



Comprehensive Solutions for the Wind Industry

Reliable. Cost Efficient.
Fatigue Resistant.








Our Wind Energy Products at a Glance



“We need durable, high strength and fast hardening materials, that allow our turbines to be constructed in the shortest period possible. Master Builders Solutions delivers just that.”

Gunter Hecker, Purchasing Manager, Vestas Central Europe

Your challenge	Our solution	Page
 <p>Foundations for offshore wind turbines</p>	<p>MasterFlow 9500, MasterFlow 9600 and MasterFlow 9800</p> <p>We offer you the best in class materials for your offshore underwater grouting applications.</p>	08
 <p>Foundations for onshore wind turbines</p>	<p>MasterFlow 9200 and MasterFlow 9300</p> <p>We have developed for you special onshore grout materials that guarantee durable and maintenance-free onshore foundations.</p>	12
 <p>Concrete foundations for wind turbines</p>	<p>Admixture solutions</p> <p>Our admixtures help to meet your increasing demands for durable on- and offshore concrete foundations: They can be tailored to achieve the best concrete mix for the foundation design, whilst minimising the CO₂-footprint of the concrete and lowering the maintenance cost.</p>	16
 <p>Concrete towers</p>	<p>Admixtures, hardening accelerators, coatings and protective solutions</p> <p>We offer a variety of systems and solutions to improve the performance of your concrete tower – tailor-made to your needs.</p>	18
 <p>Case studies</p>	<p>Solutions for all components</p> <p>Master Builders Solutions is your reliable and experienced partner supporting your wind energy project. From the concrete foundation to the tip of the rotor blade.</p>	20



Our reference in the Irish Sea – Gwynt Y Môr: Monopile-transition
piece foundations have been grouted with MasterFlow 9500



Making Wind Energy More Cost Effective

Renewable energy targets are causing a fast pace of wind energy development onshore and offshore, worldwide. Increasing turbine sizes and total lifecycle considerations make the use of optimized, state-of-the-art materials a crucial success factor. As a reliable partner, we help our customers make wind energy even more cost effective. »





Reliable Solutions for Global Challenges

As one of the most mature renewable energy industries, wind power has already proved its ability to provide safe, efficient, clean and increasingly affordable electricity.

Master Builders Solutions supports the development of wind power as a climate-friendly source of energy and our aim is to support the entire process of converting wind into energy. With a wide portfolio of innovative products and solutions we are active throughout the development, design, production, installation and maintenance stages.

Meeting the rising demands of wind energy

There are numerous factors which make wind energy engineering one of the greatest technological and logistical challenges of our time:

- Climate protection targets are getting more ambitious – leading to an ever rising demand for installed wind power generating capacities
- Turbine sizes, rotor diameters and tower heights keep increasing – resulting in greater, heavier installations
- Offshore wind park installations are always under great time pressure due to short windows of good weather and expensive installation vessels
- Whole-life performance: wind turbine installations are being designed with a life expectancy of 20 to 25 years

170

Rotor diameters in meter of multi-megawatt wind turbines (ca.)

608,000,000

In 2014, wind power avoided over 608 million tonnes of CO₂ emissions globally*

5,500

The number of average EU households that one 6 MW offshore turbine can power*

*Global Wind Energy Council (GWEC), www.gwec.net/global-figures/wind-in-numbers/

Master Builders Solutions and climate-friendly construction: Caring for our planet

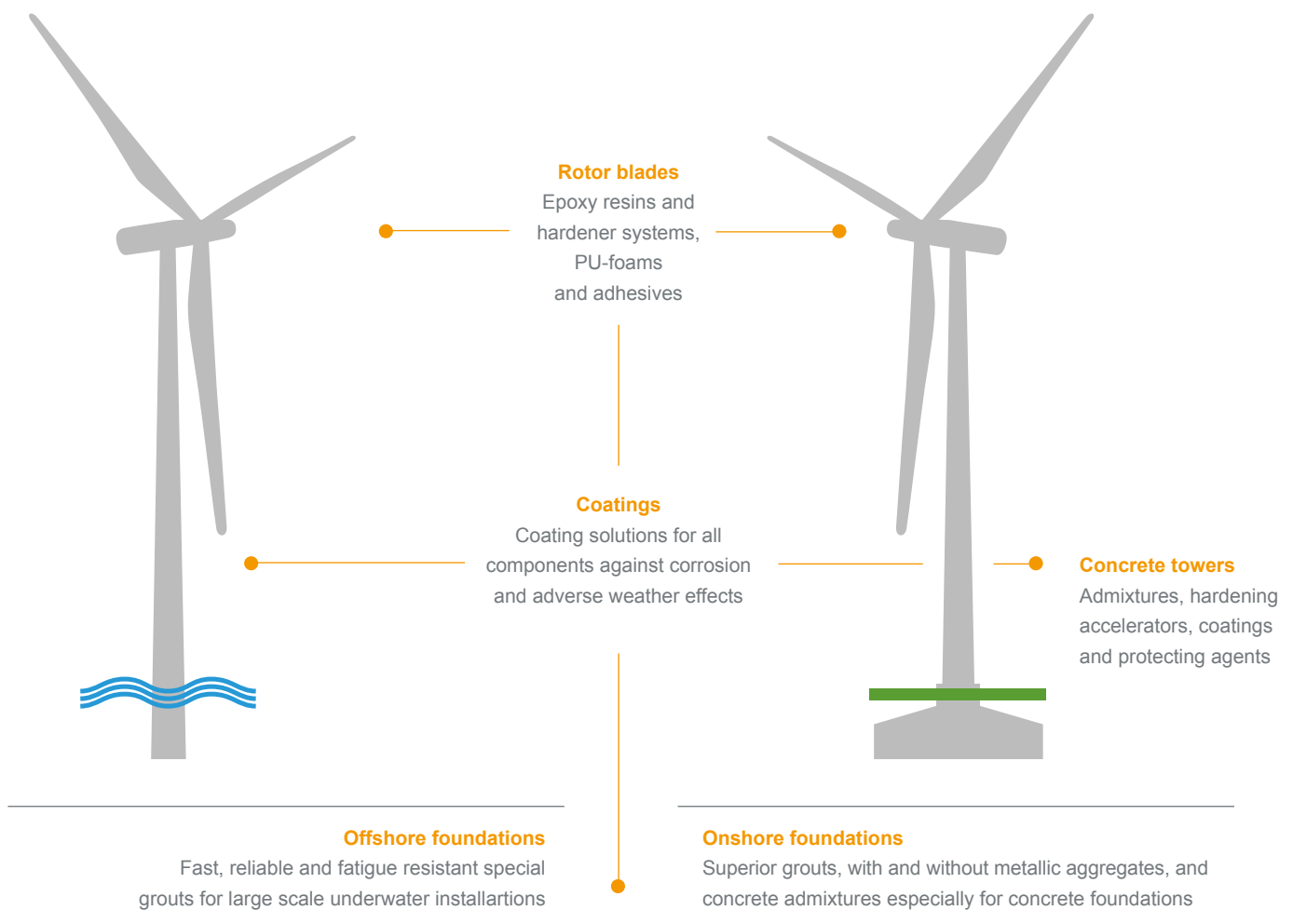
Development is a core strategic guideline for Master Builders Solutions, balancing economic growth, environmental protection and social responsibility. For concrete, Master Builders Solutions has continuously developed concepts to contribute to more climate-friendly construction by:

- Replacement/reduction of cementitious materials
- Reducing energy costs and CO₂-emissions
- Accelerating the production process
- Improving the production environment
- Focussing on durability and lifetime expectancy

Global experience and competence

Every location has its own challenges for wind turbine installations. Yet, some challenges remain the same: Materials need to be applicable under harsh weather conditions. Cost efficiency, reliability and fatigue resistance are decisive criteria as well. Master Builders Solutions experts can support

your project with a wide range of systems and solutions ranging from the very base to the tip of the rotor blades. Our experience from numerous offshore and onshore projects helps to make large scale installations more efficient.



Partnering with wind to make energy happen

As the leading provider of chemical components for wind energy installations, we are deeply rooted within the wind energy community – helping engineers worldwide in rolling out reliable wind energy on a large scale.



Worldwide



Partner



Energy



Grounded Foundations for Offshore Wind Turbines

Offshore wind turbine installations are extremely large, heavy and slender structures which are exposed to huge dynamic loads from wind and waves. Careful design of the foundations and selection of the grouting material is thus of the utmost importance.

MasterFlow 9500

MasterFlow 9500 exagROUT for offshore wind turbine installations

Where wind turbines are to be installed on foundations using structural grouted connections the grout specified must be able to absorb enormous bending movements, vibrations, wave actions, torque and wind power during the lifetime of the wind farm.

In response to these challenges, Master Builders Solutions has developed a range of grouts – ExagROUTs – with MasterFlow 9500 being a specially designed grouting mortar for the construction of offshore wind turbines with ultra-high strength. MasterFlow 9500 is formulated for large-scale underwater applications and use in limited weather windows.

DNV-GL	
Certificate No. TAK00000T1 Revision No. 2	
TYPE APPROVAL CERTIFICATE	
This is to certify:	
That the Structural Cementitious Grout	
with type designation(s) MasterFlow 9500	
Issued to BASF SE Ludwigshafen, Germany	
is found to comply with DNV GL standard DNVGL-ST-C502 - Offshore concrete structures	
Application:	
Load carrying, vertically and diagonally oriented cylindrical-shaped grouted connections, filled with displacement grouting.	
Further details, including properties, operational limitations and approved production facility, are given overall. Please refer to last page of this TAC for important information related to the validity of the TAC.	
Issued at Høvik on 2020-04-03	for DNV GL
This Certificate is valid until 2024-12-05	
DNV GL local address: Dals Marine Structures	Verification
Approval Engineer: Ole Martin Haugen	Paola Mayasca Group Leader, Concrete Structures
This document is uncontrolled when printed. Before use, check the revision number and date to verify the validity and that it is the current revision.	
<small>This Certificate is subject to terms and conditions available. Any significant change in design or construction may render this Certificate invalid. The validity of this certificate is based on the information provided and is not a guarantee of performance. The certificate holder is responsible for ensuring that the design and construction comply with the applicable standards and regulations. The certificate holder is also responsible for ensuring that the design and construction are in accordance with the approved production facility. The certificate holder is also responsible for ensuring that the design and construction are in accordance with the approved production facility. The certificate holder is also responsible for ensuring that the design and construction are in accordance with the approved production facility.</small>	



MasterFlow 9500
Certificate No.
TAK00000T1
Revision No: 2

Product benefits at a glance



High fatigue resistance
Resulting in increased safety

0 °C

Cold weather
Applicable at temperatures down to 0 °C, allowing for working in shorter weather windows



Rapid strength gain
Faster overall installation



Proven high quality
Validated and certified by DNV GL



MasterFlow 9800

High strength grout, bulk supplied

MasterFlow 9800 is the new, revolutionary offshore grout with mechanical properties that meet the toughest requirements of wind turbine installations, and which overcomes the typical problems associated with offshore grouting.

The material is especially formulated for large scale applications where bulk grout supply and continuous mixing and pumping is a major benefit:

- Grouting of grouted connections in typical jacket foundations, installed using the pre- or post-piling techniques
- Grouting where excellent fatigue resistance and long term durability are required
- Grouting in the shortest weather windows possible
- All void filling from 20 mm to 600 mm, and offshore applications at temperatures as low as 2 °C and as high as 42 °C

Wind turbines are special

Their safe and durable installation largely depends on the correct design and interaction of all components. MasterFlow 9800 is specially designed for foundations where a design strength in the range of 60 to 90 MPa is required. The material exhibits long term durability and guarantees the fastest, secure and most cost effective installation of the wind farm.

Product benefits at a glance



Excellent durability

High fatigue resistance, absorbing dynamic loads



Fast installation

Application rates of $\geq 20 \text{ m}^3/\text{h}$ and rapid strength build-up for installation in the shortest weather windows

2 °C
to
42 °C

Controlled and continuous material quality

Proven quality at wide temperature range



Secure installation

Bulk supplied material; no crane lifting operations or moving objects while grouting



Gode Wind 1 + 2 Offshore Wind Farms



MasterFlow 9500

DONG Energy decided to build the offshore wind farms Gode Wind 1 and 2 in the German sector of the North Sea. Gode Wind 1 (330 MW) and 2 (252 MW) consist of 97 Siemens turbines, each of 6.0 MW, with a total capacity of 582 MW. It is DONG Energy's biggest investment to date. The wind farms will be able to supply CO₂-free power corresponding to the annual electricity consumption of approximately 600,000 German households. In early 2015 MasterFlow 9500 grout was selected for the grouting works at the Gode Wind 1 and 2 offshore wind farms after evaluation and testing as part of the German requirements to meet single case approval (ZiE) procedures.

Client:	DONG Energy
Wind farm capacity:	582 MW
Wind turbines:	97 × Siemens SWT-6.0-154
Area of the wind farm:	70 km ²
Blade diameter:	154 m
Homes equivalent:	approx. 600,000
CO ₂ reduced per year:	833,065 tonnes
Foundation type:	Grounded monopile foundation
MasterFlow 9500:	5,918 tons
Construction period:	2015



Gemini Offshore Wind Farm



MasterFlow 9800

In early 2015 MasterFlow 9800 revolutionary bulk supplied grout was selected for the grouting works at the Gemini Offshore Wind Farm, one of the largest offshore wind projects in the world. This challenging project consists of the installation of 150 4 MW Siemens wind turbines, which will supply a total of 600 MW of renewable energy to 785,000 households by 2017. The Gemini Offshore Wind Park is situated 85 kilometers north of Groningen in the Dutch part of the North Sea.

Client:	Northland Power in JV with Siemens, Van Oord and HVC
Wind farm capacity:	600 MW
Wind turbines:	150 × Siemens SWT-4.0-130
Turbine hub height:	88.5 m
Homes equivalent:	785,000 Dutch homes
CO ₂ reduced per year:	1.25 million
Foundation:	Grounded monopile foundation with bolted connections and skirt backfill
MasterFlow 9800:	3,048 tons
Construction periode:	2015



Foundations for Onshore Wind Turbines



An increasing number of failures have been observed in wind turbine foundation areas as soon as 3–5 years after installation:

Design errors, dynamic loads and the development of taller, larger wind turbines. The installation of onshore towers now involves developing solutions to address these issues.

MasterFlow 9200

Turbine specific grout material

MasterFlow 9200, an ultra-high strength, fatigue resistant grout, that has been especially developed to meet the structural requirements of Vestas onshore installations and their specific foundation design. The material exhibits high early strength even at cold temperatures, and allows for much faster completion of the overall project and faster revenue for the owner or investor of the wind farm.



Product benefits at a glance



Excellent fatigue resistance
Guaranteeing long term load transfer



Ultra-high modulus
For exceptional stiffening properties



Rapid strength build up
Allowing fastest turbine installation



Ultra-high compressive strength
> C100/115



MasterFlow 9300 / MasterFlow 9400

Durable connection of onshore wind turbines to their foundations

A typical standard precision grout is no longer sufficient for the tower base flange area as engineering demands increase. Higher initial strength development, earlier fastening/tensioning of anchors, ultra-high final strengths and/or the inclusion of metallic aggregate for the best fatigue resistance are all essential elements to avoid early grout failure and ensure maintenance-free operation over the entire designed lifetime of the wind turbines.

ExagROUT for onshore wind turbines

Master Builders Solutions has developed grouts specifically for the installation of onshore wind towers, combining its existing specialist grout experience with the latest plasticizer technology and the company's nanotechnology used in formulations for cementitious mortars.

MasterFlow 9300 combines Master Builders Solutions offshore wind turbine grout formulation with a proven metallic aggregate that provides added toughness, load absorption and fatigue resistance.

MasterFlow 9400 is the ultra-high strength grout with excellent fatigue properties providing long term load distribution.

Product benefits at a glance



Universal product application

High ultimate strength and wide thickness range.



Excellent durability

Perfect filling and volume stability



Excellent fatigue resistance

Guaranteed long term absorption of dynamic loads



Warranted/certified material

Standardized and safe design process



Aksu, Kayseri Onshore Wind Farm



MasterFlow 9200

The wind farm location in Aksu in Central Anatolia, about two hours from the center of the city of Kayseri, was chosen for its high wind speeds.

MasterFlow 9200, developed specially for the grouting of Vestas wind turbines, was used in the construction of the onshore wind farm in accordance with the wind turbine manufacturer's specifications, marking its first application in Turkey. More particularly, Vestas specifies the use of the custom developed MasterFlow 9200 mortar for grouting the bottom flange of the steel tower during the installation process.

Client:	Ayen Enerji
Wind farm capacity:	72 MW
Wind turbines:	36 x Vestas 2.0 MW
Turbine hub height:	80 m
Blade diameter:	100 m
Annual generation capacity:	296 million kWh
Year of commissioning	2012



Clyde Onshore Wind Farm



MasterFlow 9300

Consent for the 152-turbine Clyde Wind Farm covering 47 square kilometers was granted by Scottish Ministers in July 2008, with construction commencing in April 2009. The Siemens 2.3 MW turbines are erected on reinforced concrete foundations, each of which typically comprises approximately 350 m³ of concrete with 55 tons of steel reinforcement.

Installation of MasterFlow 9300 ExagROUT was carried out by our Licensed Contractor CRL at temperatures of down to +2 °C, with a rapid strength build-up, and high ultimate strengths allowing a short overall installation time.

Client:	SSE
Wind farm capacity:	350 MW
Wind turbines:	152 × Siemens 2.3 MW
Turbine hub height:	80 m
Blade diameter:	approx. 90 m
Homes equivalent:	300,000
CO ₂ reduced per year:	43,586 tons
Foundation:	Reinforced concrete
Total contract value:	£500 million



Concrete Foundations for Wind Turbines

Already established as the typical onshore solution, concrete foundations are considered also a practical option in near-shore marine environments.

Offshore concrete foundations

Whilst many projects are situated in medium-deep water, new marine wind energy farms are planned for shallow waters, increasing the need for more technologically advanced engineering in a field where there are no standard solutions.

Admixture solutions for every challenge

As already outlined, Master Builders Solutions' concrete admixtures can be used to address many issues, from speeding up the precast process through high early strength gain to delivering long term durability, corrosion protection and waterproofing. Decreasing the weight of precast concrete foundations, to assist in transportation and installation without compromising on quality, is another key area in which our admixtures will help you design more reliable solutions.

Making more precise production methods possible

The cost of the specialist vessels and equipment involved in offshore engineering means that speeding up the placement of foundations is a critical budgetary factor. The offshore installation of monopile foundations has sometimes proved technically challenging; Master Builders Solutions' admixtures help to facilitate the mass production of new gravity base foundation designs, giving designers the ability to tailor concrete mixes to suit the environmental profile and production method precisely.



Our reference in Store Bælt – Sprogø offshore wind farm:
North of Sprogø Island (Denmark). Gravity Based Foundation Systems:
MasterFlow 9500 applied to connect the tower to the foundation

Onshore foundations

With an increasing number of failures being observed in concrete foundations as soon as 3 to 5 years after installation, nowadays installations address these issues at its origin – the concrete foundation.

Performance admixtures

Strong and durable foundations that can resist overturning forces are essential for all wind towers and concrete is the ideal material: flexible and adaptable. It can be designed to meet the increasing demands of onshore foundations as taller turbines increase the size of the foundations required:

- In-situ construction
- Concrete base solutions meet all requirements
- Economical, high-performance material
- Low maintenance, dynamic performance
- Durable and reliable

Avoiding premature fatigue damage

Meeting the minimum strength and rotational stiffness required and providing resistance to fatigue damage are all critical in combating the internal forces within the foundations caused by shear, torsion and dead loads. A further consideration as towers increase in size and height is the additional strain this places on the concrete: here, varying concrete strength options utilizing admixtures should be considered to avoid premature fatigue damage.

Minimising the CO₂-footprint

The use of admixture systems from Master Builders Solutions can be tailored to achieve the best concrete mix for the foundation design and geotechnical conditions, whilst minimising the CO₂-footprint of the concrete. Our range of superplasticizers, curing agents, release agents, air entraining agents, accelerators and corrosion-inhibiting admixtures provide the flexibility for material innovation to address these challenges whilst increasing productivity and delivering whole-life cost benefits.



- | | |
|---|--|
| 1 | Concrete foundation in preparation |
| 2 | Concrete foundation ready to install turbine |
| 3 | Concrete tower foundation |



The Concrete Tower

During the lifetime of the wind farm, wind turbine installations must withstand enormous vibrations, torque and wind power. Master Builders Solutions' systems ensure that wind turbine towers remain fit for purpose for many years.

Admixtures for precast structures

Research has shown that concrete can provide significant cost savings over steel in the construction of large diameter towers and offers a low-maintenance option long term. Our admixtures deliver a number of properties, depending on the appropriate construction method:

- Accelerated precast production using less energy
- Strong and durable concrete
- Corrosion-inhibiting systems for maximum protection
- High-performance integral waterproofing systems

Increasing precast productivity

Driven by improving precast processes, product durability and aesthetics, our precast admixture solutions increase productivity and quality. Master Builders Solutions' breakthrough Zero Energy System optimizes the energy needed for precasting, using the MasterGlenium molecule to create Rheodynamic concrete.

This optimized self-compacting mix has exceptional placing characteristics and accelerates hydration for high early strength. Our Zero Energy System assists productivity by speeding up curing without the need for external heat. Further energy reductions are gained as mechanical vibration is also eliminated.

Improving precast efficiency

Our newly developed Crystal Speed Hardening concept uses the new concrete hardening accelerator Master X-Seed from Master Builders Solutions, to significantly speed up concrete curing at early ages (6–12 hours), supporting at least double strength development at low, ambient and heat curing temperatures. As well as contributing to faster working for precast operations, it also addresses the key issues of energy demand reduction (lower carbon dioxide emissions), material optimization and high quality specifications by providing high early strength development whilst balancing the requirement for an optimum mix through the use of more binding material and reduced clinker content. In contrast to traditional acceleration methods such as heat application or normal chemical accelerators, Master X-Seed does not interfere adversely with the final engineering properties of the concrete.

Connecting concrete segments

Different designs of segmental concrete towers are being installed in onshore windfarms, whereby various techniques for connecting individual segments are being used. Master Builders Solutions offers a range of structural segmental adhesives as well as special grouts, which are used during the erection of the concrete towers.

Integral waterproofing

Our MasterPel can be used for permanent integral water proofing. Suitable for offshore concrete towers, this water-resisting admixture produces dense, structurally sound reinforced concrete for marine structures subject to tidal and wet/dry cycling.

Corrosion resistance

Our MasterLife can be used for elements requiring corrosion protection against concrete carbonation and chlorides from marine exposure. This admixture also inhibits the potentially corrosive effects of chloride-bearing ingredients used in the manufacture of concrete.

Protecting concrete

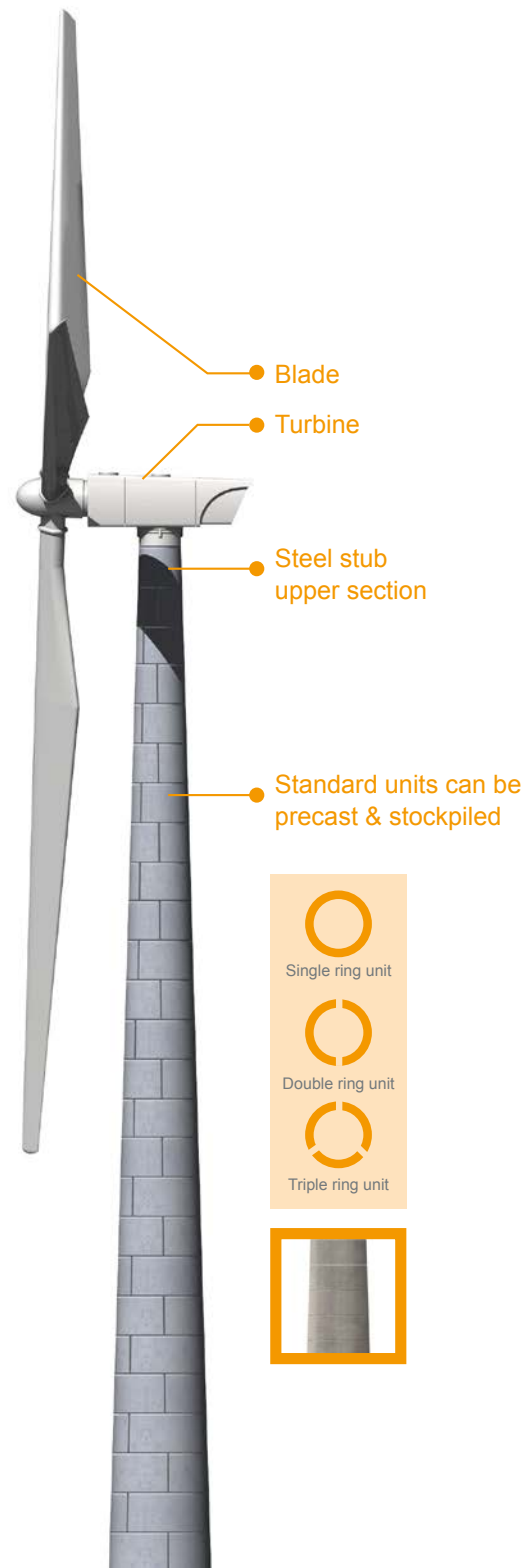
Untreated concrete is vulnerable to the damaging ingress of carbon dioxide, chlorides and water. This can lead to structural damage and safety issues. We offer the MasterProtect range of protective coatings, which can address these problems and give long term structural protection from environmental damage.

Reparing concrete

If remedial work becomes necessary to ensure the longevity of concrete towers, our high-performance MasterEmaco repair products are suitable for the most demanding environments, and cracked concrete foundations can easily be structurally retrofitted with MasterInject systems.

Protecting steel

In engineered steel constructions such as wind turbines, with maintenance periods of up to 20 years, the requirements on corrosion resistant coatings and their durability are extremely high. Whether permanently standing in the water or in splash zones offshore, every single component undergoes constant mechanical exposure, pressure and abrasion. Onshore, the mechanical forces are still extreme. Our coatings have been developed to meet these critical challenges.



Precast



Case Study Offshore

Rødsand II offshore wind farm

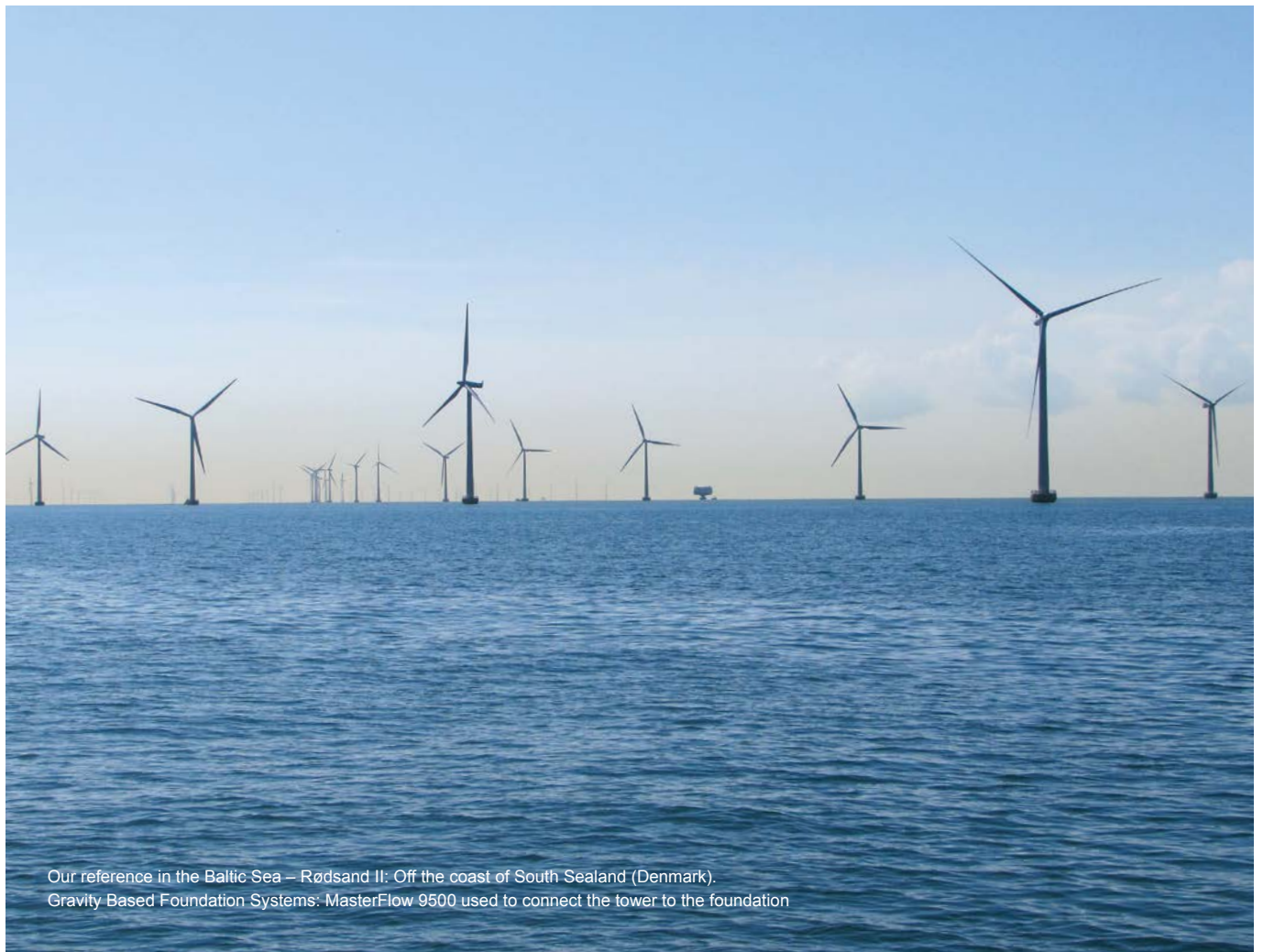
The Rødsand II Offshore Wind Farm has been built between Nysted Havmøllepark, Gedser and Rødby in the south of Denmark, on a site extending over 34 square kilometres. Gravity base foundations (GBFS) were installed in five rows of 18 in 2009 and 2010. Siemens wind turbines, each 115 metres high, were installed on top of the GBFS at a rate of up to one a day. Grouting the cavities between the wind turbine and the concrete gravity foundation was done at a record speed of up to three installations per day.

Rødsand II consists of 90 wind turbines with a total output of 207 megawatts and will produce 800 million kilowatt hours a year and supply 200,000 households with electricity.

“Everyone in the project can feel proud that they have delivered what is the second largest wind farm in the world, three months ahead of schedule and within the planned budget,” said Anders Ljungman, E.ON Vind’s project manager¹.

Client:	E.ON Sweden
Foundation manufacturer:	JVAB
Foundation type:	Gravity base
Wind turbines:	Siemens SWT-2.3-93
Number of turbines/foundations:	90
Grouting material:	MasterFlow 9500
Licensed grouting contractor:	Østermark Grouting A/S

¹E.ON, The Rødsand II Wind Farm, (<http://www.eon.se>, 23rd September 2010)



Our reference in the Baltic Sea – Rødsand II: Off the coast of South Sealand (Denmark).
Gravity Based Foundation Systems: MasterFlow 9500 used to connect the tower to the foundation



Case Study Onshore

Arecleoch onshore wind farm

Arecleoch wind farm is one of Scotland's largest wind farms and produces 120 MW of power through its 60 turbines, or enough for about 70,000 homes. The £42 million wind farm project was a huge logistical challenge. The site lies within 24 square kilometres of commercial forest plantations, the majority of which is Forestry Commission land leased by the client, ScottishPower Renewables, for the 25 year design life of the wind farm.

Roads and tracks

At first there was only a single access to the site through a 2.5 m wide stone railway arch with the main railway line from Stranraer to Ayr running overhead. Access and deliveries were monitored by Network Rail to ensure no damage occurred to the arch structure. Having negotiated this, a further 2.5 miles of stone track were added to reach the site compound. To alleviate this and provide an access route for turbine deliveries, a new railway overbridge was constructed at a different location along the main access road. This upgraded a 20 km stretch of the existing forestry road network and all turbine component deliveries used the route to avoid passing through the local village of Barrhill and under the railway.

Concrete

All the concrete for the project came from local supplier Barr Limited, at the height of the project supplying over 1,000 m³ of concrete a week. This enabled the site team to pour three of the 350 m³ reinforced concrete foundations each week. Due to the environmentally sensitive nature of the location, the site team and subcontractors became very environmentally aware. Stringent planning conditions regarding issues such as pollution prevention, ecology and archaeology resulted in the evolution of environmental procedures and monitoring, with valuable experience and lessons being learned for future projects.

Client:	ScottishPower
Renewables value:	ca. £42 million
Principle contractor:	Farrans
Designer:	Grontmij
Environmental consultant:	McCloy Consulting
Wind turbines:	Vestas V90-2.0 MW
Number of turbines/foundations:	60
Concrete supplier:	Barr Limited
Concrete volume:	ca. 21,500 m ³
Admixtures:	MasterGlenium 126
	MasterKure 181
	MasterPozzolith 100 XR



Our reference in South Ayrshire – Arecleoch:
In the south-west part of Scotland (United Kingdom).
Admixture systems from Master Builders Solutions
used in the concrete for 60 foundations



Proven and Certified Quality

Support in risk management

Wind turbines are special – their safe and durable installation largely depends on the correct design and interaction of all components – and require high performance MasterFlow ExagROUTs to guarantee long term and maintenance-free operation of the wind farm.

Master Builders Solutions helps the wind industry to be more successful by better understanding the needs of our partners and reducing the risks involved in the construction and exploration of modern wind farms.

For us, managing risks means amongst others:

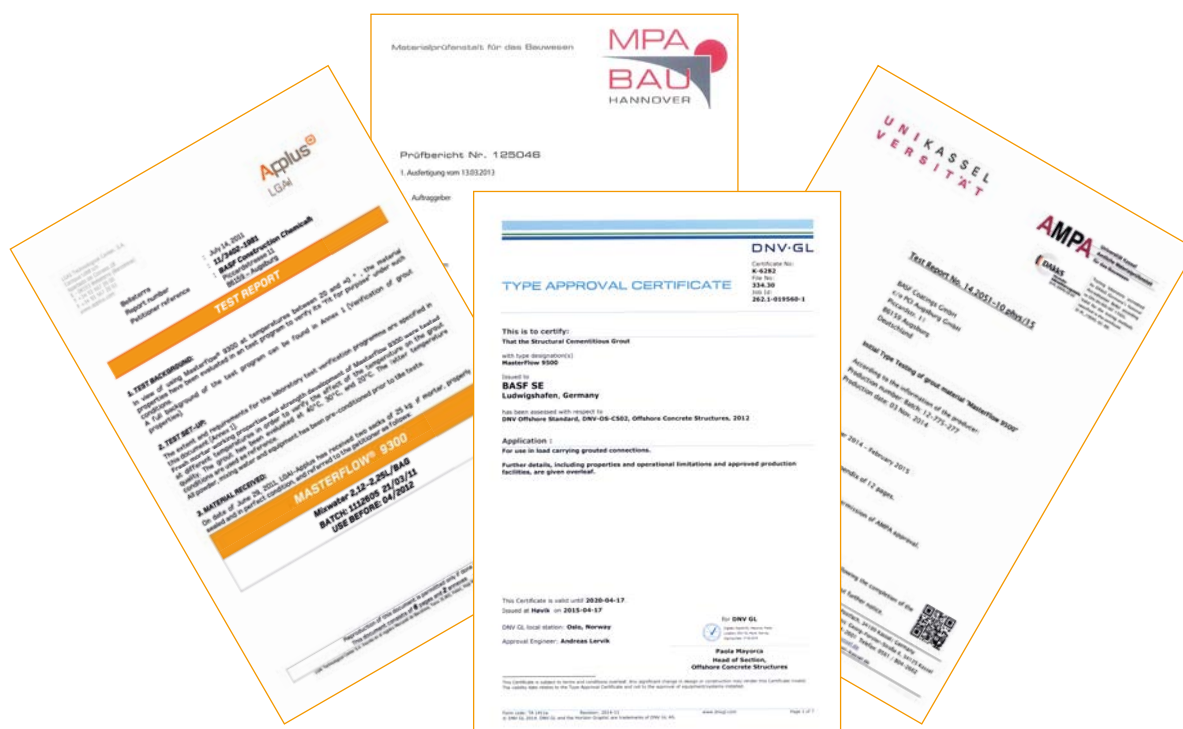
- Production of MasterFlow ExagROUTs to highest quality standards
- Type Approval Certificates from DNV GL
- On-site consultancy
- Detailed installation methods as part of the Quality Assurance
- MasterFlow ExagROUTs installed by Master Builders Solutions Licensed Contractors
- Independent documentation of the material properties

Product validation

MasterFlow ExagROUTs have been developed by the Master Builders Solutions experts' for application in on- and offshore wind farms, and especially where the turbines and foundations are exposed to very high dynamic loads. Durability and longevity of the total installation go therefore hand in hand with risk management. Minimizing risks and optimizing the electricity generation are at the heart of any investor in wind energy, whether the wind park is operated in on- or offshore conditions.

Master Builders Solutions has therefore instructed industry experts, certification bodies and independent testing houses to validate the performance of the materials and confirm their "fit for purpose".

With its global presence, Master Builders Solutions offers this high level risk management for all your projects – on- and offshore – independent of the country or region where the wind farm is being built.





Master Builders Solutions

The Master Builders Solutions brand brings all of our expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry. The know-how and experience of a global community of construction experts form the core of Master Builders Solutions.

We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, solutions for underground construction, waterproofing solutions, sealants, concrete repair & protection solutions, performance grouts, performance flooring solutions and solutions for on- and offshore wind energy.

Our comprehensive portfolio

- Concrete admixtures
- Cement additives
- Chemical solutions for underground construction
- Waterproofing solutions
- Sealants
- Concrete repair and protection solutions
- Performance grouts
- Wind turbine grouts
- Performance flooring solutions





Master Builders Solutions for the Construction Industry

MasterAir

Complete solutions for air entrained concrete

MasterBrace

Solutions for concrete strengthening

MasterCast

Solutions for the manufactured concrete product industry

MasterCem

Solutions for cement manufacture

MasterEase

Low viscosity for high performance concrete

MasterEmaco

Solutions for concrete repair

MasterFinish

Solutions for formwork treatment and surface improvement

MasterFlow

Solutions for precision grouting

MasterFiber

Comprehensive solutions for fiber reinforced concrete

MasterGlenium

Solutions for high performance concrete

MasterInject

Solutions for concrete injection

MasterKure

Solutions for concrete curing

MasterLife

Solutions for enhanced durability

MasterMatrix

Advanced rheology control for concrete

MasterPel

Solutions for hydrophobization, anti-efflorescence and surface protection

MasterPolyheed

Solutions for mid-range concrete

MasterPozzololith

Solutions for water-reduced concrete

MasterProtect

Solutions for concrete protection

MasterRheobuild

Solutions for high strength concrete

MasterRoc

Solutions for underground construction

MasterSeal

Solutions for waterproofing and sealing

MasterSet

Solutions for set control

MasterSphere

Solutions for guaranteed freeze-thaw resistance

MasterSuna

Solutions for sand and gravel in concrete

MasterSure

Solutions for extraordinary workability retention

MasterTop

Solutions for industrial and commercial floors

Master X-Seed

Advanced accelerator solutions for concrete

Ucrete

Flooring solutions for harsh environments



QUANTIFIED SUSTAINABLE BENEFITS ADVANCED CHEMISTRY BY MASTER BUILDERS SOLUTIONS

Let the numbers do the talking: We have portrayed some of our most eco-efficient product solutions for concrete and precast production, construction, civil engineering, and flooring.

sustainability.master-builders-solutions.com



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