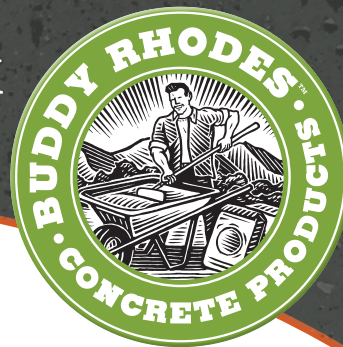


Buddy Rhodes™ GFRC Blended Mix

Versatile, with Exceptional Strength



Product Overview

Buddy Rhodes' GFRC (Glass Fiber Reinforced Concrete) Blended Mix does not contain fibers or large aggregates. This makes it a versatile base mix that can be combined with different reinforcements and decorative aggregates to create truly custom mix designs. It can be sprayed, poured, pressed, or troweled. GFRC Blended Mix is formulated with a dry polymer for workability and optimal cured physical properties. With Buddy Rhodes' extensive line of integral concrete pigments and topical color Glazes, the color possibilities are endless.

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.

The temperature of the GFRC Blended Mix is also important and will affect the outcome. 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 with ice. GFRC Blended Mix 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. Add remainder of water reducer. Blend until homogeneous.

For Backer Mixes:

- After initial blending, slowly add Alkali Resistant (AR) Glass Fiber to the mix. Blend until homogeneous*. Temper with water reducer as needed for desired consistency. *Mixing too long or at too high a speed after fiber has been added can damage the fiber, resulting in placement issues and reduced strengths.

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.

Mixing Recipes for GFRC Blended Mix

	GFRC Mix	Water	Water Reducer (WR)	Reinforcements / Aggregate
Spray	50 lb (22.7 kg)	8.3 - 8.6 lb (3.76 - 3.9 kg)	25 ml WR 420	0.1 lb (45 g) PVA 7, PVA 15, or AC50 Fiber (Optional in Facecoat) 1.25 - 1.75 lb (0.56 - 0.79 kg) AR Glass Fiber (Backer Mix)
SCC/Cast	50 lb (22.7 kg)	8.6 lb (3.9 kg)	4-5 oz (120-150 ml) WR 555	0.1 lb (45 g) PVA 7, PVA 15, or AC50 Acrylic Fiber (Optional) 1.25 - 1.75 lb (0.56 - 0.79 kg) AR Glass Fiber (Backer Mix Only)
Trowelled	50 lb (22.7 kg)	8.3 - 8.6 lb (3.76 - 3.9 kg)	WR 420 to taste	10 lb (4.53 kg) of Coarse Sand 20 lb (9.07 kg) of 3/8" (0.95 cm) Aggregate 20 g of Acrylic Fiber AC50 (trowelled surface only) 1.5 lb (0.68 kg) of AR Glass Fiber (Backer only) *Do not combine AR fiber and aggregate.

Product Specifications

Packaging: 50 lb (22.7 kg) bag

Color: Bone White

Coverage: 5 ft² at 1" thick
(0.5 m² at 2.5 cm thick)

Total Cementitious Binder: 26 lb (11.8 kg) per bag

Density: 110-130 pcf (1,762 - 2,082 kg/m³)

Compressive Strength (ASTM C-109)*

1 day - 5,942 psi (40.97 MPa)

7 day - 9,997 psi (68.93 MPa)

28 day - 12,762 psi (87.99 MPa)

Flexural Strength (ASTM C-947)*

1 day - 1,010 psi (6.96 MPa)

7 day - 1,280 psi (8.83 MPa)

28 day - 1,460 psi (10.06 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 base 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.

Casting Techniques

Spray Technique - The spray technique is accomplished in two stages: a surface layer (face/mist coat) without fiber, followed by a reinforcing layer (backer mix) containing AR Glass Fibers. The consistency of the sprayable mist coat should be similar to a milkshake. It should be fluid enough to move through a hopper gun, but not so fluid that it slumps down from vertical formwork. This is made easier with a little practice. For the backer, you can make a fluid mix that pours over the mist coat, or you can make a thicker mix that is applied by hand. A thicker mix is especially useful for vertical walls. The key to the spray technique is making sure that there is good bonding between layers. Timing is critical. Before applying the backer mix, make sure that the mist coat has not fully dried out, but is firm enough that the backer mix won't push through the surface and show fiber in your finished piece.

SCC Technique - SCC (Self Compacting/Consolidating Concrete) is a mix that consolidates with minimal mechanical force. This mix is cast directly into the forms, often without a face mix. This is a great method for rapid casting of flat panels. The key to success is keeping in mind that the glass fibers are just below the surface. Too much polishing and grinding on this mix will expose fibers and be unsightly. Many people have replaced the glass fiber with 0.6 lb of PVA100 fibers (or a combination of PVA100 and PVA15), allowing the ability to polish a bit further without having the fibers be as noticeable.

Trowel Technique - This technique is used to make pieces with the finished side facing up. Forms can be built to make precast elements, or cast in place countertops. Cast the material into the forms and use a wood or magnesium float to level the product with sweeping or circular motions. This initial processing stage can last several hours, be patient. Once the surface is firm, a steel trowel may be used to accent the top further. Caution: If a steel trowel is used too soon, air may be trapped beneath the surface, creating a weak, "egg-shell" layer that may flake off once cured. Find more information on the trowel technique on our website.

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.

The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.



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