BUILDING CHEMISTRY INDUSTRY

Method statement for BC Rock plus (Crystalline water proofing system)

Crystalline waterproofing is a type of waterproofing that uses crystalline technology to prevent water penetration in concrete structures. This technology works by using chemicals to create a crystalline structure; a network of insoluble, microscopic crystals within the concrete.

Application method

The process begins with either applying a mixture of chemicals topically, to the surface of the concrete, or by integrally, as part of the concrete mix design; with the active ingredients typically being made from a blend of cementitious materials, sand, and proprietary chemicals.

For topically application, the mixture is applied to the surface of the concrete; while integral application already has the mixture as part of the concrete mid design. From here, the chemicals will react with the byproducts of the cement's hydration (free lime) in the presence of water, leading to the natural formation of insoluble crystals.

The crystals form inside the pores, capillaries, and micro-cracks in the concrete; growing a network of calcium silicate hydrate (C-S-H) crystals. This netting of needle-like, insoluble crystals fill up all the micro-cracks, pores, and capillaries, sealing the concrete and preventing the ingress of water. The process of crystallization continues over a period of time, making the waterproofing barrier stronger and more effective as it forms.

Crystalline waterproofing is a durable and long-lasting solution that can provide protection against water damage and mold growth for the life of the structure. This process is often used to waterproof below-grade structures such as foundations, basements, and tunnels; and is also an eco-friendly solution since it does not involve the use of harmful chemicals or heavy equipment.

Mixing and application of BC Rock Plus

BC rock plus , Crystalline waterproofing can be applied in two different ways: topically, as a coating or sealer, or integrally, by adding it to the concrete mix during the construction process.

The choice between these two methods depends on several factors, including the project requirements, site conditions, and the desired level of waterproofing.

BC Rock plus as Topical crystalline waterproofing

Waterproofing an existing structure: If you need to waterproof an already-built concrete structure, applying a crystalline waterproofing coating or sealer is the best option, as it forms a barrier on the surface to prevent water ingress.
You require a cost-effective solution: Topical waterproofing is usually more affordable than integral waterproofing.
You need a fast application: Topical waterproofing can be applied relatively quickly, making it suitable for projects with tight schedules.

BC Rock plus as Integrally adding crystalline waterproofing to your mix design :

Constructing a new structure: Adding crystalline waterproofing to the concrete mix during construction ensures that the entire structure is protected from water ingress. This method is ideal for new construction projects, as it offers long-lasting protection.
You require a durable and permanent solution: Integral waterproofing provides a more durable, long-lasting solution than topical waterproofing, as it is incorporated into the concrete mix and becomes an integral part of the structure.
Waterproofing in hard-to-reach areas: Integrally adding waterproofing to the mix ensures that even inaccessible or difficult-to-reach areas are protected.

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Constructing a structure exposed to harsh conditions: Integral waterproofing is ideal for structures that will be exposed to extreme weather, chemicals, or abrasion, as it offers superior protection compared to topical waterproofing.