MasterEase 3821

New superplasticizer technology imparts advanced rheological properties a decrease in the viscosity and extended rheology maintenance. It is suitable for winter weather conditions.

Material description

MasterEase 3821 is a superplasticizer, high range water reducer from the research work of R&D laboratories of Master Builders Solutions.
MasterEase 3821 is especially engineered for ready-mix Rheoplastic concrete having fluid consistence and self-compacting concrete, to impart exceptional rheological properties and having a high workability retention under mild and winter weather conditions. It improves considerably the placing and finishing of concretes and enhances the ease of concrete pumping for all construction activities.

MasterEase 3821 is chloride free, meets EN 934-2, and it is compatible with all cements meeting the EN 197-1 standards.

Innovation

MasterEase 3821 is based on an innovative polymer chemistry and it is patented by Master Builders Solutions.
Its action differs from traditional superplasticizers, to the extent that the adsorption of polymers of MasterEase 3821 on binder particles is provided by a flexible chemical bond which does not impede the flow of concretes.
This innovation significantly improves rheological behaviour of concretes treated by MasterEase 3821, they have a low yield stress, low viscosity with additional feature of long workability retention.

Low viscosity concrete

Low Viscosity Concrete is an innovative concept dedicated to the viscosity (rheology) of concretes. It is based on the use of MasterEase polymer with dedicated technical services of Master Builders Solutions. This concept not only allows the achievement of a significant reduction in concrete viscosity but also optimizing the performance of concrete.

Benefits for ready-mix producer

MasterEase 3821 is recommended for the production of standard and self-compacting concrete requiring low viscosity, long workability retention and high compressive strength. MasterEase 3821 is specially formulated for the concrete industry. It is also suitable for applications in the general Civil and building sites.
It can be used for the realization and achievement of the following:

- concrete complying to EN 206 / CN,
- ready-mix and Site Mix concretes,
- ruperior Concrete pumping,
- reduction of Concrete waste,
- ease of compacting and finishing concrete,,
- high performance and ultra-high strength concrete
- concrete for low environmental impact and high in mineral additions,
- architectural concrete.

Properties

The MasterEase 3821 delivers many advantages both in the fresh concrete on hardened concrete.

At fresh state, optimizing the rheology:

Decrease in the viscosity of concretes at constant W/C

- Improved pumping (lower pressure and longer distance).
- Better response to vibration.
- Greater Ease of Pumping.
- Superior finishing, floating and smoothing operations.
- Excellent flexibility, mobility and flow of self-compacting concrete.

Reduction possible to the W/C ratio without affecting the viscosity of concretes

- New windows for technical and economic optimization of concrete mix designs (addition and types of binder, choice of aggregates).
- High strength and resistance to segregation.
- Workability retention over 60-90 minutes without retardation.
- Good compatibility with all types of cement and mineral additions.

In the cured state, improvement of sustainability

I. Excellent early and late compressive strength.
II. Improvement of quality of surface finishes.

MasterEase 3821

New superplasticizer technology imparts advanced rheological properties a decrease in the viscosity and extended rheology maintenance. It is suitable for winter weather conditions.

III. As part of a reduction of W/C:
- increased mechanical resistances,
- decreased porosity and permeability,
- decreased shrinkage and cracking,
- enhanced durability.

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 934-2 and the relative DoP (Declaration of Performance).

CE 1305
EN 934-2 Table 3.1 – 3.2 High range water reducing/superplasticizing admixtures

Dosage

The recommended dosage rate range is 0.5 to 1.2 litres per 100 kg of binder. Other dosages may be recommended in special cases according to specific job site conditions.
In such cases please consult our Technical Service Department for advice.

Packaging and storage

MasterEase 3821 is available in 10L cans, 1.000L tanks or in bulk. MasterEase 3821 must be stored in a place where the temperature does not drop below 5 °C.
In case of freezing, warm up and homogenise the admixture solution before using.

Technical Information	
Form	Liquid
Relative density (g/cc at 20°C)	1.030 – 1.060
Essential characteristic in accordance to EN 934-2	**Performance**
Chloride ion content	≤ 0.1% by mass
Alkali content (Na_2O equivalent)	≤ 3.0%
Corrosion behaviour	Contains only components from EN 934-1 2008 Annex A1
Compressive strength	Equal consistence: 24h ≥ 140% 28 days ≥ 115% Equal w/c ratio: 28 days ≥ 90%
Air content	Equal consistence: ≤ 2.0 % Equal w/c ratio: ≤ 2.0 %
Water reduction	≥ 12%
Consistency	Increase: ≥ 120 mm Retention: comply 3.2

MasterEase 3821

New superplasticizer technology imparts advanced rheological properties a decrease in the viscosity and extended rheology maintenance. It is suitable for winter weather conditions.

Directions for use

MasterEase 3821 is a liquid admixture to be added to the concrete during the mixing process:

- mix cement and secondary binders, sand, coarse aggregates and the mix water until a stiff, yet homogeneous, mixture is obtained,
- optimal mixing water reduction is obtained if MasterEase 3821 is mixed into the concrete right after the addition of the initial 80-90% of the total water,
- avoid adding the admixture to the dry aggregates,
- add MasterEase 3821 admixture and mix again for to 60 seconds in order to disperse it homogeneously,
- continue mixing until required workability is obtained, with addition of the remaining water.

Compatibility

In order to optimise some special properties of the concrete, use of the following complementary admixtures is suggested:

- demoulding agent from MasterFinish line for good surface appearance. curing agent,
- curing agent MasterKure for sealing the surface of freshly finished concrete against rapid evaporation of water which may cause plastic shrinkage cracking.

MasterEase 3821 is not compatible with all admixtures of MasterRheobuild series.

Safety information

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

Other services

For additional technical information, brochures, references, technical reports and technical support please visit www.master-builders-solutions.com/it-it or alternatively contact infomac@masterbuilders.com.

Scan QR code to visit the product page and download the latest version of this technical data sheet and any additional documentation.

MasterEase 3821

New superplasticizer technology imparts advanced rheological properties a decrease in the viscosity and extended rheology maintenance. It is suitable for winter weather conditions.

Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.
For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.
Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.
This version supersedes all the previous ones.

Master Builders Solutions Italia Spa
Via Vicinale delle Corti, 21 – 31100 Treviso – Italia
T +39 0422 429200 F +39 0422 421802
www.master-builders-solutions.com/it-it
e-mail: infomac@masterbuilders.com