

PRODUCT DATA SHEET

ART-HQ310

Early Strength Alkali-free Powder Origin Flash Setting Admixture

Description

ART-HQ310 is a high early strength type alkali-free powdered flash setting admixture for shotcrete, belonging to the aluminum sulfate system. It is non-toxic, harmless, non-radioactive, and non-corrosive. It is not a flammable or explosive material.

Main benefits/Characteristics

- Prominent early strength effect, with a compressive strength of mortar greater than 1MPa within 6 hours.
- Compared to liquid rapid-setting agent products, it saves on packaging and transportation costs, offering high economic value.
- Excellent anti-freeze effect, overcoming the disadvantage of poor anti-freeze performance in liquid alkali-free rapid-setting agent products.
- Simple compounding method, fast dissolution rate, just add water and stir, making it convenient for on-site use.

Compounding methods of origin materials

■ Material Ratio

It is recommended to dissolve in water with a mass ratio of 6:4 to be used as a liquid alkali-free rapid-setting agent. (Depending on the properties of the cement and the customer's different requirements for setting time and dosage, dry powder ratio can be adjusted between 55% and 65%)

■ Equipment

A mixing tank or reactor equipped with a motor and stirring paddles, preferably made of plastic; a filter screen; a self-priming pump; and a container

■ Operating Procedures

(For example, preparing 1 tons of liquid rapid-setting agent finished product)

- i. Weigh out 400 kilograms of clean water and pour it into the mixing tank, then start the mixing equipment.
- ii. Weigh out 600 kilograms of powdered alkali-free rapid-setting agent and pour it into the mixing tank bag by bag. The speed of pouring the dry powder into the tank should not be too fast.
- iii. Stir for 2 hours until the powdered alkali-free rapid-setting agent is completely dissolved, then shut off the mixing equipment.
- iv. Ensure there is a filter screen at the outlet to filter out impurities from the finished product. Open the discharge valve and transfer the liquid alkali-free rapid-setting agent finished product into a ton container for standby use.

■ Precautions

- i. The water used should be clean and free from soil, pebbles, roots, and leaves. Tap water is best. Moreover, the water temperature should not be lower than 10 ° C (the higher the temperature, the faster the dissolution).
- ii. The mixing tank motor power should be greater than 5kw. Insufficient motor power will affect the stirring and dissolution speed of the dry powder.
- iii. The mixing time should be more than 2 hours to ensure that the dry powder have enough time to dissolve completely.
- iv. A filter screen must be placed at the outlet, and the screen mesh should be 80 mesh or 120 mesh or finer. It is recommended to install a set of filter screens at both the mixing tank discharge and the container outlet to ensure that no insoluble impurities enter the liquid rapid-setting agent finished product.
- v. Ambient temperature also affects the dissolution rate of the origin material. Therefore, the preparation of the liquid rapid-setting agent should be carried out in a

factory with insulation measures and not below 10 ° C. If the environmental temperature is below 10 ° C, it will reduce the dissolution rate of the origin material and the mixing time should be extended accordingly.

Physical and chemical indicators

Items	Performance
Appearance	Pale or beige powder
pH	2.5±0.5
Alkali content	≤1%
Chloride content	<0.05%
Fluoride content	<0.05%

Recommended Dosage

- The dosage of the setting agent after being prepared into a liquid finished product varies with the temperature of the concrete and the environment, especially the adaptability of the cement. Generally, the dosage for Portland or ordinary Portland cement ranges between 6% and 9%.
- The setting agent is pumped and mixed with the concrete at the nozzle. This product has a certain viscosity, so do not install a filter on the rubber hose of the setting agent pump to avoid the setting agent from being unable to be normally pumped from the barrel.
- Before using this product, be sure to clean the setting agent pump. It is strictly forbidden to mix this product with other setting agents to avoid chemical reactions between the two setting agents, which could block the setting agent pump.

Packaging and Storage

- Storage Conditions: The powdered origin material product should be kept in intact inner and outer packaging bags to prevent moisture absorption and dampness. After being prepared into a liquid, the storage temperature should be above 5 ° C. The liquid finished product should be stored in plastic/fiberglass barrels. This product has a weakly acidic pH value and will undergo chemical reactions with iron materials, so it is strictly forbidden to store in iron barrels.
- Storage Time: The powdered origin material product can be sealed and stored for 2

years, and after being prepared into a liquid, it can be stored for 3 months. If the liquid product is stored for a longer period, it is recommended to perform a simple stirring when using it to eliminate the visually minor layering phenomenon.

- Packaging: It is packaged in 25KG/40KG plastic woven bags or bulk bags.

LEGAL NOTES

It is prohibited to retain or disclose samples of the product without the company's permission.

In addition to the product quality itself, the actual performance also depends on other factors.

If there are factors beyond our control, we cannot guarantee the performance of the product.

Users are requested to strictly follow the technical guidelines and product instructions for use. The company shall not be held liable for any consequences resulting from unauthorized changes to the product's usage without the company's authorization.