

BuildCrete™

BuildCrete Overview

BuildCrete Plaster is an ultra-high-performance finish for architectural and industrial applications. This abuse-resistant interior veneer plaster is designed for buildings that require extreme abrasion resistance. It is a single product application that provides the ultimate in resistance to abrasion and indent far exceeding abuse type drywall. This product is formulated for industrial strengths exceeding 8,500 psi and provides an attractive, smooth or textured finish over a variety of substrates, such as gypsum board, cement board, CMU block, mag-board, fiber board, monolithic concrete and unit masonry. Typical application thicknesses is 3/16" depending on the needs abuse resistance.

BuildCrete Stucco is a true one-coat stucco designed to adhere directly to any EPS foam, CMU block, DensGlass, Securock, concrete and other building materials. BuildCrete has been used on ICF construction for its durability, strength, and ease of application. It allows contractors to be green without complexity, compromising performance, or high cost. BuildCrete Stucco exterior wall finish coating performs beyond any conventional exterior stucco on the market today and features: excellent water resistance, impact and abrasion resistance and resistance to mold and mildew.

Substrate Adhesions

Both BuildCrete Stucco and BuildCrete Plaster cure through a crystalline grow process. It is important for them to dry slowly enough to allow for the growth of the crystals into the substrate that they are being applied to. This allows for the crystals to grow into the substrate creating a permanent bond. Both coatings achieve unmatched bonding strength to most material with the exception of steel.

Mesh Types

All testing has been done utilizing 11oz mesh. The Mesh is utilized in the system to allow superior impact resistance and to span joints in the foam to make substrate all one.



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STUCCO

A GIGACRETE PRODUCT

BuildCrete Stucco

BuildCrete Stucco is used for our exterior finish. With over 3,500 psi compressive strength, BuildCrete Stucco is unmatched in the market. BuildCrete Stucco is 100% waterproof providing an impenetrable surface. BuildCrete Stucco is a code approved exterior finish and can also be used as a base coat. BuildCrete Stucco may also be painted or used as a bed for tile or another approved finish. BuildCrete Stucco meets all code approvals. BuildCrete Stucco can be used to transition from the structure to the foundation and subsequently below grade. BuildCrete Stucco is mixed onsite with water and can be adjusted in set time to allow for better workability depending on the environment.

General BuildCrete Stucco Information

- BuildCrete Stucco shall be applied in ambient air temperatures above 45°F (7.2°C) and rising during the installation.
- Do not apply BuildCrete Stucco to substrates that are below 45°F (7.2°C) or that are wet, frozen or contain frost.
- Do not apply BuildCrete Stucco during inclement weather or when inclement weather is inevitable unless appropriate weather protection is used.
- Whenever possible, avoid installing BuildCrete Stucco in direct sunlight. Direct sunlight reduces working time and may promote premature surface hydration. Shade the staging if necessary to avoid sun/shade lines from the staging itself or other nearby objects.
- Expansion joints are installed at all areas where movement is anticipated and at all building structural breaks. Joint placement shall be specified by the architect.
- Rasing is necessary to remove potential bond breakers and to plane profile irregularities. All substrates must be clean, dry and sound with planar irregularities less than ¼" (6.4 mm) within a 4' (10.2 cm) radius. Repair damage, dents and voids in the EPS substrate with an appropriate expanded insulation prior to applying BuildCrete Stucco. Do not attempt to make repairs with BuildCrete Stucco or anything other than expanded insulation.
- Do not install BuildCrete Stucco on wet or frozen surfaces.
- BuildCrete Stucco is packaged in 75 lb (34 kg), moisture resistant paper bags. The material volume exceeds the capability of a standard five gallon (19 L) bucket so mixing must be done in a vessel capable of holding ten gallons (38 L) of material.
- Mixing water must be potable and from a municipal source. Water temperature should be considered and adjusted if necessary.
- Pour 4.5 quarts (4.26 L) of water into the mixing bucket and begin to add BuildCrete Stucco. Begin mixing while slowly adding in remaining BuildCrete Stucco bag contents. Mix time is approximately 3 minutes or until a smooth lump free consistency is met. Small amounts of water may be added to adjust material consistency if necessary.

- Drills with typical plaster mixer attachments may be used. Hand held ergonomically engineered mixers are also acceptable.
- BuildCrete Stucco bucket life is approximately 20 minutes. Plan the installation so that each batch can be conveniently applied within this time frame. Re-tempering batches that are beginning to set is strongly discouraged.
- BuildCrete Stucco may be hand applied like most conventional plaster material. Efficient application practice is recommended to ensure that fresh material is used.
- BuildCrete Stucco may be spray applied using conventional Squeeze pump plaster delivery equipment. Ensure continuous material spraying for best results. Wash the pump and hoses during work breaks.
- A first 1/16" (1.6 mm) coat of BuildCrete Stucco is direct applied to the EPS and worked flat. Mesh is embedded into the first coat working material through while ensuring that the mesh is flat and free of wrinkles. Overlap adjoining mesh by a minimum of 2.5" (6.4 cm). A second coat of BuildCrete Stucco is immediately applied over the mesh to the specified thickness. This is a true one coat double pass method that is typically results in a 3/16" (4.8 mm) overall thickness.
- Mesh gauge is specified by the architect per application. Mesh gauge is increased as project abuse resistance requirements increase.
- Working time depends on material viscosity, temperature and humidity. Generally, the material is easily applied in approximately 20 minutes. Trowel lines and application irregularities may be flattened within 20 minutes of the application. Water troweling will not harm BuildCrete Stucco.
- Do not over trowel as surface blistering may occur. Plan to improve the wall profile in the relative short term.
- All mixing and finishing equipment must be thoroughly washed immediately after use. Potable water is sufficient for cleaning.
- Ensure that BuildCrete Stucco is allowed to cure in temperatures within the application temperature range. Moist curing for 2 hours is recommended.
- Each 75 lb. (34 kg) of BuildCrete Stucco covers approximately 42 sq. ft. (3.9 m²) at a thickness of 3/16 in (4.8 mm).
- BuildCrete Stucco bags should be stored in a secure, indoor, and dry space. It is important that bags maintain their seal and are free of puncture or tear.
- When properly stored in original sealed packaging, BuildCrete Stucco has a shelf life of one year from the date of manufacture.

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PLASTER

A GIGACRETE PRODUCT

BuildCrete Plaster

BuildCrete Plaster, our interior finish, provides over 8,500 psi compressive strength. BuildCrete Plaster is the first product to achieve code approval over foam to replace drywall as a 15minute fire barrier. BuildCrete Plaster does not support mold or mildew making it the perfect choice for institutional facilities. BuildCrete Plaster utilizes a water-based additive that is mixed 24 hours prior to being added to the powder. Achieving the right mixture balance is imperative to the performance of BuildCrete Plaster.

General BuildCrete Plaster Information

- BuildCrete Plaster shall be applied in ambient room temperatures between 55°F and 85°F (13°C - 30°C) with a minimum wall surface temperature above 50°F (10°C).
- Relative humidity shall not drop below 35% during the BuildCrete Plaster installation or during its initial 48 hour cure.
- Air movement can assist in maintaining good drying conditions in high humidity environments. Avoid direct air movement across the BuildCrete Plaster surface as it may prematurely dry the BuildCrete Plaster surface and promote surface cracking.
- Shade the BuildCrete Plaster from direct sunlight during the installation and its initial 48 hour cure.
- Ensure that the application substrate is free of surface moisture prior to the BuildCrete Plaster application and that the source of the moisture is properly addressed. BuildCrete Plaster shall not be moistened during the application or during the initial cure period.
- Control joints are necessary to compensate for potential structural movement, thermal and humidity expansion/contraction and provide installation stop and start points. It is recommended that joints are placed at intervals not exceeding 30' (9.2 m). Plastic 093V by Trim-Tex or 093 zinc joints typically used in the wallboard industry are installed by hot knifing or cutting a groove into the EPS allowing the joint flanges to rest flush with the surface. They may be fastened through the flange with 2" (5.1 cm) roofing nails or by adhering with low expansion urethane foam adhesive. Plastic "V" joints are preferred as it is easier to maintain the target installation depth along a temporary tear away strip that runs along each side of the center groove.
- Casing beads are necessary to isolate BuildCrete Plaster from dissimilar building materials such as door frames, window frames, ceilings, floors and walls. Plastic Flat Tear Away by Trim-Tex (or similar) is preferred as it is flush mounted to the EPS and provides a temporary removable strip to trowel against. Fastening may be done with 2" (5.1 cm) roofing nails or low expansion urethane foam adhesive.
- Empty the 50 pounds (22.7 kg) of B3 Activator Concentrate into a plastic barrel capable of holding at least 15 gallons (~57 L). A clean trash barrel will work fine.
- Add 8 gallons 16 fluid ounces (30.8 L) of cool water and stir to fully dissolve all solids. Allow the activator solution to rest 8 hours— preferably overnight. Cover the barrel to prevent evaporation and to keep out possible contaminants. Store in cool area and prevent the B3 solution from exceeding 70°F (21oC).

- B3 Activator and water creates a solution much denser than water. The target density is 22.5° Baume or a specific gravity of 1.18. Using an appropriate hydrometer, check the B3 solution for actual density and adjust accordingly. Higher density will require adding water and lower density will require more concentrate. Consult a GigaCrete representative with questions.
- Mix using B3 solution only. DO NOT MIX WITH PLAIN WATER.
- Ensure all B3 concentrate has fully dissolved.
- B3 solution greater than 70°F (21°C) will greatly reduce material pot life.
- B3 Solution must be allowed to “age” before use. Immediate use is not recommended.
- Ensure B3 is at the correct liquid density before using.
- Rasping is necessary to remove potential bond breakers and to ensure good adhesion. Survey the substrate for irregularities that may adversely affect the application such as minor protrusions and voids.
- Mechanical chase voids cut into the EPS need to be filled prior to the BuildCrete Plaster installation. Low expansion spray foam is applied into the void, allowed to cure and shaved flat with the surface. Wind-Lock’s Foam2Foam is recommended for this purpose
- 4.5 ounce / 128 g (minimum) fiberglass mesh typically used in the EIFS industry is a critical part of the BuildCrete Plaster application. A 1/16” (1.6 mm) coat of BuildCrete Plaster is applied to the EPS and worked flat. Pre cut the mesh and embed into the first coat working material through while ensuring that the mesh is flat and free of wrinkles. Overlap adjoining mesh by a minimum of 2” (5.1 cm). A second coat of BuildCrete Plaster is immediately applied over the mesh to the BuildCrete Plaster may be applied by hawk and trowel but spray application is recommended for best results. Spray in a fashion that allows the trowel person to stay in close proximity to the sprayer and allows a continuous wet edge. Working wall areas in sections from top to bottom works best.
- BuildCrete Plaster is hand applied like most conventional plaster material.
- Dry and set times depend on material viscosity, temperature and humidity. Generally, the first trowel pass is approximately 20 minutes after the initial application and in 20 minute intervals for subsequent trowel passes. Troweling from top to bottom each time helps to keep a good wall profile.
- Obtaining a smooth finish is easy when good installation practices are adhered to. BuildCrete Plaster has good trowel ability but differs from conventional plasters where no surface water is used to aid the trowel pass. Additionally, over troweling at any one time may result in material drag and surface blistering. A dense, smooth finish for paint specified walls may be realized in few trowel passes-at times only one pass is necessary.
- When BuildCrete Plaster is specified as the wall finish (exposed not painted) then additional trowel passes are necessary beyond the acceptably smooth stage. Make passes from top to bottom at 15-20 minute intervals using the usual trowel pressure until the surface begins to mottle and shine. Extra pressure is not necessary as the material will begin to polish regardless. Surface blackening becomes more pronounced with each additional pass. Subtle mottling is generally more desirable so use caution not to over trowel.
- Spray textures such as orange peel, splatter and splatter knockdown are also possible. Texturing is performed during the second coat application.
- Stamp texturing is easily achieved with a 9” urethane texture roller. Liquid or “bubble gum” release agent is lightly sprayed on the BuildCrete Plaster surface and on the roller. A wide variety of textures are possible with this method.
- Wall paint is most commonly used to seal, protect, and provide a consistent decorative finish to cured BuildCrete Plaster. Breathable latex primers and paint typically used for conventional veneer plasters are recommended after a minimum 7 day cure period. In cooler and/or more humid environments additional cure time may be needed before painting. Consult with the paint manufacturer for recommendations.



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- Each 75 lb. (34 kg) of BuildCrete Plaster covers approximately 42 sq. ft. (4.2 m²) at an approximate thickness of 3/16 in (4.8 mm).
- BuildCrete Plaster bags should be stored in a secure, indoor and dry space. It is important that bags maintain their seal and are free of puncture or tear. BuildCrete Plaster should be brought to room temperature 24 hours prior to being mixed and applied.
- When properly stored in original sealed packaging, BuildCrete Plaster has a shelf life of one year from the date of manufacture.



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