

RHEOBUILD[®] SP1

High range water reducing, superplasticiser for rheoplastic concretes

Description

RHEOBUILD SP1 is composed of synthetic polymers specially designed to impart rheoplastic qualities to concrete.

A rheoplastic concrete is a fluid concrete with a slump of at least 200 mm, easily flowing, but at the same time free from segregation and having the same water/cement ratio as that of a no-slump concrete (25 mm) with admixture.

RHEOBUILD SP1 is chloride free.

Uses

- Pre-cast Concrete
- Site mixed concrete
- Pumped concrete
- Wet Shotcrete Mixes
- Concrete containing Slag/ Pozzolans
- Mass concrete
- Concreting in low temperatures

Advantages

- Reduced water content for a given workability
- Minimal bleed water
- High early strengths – quicker de-stripping
- Lower pumping pressure
- Increased ease in finishing concrete
- Increased compressive, tensile and flexural strengths as a benefit of its water reducing action
- Reduced permeability - Improved durability
- Reduced thermal peaks – reduced cracking
- Reduced shrinkage and creep
- Provides lower in-place cost

Typical Properties

Aspect	: Dark brown free flowing liquid
Relative Density	: 1.15 ± 0.02 at 25°C
pH	: ≥6
Chloride ion content	: < 0.2%

Standards

- ASTM C-494 Type A & F
- EN 934-2: T3.1/3.2
- IS 9103: 1999

Direction for use

RHEOBUILD SP1 is a ready-to-use liquid which is dispensed into the concrete together with the mixing water. The plasticising effect and water reduction are higher if the admixture is added to the damp concrete after 50 to 70% of the mixing water has been added.

The addition of RHEOBUILD SP1 to dry aggregate or cement is not recommended.

When using RHEOBUILD SP1 to produce flowing concrete at site using ready mix trucks, it can be added to the concrete via the feed hopper at the rear of the truck. Mix before discharge for 5 minutes at 10 rpm to produce a fully homogenous mix.

Dosage

Optimum dosage of RHEOBUILD SP1 should be determined with trial mixes. As a guide, a dosage range of 600ml to 2000ml per 100kg of cementitious material is recommended. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local BASF representative.

For addition information on RHEOBUILD SP1 admixture or on its use in developing concrete mixes with special performance characteristics, contact your local BASF representative.

Effects of over dosage

A severe over-dosage of RHEOBUILD SP1 can result in the following:

- Increase in air entrainment
- Bleed/segregation of mix, quick loss of workability
- Increased plastic shrinkage
- Delayed setting

A slight overdosing may not adversely affect the ultimate strength of the concrete and can achieve higher strengths than normal concrete, provided it is properly compacted and cured. Due allowance should be made for the effect of fluid concrete pressure on form work, and stripping times should be monitored.

In the event of over dosage, consult your local BASF representative immediately.

Compatibility

RHEOBUILD SP1 is compatible with most admixtures used in the production of quality concrete including normal, other mid-range and high-range water-reducing admixtures, air entertainers, accelerators, retarders, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers.

RHEOBUILD SP1 is also compatible with slag and pozzolans such as fly ash and silica fume.

Corrosivity – Non Corrosive

RHEOBUILD SP1 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of RHEOBUILD SP1 admixture. In all concrete application, RHEOBUILD SP1 admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

Workability

RHEOBUILD SP1 ensures that rheoplastic concrete remains workable for 30 to 90 minutes at +25°C. Workability loss is dependent on temperature, and on the type of cement, the nature of aggregates, the method of transport and initial workability.

It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

The use of MASTERKURE 111CF, evaporation reducer to prevent quick moisture loss from the surface of the flat works such as pavements in the dry, windy and hot climates is highly recommended.

Packaging

RHEOBUILD SP1 is supplied in 20kgs, 235 kg drums or in bulk on request.

Storage and Shelf life

RHEOBUILD SP1 must be stored where temperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local BASF representative.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted

with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

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

Disclaimer

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.

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