



# MasterFlow

Solutions for  
Industrial grouting





# Master Builders Solutions from BASF

## Master Builders Solutions

The Master Builders Solutions brand brings all of BASF's 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 BASF 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 BASF 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, chemical solutions for underground construction, waterproofing solutions, sealants, concrete repair & protection solutions, performance grouts, performance flooring and tiling solutions.







## MasterFlow – the vital link where performance counts

### Solutions for industrial grouting

The varied environments in which structural grouts are used, and the complexity of the performance characteristics required for each application, has led to the evolution of BASF's specialized MasterFlow range of grouting solutions.

Failure to recognize the fundamental importance of these materials and choose the correct material for a particular installation can prove very costly.

MasterFlow cable grouts provide safe and secure anchorage for post tensioned bridges and can be supplied pre-bagged or as an admixture for bulk installations. MasterFlow cable grouts were used to construct the Metro system in Dubai.

MasterFlow precision grouts are used for grouting and bedding of machinery and structures and must bear static and dynamic loads in the harshest of environments, including the gas transmission, steel, petrochemical, mining, paper and pulp, building and civil construction and power generation industries.

MasterFlow grouts are designed and engineered to provide the optimum strength to transfer the load to the foundation depending on the thickness of the grout bed. MasterFlow grouts feature extended open times even at high temperatures to allow consolidation of the grout and to ensure that the machine is completely supported.





### Grouting solutions for the power industry

Increasing population, urbanization, and rising standards of living are driving the rapidly growing demand for electricity. In response, governments and investors are seeking to build more power plants, upgrade existing ones, and often convert older power plants to different fuel stocks. Investment in the development of sustainable alternate sources of power generation such as wind and solar is growing across the world.

Traditional power plants use steam-driven turbines to create electricity. Turbines run at high speed for many years, and therefore need to be installed on a stable failure-free base. Ensuring that the turbine and generator drive shafts are aligned over the life of the facility is critical if the power plant is to avoid costly outages that disrupt its ability to supply power. Grouts, which provide the vital link between turbines, generators and foundations, must be able to withstand vibratory and dynamic loads and support heavy equipment equally across all load points during their years of service without failure.

MasterFlow cementitious grouts, invented in the 1930's and continuously improved in the years since, are the industry standard for heavy equipment grouting. They have been engineered to expand when in their liquid form, hereby compensating for the natural tendency of cementitious products to shrink and ensuring the complete filling of the space between the equipment and the foundation. They are chemically engineered to overcome the natural long-term shrinkage of the cement matrix, providing the necessary long term support of the machinery.

Turbines and generators are large and heavy equipment that require large amounts of grout to support them. The MasterFlow range of grouts can be applied rapidly in large quantities, either via mechanical means such as a pump or by labour intensive manual installation.





### Solutions for alternative power generation systems

The global need for green energy has led to greater use of wind turbines in many countries around the world. Wind turbines create special demands on the grout which supports the turbine towers. It has to cope with a range of forces not occurring in conventional steam turbines, generators and rotating equipment. In on-shore installations the grout bed must withstand not only the compression forces of the tower but also torsional and bending forces caused by the rotating blades and wind action. When the first wind farms were being developed, these forces posed a challenge that traditional grouts could not cope with; new technology was required. The new generation “wind power grout” needed to have a much higher compressive strength in order to transfer the load through a relatively small bed, but most importantly also had to have superior fatigue resistance. BASF developed the first grout in the world that could demonstrate superior fatigue resistance and cope with the additional forces.

The grouting of offshore wind turbine installations has an even greater level of challenge because the grout has to be able to work not only in compression but also in shear. The extra forces exerted upon the installation are a challenge for which very few products are able to meet the demanding performance requirements. Offshore installations are often remote areas, many of which experience extended and very cold temperatures during the winter months. BASF worked with the specialist offshore contractors, certification bodies and universities in Europe to find solutions to these problems. Their efforts produced the MasterFlow wind turbine grouts that cure at low temperatures within a controlled set time, allowing the grout to be pumped for a longer period and installed faster over an extended working session. This provides the installer with the ability to install more turbines per year, resulting in a quicker return on investment for those funding the project. It also results in the reduction of CO<sub>2</sub> emissions into the atmosphere from traditional power generation.





### When Ultra High Performance is required MasterFlow provides the solution

At the BASF research and development facilities we have recognized the need of many customers for a special ultra high performance grout with increased fatigue resistance and very high compressive strength (>70 MPa at 24 hours, >110 MPa at 28 days) for extremely heavy machinery with high cyclic vibration. To satisfy this requirement we have developed a unique MasterFlow grout to meet this

performance specification and can also withstand the extreme environment which these machines are subjected to in their normal service conditions. The ultra high performance MasterFlow machine grout provides our customers with the reassurances that their assets will achieve the maintenance free long life expectancy they need to run their operations.







### MasterFlow, Much More than a Void Filler

60 years of ongoing development puts superior technological capability at your disposal.

An unbroken 60 years of innovation and product development ensures the MasterFlow range of precision and structural grouts provide the vital link between foundation and equipment.

From the world's tallest building - Burj Khalifa Dubai (828 m), to the world's largest offshore windfarm Gwynt-Y-Mor UK (160 turbines)

MasterFlow precision grouts have been used to provide secure foundations and peace of mind to BASF's customers of problem free long term service in the harshest environments.





# Master Builders Solutions from BASF 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

## **MasterEmaco**

Solutions for concrete repair

## **MasterFinish**

Solutions for formwork treatment

## **MasterFlow**

Solutions for precision grouting

## **MasterFiber**

Comprehensive solutions for fiber reinforced concrete

## **MasterGlenium**

Solutions for hyperplasticized concrete

## **MasterInject**

Solutions for concrete injection

## **MasterKure**

Solutions for concrete curing

## **MasterLife**

Solutions for enhanced durability

## **MasterMatrix**

Advanced rheology control solutions for self-consolidating concrete

## **MasterPel**

Solutions for water tight concrete

## **MasterPolyheed**

Solutions for mid-range concrete

## **MasterPozzolith**

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

## **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

## **MasterTile**

Solutions for tile fixing system

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