

CapcoSet[®] NCI

Accelerating Admixture / Chloride Free

CapcoSet NCI is an Accelerating Admixture / Chloride Free for concrete casting in cold weather. This admixture is chloride-free and can be used for reinforced concrete. Also, this admixture is allowed in the pre-stressed concrete structures. CapcoSet NCI accelerates the first and second setting time of the concrete by increasing the rate of the cement hydration process and adds to the 1-day compressive strength of the concrete. Moreover, this product reduces the required time to protect the concrete in cold weather.

This product is produced based on the general Iran National Standard No. 2930-1 and the performance requirements of Tables 6 and 7 of the Iran National Standard No. 2930-2. Also, this admixture meets the requirements of grade C of the ASTM C494 Standard and the requirements of Tables 6 and 7 of the EN 934-2 standard.

The physical and chemical properties of CapcoSet NCI are according to the following table and produced in the allowable changing range of Iran National Standard No.2930-1.

(The previous name of this product was Plastit NCI)

Physical State	Liquid
Color	Yellow
Density	1/14 ± 0/02 g/cm ³
Chloride Content	Little
The equivalent Alkaline Substance (Na ₂ O)	Little
pH	7 ± 1
Freezing Temperature	-5°C

The usage and the effect of the admixture on the concrete

The usage of the admixture on concrete

- The production and implementation of the mortar and the unreinforced concrete in cold weather (Lower than 5°C) and reducing the protection period
- The production of the pre-cast concrete sections

The advantages of using the admixture in concrete

- Accelerating the initial and final setting time of the concrete and reducing the protection period in cold weather
- Increasing the 1-day compressive strength of the concrete and mortar
- Increasing the temperature of the concrete due to intensification of the hydration reaction
- Reducing the corrosion of the bars in a chloride condition

The effect of the admixture on fresh concrete

- It reduces the initial and final setting time of the standard mortar depending on the amount used
- The production of air bubbles in the fresh concrete is controlled in a way that the changes in the air percentage remain in the allowable standard range announced in the properties sheet.

The effect of the admixture on the hardened concrete

- It increases the initial compressive strength of the concrete in an equal water-to-cement ratio
- It does not reduce the 28-day strength of the concrete in an equal water-to-cement ratio and air bubble percentage

The instruction to use the admixture in the concrete

The allowable range of using the admixture in the concrete

The allowable range for using The CapcoSet NCI is from 1% to 4% of the cement content (1 to 4 kg per 100 kg of cement material weight including cement, silica fume, slag, fly ash, and other similar pozzolans). The temperature at the time of concrete casting and after that, the concrete mix design, the thickness, and the volume of the concrete section are the main indices to determine this admixture. Specifying the optimum amount of this admixture is accomplished by considering the aforementioned indices and the required test in the laboratory.

To increase the 28-day compressive strength, it is also recommended to use the water-reducing admixture to reduce the water-to-cement ratio.

The instructions to add admixture to concrete

To use the admixture, it is necessary to dilute the admixture with water twice the volume of the admixture. It is also necessary to take the following notes into consideration:

- Mix the concrete for 2 to 5 minutes after adding the admixture and assure the uniform distribution of the admixture in the mortar or grout.
- Avoid the direct contact of the admixture with the dry cement and aggregates
- In the case of using ready-to-use concrete it is recommended to add this admixture to the truck mixer before transporting and discharging concrete in the final section. However, it is necessary to subtract the water used to dilute the admixture and the

- water as much as the admixture volume (Before adding to the concrete) from the mixing water of the concrete in batching plant.

Safety tips while using the admixture

This product is not categorized as a dangerous substance; however, it can be allergic to contact with skin. Therefore, it is necessary to use a suitable gown, goggles, and mask while working and take the following tips into consideration:

- Blink in water for at least 15 minutes in case of eye contact
- Wash your skin with clean water for 15 minutes in case of any contact with the skin
- The contaminated clothes must be washed with suitable detergents to be usable for further work.
- It is necessary to visit a doctor if the injured individual still feels uncomfortable

Other necessary notes in using the admixtures

Compatibility of admixture with other products

The simultaneous use of this product with other admixtures of Capco Company is allowed. However, it is necessary to batch each admixture separately and then add it to the concrete mix.

The corrosion of admixture

This product does not start or extend corrosion in the buried bars in concrete, the pre-stressed steel, floor systems, and the roof made of galvanized steel. No Calcium chloride or any other compounds containing chloride is used in producing the CapcoSet NCI.

Transportation and storage of the admixture substance

The conditions and maintenance temperature of transportation

The allowable transportation and maintenance temperature of this product is between 5 and 25 °C. It is also necessary to consider the following tips:

- Avoid putting the container having the admixture in direct exposure to sunlight
- Prevent the admixture from freezing

The admixture lifetime

If the containers of this product are conserved and stored in a standard condition, they will be usable for 12 months.

The admixture substance packaging

This product is supplied in 24 Kg gallons, 240 Kg barrels, and 1100 Kg Pallets.

Complementary information

Contact the technical section of Capco Company for complementary information. You can also refer to the performance form of (CapcoSet NCI-PPI) NCI for more information on the performance of this product and its efficiency in the characteristics of fresh and hardened concrete.