

The QUIKRETE Companies



1. Product Name

QUIKRETE® One Coat Fiberglass Reinforced Stucco (FRS) Sanded #1200 and Concentrated #1216

2. Manufacturer

The QUIKRETE Companies
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3. Product Description

BASIC USE

QUIKRETE® One Coat Fiberglass Reinforced Stucco is an alternative exterior wallcovering to those specified in Chapter 25 of both the 1997 Uniform Building Code™ (UBC), the 2000 International Building Code® (IBC) and Section R703 of the 2000 International Residential Code™ (IRC). The system is a proprietary cementitious mix for use as an exterior coating reinforced with wire fabric or metal lath. It is applied to substrates of expanded polystyrene (EPS) insulation board, fiberboard, plywood, oriented strand board (OSB) or gypsum sheathing on exterior walls of wood or steel stud construction.

COMPOSITION & MATERIALS

The product is available in 2 forms designated as QUIKRETE One Coat FRS Sanded #1200 and QUIKRETE One Coat FRS Concentrated #1216. QUIKRETE One Coat FRS Sanded is a factory prepared mixture of Type I or Type II Portland cement complying with ASTM C150, hydrated lime complying with ASTM C207, alkali-resistant (AR) glass fibers, proprietary chemical additives and sand. The AR fibers are zirconia based and provide QUIKRETE One Coat FRS with its strength and crack resistance by acting as reinforcing elements. QUIKRETE One Coat FRS Concentrated is the same as QUIKRETE One Coat FRS Sanded, except the concentrated mix lacks sand.

SIZES

- QUIKRETE One Coat FRS is packaged in 80 lb (36 kg) bags
- QUIKRETE One Coat FRS Concentrated is packaged in 90 lb (40.8 kg) bags and must be field mixed with approximately 240 lb (110 kg) of properly graded plaster sand in accordance with ASTM C897

YIELD

- An 80 lb (36.3 kg) bag of QUIKRETE One Coat FRS Sanded will yield 0.76 ft³ (21.5 L) of material. This will cover approximately 25 ft² (2.3 m²) at 3/8" (9.5 mm) thickness
- A 90 lb (40.8 kg) bag of QUIKRETE One Coat FRS Concentrated mixed with the recommended amount of plaster sand will yield approximately 3.1 ft³ (88 L) of material. This will cover approximately 100 ft² (9.2 m²) at 3/8" (12.7 mm) thickness

COLORS

- QUIKRETE One Coat FRS Sanded is available in gray and white
- QUIKRETE One Coat FRS Concentrated is available in gray
- QUIKRETE One Coat FRS can be colored with QUIKRETE Stucco and Mortar Color (#1319). The liquid color is premixed with the mixing water prior to the addition of dry stucco. Mix thoroughly until uniform in color

4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
- ASTM C150 Standard Specification for Portland Cement



QUIKRETE® One Coat Fiberglass Reinforced Stucco (FRS) #1200 and Concentrated #1216

- ASTM C207 Standard Specification for Hydrated Lime for Masonry Purposes
- ASTM C348 Standard Test Method for Flexural Strength of Hydraulic Cement Mortar
- ASTM C834 Standard Specification for Latex Sealants
- ASTM C897 Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters
- ASTM C926 Standard Specification for Application of Portland Cement-Based Plaster
- ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
- ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials
- ASTM E514 Standard Test Method for Water Penetration and Leakage Through Masonry

American National Standards Institute (ANSI) - ANSI A4.2.2 Portland Cement Plastering (Stucco)

TABLE 1 PHYSICAL PROPERTIES OF QUIKRETE® ONE COAT FIBERGLASS REINFORCED STUCCO

Compressive strength at 28 days, ASTM C109	2020 psi (13.9 MPa)
Flexural strength at 28 days, ASTM C348	570 psi (3.9 MPa)
Tensile strength at 28 days, ASTM C109	180 psi (1.2 MPa)
Wind driven rain, average flow, 24 hours ASTM E514	0.002 lb (0.9 g) per hours
Freeze/thaw resistance, ICBO Acceptance Criteria 9/30/85	No visible cracking, checking or delamination after 10 F/T cycles at 75° to -20°F (24° to -29°C)
Water vapor permeability, ASTM E514	7.2 perm (415 ng/(Pa × s × m ²)) @ 14 days
Transverse load strength, ASTM E72	
Wood studs, average load to failure	96 psf (469 kg/m ²)
Metal studs, average load to failure	138 psf (674 kg/m ²)



APPROVALS

U.S. Department of Housing and Urban Development (HUD) - #1207

International Code Council (ICC) ESR-1240

PHYSICAL/CHEMICAL PROPERTIES

QUIKRETE One Coat FRS, when tested in accordance with ASTM procedures specified, yields the results indicated in Table 1.

FIRE RATING

For construction of exterior walls with a 1-hour fire resistive wall assembly, follow instructions in ICC ESR-1240. The assemblies include substrates of EPS insulation board, fiberboard, plywood, OSB or gypsum sheathing on exterior walls of wood or steel stud construction.

5. Installation

Only contractors with experience applying 1-coat systems, or those certified by the manufacturer, should install QUIKRETE One Coat FRS.

PREPARATORY WORK

The application of QUIKRETE One Coat FRS is intended for use as a 1-coat stucco over #20 gauge galvanized welded wire mesh, 1" (25.4 mm) minimum, or code approved expanded galvanized, self-furring metal lath, 2.5 or 3.4 pcf (12.2 or 16.6 kg/m³), and 2 layers of Grade D, 30 minute water resistant building paper.

Installation of wire mesh and building paper shall be in accordance with ANSI A422 and ASTM C926, or local governing building codes. Divide the stucco by stucco grounds into areas not to exceed 144 ft² (13.4 m²), or at a height/width ratio of 2.5:1.

ONE-HOUR FIRE RESISTIVE WALL ASSEMBLIES

There are 3 wall configurations approved as 1-hour fire resistive wall assemblies. Do not proceed with construction without consulting ICC ESR-1240.

1. The first assembly uses 5/8" (15.9 mm) Type X gypsum wallboard on the interior face and 5/8" (15.9 mm) Type X gypsum wallboard on the exterior face. The framing can be constructed of 2" x 4" wood studs spaced 24" (610 mm) oc maximum or minimum #16 gauge galvanized steel studs spaced 24" (610 mm) oc maximum. A weather resistive barrier, lath and One Coat FRS are then applied to the exterior face.
2. The second assembly uses 5/8" (15.9 mm) Type X gypsum wallboard with kraft-paper-faced, 3 1/2" (89 mm) thick, R-11 fiberglass batt insulation installed in the cavity of the wall. One layer minimum of 7/16" (11.1 mm) plywood or

OSB sheathing shall then be applied to the exterior face. The framing can be constructed of 2" x 4" wood studs spaced 24" (610 mm) oc maximum or minimum #16 gauge galvanized steel studs spaced 24" (610 mm) oc maximum. A weather resistive barrier, lath and One Coat FRS are then applied to the exterior face.

3. The third assembly uses 5/8" (15.9 mm) Type X gypsum wallboard with kraft-paper-faced, 3 1/2" (89 mm) thick, R-11 fiberglass batt insulation installed in the cavity of the wall. One layer minimum of 7/16" (11.1 mm) plywood or OSB sheathing shall then be applied to the exterior face. Install a weather resistive barrier, then Type I EPS insulation board with a density of 1 pcf (16.02 kg/m³) over the sheathing. The framing can be constructed of 2" x 4" wood studs spaced 16" (406 mm) oc maximum or minimum #16 gauge galvanized steel studs spaced 16" (406 mm) oc maximum. The lath and One Coat FRS are then applied to the exterior face.

ACCESSORIES

- Insulation boards should be fastened to the studs with approved fastening fixtures, as governed by local or national building codes. The maximum spacing of the nails, screws or mechanical fasteners should not exceed 12" (305 mm) unless otherwise controlled by the codes. All fasteners must penetrate studs a minimum of 3/4" (19.1 mm) or as otherwise specified by local building codes.
- A variety of different accessories may be needed to provide completely homogeneous exterior cladding with no possibility of water leakage, either at corners, around openings or at the bottom and top of the cladding system. Consult ICC ESR-1240 for details.
- All trim, screeds and corner reinforcement must be galvanized steel or approved plastic.
- Joint sealant - Seal joints with an approved exterior sealant material where foam edges meet metal or plastic trim, such as with weep bases or dip screeds, and where J metal trim is applied. Sealant must comply with ASTM C834.

MIXING (SANDED)

Machine mix in a paddle-type mortar mixer.

1. Add approximately 1.75 gal (6.6 L) of clean water into the mixer for each 80 lb (36.3 kg) bag.
2. Slowly pour the contents of the bag(s) into the mixer. Mix for 3 - 5 minutes until a firm,

workable consistency is achieved. Avoid overmixing, as this may affect the integrity of the AR glass fibers. If more water is needed, add small amounts at a time and continue to mix until desired consistency is achieved.

3. Do not exceed a total volume of 2 gal (7.6 L) of water for each 80 lb (36.3 kg) bag.
4. Prepare only enough mix as can be applied in 1 hour.

MIXING (CONCENTRATED)

Machine mix in a paddle-type mortar mixer.

1. Add approximately 6 gal (22.8 L) of clean water into the mixer for each 90 lb (40.8 kg) bag.
2. Add approximately 240 lb (110 kg) of clean dry plaster sand (ASTM C897).
3. Slowly pour the contents of the bag(s) into the mixer. Mix for 2 - 3 minutes until a firm, workable consistency is achieved. Avoid overmixing, as this may affect the integrity of the AR glass fibers. Consistency will vary, depending on sand loading and moisture content. If more water is needed, add small amounts and continue to mix until desired consistency is achieved.
4. Do not exceed a total volume of 7 gal (26.6 L) of water for each 90 lb (40.8 kg) bag.
5. Prepare only enough mix as can be applied in 1 hour.

APPLICATION

1. QUIKRETE One Coat FRS may be trowel or spray applied. The proper selection of spray equipment is important. The use of a peristaltic pump, 1 1/2" (38 mm) hose size and 0.5" (13 mm) minimum unobstructed aspiration nozzle is recommended. An 185 cfm air compressor will provide an adequate air supply. Apply stucco onto the mesh working from bottom to top to achieve a minimum thickness of 3/8" (9.5 mm). Force the stucco through the mesh so that it fills the gap between the mesh and wall completely.
2. Using a darby or straight board, screed the stucco flat.
3. After the stucco has lost its sheen, use a float to smooth the surface.
4. Moist cure for 2 days and then air cure for an additional 5 days before applying QUIKRETE Finish Coat Stucco (#1201) or QUIKRETE Liquid Stucco Finish (#1320) as the color and texture coat.
5. For construction details, consult ICC ESR-1240.



CURING

QUIKRETE One Coat FRS must be water cured with a fine mist once it has achieved final set. Spray the wall periodically for 48 hours. During hot and dry conditions, additional precautions may be necessary, including more frequent spraying or the erection of barriers to deflect sunlight and wind. Do not apply when weather is forecast to be above 100 degrees F (38 degrees C) or below 40 degrees F (4 degrees C) within 24 hours without adopting the required hot or cold weather precautions.

QUIKRETE One Coat FRS and QUIKRETE One Coat FRS Concentrated do not require the addition of any other material, such as coloring compounds, calcium chloride, soaps, etc. Such additions will void any warranty and result in a violation of code conditions.

Desired textures can be applied directly to the QUIKRETE One Coat FRS. Textures can also be obtained through application of QUIKRETE Finish Coat Stucco (#1201) or QUIKRETE Liquid Stucco (#1320).

QUIKRETE One Coat FRS and QUIKRETE One Coat FRS Concentrated can be modified with QUIKRETE Acrylic Fortifier (#8610). Add Acrylic Fortifier at a rate of 1/2 gal (1.9 L) to each 80 lb (36.3 kg) bag of QUIKRETE One Coat FRS or 2 gal (7.6 L) to each 90 lb (40.8 kg) bag of QUIKRETE One Coat FRS Concentrated. The addition of Acrylic Fortifier will provide greater impact resistance, strength and durability. If Acrylic Fortifier is used, use it in all batches to maintain color uniformity.

PRECAUTIONS

In cool weather, use warm water to speed the setting time. Do not apply when temperatures are expected to fall below 40 degrees F (4 degrees C) within 24 hours. Protect site from freezing for 48 hours after application.

During hot weather, work during cool times of the day, and use cold water to slow down the setting time. Keep the wall damp prior to application. Do not apply when temperatures are above 100 degrees F (38 degrees C).

6. Availability

QUIKRETE One Coat FRS, QUIKRETE One Coat FRS Concentrated and QUIKRETE Acrylic Fortifier are available at leading concrete construction supply houses and are also available through distributors. Contact QUIKRETE Construction Products for the name of the nearest dealer.

7. Warranty

The QUIKRETE Companies warrant this product to be of merchantable quality when used or applied in accordance with the instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

8. Maintenance

None required.

9. Technical Services

The QUIKRETE Companies maintain technical field representatives throughout the country. Contact a local distributor for the name and number of the nearest representative or call QUIKRETE Construction Products.

10. Filing Systems

Additional product information is available from the manufacturer.

