

RHEOBUILD® 650 M

High range, water reducing superplasticiser for use in rheoplastic and microsilica concrete

Description

RHEOBUILD 650 M is a high range superplasticising admixture designed specifically for the production of rheoplastic concrete and concrete containing microsilica. Unlike conventional superplasticisers, RHEOBUILD 650 M imparts workability for extended periods even in high temperatures.

Primary uses

- Production of microsilica concrete
- Readymixed concrete.
- Low water / cement ratio and high strength concrete .
- High workability for longer periods
- Hot weather concreting

Advantages

- Effective over high range of cement content and types.
- High early strengths when used as a water reducer
- Reduces segregation by improved cement dispersion
- Improves pumpability, durability and
- Reduces permeability
- Extended slump retention time – maintains workability in excess of concrete produced
- utilising conventional superplasticisers
- Enables Rheoplastic, workable microsilica concrete.
- Chloride-free, suitable for use with reinforced concrete.

Packaging

RHEOBUILD 650 M is available in bulk or in 210 Ltr drums.

Compatibility

RHEOBUILD 650 M can be used with all types of Portland cement. For use with special cements, contact BASF's Technical Services Department.

RHEOBUILD 650 M should not be premixed with other admixtures. If other admixtures are to be used in the concrete containing RHEOBUILD 650 M, they must be dispensed separately. Contact BASF's Technical Services Department for further advice.

Typical properties*

Colour :	Dark brown/black liquid
Specific gravity :	1.19 – 1.20 at 20°C
Chloride content:	Nil to BS 5075 :1982
Nitrate content:	< 0.1%
Freezing point:	0°C
Flashpoint :	N/A

Standards

BS 50 75 Part 1 ASTM C494 Types D & G

Typical properties

RHEOBUILD 650 M should be added to the concrete mix during the mixing cycle at the same time as the water. Never add RHEOBUILD 650 M to dry cement or dry microsilica.

Alternatively, RHEOBUILD 650 M can be added via the feedhopper of a concrete truck mixer to produce flowing concrete on site as a means of slump control at high ambient temperatures (ensure at least 30 revolutions of the mixer drum when adding on site).

Directions for use

The optimum dosage rate for RHEOBUILD 650 M should be determined by site trials using the relevant mix constituents and mix design. Control mixes should be produced to establish the full benefit of using RHEOBUILD 650 M.

The following guidelines will provide a starting point for trials in the following applications.

a) Microsilica concrete:

The incorporation of microsilica as a cement replacement in concrete makes the mix cohesive. In order to transport, pump and place microsilica concrete, an addition rate of 600 to 2000ml per 100kg of cement will be required. Dosage rates will vary according to cement content and water/cement ratio.

b) Water reduced, high strength concrete:

Due to RHEOBUILD 650 M 's plasticising properties, significant reductions in water content can be made to produce high strength concrete. Due to the powerful deflocculating and retarding action of RHEOBUILD 650 M on the cement particles the hydration process is optimised.

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Typical dosage of 600-2200ml per 100kg of cement can be used.

Optimum hydration of the cement typically results in compressive strength in excess of 80N/mm².

c) Flowing concrete:

An addition rate of 600 - 1800ml per 100kg of cement is normally required to produce flowing, self compacting concrete from a concrete with an initial slump of 60-100mm. The dosage rates given are a guideline for use. Applications requiring a dosage rate outside these guidelines are not uncommon. For confirmation of maximum recommended dosage rates please contact BASF's Technical Services Department.

d) Low permeability concrete

RHEOBUILD 650 M and microsilica incorporated into a standard mix design will produce dense, low permeability concrete which has many applications in bridges, marine works; substructure construction etc. and will resist the ingress of water and waterborne salts.

e) Control of setting times

The use of RHEOBUILD 650 M affords excellent control over initial and final setting times. The controlled retardation of the set will ensure homogeneity in the placed concrete and prevent the incidence of cold joints. Actual setting times will depend on mix design and cement type.

Dispensing

RHEOBUILD 650 M is a ready to use liquid which is dispensed into the concrete together with the mixing water.

The palsticising effect and water reduction are higher if the admixture is added to the concrete after 70% of the mixing water has been added. The addition of RHEOBUILD 650 M to dry aggregate or cement is not recommended.

Effects of over dosage

- Increased workability
- Retardation of initial and final set
- Increased air entrainment

Providing the concrete is correctly placed and cured the ultimate compressive strength will not be adversely affected. The effects of over dosage are increased in sulphate resisting cement (type V).

Storage

Store under cover, out of direct sunlight and protect from extremes of temperature. Shelf life of 2 years when stored as above.

Safety precautions

RHEOBUILD 650 M contains no hazardous substances requiring labeling. For Further **information**, refer to material safety data sheet.

Note

Field service, where provided does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

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