



The Chemical Company

RHEOBUILD® PRF 10

Polycarboxylic Ether Based, High Range Water Reducing / New Generation Super Plasticizer Concrete Admixture



1305-CPD-0097

Description of Product

RHEOBUILD® PRF 10 is a polycarboxylic ether based high range water reducing early and final strength increasing new generation super plasticizer concrete admixture developed for readymix concrete and precast industry.

Consistent With the TS EN 934-2 Table 3.1.3.2 and Table 7: High Range Water Reducing/Super Plasticizer and Hardening Accelerator Concrete Admixture and ASTM C 494 Type F: High Range Water Reducing / Super Plasticizer Concrete Admixture Standards.

Fields of Application

- In the production of precast and prefabricated concrete
- In the production of 18 - 24 hours and 28 days high strength concrete
- In the production of non-segregating, flowable Rheoplastic** precast concrete elements.

Features and Benefits

- Improves concrete's early and final compressive and flexural strengths, adherence to steel, and impermeability compared to traditional super plasticizers (NSF or MSF***).
- Improves concrete's mechanic properties like carbonation, resistance to chloride ion attack, resistance to aggressive chemicals, shrinkage, and creeping.
- Enables the production of low water/cement ratio Rheoplastic concrete.
- Optimizes curing cycles by decreasing curing time and curing temperature during prefabricated concrete production.
- Improves production efficiency.
- Gives perfectly smooth surface finishing in concrete placed in molds without any segregation.
- **RHEOBUILD® PRF 10** does not contain chloride.

Working Mechanism of New Generation Superplasticizers

The special molecular structure of **RHEOBUILD® PRF 10** increases cement's hydration. The rapid absorption of **RHEOBUILD® PRF 10** molecules on cement particles, along with an effective distribution effect, helps the reaction with water by enlarging the surface of cement particles. As a result of this effect, early hydration occurs and

Technical Data

Structure of the Material	Polycarboxylic ether based
Color	Brown
Density	1.023 - 1.063 kg/liter
Chloride Content% (EN 480-10)	< 0.1
Alkaline Content % (EN 480-12)	< 3

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



Adding Value to Concrete



RHEOBUILD® PRF 10

cement hydration products are developed in the very early stages, and obtaining early high strength is made possible.

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, **RHEOBUILD® PRF 10** must be added to the mixture along with the remaining water. **RHEOBUILD® PRF 10** must be mixed for 60 sec. or for the duration determined in laboratory experiments in the mixture for a homogenous diffusion.

Dosage

RHEOBUILD® PRF 10 is suggested to be used as 1.2 - 1.8 kg for 100 kg binder (cement-micro silica-flyash). The dosage to be used must be determined beforehand by laboratory experiments according to concrete class and properties. **BASF Yapı Kimyasalları San. A.S.** Technical Service must be consulted for detailed information.

Compatibility

RHEOBUILD® PRF 10 can be used with the following materials:

1. **RHEOBUILD® PRF 10** is not compatible with other **Rheobuild®** (NSF based) series super plasticizers.
2. Can be used with all cement types.
3. Can be used with silica, flyash and slag where high binding material like Rheodynamic self-compacting concrete is needed to be used.
4. Can be used with air entraining **Micro Air® 200** (environment condition XF1-XF4 according to TS EN 206-1) to increase Freezing - Thawing resistance.
5. Used with **Meyco® MS 610** micro silica (environment condition XA1-XA3 according to TS EN 206-1) to improve the performance of concrete and its strength in aggressive environments.
6. Used with **Meyco® TCC 735** and **Binder® 5** to prevent shrinkage by preventing rapid losing of the water in concrete mixture.

7. Used against fissures from plastic shrinkage with synthetic fibers **Meyco® FIB. SP 530/540/550** and steel fibers.
8. In environments with high temperature and wind, must be used with a suitable curing membrane or material like **Masterkure® 101**, **Masterkure® 107**, **Masterkure® 176** or **Masterkure® 181** to prevent the water of the mixture inside the concrete from evaporating.

Watchpoints

- Not suitable to use with **Rheobuild®** series (NSF based) admixtures.
- 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 water, then it would be absorbed by 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 could not 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.
- If **RHEOBUILD® PRF 10** is to be used under +15°C, then necessary precautions have to be taken in cure conditions (temperature and time) and cement doses.
- The performance of **RHEOBUILD® PRF 10** is reduced if it is mixed with other admixtures in other classes. So, the storing and mixing equipments have to be used after cleaning. Contact **BASF Yapı Kimyasalları San. A.S.** technical service for detailed information.

Packaging

220 kg drum
1000 kg tank
Bulk

RHEOBUILD® PRF 10

Storage

Must be stored in original packing, in +5°C environment and protected from direct sunlight. 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.

() According to the environmental conditions under TS EN 206-1 standard about concrete's strength*

*(**)Rheoplastic Concrete: Although has the same water/cement ratio with the reference concrete of approximately 7 cm slump, easily flowable (20 - 22 cm slump), non-segrating concrete*

*(***)NSF (Naphthalene Sulphonate Based Products); MSF (Melamine Sulphonate Based Products)*

Disclaimer

This information given here is true, represents our best knowledge and is based not only on laboratory work, but also on field experience. However, BASF Yapı Kimyasalları San. A.S. is only responsible from the quality of the product. BASF Yapı Kimyasalları San. A.S. cannot be hold responsible from the results caused by applications of the product not in accordance with the written suggestions of how and where to use the product and/or faulty applications. This technical document is valid until a new one is printed and abates the previous editions. 01/2008.

