

MASTER®
» BUILDERS
SOLUTIONS

MasterSuna® SBS

**Adding Value to Local
Fine Aggregates**



MasterSuna[®] SBS

Making Fine Aggregates Contaminated with Clay a Useful Raw Material

The mineral composition of fine aggregate varies from region to region. Until now, fine aggregates contaminated with swelling clay were often regarded as unsuitable to produce high quality concrete. This is where MasterSuna[®] SBS, our solution for clay containing fine aggregates, comes into play.

Concrete producers save costs

The new MasterSuna[®] SBS concrete admixture from Master Builders Solutions[®] portfolio now enables fine aggregates containing swelling clay to be used in the production of high quality concrete. This in turn enables concrete producers to significantly reduce their costs. Given their availability, fine aggregates contaminated with swelling clay from local sources can be used thereby reducing, or omitting, the need to secure additional suitable fine aggregates from remote sources.

The economic value of the quarries increase

Owners of quarries can also benefit from the use of MasterSuna[®] SBS. Historically, fine aggregates contaminated with swelling clay could only be utilized in less-demanding applications, if at all. However, MasterSuna[®] SBS now makes it possible to use existing deposits to a much greater extent. Furthermore, the washing and pretreatment of local fine aggregates can also be reduced thereby increasing the economic value of the quarry.

Benefits at a glance:



Better utilization of local fine aggregate deposits



No shipments required from remote quarries



Washing and pretreatment of local fine aggregates is reduced



Quarries increase in value

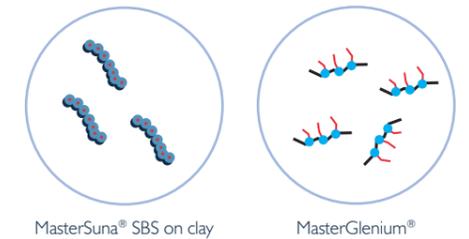


Reduced requirement for the development of new quarries

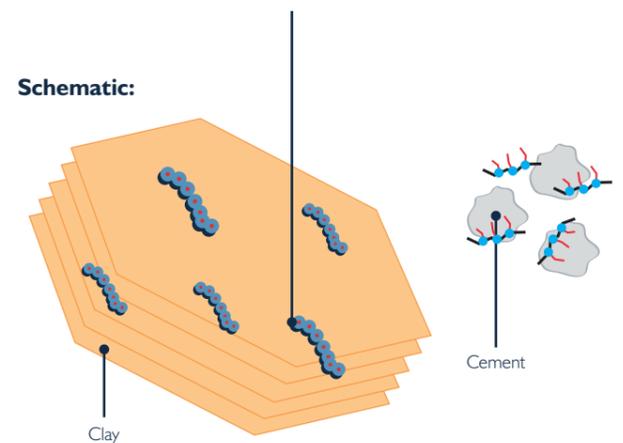
How MasterSuna[®] SBS Works

The adverse impact of swelling clay

Fine aggregate deposits can be contaminated by swelling clay. When used in concrete production, this swelling clay can, on the one hand, impair the bonding of the concrete paste to the surfaces of aggregates. On the other hand, it can increase the water demand of the concrete. Often, this increased water demand cannot be compensated by an increase in the dosage of the water reducing admixture. Swelling clay can impact fresh concrete in yet another significant way. Their layered structure provides an extremely large inner surface that strongly adsorbs water reducing admixtures, rendering them ineffective.



Schematic:



No increase in water demand with MasterSuna[®] SBS

MasterSuna[®] SBS counteracts this effect. It saturates the inner and outer surfaces of the swellable clay to prevent the adsorption of the water reducing admixture molecules. This enables water reducing admixtures such as MasterGlenium[®] or MasterPolyheed[®] to perform in an optimal way. Combining MasterSuna[®] SBS with MasterGlenium[®] or MasterPolyheed[®] provides optimal control over concrete workability and consistency retention, even when using critical fine aggregates.

Example: Typical data using fine aggregates contaminated with swelling clay in the production of F4 concrete, with or without the addition of MasterSuna[®] SBS

	Fine Aggregate Blocker Solutions			
Fine aggregate 0/4 mm, methylene-blue value	1	2.5	2.5	4
MasterGlenium [®] in wt % of m ³ concrete	0.60 %	1.40 %	0.60 %	0.60 %
MasterSuna [®] SBS in percentage of weight of fine aggregate	–	–	0.20 %	0.30 %
Water/cement ratio	0.65	0.65	0.65	0.65
Consistency d (0)	F4	F3	F4	F4
Consistency d (90)	F4	F2	F4	F4
Compressive strength after 24 h	5 MPa	1 MPa	5 MPa	5 MPa
Compressive strength after 28 days	29 MPa	29 MPa	29 MPa	29 MPa

Assessing Fine Aggregate Quality

Using the methylene-blue test, our Master Builders Solutions® experts can provide rapid information on clayey, adsorptive components, and thus on the quality of the fine aggregate. The results of the test form the basis for a systematic solution when using difficult fine aggregates.

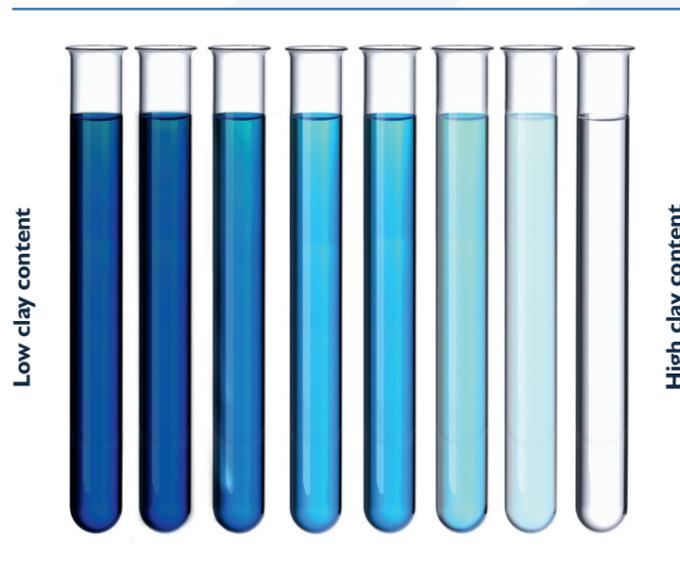
The experts from Master Builders Solutions® are happy to help you.



P +44 161 727 6300

ukinfo@masterbuilders.com

www.master-builders-solutions.com



Concrete with fine aggregates contaminated with swelling clay, **without** MasterSuna® SBS



Concrete with fine aggregates contaminated with swelling clay, **with** MasterSuna® SBS



Master Builders Solutions®

As Master Builders Solutions®, we are a leading global producer of responsible solutions for the construction industry, focussed on delivering our vision: **Inspiring people to build better.**

We provide value-added technology and market-leading R&D capabilities to improve the performance of construction materials and to enable the reduction of CO₂ emissions in the production of concrete. The comprehensive portfolio under the Master Builders Solutions® brand encompasses concrete admixtures, cement additives, and solutions for underground construction.

We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide, leveraging 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.

Founded in 1909, Master Builders Solutions® operates 35 production sites globally, supporting you in mastering your building challenges of today and tomorrow – for a decarbonised future.



Master Builders Solutions® for the Construction Industry

MasterAir

Complete solutions for air entrained concrete

MasterCast®

Solutions for the manufactured concrete product industry

MasterCem®

Solutions for cement manufacture

MasterCO₂re™

Solutions for low-clinker concrete

MasterEase®

Low viscosity for high performance concrete

MasterFinish®

Solutions for formwork treatment and surface improvement

MasterFiber®

Comprehensive solutions for fiber reinforced concrete

MasterGlenium®

Solutions for high performance concrete

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

MasterPozzolith®

Solutions for water-reduced concrete

MasterRheobuild®

Solutions for high strength concrete

MasterRoc®

Solutions for underground construction and surface improvement

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

Master X-Seed®

Advanced accelerator solutions for concrete

Unveil the Power of MasterCO₂re™: Intelligent Cluster System for Low-clinker Concrete Production

info.master-builders-solutions.com/en/masterco2re



Master Builders Solutions UK Ltd

Swinton Hall Road, Swinton,
Manchester, M27 4EU
T +44 161 727 6300

ukinfo@masterbuilders.com

www.master-builders-solutions.com

The data contained in this publication are based on our current knowledge and experience. They do not constitute the agreed contractual quality of the product and, in view of the many factors that may affect processing and application of our products, do not relieve processors from carrying out their own investigations and tests. The agreed contractual quality of the product at the time of transfer of risk is based solely on the data in the specification data sheet. Any descriptions, drawings, photographs, data, proportions, weights, etc. given in this publication may change without prior information. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed (12/2023).

® registered trademark of Master Builders Solutions® in many countries of the world

