



The Chemical Company

MasterRheobuild® 181K

(Formerly known as RHEOBUILD® 181 K)

Naphthalene Sulphonate Based High Range Water Reducing / Superplasticizer Admixture

Description of Product

MasterRheobuild® 181K is a naphthalene sulphonate based high range water reducing / superplasticizer admixture that improves the early and final strengths of concrete by giving Rheoplastic property.

Consistent With the Ministry of Public Works Pos. No: 04.613/1-A3 TS EN 934-2 Table 3.1 and 3.2: High Range Water Reducing / Superplasticizer Admixture ASTM C 494 Type F: High Range Water Reducing and Superplasticizer Admixture Standards.

Fields of Application

- In the production of pumpable and non-pumpable high quality readymix concrete,
- In the production of Rheoplastic* concrete that can easily set to densely reinforced concrete elements.
- Suggested in the pouring of concrete in low temperature environments.

Features and Benefits

- Decreases the amount of water at least 12% by weight compared to concrete without admixture.
- Enables lower water/cement ratio or high workability in the same water/cement ratio and easy pumpability compared to concrete without admixture.
- Increases early and final strengths compared to concrete without admixture.
- Improves formwork and surface finishes compared to concrete without admixture.
- Improves concrete's other mechanical properties like impermeability, durability, contraction, and creeping.
- Enables setting with lesser vibration even in densely reinforced concrete structures.
- **MasterRheobuild® 181 K** does not contain chloride.

Technical Data

Structure of the Material	Naphthalene Sulphonate Based
Color	Brown
Density	1.153-1.213 kg/liter
Chloride Content % (EN 480-10)	<0.1
Alkaline Content % (EN 480-12)	< 10

Obtained in +20°C, 50% relative humidity conditions.



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Working Mechanism of Admixture

Admixtures generally go into reaction only with the binder. When the admixture is added to the concrete, it is absorbed by the particles of the binder. The particles of the binder push each other by electrostatic force. Thus, the desired workability is obtained by less amount of water. Proportional with the decrease of mixture's water amount, mechanic strength increases.

Application Procedure

Binder (cement-micro silica-fly ash) and aggregate must be mixed until a homogenous mixture is obtained. After adding 50%- 70% of the water to be added to the mixture, **MasterRheobuild® 181K** must be added to the mixture along with the remaining water. **MasterRheobuild® 181K** must be mixed for 60 sec. or for the duration determined in laboratory experiments in the mixture for a homogenous diffusion.

Dosage

MasterRheobuild® 181K is suggested to be used as 0.8-1.4 kg for 100 kg binder (cement-micro silica-fly ash). The dosage to be used must be determined beforehand by laboratory experiments according to concrete class and properties. **BASF Yapi Kimyasallari Sanayi A.Ş.** Technical Service must be consulted for detailed information.

Compatibility

MasterRheobuild® 181K can be used with the following materials:

1. Can be used with all cement types.
2. Can be used with mineral admixtures like micro

silica, flyash and slag.

3. Can be used with air entraining **MasterAir® 200** to increase Freeze – Thaw resistance.
4. Used against fissures from plastic shrinkage with synthetic fibers **MasterRoc® FIB. SP 530/540/550** and steel fibers.
5. In environments with high temperature and high air flow, must be used with a suitable cure material like **MasterKure® 101**, **MasterKure® 107**, **MasterKure® 176** or **MasterKure® 181** to prevent the water of the mixture inside the concrete from evaporating.
6. In cold climate conditions, it is used with **MasterPozzolith® 42 CF** to accelerate the setting of concrete by increasing hydration temperature.
7. Can be used with **MasterRheobuild® 310** admixture to increase the slump of the concrete in construction sites.

Watch Points

- Concrete design and admixture dosage must be determined by prior laboratory trials according to concrete class and properties.
- The determined binder (cement-micro silica-fly ash), at the end of laboratory trials, coarse and fine aggregate must be mixed until a homogenous and dry mixture is obtained. If admixture is added to the dry mixture before adding mixing water, then it will be absorbed by the fine aggregate and uniform distribution will not be obtained. Even if all the mixing water is added on top of this, aimed concrete class and properties cannot be obtained. Since the mixture will need extra water, the water amount in design values will be exceeded and the concrete's mechanical properties will be below the aimed value. For this reason, concrete admixtures must not be added directly to the dry mixture.
- The admixture amount in the mixture is



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calculated by multiplying the sum of cement and secondary binders (such as micro silica-fly ash-slag) in the mixture by admixture dosage ratio.

- If higher doses are used than the suggested dosage, then setting time of the mixture can increase. In such cases, reinforced concrete has to be cured by keeping it humid during demoulding.

Packaging

250 kg drum
1200 kg tank
Bulk

Storage

Must be stored in original packing, in +5°C environment. If the material freezes because of storing in undesirable environments, it must be thawed by keeping it in room temperature without direct heating, and mixed by mechanical methods until it becomes homogenous. Pressured air must not be used when mixing.

Shelf Life

12 months after the production date under appropriate storing conditions. Opened packages can be used throughout the shelf life if the package cover is well closed.

Health and Safety Precautions

Work cloth, protective gloves, goggles and masks concordant with Work and Worker Health rules must be used during the application. Avoid contact to skin and eyes during storing and application. If such a contact occurs, it must be washed by soap and plenty of water. Consult a physician urgently if swallowed. Food and drink

must be kept outside the application areas. Must be stored away from children. Please look at the Material Safety Data Sheet for detailed information.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge **BASF Yapi Kimyasallari Sanayi A.Ş.** is only responsible for the quality of the product. **BASF Yapi Kimyasallari Sanayi A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones (08/2013).