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ADI-CON™ CW PLUS

Crystalline Waterproofing Admixture for Concrete

DESCRIPTION

ADI-CON CW PLUS is a crystalline waterproofing admixture designed to enhance the durability and water resistance of concrete and cementitious materials. It uses proprietary crystalline technology that reacts with the byproducts of cement hydration in the presence of moisture, forming insoluble crystals within the concrete's pore structure and micro-cracks. This process reduces the permeability of concrete and helps limit water ingress under hydrostatic conditions. ADI-CON CW PLUS becomes a permanent part of the concrete matrix and remains effective over time. The product provides active self-healing and waterproofing for the life of the concrete.

USES

ADI-CON CW PLUS is intended for use in new concrete construction, as it is added directly into the concrete mix at the time of batching. The product is designed for a wide range of structures where long-term resistance to water ingress and enhanced durability is important. ADI-CON CW PLUS will reduce the potential for freeze-thaw damage and corrosion of the concrete structure by reducing the amount of water penetration into the concrete. Typical applications include:

- Water and wastewater treatment facilities
- Reservoirs, foundations, basements, elevator pits
- Parking structures, tunnels, subway systems
- Marine structures, dams, power stations, secondary containment areas
- Bridge and decks
- Pools and fountains

ADI-CON CW PLUS is effective in both below-grade and water-retaining applications, and is compatible with cast-in-place, precast, and shotcrete concrete.

FEATURES/BENEFITS

- Low Permeability: Effective protection against hydrostatic head pressure up to 200 psi (462') [(1.4 MPa (140.8 m)] .
- Durability Enhancement: Protection against water penetration, chemicals, salts/chlorides, corrosion and freeze-thaw cycles.
- Simplified Construction: Easily added at the batch plant or directly into the ready-mix truck at the jobsite.
- Environmentally Friendly: Inorganic, 0 g/L VOC content.

PACKAGING

Available in various sizes and types of packaging, including water-soluble bags in boxes or pails. Contact W. R. MEADOWS for information on available sizes and packaging types.

SHELF LIFE

ADI-CON CW PLUS stored in a dry environment has a shelf life of one year in bags and two years in pails. When original wrapping of the pallet of mixer ready bags is opened, use within four months.

SPECIFICATIONS/STANDARDS

- ACI 212.3R-10, Chapter 15 for Permeability Reducing Admixtures: Hydrostatic Conditions (PRAH)
- ASTM C494, Type S
- AASHTO M 194, Type S

TECHNICAL DATA

Materials Properties	
Appearance	Free-flowing, gray powder
Bulk Density, g/cm ³	1.4
pH	12.78
Chloride Content, % (BS EN 480-10:2009)	<0.1
VOC Content, g/L	0

Effect on Fresh Concrete Properties		
Property	Test Method	Performance
Slump	ASTM C143/143M	Negligible effect; complies with ASTM C494, Type S
Air Content	ASTM C231/C231M	Negligible effect; complies with ASTM C494, Type S
Setting Time – Initial	ASTM C403/C403M	Negligible effect; complies with ASTM C494, Type S
Setting Time – Final	ASTM C403/C403M	Negligible effect; complies with ASTM C494, Type S

Effect on Hardened Concrete Properties		
Property	Test Method	Performance
Compressive Strength	ASTM C39/39M	Equal or slightly higher than control
Flexural Strength	ASTM C78/C78M	Equal or slightly higher than control
Relative Durability Factor (300 Freeze- Thaw Cycles)	ASTM C666/C666M	98 %
Length change	ASTM C157/C157M	Exceeds the requirements of ASTM C494, Type S

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Property, Test Standard	Test Conditions	Results (Concrete with 2% by wt. of cement ADI-CON CW PLUS vs. Control)	Performance Summary
Permeability, USACE CRD-C 48	200 psi (1.38 MPa); tested at AET	0 vs. 4.68×10^{-13} ft/sec	100% reduction in permeability; no flow observed
Depth of penetration, DIN 1048	72 psi (0.5 MPa) for 72 hrs; 28-day cure	7.31 mm vs. 38.59 mm penetration	≥ 81% reduction in water penetration depth

APPLICATION

Dosage ... 0.8 - 2.0% by weight of cementitious content. Contact W. R. MEADOWS for assistance with determining the proper dosage for your specific mix design and project conditions.

Application Method ... ADI-CON CW PLUS is mixed with concrete or mortar at the time of batching. The procedure for adding the admixture will vary according to the type of batch plant operation and equipment. Contact W. R. MEADOWS for specific information regarding procedures in various batch plant operations. It is important to obtain a homogeneous mixture of ADI-CON CW PLUS with the concrete or mortar. ADI-CON CW PLUS is compatible with all cement types, supplementary cementitious materials (SCM), admixtures, and fibers.

Addition Methods

Truck Addition (at Plant) ... Add ADI-CON CW PLUS (bulk powder or soluble bags) to the ready-mix truck drum immediately prior to batching or as close to batching as possible. To ensure proper dispersion of soluble bags, place bags as far forward in the drum as possible. When post-adding ADI-CON CW PLUS, mix for 7 - 10 minutes at high speed.

Central Mixer Addition ... Add ADI-CON CW PLUS (bulk powder or soluble bags) directly to the central mixer with the other concrete components. Mix in accordance with standard batching practices to ensure uniform distribution.

Coarse Aggregate Belt Addition ... Add ADI-CON CW PLUS (bulk powder or soluble bags) directly to the coarse aggregate conveyor belt, either manually or through a mass-batching system.

CONSIDERATIONS

Concrete structures must resist all structural and hydrostatic loads. Self-sealing is effective for static cracks. For dynamic cracks, use a flexible sealant. Use expansion joints for moving joints. Utilize an appropriate waterstop system to maintain watertightness at joints and penetrations. Like standard concrete, concrete treated with ADI-CON CW PLUS can be used with membranes, sealers, paints, and tile grouts without compatibility issues. Follow all supplier installation, application instructions, and limitations of subsequent coatings or treatments.

LIMITATIONS/PRECAUTIONS

ADI-CON CW PLUS is a reactive material. It may either accelerate or retard the setting characteristics of concrete or mortar depending on the specific cement chemistry, mix design, water-to-cement ratio, and temperature. Therefore, it is necessary to evaluate the setting characteristics of specific concrete or mortar mix design prior to use. The required dosage will depend upon the application. It is the responsibility of the user to check with W. R. MEADOWS as to the suitability of this admixture in a given application.

Concrete must be designed, placed and cured in accordance with applicable codes and best concrete practices.

For most recent data sheet, sustainability information, and SDS, visit www.wrmeadows.com or www.gemite.com.



LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request. Extended warranties available. Contact W. R. MEADOWS for more information.

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