The Chemical Company

RHEOBUILD® 1100

High range, water-reducing, superplasticising admixture for the production of Rheoplastic concrete

Description of Product
The basic components of RHEOBUILD 1100 are synthetic polymers, which allow mixing water to be reduced considerably and concrete strength to be enhanced significantly, particularly at early ages.

RHEOBUILD 1100 is a chloride-free product.

Primary Uses
- Production of rheoplastic self-compacting concrete
- Pre-cast concrete
- Low w/c ratio concrete
- For concrete to be placed in complicated formwork or with congested reinforcement

Advantages
RHEOBUILD 1100 allows the production of very flowable concrete, with a low w/c ratio. Table 1 shows some typical examples of reductions in w/c ratio. Concrete with RHEOBUILD 1100 shows strengths higher than concrete without admixture having the same workability. The increase in strength, especially evident at early ages, remains at later ages, both in air-cured and steam-cured processes. Initial and final sets do not change significantly with respect to concrete without admixture. Therefore, whenever longer transport and finishing times are needed, the use of retarding superplasticisers, such as RHEOBUILD 561E or RHEOBUILD 850, is recommended.

Due to the reduction in the w/c ratio, all other properties of hardened concrete improve significantly, namely: lowered permeability, shrinkage and creep, increased workability and modulus of elasticity.

For more detailed information on the influence of superplasticisers on hardened concrete properties, consult your local BASF representative.

Compatibility
RHEOBUILD 1100 is compatible with all cements and admixtures meeting ASTM standards.
The use of RHEOBUILD 1100 and MICRO-AIR 111, air-entraining agent, is recommended whenever concrete is required to withstand freeze/thaw cycling.

Packaging
RHEOBUILD 1100 is available 25ltr pails, 210ltr drums or 1000ltr bulk.

Typical Properties

Colour:	Brown free-flowing liquid
Specific gravity:	1.190 at 24℃
Air-entrainment:	Maximum 1%
Chloride content:	Nil to BS 5075
Nitrate content:	Nil
Freezing point:	0℃; can be reconstituted if stirred after thawing

Standards
ASTM C494 Types A and F
BS 5075 Part 1 and 3

Dosage
RHEOBUILD 1100 is normally dispensed, depending on the desired plasticising or water-reducing effect, at a rate of
1.0-3.0 ltr/100kg of cement
Other dosages may be used, depending on the materials and conditions.

Directions for Use
RHEOBUILD 1100 should be added to the mix with the gauging water. No extension to mixing time is necessary. Never add RHEOBUILD 1100 to dry cement.

The Chemical Company

RHEOBUILD® 1100

Alternatively, when using RHEOBUILD 1100 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 3 minutes at 10rpm to produce a fully homogenous mix.

When using RHEOBUILD 1100 to obtain very high early strengths, advantage must be taken of its water-reducing properties.

Effects of Over Dosage
A severe over-dosage of RHEOBUILD 1100 will result in the following:

- Retardation of initial and final set
- Slight increase in air-entrainment
- Increase in workability

Dispensing
RHEOBUILD 1100 is introduced into the mixer together with mixing water. The plasticising effect, or water reduction, is higher if the admixture is added to the concrete after 50-70% of the mixing water has been added. The addition of RHEOBUILD 1100 to dry aggregate or cement is not recommended.

Storage
Store under cover, out of direct sunlight and protect from extremes of temperature.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice, consult BASF's Technical Services Department.

Shelf Life
Up to 24 months if stored according to manufacturer’s instructions in unopened containers.

Safety Precautions
RHEOBUILD 1100 contains no hazardous substances requiring labelling. 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 BASF representative.

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

Quality Statement

All products manufactured by BASF Egypt, or imported from BASF affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2000, ISO 14001:2004 & OHSAS 18001:1999 standards.

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RHEOBUILD® 1100

Table 1

Typical examples of the influence of RHEOBUILD 1100 on strength of concrete cured at 20℃ or steam-cured (cement content = 350kg/m³; aggregate maximum size = 20mm):

				Curing at 20℃				Steam-curing			
				(Days) Strength N/mm²							
Type of cement	RHEOBUILD 1100 ltr/100kg cement	W/c ratio	Slump (cm)	1	3	7	28	1	3	7	28
Ordinary Portland cement:	0 1	0.60 0.47	21.5 22.0	5.6 10.4	13.1 24.5	25.3 42.8	33.8 51.6	17.3 29.1	20.1 32.3	26.2 38.3	33.2 46.2
High strength Portland cement:	0 1	0.63 0.50	21.0 21.0	8.2 11.6	14.8 23.2	29.6 42.5	38.3 52.5	21.1 28.8	24.1 32.9	30.8 42.1	38.5 52.7
High strength and rapid hardening Portland cement:	0 1	0.59 0.43	21.0 21.5	14.6 21.0	25.3 41.2	39.7 53.2	44.1 60.0	30.4 40.2	33.1 44.2	39.6 54.6	42.7 59.4

3 hours pre-curing at 20℃; steam-heating from 20℃ to 70℃ in 3 hours; steam-curing at 70℃ for 6 hou rs; cooling from 70℃ to 20℃ in 6 hours time; curing f inishing at 20℃.

12/07 BASF EG

* Properties listed are only for guidance and are not a guarantee of performance.

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