

# MasterRheobuild® 1100

A high range water reducing superplasticising admixture for the production of rheoplastic concrete

## DESCRIPTION

The basic components of **MasterRheobuild 1100** are synthetic polymers which allow mixing water to be reduced considerably and concrete strength to be enhanced significantly, particularly at early ages. **MasterRheobuild 1100** is a chloride free product.

## PRIMARY USES

Production of rheoplastic self-compacting concrete  
Pre-cast concrete  
Low water/cement ratio concrete.  
For concrete to be placed in complicated formwork or with congested reinforcement.

## ADVANTAGES

**MasterRheobuild 1100** allows the production of very flowable concrete, with a low water / cement ratio. Table 1 shows some typical examples of reductions in w/c ratio. Concrete with **MasterRheobuild 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 **MasterRheobuild 561E** or **MasterRheobuild 850**, is recommended.

Due to the reduction in the water / cement 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 Master Builders Solutions representative.

## COMPATABILITY

**MasterRheobuild 1100** is compatible with all cements and admixtures meeting ASTM standards.

The use of **MasterRheobuild 1100** and **MasterAir 111** entraining agent is recommended whenever concrete is required to withstand freeze / thaw cycling.

## PACKAGING

**MasterRheobuild 1100** is available in 1000 ltr. bulk

## TYPICAL PROPERTIES

Colour: Dark brown liquid
Specific gravity: 1.190- 1.260 at 25°C
Air-entrainment: Maximum 1%
Chloride content: Nil to BS 5075
Nitrate content: Nil
pH: 6-11
Freezing point: 0°C; can be reconstituted if stirred after thawing

## STANDARDS

ASTM C-494 Types A and F  
BS 5075 Part 1 & 3.

## DOSAGE

**MasterRheobuild 1100** is normally dispensed at a 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

**MasterRheobuild 1100** should be added to the mix with the gauging water.

No extension to the mixing time is necessary. Never add **MasterRheobuild 1100** to dry cement.

Alternatively, when using **MasterRheobuild 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.

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When using **MasterRheobuild 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 **MasterRheobuild 1100** will result in the following:

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

## DISPENSING

**MasterRheobuild 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 **MasterRheobuild 1100** to dry aggregate or cement is not recommended.

## STORAGE

Store under cover, out of direct sunlight and protect from extremes of temperature. Shelf life is at least 2 years 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 Master Builders Solutions 's Technical Services Department.

## SAFETY PRECAUTIONS

**MasterRheobuild 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 Master Builders Solutions representative.

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

## QUALITY AND CARE

All products manufactured by Master Builders Solutions Egypt, or imported from Master Builders Solutions affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 standards.

\* Properties listed are based on laboratory controlled tests.

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**TABLE 1**

Typical examples of the influence of **MasterRheobuild 1100** on strength of concrete cured at 20°C or steam-cured (cement content = 350kg/m<sup>3</sup>; aggregate maximum size = 20mm):

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

3 hours pre-curing at 20°C; steam-heating from 20°C to 70°C in 3 hours; steam-curing at 70°C for 6 hours; cooling from 70°C to 20°C in 6 hours' time; curing finishing at 20°C.

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