MasterMatrix®
Solutions for everyday self-consolidating concrete
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 CO₂ 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 BASF 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.

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.

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.

Benefits

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

Ecological
- Less fines, less CO₂
- Higher durability

Ergonomic
- No vibration
- No noise
- Low stickiness
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 from BASF, 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.
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