

# PRE COR™

## Exterior Insulation and Finish System **Installation Guide**

COREV AMERICA



## **I. ENVIRONMENTAL REQUIREMENTS**

- A. Storage: PRECOR materials should be stored in their original containers in an area protected from weather and direct sunlight, in temperatures not lower than 40° F or higher than 110° F. Do not stack buckets more than three high. Shelf life of wet goods is approximately one year, when stored as indicated above.
- B. The ambient air temperature will be a minimum of 40° F and rising at the time of installation and remain so for twenty-four (24) hours thereafter.
- C. For PRECOR System installation in ambient temperatures lower than 40° F, enclose the area and apply supplementary heat during installation and for a minimum of twenty-four (24) hours after the installation of materials is complete.
- D. Do not install the PRECOR System materials during rain or other inclement weather, and after such weather, wait until surfaces are completely dry before resuming work.
- E. Adjacent areas and materials shall be protected to preclude damage during materials installation.
- F. The PRECOR System assembly shall be protected from weather immediately after installation through use of flashing. Plastic shall be used to cover areas that may be exposed to moisture prior to drying.
- G. The General Contractor shall provide access to electric power and clean water where the PRECOR System is to be installed.
- H. Proper scheduling of the installation shall be coordinated with the General Contractor and the job shall be staffed to maintain the schedule established. General Contractor shall be notified of any and all deviations from these environmental requirements or other substandard conditions, and such deviations or substandard conditions shall be redressed, prior to commencement or continuation of work.

## **II. JOBSITE CONDITIONS**

- A. The PRECOR System installer is never in a position to verify proper installation of any products other than those of the PRECOR System.
- B. Substrate systems should be designed to withstand applicable loads, including live, dead, positive and negative wind, seismic, etc. Bond strength, fastener strength and connection strength shall be analyzed and engineered, and appropriate factors of safety shall be used. Maximum deflection of substrate systems shall not exceed 1/240th of the span.
- C. Dimensional tolerances:
  - 1. Structural steel framing used to support the EIFS system shall meet the requirements of the American Institute of Steel Construction.
  - 2. Brick, masonry and concrete substrates and exterior grade sheathing shall be flat within ¼" depth within any 4' radius.
  - 3. Wood framing shall be as specified by architectural drawings. Warps or bows in the structure greater than ½" in any 8' length will not be acceptable.
- D. Light Gauge Steel Framing
  - 1. Thickness shall be determined by loads using accepted engineering practices with minimum thickness being 20 gauge at maximum 16" stud spacing.
  - 2. Section properties of members shall meet the latest AISI standards.
  - 3. All stud, track, bridging and bracing connections shall be electric fusion welded. Field erected framing shall be screw fastened.
  - 4. Framing will include stud, track, bridging and bracing and be galvanized or painted with rust-resistant primer.
  - 5. When light gauge steel framing is continued past the floorline, the stud cavity flue shall be continuously firestopped at the floorline. The space between the edge of the floor and the slab shall be sealed with safig material as per building code requirements.

E. The PRECOR System may be applied to the following substrates:

1. Exterior grade gypsum sheathing meeting ASTM C 79 requirements for water-resistant core at the time of installation of the PRECOR System.
2. Inorganic fiberglass mat faced water-resistant gypsum sheathing meeting ASTM C 1177.
3. Sound unpainted unglazed concrete.
4. Sound unpainted unglazed unit masonry.
5. Cement fiberboard.
6. APA Exterior or Exposure 1 Rated Plywood Grade C-D or better, nominal ½" minimum 4-ply. Limited to use in areas where necessary for signage blocking, or where otherwise approved in writing by Corev America.
7. Application to substrates other than those listed above shall be approved in writing by Corev America.
8. Sheathing shall be protected at all times prior to installation of the EIFS system to ensure that damage to the sheathing does not occur and that the bond between the gypsum and its facing has not been compromised by weather conditions.

F. The minimum slope of inclined surfaces shall be not less than 6" (150 mm) of rise in 12" (300 mm) of horizontal projection. Inclined areas defined as roof shall not use the PRECOR system.

G. Expansion joints: The designer is responsible for the design and location of expansion joints. They are required at a minimum at the following locations:

1. Where expansion joints are specified by the Architect.
2. Where building expansion joints occur.
3. Where expansion joints occur in the substrate.
4. Where prefabricated panels abut one another.
5. Where the EIFS abuts dissimilar materials.
6. Where a change in the substrate type occurs, unless specifically approved in writing by Corev America.
7. Where significant structural movement occurs or can be expected to occur, such as but not limited to:
  - a. Changes in rooflines.
  - b. Changes in building shape and structural system.
  - c. All floor lines in wood frame construction.

H. Terminations

1. At penetrations through the substrate, a minimum ½" will be left between the EIFS and that element, in order to accommodate the installation of backer rod and sealant. The single exception is in a sill condition, where sill flashing is installed and turns down onto the vertical face of the PRECOR System. Other exceptions shall be only as approved by the manufacturer.
2. Windows must be designed with the proper sill pan, end dams, or other design elements to ensure that any water penetrating the window assembly is diverted to the exterior of the building.
3. The EIFS shall terminate at least 8" above grade.
4. At rooflines, balconies and other terminations, adequate flashing, including diverter flashing, shall be designed and installed to prevent water infiltration into the wall assembly.

I. Sealants

1. Sealant shall be installed per the sealant manufacturer's specifications, using accessories and components approved by that manufacturer. Backer rods shall be closed cell.
2. Sealant shall be installed immediately upon completion of installation of the PRECOR System.

J. Details: Follow Corev America's latest published information for standard detail treatments.

### III. MATERIALS

- A. UNIBOND™ Adhesive: A 100% acrylic polymer one-part adhesive. Used to affix expanded polystyrene (EPS) insulation board to the substrate.
- B. UNIBASE™ acrylic polymer cement modifier: An element of the adhesive mixture and the basecoat mixture.
1. UNIBASE Adhesive Mixture: A combination of Corev UNIBASE acrylic polymer cement modifier and Portland cement, mixed at the jobsite. Used to affix expanded polystyrene (EPS) insulation board to the substrate. Note: UNIBOND™ should be always used as an adhesive for plywood substrates.
  2. UNIBASE Basecoat mixture: A combination of UNIBASE acrylic polymer cement modifier and Portland cement, mixed at the jobsite. Used as the matrix for the COREVNET reinforcing mesh of the UNIBASE lamina.
- C. UNIBASE-WP™ water-resistive acrylic polymer cement modifier: An element of the basecoat mixture as an alternate to UNIBASE™. UNIBASE-WP should always be used in non-vertical conditions such as EPS parapet caps and sills.
- D. INSULATION BOARD: A nominal 1.0lb./cubic foot expanded polystyrene (EPS) insulation board complying with ASTM C 578 Type 1 requirements and EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board. Such insulation board shall be produced for Corev America by manufacturers approved by Corev America. Minimum thickness of EPS for the PRECOR system shall be ¾" after all rasping is complete, including any point where it has been routed or grooved. Maximum thickness of EPS shall be 4".
- E. REINFORCEMENT MESHES
1. COREVNET-DT™ Reinforcing Mesh (Detail): A Corev-supplied treated glass-fiber reinforcing mesh in the UNIBASE lamina used in detailed work and for backwrap at all system terminations to strengthen the surface of the EPS insulation board. 2.0 oz./SY
  2. COREVNET-ST™ Reinforcing Mesh (Standard): A Corev-supplied treated glass-fiber reinforcing mesh in the UNIBASE lamina used to strengthen the surface of the EPS insulation board. 4.4 oz./SY
  3. COREVNET-RF™ Reinforcing Mesh (Reinforced): A Corev-supplied treated glass-fiber reinforcing mesh in the UNIBASE lamina used in high-traffic areas to strengthen the surface of the EPS insulation board. 10.6 oz./SY
  4. COREVNET-HD™ Reinforcing Mesh (Heavy Duty): A Corev-supplied treated glass-fiber reinforcing mesh in the UNIBASE lamina used in high-traffic areas to strengthen the surface of the EPS insulation board. 14.0 oz./SY
  5. COREVNET-SHD™ Reinforcing Mesh (Super Heavy Duty): A Corev-supplied treated glass-fiber reinforcing mesh in the UNIBASE lamina used in high-traffic areas to strengthen the surface of the EPS insulation board. 20.0 oz./SY
  6. COREV-CORNER™: A Corev-supplied treated glass-fiber reinforcing mesh to add increased impact resistance to corners. 7.0 oz./SY
- F. PINTUPRIME: A vapor-permeable, all acrylic exterior primer formulated with silica fillers. PINTUPRIME may be used to ensure uniform color across large areas, and is particularly recommended for use with certain smaller aggregate finish coat materials.
- G. FINISH COAT MATERIALS: Factory-mixed, acrylic polymer based finish coatings containing integral color and available in various textures.
- H. PORTLAND CEMENT: ASTM C 150 Type I or II Portland cement, gray color, with fine powder consistency and free of lumps.
- I. WATER: Clean and clear, free of foreign matter, and potable.

#### IV. INSTALLATION

A. Prior to installation of the EIFS system the substrate shall be examined by a Corev America approved installer or representative to ensure the following:

1. The substrate is appropriate for use with the PRECOR System.
2. The substrate is as specified in the construction plans and is sound, tight, and otherwise ready for the installation.
3. The surface of the substrate is free of foreign materials such as paint, wax, glazing, moisture, dust, dirt or oil.
4. The dimensional correctness of the substrate is as specified in this document.
5. Any discrepancies shall be immediately brought to the attention of the General Contractor and Architect and Work shall not proceed until unsatisfactory conditions have been rectified.

#### B. COREVNET-DT WRAP MESH

1. WRAP MESH is installed at all EIFS system openings and terminations.
2. Approximately 2" of the 9" strip of COREVNET-DT shall be attached to the substrate with UNIBASE or UNIBOND adhesive.

#### C. ADHESIVE

1. Mixing UNIBASE or UNIBASE-WP with Portland cement: Using a slow-speed electric drill and a paddle bit, add Portland cement to UNIBASE or UNIBASE-WP slowly, in order to avoid lumps, until the material reaches the desired consistency. The approximate ratio of UNIBASE or UNIBASE-WP to Portland cement is 2:1 by volume. The resultant chemical reaction creates heat, which in turn causes an initial set of the material. If the material becomes too stiff, add a small amount of water and remix the material in order to restore workability.
2. Apply UNIBOND adhesive or UNIBASE adhesive mix to one entire side of the EPS board. With UNIBASE adhesive, use a "U" notched trowel with notches 3/8" wide, 1/2" deep, and spaced no more than 1 1/2" apart. With UNIBOND adhesive, use a U-notched trowel with notches 5/8" wide, 3/16" deep, and spaced no more than 1 1/2" apart.
3. UNIBOND must be used as an adhesive over plywood substrates. Never use UNIBASE adhesive over wood substrates.
4. Do not apply adhesive to board edges.
5. The notched pattern should run vertically in all cases.

#### D. INSULATION BOARD

1. After application of the adhesive, immediately affix the board to the substrate in a running bond pattern.
2. EPS insulation boards shall be applied with joints offset with respect to the substrate joints. Joints will be staggered at corners, and joints between EPS boards shall be staggered with respect to one another.
3. Light pressure should be evenly applied over the entire surface of the board and all board edges abutted tightly to the adjacent board.
4. Any open joints greater than 1/16" between boards must be filled with slivers of insulation board or Foam2Foam™ gap and crack filler by Wind-lock or approved equal. CAUTION: Do not use UNIBASE mix to fill gaps between EPS boards.
5. Cut boards into L shapes for installation at all corners of openings – board joints must never align with such corners.
6. The EPS insulation board should be allowed to cure undisturbed for twenty-four hours after installation.
7. Edges of the insulation board which are out of plane shall be rasped until flush.
8. All insulation board surfaces shall be lightly rasped in order to facilitate adhesion of the UNIBASE lamina.
9. Aesthetic joints are installed using a hot knife and blade shaped to match the specified joint shape. The minimum thickness of the EPS insulation board after rasping, including any point where it has been routed or grooved, shall be 3/4".

#### E. FASTENER APPLICATION

1. When mechanical fasteners are specified, they shall be used in addition to adhesive, and never in lieu of the adhesive.
2. A minimum of eight fasteners per 2' by 4' insulation board shall be used.
3. Fastener heads shall be flush with the surface of the insulation board.

## F. UNIBASE LAMINA

1. Mixing UNIBASE or UNIBASE-WP with Portland cement: Using a slow-speed electric drill and a paddle bit, add Portland cement to UNIBASE or UNIBASE-WP slowly, in order to avoid lumps, until the material reaches the desired consistency. The approximate ratio of UNIBASE or UNIBASE-WP to Portland cement is 2:1 by volume. The resultant chemical reaction creates heat, which in turn causes an initial set of the material. If the material becomes too stiff, add a small amount of water and remix the material in order to restore workability.
2. Standard Impact Resistance
  - a. Always embed wrap mesh in UNIBASE mixture at all system terminations prior to installation of the UNIBASE lamina over the entire wall surface.
  - b. COREVNET-ST as a single layer may only be used above 6' above grade. COREVNET-ST may be used in a double layer or in combination with other COREVNET products below 6' above grade (see below).
  - c. Complete backwrapping: Use a stainless steel trowel to apply a uniform coat of UNIBASE mixture to an area of the EPS board the width of exposed wrap mesh, in a thickness of approximately 1/16". Embed the wrap mesh in UNIBASE mixture.
  - d. Place a 9" diagonal reinforcement on all corners of openings.
  - e. Use a stainless steel trowel to apply a uniform coat of UNIBASE mixture to the EPS board (or to the higher impact mesh lamina – see below) in a thickness of approximately 1/16".
  - f. Using a trowel, immediately embed the COREVNET-ST mesh in the wet UNIBASE mixture, working from the center to the edge, ensuring that the mesh is entirely embedded in the basecoat.
  - g. COREVNET-ST reinforcing mesh sheets shall overlap by 2", leaving no areas uncovered.
  - h. Allow the UNIBASE lamina to dry twenty-four hours prior to application of the finish coating. During this period, the surface should be protected from damage and weather.
  - i. If areas of mesh color are visible after the drying period, such areas should be skimmed again with basecoat; no mesh color shall be visible when the UNIBASE lamina is completed.
3. Intermediate Impact Resistance:
  - a. Follow procedure 1; a through d.
  - b. Use a stainless steel trowel to apply a uniform coat of UNIBASE adhesive to the EPS board in a thickness of approximately 1/8".
  - c. Using a trowel, immediately embed the COREVNET-RF mesh in the wet UNIBASE mixture, working from the center to the edge, ensuring that the mesh is entirely embedded in the basecoat.
  - d. COREVNET-RF should be abutted tightly, not overlapped.
  - e. Allow the UNIBASE coat to set a minimum of four hours prior to application of the Standard Impact Resistance layer. During this period, the surface should be protected from damage and weather.
  - f. Follow procedure 1; e through h.
4. Heavy Duty Impact Resistance
  - a. Follow procedure 1; a through d.
  - b. Use a stainless steel trowel to apply a uniform coat of UNIBASE adhesive to the EPS board in a thickness of approximately 1/8".
  - c. Using a trowel, immediately embed the COREVNET-HD mesh in the wet UNIBASE mixture, working from the center to the edge, ensuring that the mesh is entirely embedded in the basecoat.
  - d. COREVNET-HD should be abutted tightly, not overlapped.
  - e. Allow the UNIBASE coat to set a minimum of four hours prior to application of the Standard Impact Resistance layer. During this period, the surface should be protected from damage and weather.
  - f. Follow procedure 1; e through h.
5. Super Heavy Duty Impact Resistance
  - a. Follow procedure 1; a through d.
  - b. Use a stainless steel trowel to apply a uniform coat of UNIBASE adhesive to the EPS board in a thickness of approximately 1/8".

- c. Using a trowel, immediately embed the COREVNET-SHD mesh in the wet UNIBASE mixture, working from the center to the edge, ensuring that the mesh is entirely embedded in the basecoat.
- d. COREVNET-SHD should be abutted tightly, not overlapped.
- e. Allow the UNIBASE coat to set a minimum of four hours prior to application of the Standard Impact Resistance layer. During this period, the surface should be protected from damage and weather.
- f. Follow procedure 1; e through h.

G. PRIMER: PINTUPRIME™, factory mixed in a color to match the finish coating, is brush, roller or spray applied uniformly to the surface of the basecoat lamina.

#### H. FINISH COATING

1. Use a slow-speed drill and paddle bit to ensure that the finish coating is uniform and that all pigments are thoroughly dispersed. Do not over mix. A small amount of water, not to exceed 8 oz. per 5-gallon bucket, may be added to improve workability. Excessive dilution will affect color stability and bond strength.
2. A clean stainless steel trowel shall be used for application and a wet edge shall always be maintained. To ensure uniform appearance, sufficient labor and material must be employed.
3. The material shall be worked from one side of the UNIBASE lamina to the opposite side, maintaining a wet edge.
4. The coating shall first be applied to the substrate and leveled, and then it shall be textured.
5. Consult individual finish coating product data sheets for additional details on installation techniques
6. Drying rate will vary depending on weather conditions. Until dry, the finish coat shall be protected from the weather. Flashing and other waterproofing systems shall be completed immediately after installation of the finish to protect the entire wall assembly from weather and to prevent water infiltration behind the EIFS.
7. Avoid applying finish in direct sunlight or over hot basecoat surfaces.
8. Consistency of texture requires that applicators use the same tools and hand motions.
9. Do not install finish in sealant joints. Install sealants when the finish is completely dry.

#### I. ARCHITECTURAL DETAILS

Consult the PRECOR System architectural details for further information regarding treatment of specific conditions such as head, jamb, sill, grade, parapet, and aesthetic reveal, among others.

#### V. MAINTENANCE

A. Repairing damage to the PRECOR System: The damage repair instructions below are intended for punctures of the systems that do not damage the underlying substrate or structural system. These instructions are intended for qualified installers of PRECOR or similar systems with related experience with troweled basecoats and finishes. "Feathering" of finish coatings is an art, and it is recommended that, for those without considerable experience with feathering, the entire panel surrounding the damaged area, out to the next corner, aesthetic joint, expansion joint or other system termination, be refinished as described below:

1. Cut through the basecoat, mesh and finish in order to expose a cutaway larger than the damaged area. Use a very sharp blade so that the edges of the cutaway are clean and sharp.
2. Use a knife or other tools as necessary to remove EPS beneath the cutaway. All EPS should be removed, such that only the substrate and original adhesive are visible.
3. Sand off finish coating around the perimeter of the cutaway, making visible approximately 2-3" of basecoat and mesh.
4. Fashion a piece of EPS to fit into the cutaway area, such that the piece fits snugly and its surface is flush with the surface of surrounding EPS.
5. Apply UNIBASE or UNIBOND adhesive to the EPS insert and adhere it.
6. Cut a piece of COREVNET reinforcing mesh to size so that it overlaps the entire cutaway and all but 1/2" of the surrounding sanded basecoat and finish. Take care that this new mesh piece will not overlap existing finish coating.
7. Use masking tape to completely mask off the existing finish coating around the patch.
8. Apply UNIBASE or UNIBASE-WP basecoat mixture uniformly to the patch area, and embed the COREVNET piece in that basecoat mixture. Feather the mixture out toward the finish coating edge that is fully masked off.

9. Allow basecoat mixture to dry according to instructions in the related product datasheet.
10. Apply the finish coat, remove the masking tape, and feather it into the existing finish coat.
11. Use original finish coating lot, if available. If not, order finish coating referencing the original lot number, in order to ensure the closest possible match to the original color. Exact match cannot be guaranteed, even after adequate curing and exposure to environmental conditions of the finish coating.

#### B. BASIC CLEANING

1. Power-wash at low pressure (never more than 600 PSI) with clean water. In particularly difficult areas, lightly scrub with a soft bristle brush. Never exceed pressure recommendation and never use hard bristle brushes or hard scrubbing on EIFS finishes. Doing so may damage the finish coat and may void the manufacturer's warranty.

#### C. CLEANING MILDEW AND ALGAE

1. Mix water with household bleach in a ratio of 3:1, in an amount adequate to liberally cover the entire area to be cleaned.
2. Cover vegetation and other materials that may be damaged by the bleach prior to spraying.
3. Spray the mixture on the affected wall and lightly scrub with a soft bristle brush as necessary.
4. After successful cleaning, rinse the entire wall surface thoroughly with clean water. Do not use solvent-based products as they are not compatible with PRECOR components.

- D. **SEALANTS AND FLASHINGS:** It is critical that sealants and flashings be inspected on a regular basis for soundness and performance in preventing water infiltration. Where there is any question of soundness or performance, sealants and flashings shall be replaced or repaired.

## **VI. DISCLAIMER**

This document conveys system, product and installation information related to the PRECOR system and applicable as of the date of this document. Corev America assumes no liability, expressed or implied, for workmanship. The “registered” designation conferred by Corev America on selected installation companies does imply any endorsement or sponsorship of that installation company by Corev America. Installation companies are independent contractors and are entirely responsible for their workmanship.

Corev also offers the PRECOR-SB System, which incorporates a weather and air barrier and which provides drainage. Corev cannot be responsible for damage to the substrate or other elements of the wall assembly related to intrusion or entrapment of water resulting from windows that leak; lack of, improper installation of, or improper maintenance of flashing; lack of, improper installation of, or improper maintenance of sealants, or improper specification or installation of the PRECOR System.



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