



ELEMENTS
QUÍMICA APLICADA

e5 WRA 10++
Water reducing admixture



e⁵ WRA 10++

Description

e⁵ WRA 10++ is a water reducer and retardant, produced with high technology dispersants, friendly with the environment, and specially designed to break the flocculating effect of cement in contact with water.

Its special formula contributes to a better cement hydration, evidenced by considerable increases in mechanical strengths of the concretes at all ages. There are some cements and aggregates in the market, that in combination with some admixtures can result in high air contents and undesirable effects in concrete. The recommendation in these cases is e⁵ WRA 10++ D.

e⁵ WRA 10++ allows water reductions higher than 5% and amply complies with type D, ASTM C-494.

Benefits

- Significantly increases mechanical strengths of concrete.
- Improves rheological properties of concrete.
- Reduces concrete's permeability.
- Reduces the water/binding agent ratio.
- Adequate for mixing warm climate concretes.
- Increases the durability of the mixes.
- Lowers manufacturing cost per m³ of concrete.
- Highly compatible with the GULtra reactive ash technology. This allows the mixing of hybrid concretes with greater durability and important economic benefits.

Technical information

Specific gravity 1.19

Physical appearance: dark brown liquid

Presentation

19 L pails, 200 L drums and bulk

Useful life: 12 months in its original container

Principal applications

- Durable hybrid concretes with GULtra technology
- Conventional concretes
- Pumpable concrete
- Structural concrete

Directions for use

In order to improve results, the preparation of lab tests is recommended to allow for all the necessary adjustments to the concrete mix, such as: appearance, workability, consistency, air content, yield, setting times and the admixtures' dosage.

After this, it is important to replicate the tests under job conditions (moisture content, temperature, time required to transport fresh concrete, etc.) with the purpose of carrying out the final adjustments.

Place all the materials: aggregates, cement and 80% of the mix water in the mixer. Allow mixing during a couple of minutes and then add the calculated amount of admixture with the remaining 20% of the water. This will allow the

calcium sulphate to form ettringite with the cement's tricalcium aluminate and thus improve the performance of the admixture.

Doses can vary between 4 and 9 cc/kg of cement and will depend on the design of the concrete to be prepared. An over dosage, over the established doses, can cause a delay in the speed of hydration.

When used with an integral water proofer, it is necessary to check the air content and setting times of the concrete mix.

Carry out tests in combination with other admixtures to check the behavior of synergies of admixtures, specially with regards to air content and setting times.

It is compatible with all admixtures. In the event of any important variation in materials (change of aggregates, cement, etc.), it is necessary to make the corresponding adjustments

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to the combination of materials, change admixture, using e⁵ WRA 10++ D instead.

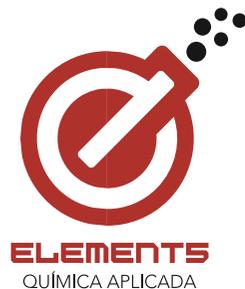
Check with your **Soluciones Integrales Element5-GUltra** Technical Advisor for the preparation of durable hibrid concretes with an important economic benefit.

Cautions

-  Do not allow the product to freeze.
-  Always keep the product in its original container.
-  Never add the admixture to the aggregates or to the cement without its prior initial hidration. Doing so will lower the performance of the admixture.



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