The Chemical Company

MasterPozzolith 42 CF

Set Accelerating / Plasticizer Concrete Admixture

Description of Product

MasterPozzolith 42 CF is set accelerating/plasticizer concrete admixture which enables set accelareting of concrete and increasing its early strenght by speeding up the reaction between the water and cement especially at the beginning of setting which is suitable for cold climate conditions.

Fields of Application

- In the production of concrete with or without pumps.
- In pourings in which the concrete has to be protected from frost in cold weathers and when early high resistance is desired.
- In the pre-cast, pre-fabricated concrete pourings.
- In the production of all kinds of concrete, light or normally weighted, with or without fittings.

Advantages

- It shortens the beginning and ending setting durations of concrete with respect to concrete without additives.
- It protects the concrete from the effects of frost by giving it early resistance especially in cold weather.
- **MasterPozzolith 42 CF** does not contain chlorine

The Working Principle of Chemical Admixtures

MasterPozzolith 42 CF goes into reaction with cement. **MasterPozzolith 42 CF** is absorbed by the cement granules when it is added to the mixture. MasterPozzolith 42 CF increases the speed of the reaction between the cement and water at the beginning of the solidification and it increases the temperature of hydration. Thereby the solidification of the concrete speeds up and its early resistance is affected in a positive way.

Application Method

The binder (such as cement-micro silica-fly ash-cinder) and aggregate must be mixed until a homogeneous mixture is obtained. **MasterPozzolith 42 CF** and the plasticizer that will be used if any, must be added to the mixture after 50% - 70% of the water that will be added to the mixture is added together with the remaining water. In order to ensure the homogeneous dispersion of **MasterPozzolith 42 CF** throughout the mixture, it must be mixed preferably for 60 seconds or for the amount of time determined in the laboratory tests

Technical specifications

Structure of material	Sulphonat and Nitrate Salt Based
Color	Amber
Density	1,13 - 1,14 kg/liter
Chlorine content %	< 0,1
Alkali content % (EN	< 10

+21℃'de ve %50 humidity conditions

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Dosage

It is suggested that 2,5 – 5,0 kg of **MasterPozzolith 42 CF** should be used alone per 100 kg of binder (cement-micro silica-fly ash-slag) when it is desired to have the solidification speed up in accordance with the standard TS EN 934-2. It can be used in the ratio of 1,0 – 2,0 kg per 100 kg of binder (cement-micro silica-fly ash-cinder) when it is used together with another plasticizer depending on the type and dosage of the other plasticizer. The usage dosage must be determined according to the concrete class and properties with laboratory tests which should be conducted in advance. **BASF Yapı Kimyasalları** should be consulted for detailed information.

Compatibility

MasterPozzolith 42 CF can be used in conformance with the following products:

1. It is used with all types of cement.
2. It is used together with mineral additives like micro silica, fly ash, and cinder.
3. It is used together with **MasterRheobuild®** and **MasterPozzolith®** series of additives.
4. It is used together with air drifting **MasterAir® 200** in order to increase the freeze – thaw cycle.
5. Against cracks that are formed due to plastic contraction it is used together with synthetic fibers **MasterRoc® FIB. SP 530/540/550** and steel fibers.
6. In order to prevent the evaporation of the of the mixture water within the concrete in environments in which high temperatures and air circulation is dense, the appropriate one among the following cure materials must be chosen and used: **MasterKure® 101, MasterKure® 107, MasterKure® 176 or MasterKure®181**.

İmportant Issue

- The concrete design and used additive dosage must be determined in accordance with the desired concrete class properties through laboratory tests that are conducted in advance.
- The binder determined as a result of the laboratory tests (cement-micro silica-fly ash-cinder) and the fine and raw aggregate must be mixed until a homogeneous and dry mixture is obtained.
  If the additive is added to the dry mixture before the mixture water is added, the additive will be absorbed in the mixture and it will not be distributed uniformly. The desired class of cement and its properties will not be achieved even if all the mixture water is added on top of this. Since the mixture will need additional water, the water amount defined in the design values will be exceeded and the mechanical values of the concrete will be below the targeted values. Therefore concrete additives should not be added directly on to the dry mixture.
- The amount of additive in the mixture is calculated by multiplying the sum of the cement and second degree binders in the mixture (such as micro silica-fly ash-cinder) with the additive dosage ratio.
- The solidification durations of the mixture may be extended if more additive then the recommended dosage interval is used. In such cases the reinforced concrete must be kept damp during the molding time and get cured.
- The usage of **MasterPozzolith 42 CF** together with the MasterGlenium® series and **MasterGlenium ACE 10** additives.
- In cases where the concrete temperature falls under +5℃ the hydration of cement stops and the concrete mixture water begins to freeze below 0℃. The freezing water increases the volume of concrete by approximately 10%. As a result of which:

  • The adherence between the cement paste and aggregates weakens.
  • The resistance of the concrete decreases.
  • Cracks and surface defects are created on the concrete.
- The following parameters must be considered for concrete production in cold climates.
  • In order to make sure that the materials which will be used in the concrete mixture (cement/second degree binders/aggregate and water) are not affected by the cold, these materials must be stored in an appropriate ambient temperature.
  The appropriate cement type must be used. (Cem I 42,5/PÇ 42,5)
  The appropriate dosage of cement must be determined. (350 -400 kg/m3)
  The solidification accelerating additive and the concrete must be protected from the

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effects of frost and the mixture water must be decreased by achieving the desired machinability with the usage of an appropriate superplasticizer Since hydration stops under +5℃ from the solidification of the concrete to the time in which it reaches sufficient resistance (5MPa on the average) it must be protected with the correct cure methods.

- Care must be taken so that the concrete is poured at the hottest times of the day, and there must be no snow or ice on the molds.

In order to increase the concrete temperature by 1℃:

- Aggregate temperature must be increased by 2℃.
- The temperature of the concrete mixture water must be increased by 4℃.
- The temperature of the cement must be increased by 8℃.

Packaging

30 kg can
230 kg drum
1,000 kg tank
Bulk

Storage

It must be stored in places where the ambient temperature is above +5℃. In case the material which was not stored in the appropriate conditions freezes, it must be defrosted by making it wait at room temperature without using direct heat and must be mixed with mechanical methods until it becomes homogeneous. Pressurized air should not be used in the mixing procedure.

Shelf life

It is 12 months after the date of production under appropriate storage conditions. Opened packages may be used throughout their shelf life by re-closing their covers.

Health and Safety

Work clothes, protective gloves, goggles and masks in conformity with the rules on Work and Worker Health must be used during application. It shouldn't be allowed to get into contact with skin and eyes, in case there is a contact it must be washed with plenty of water right away and a doctor must be urgently consulted if swallowed.Food and beverages must not be allowed into application areas.It must be stored in places out of the reach of children.Please see Material Safety Data Sheets for detailed information.

Disclamier

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