

Technical FAQs

1) How much of the additive is required?

- a) Internal testing showed that adding anywhere between 0.3%-0.6% of the dry mass in additive resulted in stronger, faster curing concrete. The specific ratio is determined by the type of materials used in your concrete mix. We recommend testing within this range to find the optimal amount for you.

2) An example of how much additive to add in?

- a) For 1KG of concrete to be made (portland cement 90), we recommend a desired loading % of between 0.01% and 0.09% of total dry mass weight for the nanocomposite.

Note: 1ml of undiluted sample = 0.088g of nanocomposite.

Then you will need ~140ml of water (CureFAST testing finds 1kg:140ml/concrete:water the optimum ratio. Our proprietary technology significantly reduces the amount of water needed .

Then measure out 10 ml of CureFAST additive and mix it into 200ml of water. Use 140ml for the concrete. The remaining 60ml can be discarded.

This can be calculated using the calculator provided on our website.
www.curefastcement.com/calculator

3) Safety concerns are present when handling and mixing the additive?

- a) The additive is water soluble and the active agent is locked in the matrix preventing aerosolization of active ingredients. We suggest wearing gloves and masks that are typically used for concrete additives. No special requirements are needed. If exposed to skin, wash with water.

4) **How is this additive dispersed into the concrete admixture?**

- a) The additive is presented as a black liquid and can be mixed into the concrete at the time of the addition of water. Is safe to be added using pumps or manual pours.

5) **Is this corrosive towards pipes and pumps?**

- a) No; the additive is water soluble and corrosion resistant

6) **Is this corrosive towards rebar and reinforcements in concrete?**

- a) No; the additive is water soluble and corrosion resistant

7) **How does the additive provide additional strength and reinforcement?**

- a) Our additive works by filling in the microscopic pores of the concrete and bonding them together. This makes it faster to cure the concrete and ultimately makes it stronger. It bonds with the concrete on the sides of the pores holding it together increasing its tensile strength, (rebar at the nano level). The additive provides an extra reinforcement across the individual micropores in the concrete strengthening the entire system.

8) **Does adding more additive increase the strength?**

- a) There is an optimal amount of additive, too much will oversaturate the micropores and not provide the strength. Adding too little will not provide the bonding capabilities required. Our testing suggests a ratio between 0.3% and 0.6% depending on your concrete admixture.

9) **How does this additive affect the workability of concrete?**

- a) The plasticizer part of the additive makes it so that less water is required and the flow of concrete is consistent.

10) **What is the active ingredient in the additive?**

- a) The nanocomposite active ingredient is Carbon Nanotubes. For more information check out the link below.
- b) https://www.researchgate.net/publication/325786477_Carbon_Nanotubes_A_Review_Article/link/5b9374d0299bf1473925ef77/download

11) **What percentage of the additive is the active ingredient?**

- a) The additive consists of 10% Carbon Nanotubes and 70% water and 20% proprietary stabilizing agent.

12) **How does this relate to other additives such as silica fumes?**

- a) The additive is about 1000x smaller than that of silica fumes. This increases the surface area which allows it to bind with the micropores much easier. Our testing showed you need about 25 -50 % less of our additive by weight when compared to the amount of silica fumes used.

13) **What is the stability of the mixture over time?**

- a) Our testing showed that the mixture remains in solution for up to 2 years. After the 2 years, we suggest aggressive mixing before adding into the concrete mixture. The additive is thermally stable at both high and low temperatures than standard additives due to the Carbon Nanotubes.

14) **What size containers is the additive offered in?**

- a) Our current offerings consist of 5 gallon, 55 gallon, 275 gallon, or 4000 gallon containers. Please inquire about custom sizes, and we will do our best to accommodate.

15) **Does this additive require special storage conditions?**

- a) The additive can be stored in rugged industrial environments without spoilage.

16) **Will this additive change the color of the concrete mixture?**

- a) The additive will negligibly affect the color of the concrete. The effect of the additive is minimal and will not impede the effectiveness of the color additive.

17) Why would I want my concrete to set within 8-12 hours instead of 2-3 days?

- a) Having a faster setting time allows for projects to be sped up. Other clients have told us that they could lay concrete in the morning, remove the scaffolding at night, and set up for the next lay all within the same day. This decreased the time required in their project by nearly 35%.

18) Can this additive replace any current additives we use?

- a) Due to the vast amounts of properties, the additive is able to replace superplasticizers, adhesive agents, anti-corrosive agents, strengthening agents, abrasive-resistant agents, permeability reducing agents. It is recommended that you test the additive to see it for yourself.

19) What form does the additive come in?

- a) The additive is a black liquid that can be added into the water reservoir or directly added into the concrete during water addition.



CureFast Cement Additive

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