

# Diamond Wall Insulating System

One coat stucco system with foam insulation

PRODUCTS INTERNATIONAL

**Diamond Wall Insulating One Coat Stucco** is a code compliant plaster system with increased energy efficiency 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

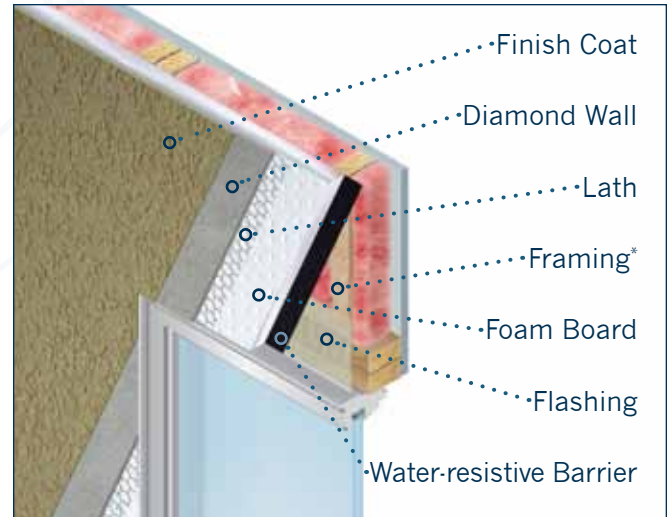
The Diamond Wall Insulating One Coat System consists of a water-resistive barrier installed over open framing or optional sheathing. Foam board is then attached over the water-resistive barrier. Next, metal lath is fastened over the foam board and the Diamond Wall base coat is applied as a single layer 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 open steel or wood framed construction or 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.



\*Diamond Wall Insulating System may be applied over open framing (as pictured) or over approved sheathing.

## DIAMOND WALL ADVANTAGES

FEATURES	BENEFITS
<i>Low Life-cycle Costs</i>	Will last decades with minimal maintenance
<i>Durable and Impact Resistant</i>	Can withstand years of weather and physical abuse
<i>Cement-based</i>	Fungus, rot, and insect resistant
<i>Fire-resistant</i>	Non-combustible and available in 1-hour fire-resistive-rated assemblies
<i>Acceptable Base Coat for a Variety of Finishes</i>	Stucco, acrylic, paint, and stone are all finish options
<i>Reduced Labor Costs</i>	Only requires one base coat application
<i>Shorter Construction Schedule</i>	Finish coat can be applied in as little as 24-hours after the base coat; some finishes may require longer cure times
<i>Improved Energy Efficiency</i>	Using foam board increases the wall assembly's R-value
<i>Consistency</i>	Factory blended, requiring only sand and water to be added in the field
<i>Lighter Weight</i>	Reduces the base coat weight by approximately 50% compared to three coat stucco
<i>System Warranty</i>	Up to 15-years when used in combination with other Omega products

Approved by:

Date:

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## System Components

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

### Water-resistive Barrier<sup>1</sup>

- 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 55A (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)
- When applied over any wood-based sheathing, the water-resistive barrier shall be either: (a) a minimum of two layers of Grade D kraft building paper or (b) one layer of EPS or XEPS insulation board, having horizontal tongue-and-groove edges, over one layer of Grade D kraft building paper having a minimum water-resistance rating of 60 minutes
- AkroGuard/AkroFill: Acrylic-based, vapor-permeable water-resistive/air barrier coating

### Foam Board<sup>1</sup>

- EPS or XEPS: Type II (EPS) or Type IV (XEPS) board complying with ASTM C578 with a nominal density of 1½ pound per cubic foot and a thickness of 1 to 1½-inches over open framing or ½ to 1½-inches over sheathing
- Polyisocyanurate: A nominal density of 2 pound per cubic foot, and a thickness of 1 to 1½-inches

### Lath<sup>1</sup>

- Woven Wire (20-gage): Nominal No. 20 gage [0.035 inch], 1-inch opening, galvanized steel complying with ASTM C1032
- Woven Wire (17-gage): Nominal No. 17 gage [0.058 inch], 1½-inch opening, galvanized steel complying with ASTM C1032
- Welded Wire: Nominal No. 16 gage [0.065 inch], 2-inch-by-2-inch opening, galvanized steel complying with ASTM C933
- 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<sup>1</sup>

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.

### 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<sup>2</sup>
- AkroCoat: 100% acrylic paint
- Elastomeric 44: Elastomeric acrylic-based coating
- Valentino Finishes: Approved Valentino finishes
- AkroStone Finishes: Acrylic-based stone-like finishes

## Installation & Design Requirements

- Substrates must be structurally sound, clean, and dry without planar irregularities greater than ¼-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 climatic 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 Upgrades

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

### Admixture<sup>2</sup>

An optional Omega admixture may be added to Diamond Wall for increased tensile, bond, and flexural strength.

- AkroLoc: A 100% acrylic polymer bond or admixture
- PolyLoc: Poly-vinyl acetate (PVA) bond 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.

<sup>1</sup> Manufactured by others

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

### Disclaimer

Omega Products International, Inc. [Manufacturer] MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE PRODUCT(S) SOLD HEREIN. The recommendations, suggestions, statements and technical data are based on the best knowledge available to Manufacturer and are given for informational purposes ONLY and without any responsibility for their use. It is expressly understood and agreed, as a condition of the use of this product, that the buyer's sole and exclusive remedy for any claimed defective product against Manufacturer shall be the replacement of products actually proven to be defective. Handling and use of the products are beyond

the control of Manufacturer; therefore, no warranty is made, expressed or implied, as to the results obtained from the use of the product or against any claims for infringement of patents resulting from use of the product. Under no circumstance shall Manufacturer be liable for incidental or consequential damages arising out of the use or the improper application of the product. Before applying the product, the user shall determine the suitability of the product for his/her independent use, assuming all risks and liability whatsoever in connection therewith. This writing constitutes a complete and exclusive statement of the understanding between Manufacturer and Buyer.

### Claims

Any Claimant shall notify Manufacturer immediately in writing of any alleged defect in the material. Claimant will provide Manufacturer with a reasonable and exclusive opportunity to investigate and test for the alleged defect. For any claim that is not valid Claimant agrees to pay Omega's reasonable charges, including travel and labor associated with investigation of such claim.

### 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.

### Warranty

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.



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