

RHEOBUILD[®] MICRAFLOW

Superplasticiser for use with microsilica concrete

Description

RHEOBUILD MICRAFLOW is a high range superplasticising admixture for use with conventional concrete and concrete containing microsilica. RHEOBUILD MICRAFLOW produces a rheoplastic concrete. Unlike conventional superplasticisers RHEOBUILD MICRAFLOW possesses the ability to retain workability for extended periods even in high temperatures.

Primary uses

- Production of microsilica concrete.
- Production of low permeability and high strength concrete.
- Hot weather concreting.
- Production of self compacting flowing concrete.
- Low water/cement ratio concrete.

Advantages

- Enables rheoplastic, workable microsilica concrete.
- Increases durability and impermeability.
- Affords cost savings by reducing cement contents without loss of strength.
- Reduces segregation by improved cement dispersion.
- Chloride free, suitable for use with reinforced concrete.
- High early strengths when used as a water reducer without cement reduction.
- Maintains workability over wide temperature ranges.

Compatibility

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

RHEOBUILD MICRAFLOW should not be premixed with any other admixtures. If other admixtures are to be used these should be dispensed separately. Consult's Technical Dept. for advice.

Packaging

RHEOBUILD MICRAFLOW is available in bulk or in 210 litre drums.

Typical properties

Colour:	Dark brown/black liquid
Specific gravity:	1.16 – 1.18 at 25°C
Chloride content:	Nil to BS 5075 : 1982
Nitrate content:	<0.1%
Freezing point:	0°C
Flashpoint:	N/A

Standards

BS 5075 Part 1
ASTM C494 Types D & G

Directions for use

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

Alternatively RHEOBUILD MICRAFLOW 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).

Dosage

The optimum dosage rate for RHEOBUILD MICRAFLOW 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 MICRAFLOW.

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.

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b) Water reduced, high strength concrete:

Due to RHEOBUILD MICRAFLOW'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 MICRAFLOW on the cement particles the hydration process is optimised. Optimum hydration of the cement typically results in compressive strength in excess of 80N/mm².

Typical water reduction properties are given below :

% Water Reduction	Dosage (ml/100kg cement)
10 - 15	500-750
15 - 20	750-1000
20 - 30	1000-2000

c) Flowing concrete:

An addition rate of 600 - 1200ml 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's Technical Services Department.

d) Low permeability concrete

RHEOBUILD MICRAFLOW 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 MICRAFLOW 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.

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 MICRAFLOW is not a fire or health hazard. Spillages should be washed down immediately with cold water. For further information refer to the material safety data sheet.

Note

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

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

Quality and care

This statement is made under condition that the material and usage thereof conform to the terms of our published literature and recognized good workmanship

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Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control

As all BASF technical datasheets are updated on a regular basis it is the user's responsibility to obtain the most recent issue.

BASF Construction Chemicals – Jordan
P.O. Box 752 11118, Amman, Jordan
Tel: +962-6 5521672 Fax: +962 6 5523148