

Cementitious Crystalline Capillary Waterproofing Admixture **NOVASTAR™ CCCW-AD**

Description

NOVASTAR™ CCCW-AD is a high-performance crystalline capillary waterproofing admixture produced with advanced industry technology and premium raw materials. It is suitable for waterproof concrete and mortar, and serves as a core ingredient in cement-based crystalline waterproof coatings.

When added at 2%–4% of the total mix weight, CCCW-AD penetrates along with water into the substrate to form durable needle-like crystals. These crystals block capillary pores, microcracks, and other imperfections in the cementitious matrix, enhancing impermeability by 200–500 times. This ensures long-lasting waterproofing performance and extended structural service life—without compromising strength.

Specification

Items	Specifications
Composition	Active silicon, active inorganic compounds, and more
Appearance	White or light gray powder
Package	20 kg / 25 kg white plastic buckets

Applications

NOVASTAR™ CCCW-AD is widely used in:

- ★ Tunnels
- ★ Dams
- ★ Underground Buildings
- ★ Bridges
- ★ Sewage Treatment Plants
- ★ Chemical Plants
- ★ Reservoirs
- ★ Water tanks and towers

Advantages

—Compared with standard concrete, CCCW-AD enhances the backside waterproofing performance by up to three times, increasing water head resistance from 40 meters to 120 meters.

—Even after the coating is removed, more than 70% of its waterproofing capability is retained.

—Effectively seals concrete cracks up to 0.4 mm wide.

—Demonstrates excellent resistance to chemical corrosion and freeze-thaw cycles.

—Provides lifetime waterproofing equivalent to the structure itself.

—Offers excellent vapor permeability while strongly resisting liquid water penetration.

—Withstands alkaline solutions with pH values from 9–13 without cracking, chalking, or peeling.

—Non-toxic, odorless, and environmentally safe—suitable for waterproofing potable water systems.

Application Instructions

1. Recommended Mix Proportion

Material	Dosage	Role and Requirements
Cement	64%	Binding agent; use ordinary Portland cement grade P.O 42.5 or above.
NOVASTAR CCCW-AD Admixture	2%–4%	Core material; serves as a crystallization catalyst in the mix.
Quartz Sand	30%	Filler; use 60–100 mesh quartz sand with low clay content and dryness
Water-to-cement ratio: 0.3:1 (by weight)		

2. Mixing and Application Procedures

★ Pre-Blending Method

◆ Adding at the Mixing Plant

1. Add the specified amount of CCCW-AD during the transfer of fine aggregates in the concrete batching process.
2. Mix rapidly for 3–5 minutes to ensure CCCW-AD is completely and evenly dispersed.

◆ Adding in a Concrete Mixer Truck

1. Mix CCCW-AD with clean water at a 1:1 ratio to create a uniform slurry.
2. Pour the slurry into the mixer truck while the drum is rotating at high speed.
3. After adding the slurry, continue mixing at high speed for at least 5 minutes to achieve full dispersion and uniform blending.

★ Post-Blending Method

Dry Shake Method

Method 1:

1. Approximately one hour before pouring the concrete base slab, evenly spread the product on the cushion layer at a dosage of 1.5 kg/m².
2. Pour the base concrete immediately.

Method 2:

1. After pouring the slab and before setting, evenly sprinkle the product at 1.5 kg/m² across the surface.
2. Trowel it uniformly to ensure proper penetration into the top layer.

(This method is suitable for various concrete pouring structures.)

Brush Coating Method

1. Use a semi-stiff bristle or nylon brush to apply the prepared slurry evenly in two coats. The first coat should be applied at 0.6–0.8 kg/m².
2. Apply the second coat after the first has initially set, brushing perpendicular to the first layer. If the first coat dries and whitens, lightly mist it with water before the second application.
3. The total dosage for both coats should be 1.2–1.5 kg/m²

Spray Application Method

1. Use funnel-type or spray-gun-type equipment. Keep the nozzle within 0.5 m from the surface, maintain vertical alignment, and move steadily to ensure an even coat without omissions.
2. Apply two coats with a total dosage of 1.2–1.5 kg/m²; final coating thickness should be about 1 mm.

3. Common Issues and Fixes

1. If powdering occurs, add less than 1% redispersible latex powder.
2. If the mix lacks proper viscosity, add hydroxypropyl methylcellulose ether (<2‰).
3. If cracking appears, increase the proportion of quartz sand.

Packaging and Storage

Available in 20 kg or 25 kg white plastic buckets/bags.

Store sealed in a cool, dry indoor spot away from light.

Shelf Life

12 months if stored according to manufacturer's instructions in unopened containers.

Health and Safety

This product may exhibit corrosiveness when in contact with water or perspiration.

Note

While the information and data provided are accurate and reliable to the best of our knowledge, we strongly recommend conducting independent testing to confirm suitability for specific applications.

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The information contained in this technical data sheet is valid as of the date of issue.