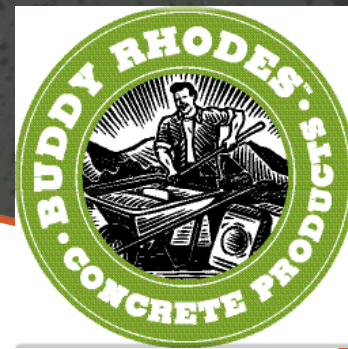


# Buddy Rhodes™ ECC Admixture

## The Most Advanced Concrete Admixture Available



### Product Overview

Buddy Rhodes ECC (Engineered Cementitious Composite) Admixture is a polymer modified, multi component additive package that was originally developed for use in seismic zones. When added to locally sourced portland cement and sand, it will provide strength, premium working characteristics, and durability similar to our ECC Preblended Mix.

The strength and ductility of our ECC recipes comes from the combination of particle gradation and the addition of a high dosage of fiber. From a creative standpoint, ECC can be mixed to unique workabilities, allowing for many variations in finish. The use of this admixture eliminates the need for curing polymers, pozzolans, defoamers, and shrinkage reducers. ECC Admixture provides maximum performance at minimal weight, reducing shipping costs and other concerns related to comparable products.

### Preparation - Getting Ready to Mix

Have all ingredients assembled before you start. Wear vinyl or nitrile gloves and protective eye wear. Use an accurate scale for weighing components. Use materials between 50° F and 90° F (10° C - 32° C). Colder temperatures will slow the reaction and warmer temperatures will accelerate it.

Once the temperature of the mix reaches 70° F (21° C), the reaction begins to accelerate. Using a laser thermometer to monitor, keep the temperature of the mix near 60° F (15° C). In warm environments, substitute up to 50% of the water weight with ice. ECC Admixture has a shelf life of 1 year after purchase if kept in a dry, moisture free environment. Once opened, the material should be used as soon as possible.

### Mixing Instructions

Use clean, potable water and clean mixing vessels. Use a handheld mortar mixer to mix. If mixing on a regular basis or for a large project, investing in a vertical shaft mixer may be justified.

- Combine water and pigment together and mix thoroughly.
- Add 50% of the water reducer to the water. Slowly add dry ingredients while continuing to blend. Start with sand, followed by ECC Admixture and finally Portland cement.
- Slowly add PVA Fibers to the mix. Blend until homogeneous.
- Temper with water reducer as needed for desired consistency.

### If Using Acrylic Fiber:

Overdosing acrylic fibers can easily choke up a concrete mix. Some users find blending the fibers in the mix water first provides optimal dispersion. Others prefer to slowly blend the fibers into the concrete slurry later in the mixing process. Some experimentation is suggested to determine the best solution for a specific mix design.

### Product Specifications

**Packaging:** 30 lb (13.6 kg) bag

**Color:** Bone White

**Coverage:** 5 ft<sup>2</sup> at 1" thick for every 50 lbs (22.68 kg) of mixed material  
(0.5 m<sup>2</sup> at 2.5 cm thick)

**Total Cementitious Binder:**  
29.45 lb (13.36 kg) for every 50 lbs (22.68 kg) mixed material

**Density:** 110-130 pcf (1,762 - 2,082 kg/m<sup>3</sup>)

**Compressive Strength (ASTM C-109)\***

1 day - 6,092 psi (42.00 MPa)

7 day - 10,735 psi (74.02 MPa)

28 day - 13,406 psi (92.43 MPa)

**Flexural Strength (ASTM C-947)\***

1 day - 1,400 psi (9.65 MPa)

7 day - 1,900 psi (13.10 MPa)

28 day - 2,140 psi (14.76 MPa)

Test pieces should be prepared to ensure that the product is suitable for the intended use. This will also familiarize you with the material.

\*Test samples made with ECC Blended Mix without reinforcement. Results are not to be used for design or control purposes. The values achieved in practice will be dependent on mix design, quality control of materials, fabrication process and curing.

### Mixing Recipes for ECC Admixture

	ECC Admixture	Water	Water Reducer (WR)	Portland Cement*	30/60 Mesh Silica Sand	40/120 Mesh Silica Sand	Reinforcements
<b>Clay (Stiff)</b>	7.75 lb (3.52kg)	9.4 lb (4.3 kg)	0-60 ml WR 444	26.15 lb (11.86 kg)	7.1 lb (3.22 kg)	9 lb (4.08 kg)	42 g of Acrylic Fiber AC50 130 g of PVA RECS 15
<b>Cast (Soft)</b>	7.75 lb (3.52kg)	8.9 lb (4 kg)	60-140 ml WR 444	26.15 lb (11.86 kg)	7.1 lb (3.22 kg)	9 lb (4.08 kg)	110 g of PVA RECS 15 220 g of PVA RECS 100
<b>Flowable (Fluid)</b>	7.75 lb (3.52kg)	8.9 lb (4 kg)	140-150 ml WR 444 to taste	26.15 lb (11.86 kg)	7.1 lb (3.22 kg)	9 lb (4.08 kg)	360 g of PVA RECS 100

\*Type 1 White Recommended

## Casting Techniques

**Clay Technique** - This is a stiff recipe, which can be pressed up vertical walls and into molds to create beautiful finishes. While it is quite a bit different to work with than the Craftsman Mix, you can achieve brilliant veined finishes with tremendous durability. Color contrasting veining is possible with the addition of 0.5% PVA 15 and 0.2% AC 50 fibers. The mix will hold together, keeping different pigments loaded in separate batches from bleeding together into a new color. Patience is key when mixing this recipe. Adding the fibers too quickly can choke the mix

**Cast Technique** - This recipe has a soft consistency that is not as fluid as the Flowable mix, but easier to move around than the Clay mix. It is ideal for casting and troweling. This mix uses a combination of 1% PVA 100 and 0.5% PVA 15 to create an "oatmeal-like" full-body consistency. It is best used in simple 2 dimensional shaped forms, such as countertops. Many interesting effects can be created using this recipe in different ways during casting. It is often used in combination with the Clay mix.

**Flowable Technique** - This recipe produces a fluid ECC mix. It can be placed directly into forms, and will consolidate with minimal effort. Use up to 1.5% PVA 100 fibers only for a fluid and strong mix that will fill into almost any mold with intricate detail.

## Curing

In order to ensure that concrete reaches its maximum potential, keep the concrete warm and moist while curing. Ambient temperature should be kept at a minimum of 50°F (10°C). A layer of moist felt or fabric followed by plastic sheeting will keep the moisture from escaping. This is often covered again by blankets or insulation to keep the heat from leaving the matrix. This is specially important on troweled finishes, since plastic placed directly on them is likely to leave discolorations. Demold after 24-48 hours, depending on shop conditions.

## Polishing

Polishing can be done wet or dry. We recommend wet polishing as it will provide a finish true to the grit used and it reduces the risk to your health. To maintain the cream layer, lightly polish the concrete using pads that are 200 grit or higher. The higher grits produce higher sheen. To expose your sand (salt and pepper look) or any decorative aggregate, begin grinding with coarser grit pads, progressing to finer grits until reaching the desired sheen and aggregate exposure.

## Sealing

Concrete is an inherently porous material and needs to be sealed for particular environments and uses. Choose the sealer that best fits the needs of the finished piece and the skill level of the person applying it. Buddy Rhodes offers a variety of sealer options, which can be found on our website.

## Safety

### KEEP OUT OF REACH OF CHILDREN

Avoid prolonged exposure to dust created while mixing. Use a NIOSH approved respirator if threshold limit values are unsafe. Dust collection systems are recommended to maintain a safe working environment.

Wear nitrile or vinyl gloves and safety eye protection while handling the material. Follow all safety instructions from mixing equipment manufacturer.

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