



## MasterMatrix®

Solutions for everyday  
self-consolidating concrete





## Master Builders Solutions



The **Master Builders Solutions** brand brings all of its 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 Master Builders Solutions 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.



## Smart Dynamic Concrete™

New generation of highly fluid concretes

### Concept

The Smart Dynamic Concrete concept is suitable to upgrade high slump concretes to a higher performance level with self-compacting characteristics and is as easy to produce as standard concrete.

It allows the ready-mix industry to reach better construction process economy, higher concrete durability and increased energy efficiency in order to save time and money and reduce CO<sub>2</sub> emissions.

MasterMatrix® is the essential component of the Smart Dynamic Concrete concept. It consists of a water-soluble polymer which modifies the rheological properties of the concrete mix. When used in conjunction with one of our MasterGlenium® products, MasterMatrix brings a level of viscosity to the mix that allows the right balance between fluidity, passing ability and resistance to segregation apparently opposing properties to be achieved. Thus enabling the production of a self-consolidating concrete.

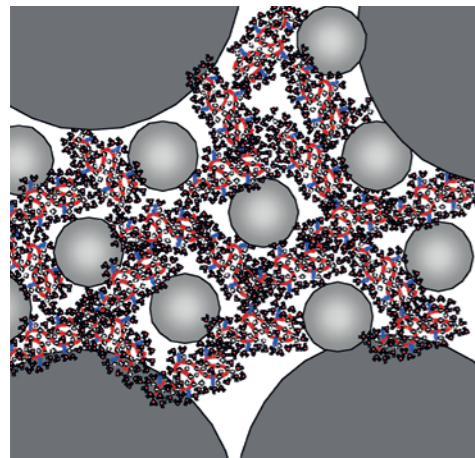




## Mechanism of action

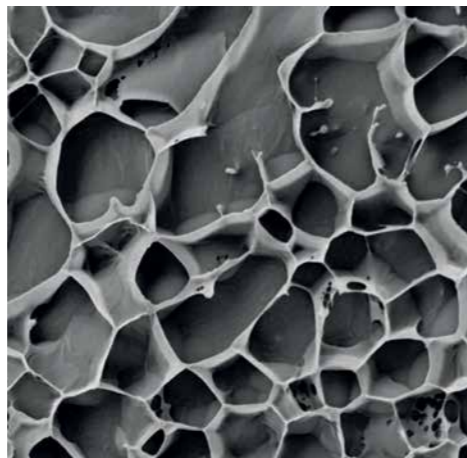
The unique mix-design optimization now possible allows the substitution of concrete paste quantity by concrete paste quality to achieve self-compacting properties and concrete stability at the same time.

MasterMatrix is based on Master Builders Solutions proprietary, intelligent (smart) high molecular weight ionic polymers which interact among themselves and mainly with water molecules, generating a water envelope, therefore building up a highly structured cement paste.



The viscosity of the pore solution is modified by formation of the water envelope and a three dimensional network of the MasterMatrix polymers.

An additional mechanism of action that strengthens the effectiveness of the system is the simultaneous absorption of MasterMatrix molecules on more than one fine particle of the cement or fine sand, leading to a bridging phenomenon which generates an even more powerful molecular network.



Smart MasterMatrix polymers which self-organize to a matrix-like structure.



One of the greatest benefits for constructors and builders is higher productivity in the concrete placement process. The ease of application requires less manpower and reduced claims for defects, voids and honeycombs.

Picture above compares the ease of application between traditional vibratable concrete (on the left) with Smart Dynamic Concrete (on the right).

### Benefits

#### Economical

- Savings on fines
- Up to 40 % faster placing
- Up to 5 times higher labour productivity
- Easy to produce

#### Ecological

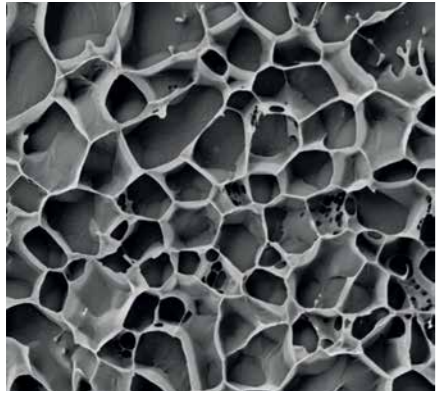
- Less fines, less CO<sub>2</sub>
- Higher durability

#### Ergonomic

- No vibration
- No noise
- Low stickiness



## At a Glance



Smart



Dynamic



Concrete

- Smart Dynamic Concrete is designed to upgrade high slump concrete to become self-compacting and robust for day-to-day use at minimum extra cost.
- The centerpiece of this concept is MasterMatrix, a high performance viscosity modifying agent (VMA) which allows for a quantum leap in concrete robustness.
- Smart Dynamic Concrete combines the advantages of both traditionally vibrated concrete and self-compacting concrete.
- This concept makes unique mix-design optimization (by reducing fines) possible.
- Smart Dynamic Concrete adds economical, ecological and ergonomic values to concrete and has the potential to move the market up to the next level of advanced construction practice.

With Master Builders Solutions, you will find a competent and professional partner that will optimize the use of concrete in every situation. Increasing quality and durability, safety and aesthetics, we work within the framework of environmental responsibility and the economic realities of the industry.

Maximizing the performance of concrete is central to everything we do.





# 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

**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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