

**e<sup>5</sup> WRA 20**

Water reducer and retarder admixture



# e<sup>5</sup> WRA 20

## Description

**e<sup>5</sup> WRA 20** is a water reducer and retarder, manufactured with high technology polymers, specially designed to interact with cement particles and break up these particles' flocculating effect. It allows water reductions higher than 5% amply meeting ASTM C-494 TYPE D admixture specs.

## Benefits

- Increases the mechanical resistance of concrete.
- Improves the rheological properties of concrete.
- Allows adequate transportation of fresh concrete in warm climates.
- Reduces the permeability of concrete.
- Reduces the ratio water/binding material.
- Increases the durability of concrete mixes.

## Technical information

Specific gravity 1.22

Physical appearance: dark brown liquid

## Presentation

19 L pails, 200 L drums and bulk

Useful life: 12 months in its original container

## Main applications

- Conventional concretes
- Pumpable concretes
- Structural concretes
- Concretes placed in warm climate, with the corresponding care, as per ACI 305.
- Concrete placed under water in combination with our admixture **e<sup>5</sup> AWA** (Anti-Washout Admixture) and **e<sup>5</sup> SP 2000**.

## Directions for use

In order to obtain better results, we recommend carrying out lab tests with the job materials to allow making the necessary adjustments in the concrete mix, such as: appearance, workability, consistency, air content, yield, setting times, as well as the admixture dosage. Then it is important to repeat the testing under real job conditions (humidity, temperature, time to transfer fresh concrete, etc.) for the purpose of making the final adjustments.

Load all the materials: aggregates, cement and 80% of the mix water. Allow the materials to mix at least 2 minutes, then add the established amount of admixture with the remaining 20% of mix water. With this, the calcium sulfate will form ettringite with the cement's tricalcium aluminate, thus improving the admixture's performance.

Dosages can vary from 4 to 9 cc/kg of cement. These will depend on the concrete's mix design to be used. An overdose, over those established, can be the cause of delays in the speed of hydration of the cement.

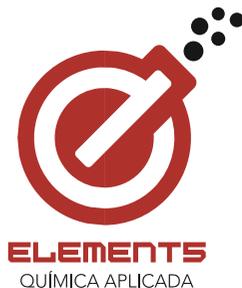
When used in combination with an integral waterproofer, it is necessary to check the air content and the setting times in the concrete mix.

## Cautions

-  The over dosage of this admixture can cause delays in the speed of cement hydration and excessive air contents.
-  Perform tests in combination with other admixtures to check for admixture synergies. This is particularly important for 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 required adjustments in the dosages used.
-  Do not allow the product to freeze.
-  Always keep the product in its original container.
-  Never add the admixture to the aggregates or the cement without its initial hydration, because this will decrease the efficiency of the admixture.



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**ELEMENT5**

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