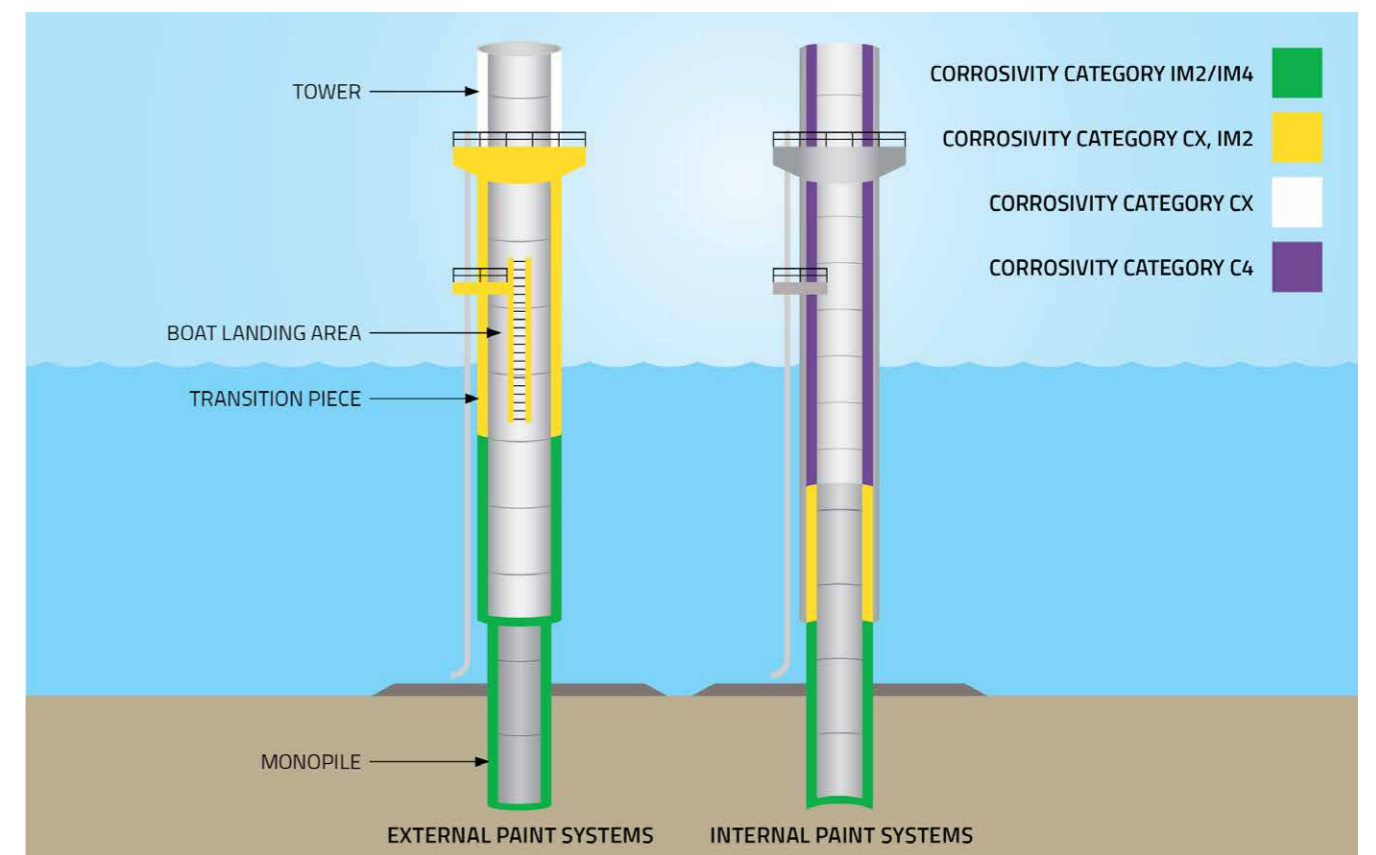
The surface of an offshore foundation has to withstand extreme mechanical wear and impact. For its technical superiority, Polyurea is an ideal solution to protect the transition piece and boat landings from crew transfers and other mechanical impact.

## OUR TEKNOPUR 300 SYSTEM OFFERS:

- Extremely durable and elastic coating – able to stretch nearly 400% of its own size without cracking
- Advanced protection against mechanical impacts – minimizing damages to the anticorrosive paint system on the foundation
- Polyurea can be tinted to match the standard color requirements

## COATING SYSTEMS FOR FOUNDATIONS' INTERNAL AND EXTERNAL SURFACES

Teknos offers a complete coating solution for buried, submerged, splash and atmospheric zones of internal and external foundation structures according to EN ISO 12944-5 corrosivity categories.



## SIX TIMES FASTER – A REVOLUTION IN WIND TURBINE BLADE REPAIR

# TEKNOBLADE REPAIR 9000

A broken blade can result in a total breakdown of a wind turbine. The erosion of the wind turbine blades causes huge repair costs, especially offshore, where repair work is up to 300 times more expensive compared to onshore work. There are 75,000 blades in the world at the moment that need some degree of repair. This number is increasing day by day because of the slow repair procedures and few suitable working days, especially offshore. TEKNOBLADE REPAIR 9000 is a cost-saving, environmentally

friendly technology for the wind power industry: an elastomer-based high-solid paint solution with 100% proportion solids and no VOCs. It can be used both as a preventive edge protection on new rotor blades, as well as for blade repair.

### WHAT YOU GET WITH TEKNOBLADE REPAIR 9000

- **Single coat application** – repair work is 6 times faster
- **Protective elastic layer of 2-4 mm** – high absorption of impact energy
- **Only a few minutes curing time instead of 2 hours** – minimized downtime
- **Processing at temperatures from sub-zero to +35°C** – up to 25% more working days per year
- Increased offshore work **safety**
- Rain erosion test in accordance with DNVGL-RP-0171: 10 hours at 130 m/s, but at 120 m/s no visual effect even after 21 hours
- **Up to 40% project cost savings** on average, compared to traditional systems



© Danwind Construction

# TEKNOS PAINT SYSTEMS FOR WIND TURBINE BLADES AND FIBERGLASS STRUCTURES

Teknos is also an expert in producing paints and coatings for fiberglass reinforced composites. One of the best examples of Teknos's recent product development are the paints and coatings specially developed for wind turbine blades.

The Teknos product family for wind turbine blades offers a full range of solutions, from priming to finishing paints and putties. Teknos's advanced coating technologies enhance the performance and longevity of turbine blades. The products have been proven effective in different environments ranging from challenging to harsh.

## TEKNODUR 3572-02

HIGH-PERFORMANCE PAINT SYSTEM FOR WIND TURBINE BLADES

### APPLICATIONS

Surface of wind turbine blades or other fiberglass components.

### PRODUCTS

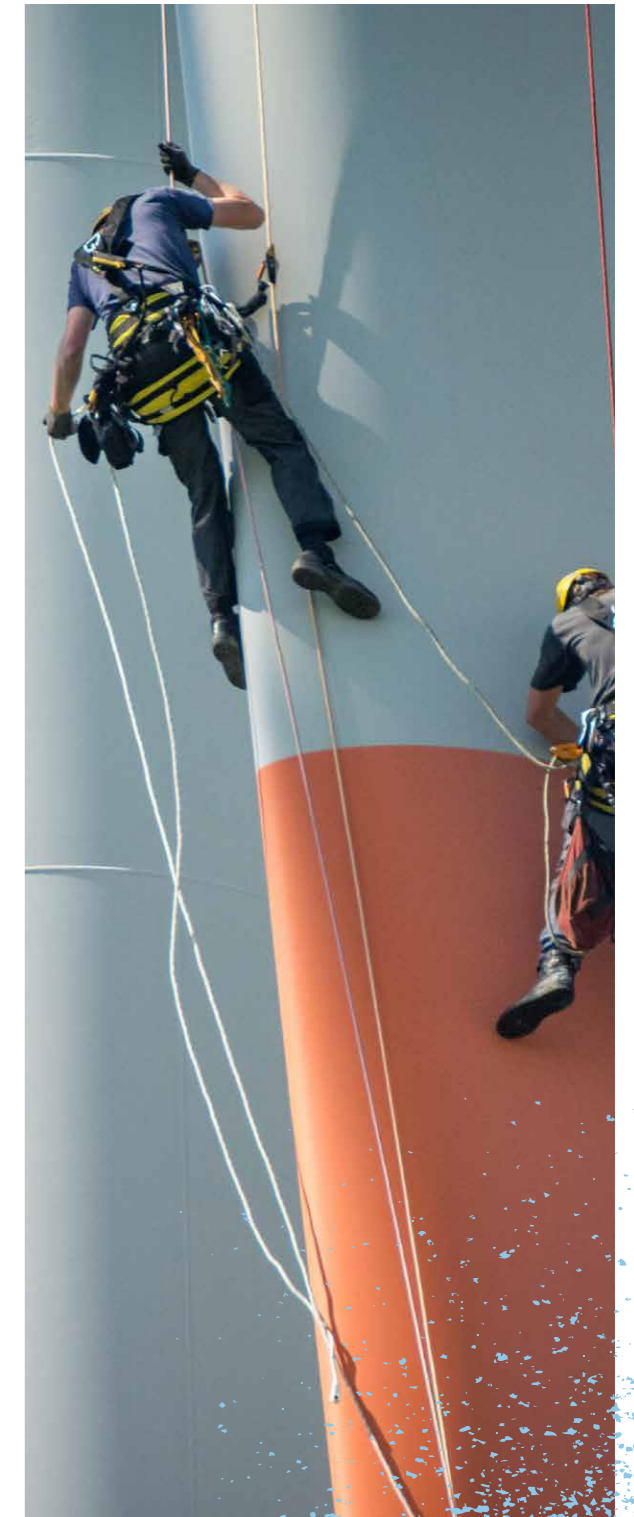
- TEKNOPOX 2118 Putty
- TEKNODUR 3572-09 Primer
- TEKNODUR 3574 Pinhole Filler
- TEKNODUR 3572-02 Topcoat
- TEKNOSOLV 9521/9526 Thinners
- TEKNOCLEAN 6496 for 2K-equipment cleaning

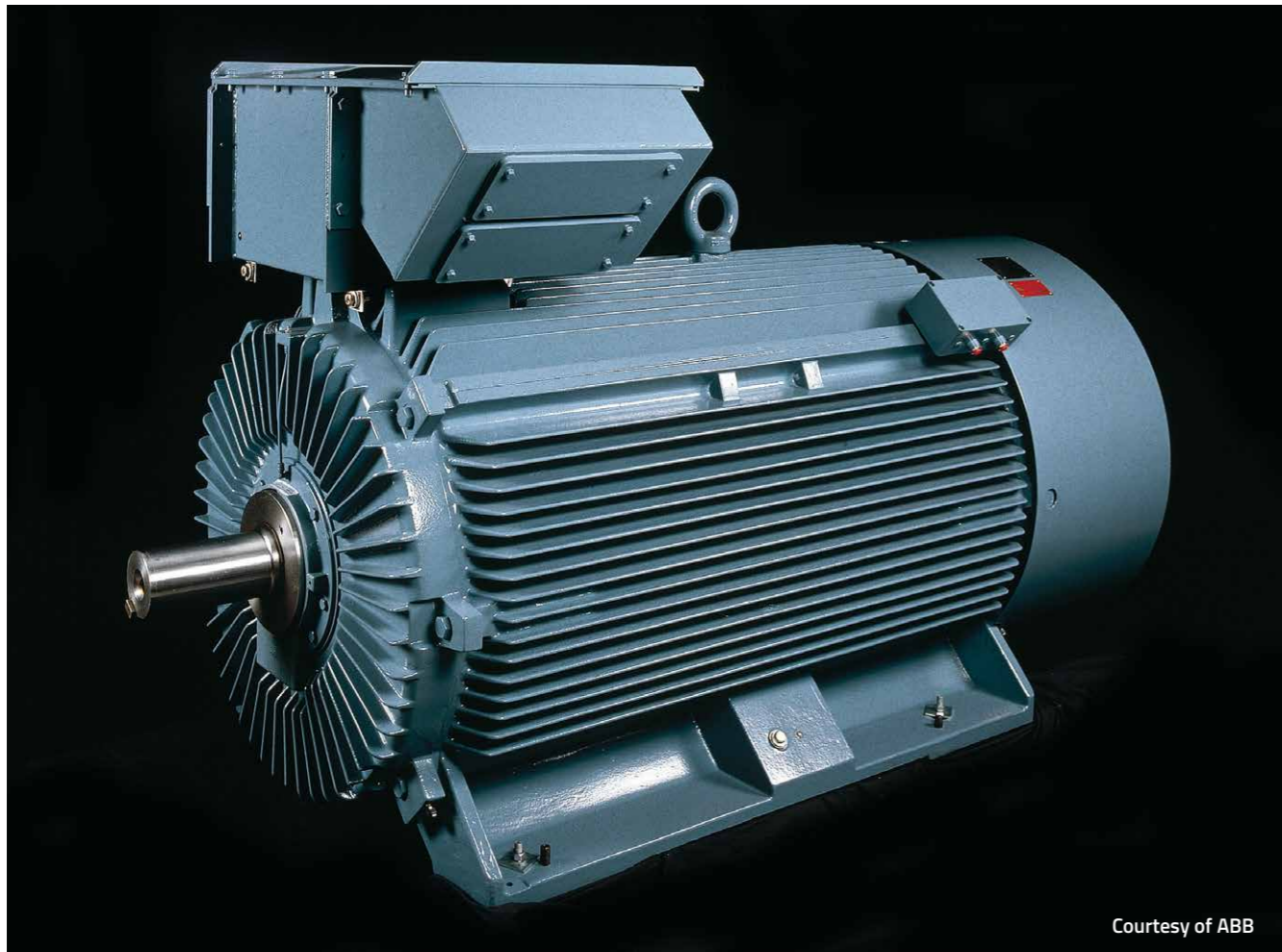
### APPLICATION CONDITIONS

Humidity must be below 70% RH at ambient temperature (15-30°C) or at elevated temperatures.



DNV-GL Approved Blade system  
(no. WP 1520022 HH)





Courtesy of ABB

# TEKNOS PAINT SYSTEMS FOR WIND TURBINE COMPONENTS

Teknos has a long tradition of developing and supplying paint products for components within the wind power industry.

- Wet paint systems based on waterborne, low-solvent or fully solvent-free formulations
- Powder coating solutions for both smooth and blasted surfaces, e.g. for generators, transformers and electrical motors
- For steel, including thin plate structures, cast iron, aluminium and fiberglass substrate, Teknos products comply with the corrosivity categories to meet the design life requirements.

Contact Teknos for the optimal coating specification for your needs.



# TEKNOS TECHNICAL SERVICE

According to research, up to 95% of painting problems are caused by improper surface preparation and insufficient quality in the application process. This indicates why good surface preparation and optimal application work play a crucial role for our customers looking for long-lasting protective paint systems.

Teknos's technical service engineers have extensive experience in the field of industrial painting, and they will readily offer their assistance to ensure the very best performance when using Teknos paint products.

We offer training to our new customers, which will help them excel in all aspects of application, including chemistry, equipment, safety, spraying technique, and troubleshooting. In addition to training our customers, we can participate in the first applications at the customers' sites to ensure smooth first deployment of our coatings.



## CHOOSE TEKNOS AS YOUR EXPERT PAINT AND COATING PARTNER FOR THESE ADVANTAGES:



**OPTIMUM COATING QUALITY WITH USER-FRIENDLY PAINT PRODUCTS**



**DURABILITY AND CORROSION PROTECTION FOR 25+ YEARS**



**SOLUTIONS FOR ONSHORE AND OFFSHORE ENVIRONMENTS WITHIN -40 °C TO +45 °C**



**FAST CURING PRODUCTS TO INCREASE OUTPUT**



**LOW VOC COATINGS TO INCREASE SUSTAINABILITY**



**EXPERT TECHNICAL SUPPORT AT ALL STAGES, FROM SPECIFICATION TO APPLICATION**

# WE MAKE THE WORLD LAST LONGER

Teknos is a global coatings company with operations in more than 20 countries in Europe, Asia, and the USA. It employs approximately 1,800 people and makes annual net sales of approximately EUR 400 million. Teknos is one of the leading suppliers of industrial coatings with a strong position in retail and architectural coatings.

Teknos wants to make the world last longer by providing smart, technically advanced paint and coating solutions to protect and prolong. Teknos always works in close cooperation with its customers. It was established in 1948, and is one of Finland's largest family-owned businesses. For further information, visit

[www.teknos.com](http://www.teknos.com)