



**Concrete -
connecting
the world**

 **BASF**

We create chemistry



BASF **North America** **Headquarters**

Florham Park, NJ

The new BASF corporate headquarters is a living example of how we're creating chemistry for a sustainable future. The building has achieved LEED® Double Platinum certification (Leadership in Energy & Environmental Design) from the United States Green Building Council (USGBC). The building incorporates several BASF construction technologies including Green Sense® Concrete, an environmentally preferable concrete that optimizes mixture proportions using specially formulated BASF admixtures and recycled materials to achieve performance and strength.

Odeon Tower

Monte Carlo

The Odeon Tower is the first high-rise project in Monaco since the 1980s. 170 meters tall, it will be the second-highest building on the European Mediterranean coast. Starting from a 'zero level', 47 upper stories and ten underground parking deck levels are being constructed simultaneously. The building's core is created using slip-form construction and concrete of strength category C60. This requires, among other things, good slump retention and a high early strength: After 16 hours, compressive strength must be at least 20 MPa to allow the core to support the climbing of the formwork. Pumpability of the concrete is also important, with the material having to cover horizontal and vertical distances of up to 230 and 150 meters, respectively. In addition, heat during hydration as well as the general impact on the environment is to be kept to a minimum. A mix design comprising the Glenium® SKY 537 hyperplasticizer and the Prelom® 500 water-reducing agent was developed and used to meet all specifications. The project is scheduled for completion in mid-2014.





Shanghai Tower

Pudong, Shanghai

The Shanghai Tower, when completed in 2014, will dominate the city's skyline. At 632 meters and 127 stories, it will surpass the neighboring Shanghai World Financial Center to become the tallest building in China and the second tallest building in the world.

The raft foundation has a diameter of 121 meters, occupying an area larger than one and a half football pitches. At six meters in depth, a total of 61,000 cubic meters of concrete was required to complete the foundation that was to be placed in one continuous pour. In order to tackle this challenge, 450 concrete mixers from six different plants delivered the concrete. To ensure the concrete met the strict performance criteria, cutting edge admixture technology was used. The latest MasterGlenium® hyperplasticizers, in conjunction with MasterSure® and MasterMatrix® controlled the workability of this self-consolidating concrete ensuring a consistent product every time. The raft at the Shanghai Tower was poured in 60 hours: a world record.

Petronas Towers

Kuala Lumpur

BASF Admixtures
pumped vertically 452m

Soaring to a height of 452 metres, the 88-storey twin structure is Kuala Lumpur's crown jewel. The structure includes a 170 metre high sky bridge between the towers and is the world's highest two storey bridge. Challenges during construction included the need to pump concrete vertically to the full height of 452 metres. This was successfully achieved using new concrete admixture technology developed for such testing projects by BASF's state of the art Research and Development facilities.





Master Builders Solutions from BASF

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 and performance flooring solutions.

Burj Khalifa

Dubai, UAE

BASF Admixtures pumped vertically 602m

One unique challenge was ensuring the concrete mix design for the structural core of the tower was capable of being pumped to formidable heights. The structural core of the tower required nearly 170,000m³ of concrete designed for 80N/mm² compressive strength, MasterGlenium® SKY 504 won hands down. It was the only concrete admixture that could offer the required early strengths and workability retention at ambient temperatures of above 45°C in a mix to be pumped to a height of at least 600m - using a single pump at ground level.





The Shard

London

BASF Admixtures
pumped vertically 310m

The Shard is the tallest building in Western Europe, standing at 310 metres. The structure's core was slipformed in reinforced concrete and progressed at an impressive rate of three metres a day whilst the basement levels were built top down simultaneously. The record-breaking concrete pour for the basement's construction, the largest UK continuous concrete pour to date, started at 5pm on Friday 16th April 2010 and went on until 4am on Sunday 18th April. A total of 5,480m³ of concrete was placed in just 35 hours, beating the schedule both on time and volume. The volume of BASF admixtures used in the pour was 11,000 litres of MasterGlenium® SKY 569 and 5,000 litres of MasterPozzolith® 100 XR.

Freedom Tower

New York

Sustainable design was a central theme to One World Trade Centre's development, with the Port Authority of New York/ New Jersey imposing a strict requirement for the replacement of Portland cement with recycled materials. Through BASF's Green Sense® Concrete mixture optimization service, a concrete mixture with 71% cement replacement was achieved. The mixture replaced Portland cement with the recycled materials, non-cementitious fillers and specialised admixtures to exceed all the performance targets specified. This mixture was used for the 110,860m³ or 145,000 yds³ of concrete needed for the columns of the entire structure. Some practical equivalents for these savings are: water savings equal to 1,177,329 half-litre bottles of water, reduced carbon footprint equal to 1,835,494 gallons of gasoline and fossil fuel savings equal to 29,872 barrels of oil.





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
high performance concrete

MasterPozzolith®

Solutions for water-reduced concrete

MasterProtect®

Solutions for concrete protection

MasterRheobuild®

Solutions for superplasticized
concrete

MasterSeal®

Solutions for waterproofing
and sealing

MasterRoc®

Solutions for underground
construction

MasterSet®

Solutions for retardation control

MasterSure®

Solutions for workability control

MasterTop®

Solutions for industrial
and commercial floors

Master X-Seed®

Advanced accelerator solutions
for pre-cast concrete

Ucrete®

Flooring solutions for
harsh environments

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