

Variance 2 Coat Exterior Finish System

Variance System—A stucco system comprised of 3/8"–1/2" thick base coat, primer and acrylic finish.

Introduction

This document can enable the design professional to select or delete sections to suit the project requirements and is intended to be used in conjunction with Variance 2 typical details, bulletins, etc.

Technical Support

Consult the Variance Technical Services Department for specific recommendations concerning all other applications. Consult the Variance website, www.variancefinishes.com, for additional information about products and systems and for updated literature.

Part 1 - General

1.01 SECTION INCLUDES

Variance 2 System: composite wall (and soffit) system consisting of a stucco base coat, primer and finish coat.

1.02 RELATED SECTIONS

- A. Section 03300 Concrete
- B. Section 04200 Masonry
- C. Section 04500 Plywood
- D. Section 05400 Cold-formed metal framing: Light gauge load-bearing metal framing.
- E. Section 06100 Rough carpentry: Wood framing.
- F. Section 07260 Building paper
- G. Section 07900 Sealants
- H. Section 08000 Doors and windows
- I. Section 09100 Metal support systems
- J. Section 09110 Non-load-bearing wall framing: Non-load-bearing metal framing systems.
- K. Section 09206 Metal lath
- L. Section 09250 Extension gypsum substrates

1.03 REFERENCES

- A. ASTM C150-99a Standard specification for Portland cement
- B. NER-S36 National evaluation service report NER-459
- C. ASTM C847-95 Standard specification for metal lath
- D. ASTM C926-98a Standard specification for application of Portland cement-based plaster
- E. ASTM C933-96a Standard specification for welded wire lath
- F. ASTM C1032-96 Standard specification for woven wire plaster base
- G. ASTM C1063-99 Standard specification for installation of lathing and furring to receive interior and exterior Portland cement based plaster.
- H. ICBO AC11 Cementitious exterior wall coatings
- I. ER-4658 ICBO Evaluation report ER-4658

1.04 QUALITY ASSURANCE

- A. Manufacturer: More than 5 years supplying wall systems, with more than 500 completed projects.
- B. Applicator: Proven ability in performing work of this Section.
- C. Regulatory requirements: Conform to applicable code requirements for finish system.
- D. Field samples:
 - 1. Construct one field sample panel for each color and texture, illustrating method of attachment, surface finish, color and texture, prepared using the same tools and techniques to be used for the actual application.
 - 2. Locate sample panel where directed.
- E. Designing and detailing a Variance 2 System.
 - 1. General
 - a. The system shall be installed in strict accordance with current recommended published details and product specifications from the system's manufacturer.
 - b. Sealants and backer rod as required at dissimilar materials and expansion joints within the Variance 2 shall provide a complete watertight system.
 - c. The use of dark colors must be considered in relation to wall surface temperature as a function of local climate conditions.
 - d. Minimum slope for all projections and horizontal surfaces shall be 1:2 with a maximum length of 30.5 cm (12") [e.g. 15 cm in 30.5 cm (6" in 12")], unless other manufacturer-approved detailing is shown on the construction documents.
 - 2. Substrate systems
 - a. Deflection of the substrate systems shall not exceed L/360.
 - b. Acceptable substrates are water-resistant core exterior grade gypsum sheathing (ASTM C1396), Dens-Glass Gold® sheathing (ASTM C1177), fiberboard ANSI/AHA A 194-85, exposure 1 (Grade C-D or better) plywood, expanded polystyrene insulation board ASTM C578, exposure 1 oriented strand board, Duroc cement board or other ASTM C1325 cement board, poured concrete, and masonry units.

- c. Painted and otherwise coated surfaces of brick, unit masonry, stucco, and concrete shall be inspected and prepared as approved by Variance before application. Paint-on surface consolidants or primers shall not be used to bond Variance Systems to painted surfaces.
 - d. Other substrates shall be approved by the system's manufacturer in writing prior to the application.
 - e. The applicator shall verify that the proposed substrate is acceptable prior to the Variance installation.
 - f. The substrate systems shall be engineered with regard to structural performance by others.
3. System joints
- a. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, where substrates change and where structural movement is anticipated. Control joints are required at a minimum of every 13 m² (144 ft²) of wall surface or and where specified by the design professional. The maximum uncontrolled length or width is 5.5 lineal meters (18 lineal feet) and a maximum uncontrolled length to ratio of 2 1/2 : 1.

1.05 DELIVERY, STORAGE AND HANDLING

Comply with Variance recommendations regarding environmental conditions for its materials.

1.06 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Variance 2 System with related work of other sections.
- B. Coordinate and schedule installation of trim, flashing, and joint sealers to prevent water infiltration behind the system.

1.07 WARRANTY

- A. Provide Variance five-year materials warranty for Variance 2 System installations.
- B. Provide Variance five-year materials and labor warranty for Variance System installations.
- C. Comply with Variance project review requirements and notification procedures to assure qualification for warranty.

Part 2 - Products

2.01 MANUFACTURERS

Variance 2 System manufactured by Variance, LLC, Inc.

2.02 MATERIALS

- A. Insulation Board: expanded or extruded polystyrene not to exceed 2 lb density. Thickness of EPS shall not exceed 4".
- B. Acrylic substrate bonding agent: an acrylic-based, non re-emulsifiable bonding agent.
- C. Metal lath or woven/welded wire: (See also, *Lath & Trim Accessories* system support bulletin) [Minimum No. 20 gauge, 25.4 mm (1") galvanized steel, woven wire fabric is required. Other laths shall comply with ASTM C933-80 (welded) and ASTM C1032-86 (woven). The lath is self-furred or furred when applied over all substrates except un-backed polystyrene.]
- OR -
Expanded metal lath: The lath shall comply with ASTM C847-93. Furring and self-furring requirements shall be as set forth for wire-fabric lath. Minimum weight is 0.665 kg/m² (2.5 lb/yd²) Other acceptable welded laths shall comply with ASTM C933-80 and other acceptable woven laths shall comply with ASTM C1032-86.
- D. Plaster sand: Must be clean and free from deleterious amounts of loam, clay, silt, soluble salts and organic matter. Sampling and testing must comply with ASTM C144. Plaster sand must be graded within the following limits:

Percent retained by weight			
Retained on	± 2 Percent		
U.S. Standard Sieve	Min.	Max.	
No. 4	-	0	
No. 8	0	10	
No. 16		10	40
No. 30		30	65
No. 50		70	90
No. 100	95	100	
- E. Water: Clean and potable without foreign matter.
- F. UltraKote base coat:
UltraKote; cement-based, fiber reinforced base coat use for scratch and brown coats.
- G. UltraKote insulation adhesive/base coat
 - 1. Fino Arena: 100% acrylic base coat, by Variance]
 - 2. Adhesive Ground Coat: Dry-mix base coat containing Portland cement; manufactured by Variance]
 - 3. Variance Base Coat: Dry-mix base coat and leveler containing Portland cement, polymers and fibers; manufactured by Variance]
- H. Variance Mesh - reinforcing mesh: MIL-Y-1140G; Balanced, open weave glass fiber reinforcing mesh; twisted multi-end strands treated for compatibility with Variance System components.
 - 1. Reinforcing Mesh: Standard weight, 4.5 oz.
 - 2. Standard Mesh: Standard/medium weight, 6 oz.
 - 3. Intermediate Mesh: Intermediate weight, 12 oz.
 - 4. High-Impact Mesh: Heavy weight, 15 oz. used only in combination with Reinforcing or Standard Mesh.
 - 5. Heavy-Weight Mesh: Heavy weight, 20 oz. used only in combination with Reinforcing or Standard Mesh.
- I. VariPrime: 100% acrylic-based primer; color [] to closely match the selected Variance finish coat color; manufactured by Variance.

- J. Variance: Finish 100% acrylic resin finish; air cured, finish color factory-mixed; color [] as selected; finish texture as scheduled; manufactured by Variance.

2.03 ACCESSORIES

- A. Trim: Casing bead, corner bead, expansion joint and weep screed accessories shall meet the requirements of ASTM C1063. Accessories shall be vinyl, meeting ASTM D1784; galvanized, meeting ASTM A525 and ASTM A526; or zinc, meeting ASTM B69. Zinc accessories are recommended where highly humid or salt-laden service conditions exist
- B.
 - 1. Foundation weep screed: Beveled edge designed to terminate finish system and drain internal moisture.
 - 2. Casing bead: Square edge style.
 - 3. Corner bead: Small radius nose style.
 - 4. Control joints: W-shaped accordion profile style.
 - 5. Expansion joints: [Two piece type slip-joint design] or [pair of casing beads spaced for application of sealant bead].]
- C. Fasteners: Comply with ASTM C 1063 for type and size of fastener required to rigidly secure materials in place.
- D. A secondary weather barrier must be installed over sheathing substrates and wrapped into rough openings prior to installation of the Variance 2 System. Suitable secondary weather barriers include minimum grade D building paper complying with federal specifications UUB 790a or asphalt-saturated rag felt complying with UL standard number 55-A or other code-recognized equivalent. One layer of Grade D 60 minute paper with one layer of EPS or extruded poly styrene with tongue and groove edges or two layers Grade D 60 minute paper are required by the Uniform Building Code (UBC) for wood-based sheathings. Check the applicable code and code compliance report for appropriate type.
- E. Variance VariPrime: water-based primer for use prior to application of flashing membrane on all approved surfaces.
- F. Wrap: 20 mil thick, self-sealing, self-healing rubberized asphalt laminated to a polyethylene film.

Part 3 - Execution

3.01 EXAMINATION

- A. Verify project site conditions under provisions of Section [01039] [].
- B. Walls
 - 1. Substrates
 - a. Acceptable substrates: exposure 1 or exterior grade plywood sheathing (Grade C-D or better); exposure 1 OSB; cement boards conforming with ASTM C1325; poured concrete/unit masonry; Dens-Glass Gold sheathing (ASTM C1177); Aqua-Tough underlayment (ASTM C79 and C1278); or gypsum sheathing (ASTM C1396). Consult Variance for all other applications.
 - b. Wall sheathings must be securely fastened per applicable building code requirements.
 - c. Examine surfaces to receive system and verify that substrate and adjacent materials are dry, clean, and sound. Verify substrate surface is flat, free of fins or planar irregularities greater than 6 mm in 3 m (1/4" in 10').
 - 2. Flashings
 - a. Heads, jambs and sills of all openings must be flashed with a minimum 230 mm (9") strip of secondary moisture barrier prior to window/door, HVAC, etc. installation.
 - b. Windows and openings shall be flashed according to design and building code requirements.
 - c. Individual windows that are ganged to make multiple units require continuous head flashing and/or the joints between the units must be fully sealed.
 - 3. Utilities
 - a. The system must be properly terminated (back-wrapped, sealed, flashed) at all lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.
 - 4. Decks
 - a. Wood decks must be properly flashed prior to system application. The system must be terminated a minimum of 25 mm (1") above all decks, patios, sidewalks, etc.
 - 5. Secondary moisture barrier
 - a. Verify that the secondary moisture barrier is installed over the substrate per applicable building code requirements, manufacturer's specifications, prior to application of the Variance 2 System.
 - 6. Roof
 - a. Verify that all roof flashings have been installed in accordance with the guidelines set by the Asphalt Roofing Manufacturers Association (ARMA).
 - 7. Kick-out flashing
 - a. Kick-out flashing must be installed where required. The kick-out flashing must be leak-proof and angled (min 100°) to allow for proper drainage and water diversion.
- C. Unsatisfactory conditions shall be reported to the general contractor and/or builder and/or architect and/or owner. Do not proceed until all unsatisfactory conditions have been corrected.

3.02 MIXING

General: No additives are permitted unless specified in product mixing instructions. Close containers when not in use. Prepare in a container that is clean and free of foreign substances. Do not use a container which has contained or been cleaned with a petroleum-based product. Clean tools with soap and water immediately after use.

- A. UltraKote Base Coat
 - 1. Use mixer which is clean and free of foreign substances.
 - 2. Add 18.9–22.7 liters (5–6 gallons) of clean potable water to mixer per one bag of UltraKote
 - 3. Add one bag of UltraKote.
 - 4. Add one half 45.4 –61.2 kg (100–135 lbs) of the required plaster sand (ASTM C144 or ASTM C897).
 - 5. Mix for 3–4 minutes at normal mixing speed while adding the remainder 45.4–61.2 kg (100–135 lbs) of the plaster sand. Allow material to set for 2–4 minutes, then remix adding water to achieve desired consistency.
- B. UltraKote
 - 1. Variance Dry Base
 - a. Mix and prepare each bag in a 19-liter (5-gallon) pail.
 - b. Fill the container with approximately 3.8-liters (1 gallon) of clean, potable water.
 - c. Add Variance Dry Base in small increments, mixing after each additional increment.
 - d. Mix Variance Dry Base and water with a mixer to a homogeneous consistency.
 - e. Additional Variance Dry Base or water may be added to adjust workability.
- C. Variance Finish Coat
 - 1. Thoroughly mix the factory-prepared material with a mixer to a homogeneous consistency.
 - 2. A small amount of clean, potable water may be added to adjust workability.
 - 3. Additives are not permitted.
 - 4. Close container when not in use.
 - 5. Clean tools with soap and water immediately after use.

3.03 APPLICATION

General: Apply Variance 2 System materials in accordance with Variance specifications.

- A. Apply to approved substrates in accordance with manufacturer's instruction and government code requirements.
- B. Apply UltraBond substrate bonding agent (required for non-insulated concrete/unit masonry substrates) as per specifications to areas that will receive stucco base mixture the same day.
- C. Secondary weather barrier (Not required on unit masonry/non-insulated concrete substrates).
 - 1. Installation should be in accordance with the secondary weather barrier manufacturer's specifications and applicable building code requirements. Alternative methods may be used to wrap openings. Contact the secondary weather barrier supplier for specific details.
 - 2. The secondary weather barrier shall be free of any damage such as holes or breaks, and must be applied to all surfaces to receive the system.
 - 3. For optimum effectiveness, wrap the secondary weather barrier into rough openings (doors, windows, etc.) to increase the level of protection to the building frame and interior.
 - 4. Coordinate work with other trades to assure proper sequencing, detailing and installation of materials.
- D. Lath
 - 1. Wire fabric lath
 - a. Wire or lath shall be applied with minimum 25 mm (1") end laps and side laps.
 - b. Furring crimps shall occur at maximum 152 mm (6") intervals each way. Furring crimps shall provide a minimum 3.2 mm (1/8") clearance from the substrate after installation.]
 - OR-
 - 1. Metal lath
 - a. The metal lath shall be applied with minimum 13 mm (1/2") side laps and 25 mm (1") end laps.
 - b. When end laps occur between supports, lace or wire ties the ends of the sheets with 1.2 mm (0.0475") galvanized annealed steel wire.]
 - c. Refer to ASTM C1063 for additional information.
 - d. Corrosion-resistant fasteners for lath attachment shall penetrate a minimum of 25 mm (1") into wood framing.
 - e. Apply the Variance System over steel framing [minimum No. 20 gauge, 0.912 mm (0.0359") thick]. Lath is secured to framing using No.8-18, S-12, panhead, self-tapping screws spaced a maximum of 152.4 mm (6 inches) vertical on center to studs.
- E. Trim junction
 - 1. When two pieces of trim abut:
 - a. Set intersection of trim in a minimum 100 mm (4") bed of trim sealant approved by Variance.
 - b. Allow 3–5 mm (1/8"–3/16") gap between the abutting trim pieces. Do not overlap trim..
 - c. Attach the trim in accordance with manufacturer's specifications. True expansion joints must be fastened to the structural substrate.
 - 2. When two or more pieces of trim intersect:
 - a. The vertical trim piece shall be continuous with all horizontal pieces.
 - b. Miter all corners at intersections of trim.
 - c. Set intersection of trim in a minimum 100 mm (4") bed of trim sealant approved by Variance.
 - d. Allow 3–5 mm (1/8"–3/16") gap between the intersecting trim pieces. Do not overlap the trim.
 - e. Attach the trim in accordance with manufacturers' specifications. True expansion joints must be fastened to the structural substrate.

NOTE: Control joints are required at a minimum of every 13.4 m² (144 ft²) or as specified by the design professional. The maximum uncontrolled length or width is 5.5 lineal meters (18 lineal feet) and a maximum uncontrolled length to ratio of 2 1/2 : 1.

- F. Application over open framing
 1. The weather-resistive membrane is placed over open wood or steel framing spaced a maximum of 610 mm (24") on center. Wall bracing, in accordance with the applicable code, shall be installed. Square wall corners and parapet corners, metal corner reinforcement are optional. The expanded polystyrene insulation board [610 mm x 2438 mm (2' x 8') tongue-and-groove] shall be placed horizontally with the tongue facing upward and temporarily held in place with galvanized staples or roofing nails. Self-tapping screws shall be used to temporarily fasten the board to metal framing. Vertical butt joints shall be staggered a minimum of one framing space from the adjacent courses and occur directly over framing.
 2. The lath shall be applied tightly over the insulation board and shall be fastened through the board to wood framing with minimum 50 mm long (2"), No. 11 gauge [3.75 mm (0.148") shaft diameter, 11.1 mm (0.438") head diameter], galvanized roofing nails or No. 16 gauge [1.59 mm (0.0625") shaft diameter] galvanized staples spaced a maximum of 152.4 mm (6") on center with a minimum 25.4 mm (1") penetration into the wood framing. Staples shall have a minimum 13 mm (1/2") crown width. Stapling shall be utilized only in wood species having a minimum specific gravity of 0.42. The lath shall be fastened to all steel framing members [minimum No. 20 gauge, 0.912 mm (0.0359") thick] using No. 8-18, S-12, panhead, self-tapping screws spaced a maximum of 15 cm (6") on center to all framing. The screws shall penetrate framing at least 6.35 mm (1/4"). The wire lath shall be applied with minimum 25.4 mm (1") end laps.
- G. UltraKote base coat
 1. Following surface preparation and installation of the lath and accessories apply the cement basecoat mixture to a thickness of 3/8" to 1/2", completely embedding the lath.
 2. Use rod and darby to level the applied base coat without exposing the lath.
 3. After initial set begins, trowel or float out imperfections, voids or holes.
 4. Damp cure for at least 48 hours by lightly and evenly fogging the surface with water at least twice a day. Direct sunlight, hot temperatures, low humidity and windy conditions may make additional fogging necessary.
 5. Allow UltraKote base coat to cure a minimum of 6 days prior to finish coat application.
- H. Adhesively attach EPS insulation board shapes over cured stucco using Variance and ensure EPS in completely encapsulated in base coat and reinforcing mesh. Mesh must be completely embedded in wet base coat so that no mesh color is visible. Reinforcing mesh from EPS shapes should extend a minimum of 6" onto stucco base coat. Base coat should be feathered out onto stucco base coat.
- I. VariPrime
 1. Apply VariPrime to the UltraKote base coat with a sprayer, 10 mm (3/8") nap roller, or good-quality latex paint brush at a rate of approximately 4.3–6.7 m² per liter (175–275 ft² per gallon).
 2. VariPrime shall be dry to the touch before proceeding to the Variance Finish Coat application.
- J. Variance Finish Coats
 1. Apply finish directly to the UltraKote base coat with a clean stainless steel trowel.
 2. Apply and level finish during same operation to minimum obtainable thickness consistent with uniform coverage.
 3. Maintain a wet edge on finish by applying and texturing continually over the wall surface.
 4. Work finish to corners, joints, or natural breaks and do not allow material to set up within an uninterrupted wall area.
 5. Float finish to achieve final texture.

3.05 CLEANING

- A. Clean material from adjacent surfaces as recommended by manufacturer.
- B. Remove surplus material and debris, including field sample, from site.

3.06 PROTECTION

Protect base coat and finish from rain, snow and frost for a minimum of 48 hours following application.

3.07 SCHEDULES

Variance finish coat