Diamond Wall One Coat Stucco is a code compliant plaster system that creates a long-lasting exterior cladding for residential and commercial projects. One coat stucco has the appearance and advantages of traditional three coat stucco, including one-hour fire-resistive-rated assemblies, but with reduced labor costs and schedule savings.

System Description

The Diamond Wall One Coat System consists of a water-resistive barrier installed over approved sheathing. Metal lath is then fastened over the water-resistive barrier and the Diamond Wall base coat is applied as a single layer at a minimum 3/8-inch thickness. Diamond Wall Concentrate is a factory prepared blend of portland cement complying with ASTM C150, chopped fibers, and proprietary ingredients field mixed with sand, water, and an optional approved admix. Diamond Wall is also available in a sanded version that requires only water to be added. After the base coat has properly cured, the finish coat is then applied.

Design Considerations

- May be applied over steel or wood framed construction with one of the following substrates:
  - ASTM C1396 water-resistant gypsum sheathing
  - ASTM C1177 glassmat faced gypsum sheathing, such as DensGlass Gold from GP
  - ASTM C1325 cement boards, such as Durock from USG
  - ASTM C1278 gypsum fiber panels, such as Aqua Tough from Fiberock Brand
  - Exterior grade or exposure 1 plywood
  - Exposure 1 OSB
  - Poured concrete or masonry
- Available in proprietary one-hour fire-resistive-rated assemblies
- Available in non-combustible assemblies
- May be panelized to meet project construction needs
- Design and installation requirements can be found in the Diamond Wall ICC-ES ESR-1194 report

Uses

Diamond Wall is an excellent exterior wall cladding for new or retrofit residential, multi-family, commercial, or institutional projects.
OmegaFlex or AkroFlex primer is recommended when using acrylic-based finishes. When applied over wood-based sheathing, the barrier shall be a minimum of two layers of Grade D Kraft building paper.

AkroSil Finishes: Silicon enhanced acrylic-based finishes

Portland cement-based stucco finishes

Elastomeric acrylic-based finishes

Elasticstuc: Portland cement-based stucco finishes

AkroLoc: A 100% acrylic polymer bonder or admixture

OmegaCure: A non-corrosive liquid admixture for accelerating the hydration of cement plaster

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The following is made in lieu of all expressed and implied rights, warranties and conditions, statutory or otherwise. The manufacturer's only obligation shall be to replace such quantity of products proven to be defective within one year following the date of manufacture, provided that the alleged defective product is returned prepaid to the manufacturer's plant and is accompanied with proof of purchase and batch number.

Installation & Design Requirements

- Substrates must be structurally sound, clean, and dry without planar irregularities greater than 1/4-inch in 10-feet.
- Maximum allowable deflection of structural wall components is 1/360 of the span.
- Expansion joints should be installed at floor line, dissimilar substrates, and through wall expansion joints. Final expansion and control joint design and location are the responsibility of the design professional.
- Store and apply all component products per the product's data sheet.
- Do not use below grade. Terminate a minimum of 4-inches above grade, 2-inches above finished grade, or as specified by local code.
- All openings shall be properly flashed and designed to allow water to escape to the outside of the wall.
- All penetrations shall be properly flashed and/or sealed using approved methods.
- Walls should be designed to prevent bulk water from getting behind the stucco or running down the face of the stucco. The bottom of the wall should have weep screed or another effective means to drain any water that may get behind the stucco.
- To reduce the likelihood of the stucco cracking, it is recommended the building carry a minimum of 90 percent of the dead building load and the interior gypsum be installed prior to installation of the stucco.
- Wood-based sheathing should be gapped 1/8-inch to allow for expansion and be attached per code requirements using corrosion resistant fasteners.
- Moist curing must be provided for a minimum 24 hours after coating applications. The length of time and most effective procedure for moist curing will depend on climactic and job conditions.
- Do not apply Diamond Wall when the ambient and surface temperature is below 40°F (4°C). To ensure proper hydration in cold weather applications (approximately 50°F to 32°F) use OmegaCure admix. Refer to OmegaCure data sheet for additional information.
- Protect Diamond Wall from freezing for a period of not less than 24-hours after set has occurred.
- Protect applied product from inclement weather until dry.
- Refer to stone veneer manufacturer’s requirements for lath installation when applying stone over Diamond Wall.
- Sufficient slope on faces of plastered surfaces shall be provided to prevent water, snow, or ice from accumulating or standing.
- Optional EPS foam plant-ons may be used to add architectural detailing.
- Some Omega finishes may be applied after a minimum cure time of 24-hours. Refer to finish product data sheet for additional information.

System Ugrades

The following products are optional upgrades to the Diamond Wall System. The use of these products will increase the system’s warranty.

Admixture:

- AkroLoc: A 100% acrylic polymer bonder or admixture
- PolyLoc: Poly-vinyl acetate (PVA) bonder or admixture
- Admix 500: A 100% acrylic polymer admixture
- OmegaCure: A non-corrosive liquid admixture for accelerating the hydration of cement plaster

Primer:

- OmegaFlex or AkroFlex primer is recommended when using acrylic-based finishes.

Crack Isolation System

To help reduce the likelihood of cracking, an optional layer of fiber-glass mesh may be embedded into the Diamond Wall base coat or a skim coat with mesh may be applied over the Diamond Wall base coat. See Omega’s Crack Isolation System technical bulletin for more information.

1Manufactured by others

2When optional an acrylic admix is used, ColorTek Stucco or other cementitious finishes require the use of a bonding agent or an acrylic admix.

System Components

The following products are components in the Diamond Wall System. Please see the product's data sheet for additional information.

Water-resistive Barrier

- Minimum No. 15 asphalt nonperforated felt complying with ASTM D 226 for Type I (IBC or IRC) or asphalt-saturated rag felt complying with UL Standard 59A (UBC).

- Minimum Grade D kraft building paper complying with UBC Standard 14-1 or ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38).

- Material recognized in a current evaluation report as complying with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38).

- Metal Lath: Complying with ASTM C847 (IBC or IRC) or with Table 25-B of the UBC as applicable.

Base Coat

- Diamond Wall Concentrate: Diamond Wall is a factory prepared blend of Portland cement complying with ASTM C150, chopped fibers, and proprietary ingredients.

- Diamond Wall Sanded: Diamond Wall is a factory prepared blend of Portland cement complying with ASTM C150, sand, chopped fibers, and proprietary ingredients.

Sand

- Sand shall be clean and free from deleterious amounts of loam, clay, silt, soluble salts, or organic matter and shall be graded in accordance with ASTM C144, C897, or within the limits listed in the ESR-1194 report. Diamond Wall Sanded does not require the addition of sand.

Finishes

A variety of finish options are available:

- OmegaFlex Finishes: 100% acrylic-based finishes
- AkroFlex Finishes: 100% acrylic-based finishes
- AkroSil Finishes: Silicon enhanced acrylic-based finishes
- Akrolastic Finishes: Elastomeric acrylic-based finishes

- ColorTek Stucco: Portland cement-based stucco finishes
- Valentino Finishes: Approved Valentino finishes
- AkroCoat: 100% acrylic paint
- Elastomeric 44: Elastomeric acrylic-based coating

Crack Isolation System

- Omega’s Crack Isolation System technical bulletin for more information.

Technical Assistance

Technical assistance and information is available by calling Omega Products International, Inc. at (800) 600.6634 or FAX (951) 520.2594 or by e-mail at info@omega-products.com.