

STUC-O-FLEX

PERM-FLEX ASSEMBLY DIRECT APPLICATION TO CEMENT BOARD SUBSTRATES MANUFACTURERS SPECIFICATION / SECTION 09960

PART 1 - GENERAL

1.01 DESCRIPTION

Provide all labor, materials and equipment necessary to install the "PERM-FLEX" Coating Assembly from STUC-O-FLEX. The assembly consists of PRM (Polymer Reinforced Mortar) or Stuc-O-Base, a polymer modified cement base coat, reinforcing fiberglass mesh, and Stuc-O-Flex finish applied to cement board substrates.

- A. Related work specified elsewhere:
 - 1. Concrete 03300
 - 2. Unit Masonry 04200
 - 3. Light Gauge Steel Framing 05400
 - 4. Sheathing 06100
 - 5. Sheet Metal Flashing and Trim 07620
 - 6. Sealants 07900
 - 7. Doors and Windows 08000
 - 8. Sealant section 07900.

 - B. Terms and Definitions:
 - 1. Perm-Flex Assembly - Consists of STUC-O-FLEX reinforcing fiberglass mesh, adhesive / base coat, and finish coat, applied to cementitious substrate sheathing.
 - 2. Reinforcing Fiberglass Mesh - Balanced open weave reinforcing fiberglass mesh treated for compatibility with other materials of the system. The fabric shall not be less than 4.4 oz (\pm 10%) per square yard.
- Optional:
- High Impact Resistant and additional shear strength. This consists of an additional layer of Light Armor (15 oz.) Mesh or Armor (21 oz.) mesh embedded in to STUC-O-FLEX PRM or Stuc-O-Base base coat. The heavier mesh is always installed under the lighter mesh. In no case should Armor mesh be used without the regular mesh (4.4 oz) over it.
 - 3. Base coat - PRM (Polymer Reinforced Mortar) Base or Stuc-O-Base is a fiber reinforced, 100% acrylic polymer modified cement base coat that has good water resistance and vapor permeability. Used to smooth out wall surfaces prior to Stuc-O-Flex finish Coat application.
 - 4. Finish Coat - STUC-O-FLEX Elastomeric Acrylic Finish Functions as the weathering surface providing color and texture. Factory Finish supplied by STUC-O-FLEX INTERNATIONAL, INC. in various colors, finishes and textures.

1.02 QUALITY ASSURANCE

Optional but Encouraged - "WaterWay Rainscreen Drainage Mats" create space between your building and the elements. They also contribute to air circulation and ventilation when properly designed. Water drainage and increased air flow will enhance drying and in turn reduce the damaging effects of water penetration. A Nylon / Polymer core of fused, entangled filaments in varying thicknesses from a nominal ¼ inch to ¾ inch with a protective filter fabric bonded to one

side or consider WaterWay Plus - a "Patent Pending" Drainage Mat consisting of polymer matrix laminated to a breathable filter fabric on one side and a code compliant WRB on the other side. This multiple layer product creates a one step WRB and Rainscreen drainage assembly in a single application.

Information & Specification @ http://www.stucoflex.com/rainscreen_drainage_mats.htm

A. Applicator Requirements

1. Applicator shall be licensed, insured and competent to accurately install the products consistent with construction documents and specifications.
Manufacturer is not responsible for application.

B. Approvals

1. The system shall be recognized for the intended use by applicable building codes.

C. Design Consideration

1. Deflection of the substrate system shall not exceed 1/240.
2. Minimum slope shall be 4 : 12 pitch.
3. Expansion Joint Requirements:
 - a. Where building or substrate expansion joints occur.
 - b. At floor lines in wood frame construction.
 - c. Where dissimilar substrates occur.
 - d. Locations where the system abuts alternate building materials.
 - e. As determined by design professional
4. Stuc-O-Flex coating material terminations to windows, doors, air conditioning units, electrical boxes, etc. shall provide adequate space for proper waterproof transition. Under no circumstances shall Stuc-O-Flex be responsible for integrity or design.
5. Stuc-O-Flex coatings shall terminate at a minimum 2" inches above grade.
6. Sealant system shall be compatible with Stuc-O-Flex base coat and adjacent building product. Consult sealant manufacturers for recommendations
7. All substrate sheathing systems should incorporate code compliant weather resistive barrier and a mechanism for water drainage.
8. Substrate systems shall have no surface irregularities greater than 1/4 in 8 feet.

D. Framing (general guidelines)

1. Maximum spacing shall be 24" O.C. when using 1/4" cementitious substrate over nominal 1/2" wood base sheathing or nominal 1/2" cementitious substrate over open framing.
2. Blocking shall be required in some cases to ensure all sheathing butt joints (edges) fall on a structural member preventing movement of substrate sheathing.
(Substrate integrity is important to final appearance of completed walls)

E. Substrate Sheathing (general guidelines)

1. Moisture content of sheathing shall not exceed 19% during installation and remain so throughout PERM-FLEX assembly application.
2. Install substrate sheathing with a 1/32" to 1/16" gap between pieces to allow for expansion and contraction.
3. Sheathing butt joints shall be parallel and fastened to studs 6" O.C. with fasteners no closer than 3/8" from edge.
4. Sheathing shall be installed leaving an appropriate gap around windows, doors, openings, etc. to allow for caulking/sealant to ensure a tightly sealed edge detail.

Note: All Stuc-O-Flex transitions to adjacent building materials shall be professionally designed and executed to prevent water intrusion behind the coating materials, this is normally achieved by incorporating a nominal ½ wide sealant joint. The integrity of this water tight detail must be maintained. Stuc-O-Flex International, Inc. is not responsible for design.

1.03 SUBMITTALS

- A. Samples:
 - 1. The applicator shall, before the project commences, provide the owner or architect, a sample of suitable size of each color and texture as specified for the project for purposes of obtaining approvals.
 - 2. Each sample shall be prepared using the same tools and techniques as required for the actual application.
 - 3. An approved sample shall be available and maintained at the job site.

1.04. PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver all material supplied by the manufacturer in original, unopened packages with legible manufacturer's identification and labels intact.
- B. Store all products supplied by STUC-O-FLEX in a cool dry place, out of direct sunlight, protected from weather and other damage. In addition, the materials shall be stored in tightly sealed containers at a temperature of not less than 40°F at all times.

1.05 JOB CONDITIONS

- A. Weather and Environmental Conditions
 - 1. Application of Stuc-O-Flex Coatings shall not take place during inclement weather unless appropriate protection is employed.
 - 2. PRM Base Coat and Stuc-O-Flex Elastomeric Finish shall be protected against freezing temperatures, rain, or water splash for a period of at least 48 hours. The job should be tented and a heat source provided if there is a projected drop in the temperature below 40°F during the first 24 hours after application of Base coat or Finish coat.

1.06 COORDINATION AND SCHEDULING

- A. The work in this section requires close coordination with related sections and trades.
- B. The tops of all walls must immediately be protected to prevent water infiltration behind the exterior wall assembly. The cap flashing should be installed immediately after the Finish coat has been cured.
- C. Sealant and waterproofing materials shall be installed in a timely manner as to prevent water intrusion behind the Stuc-O-Flex coatings.

1.07 MAINTENANCE

- A. Sealant and other components of the structure must be inspected periodically to confirm performance as originally installed. Corrections shall be made at once.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

All Stuc-O-Flex Coating products shall be obtained from STUC-O-FLEX INTERNATIONAL, INC., as manufacturer, or its authorized supplier or distributor. Contact:

Stuc-O-Flex International, Inc.
17639 NE 67th Court
Redmond, WA 98052
800-305-1045
info@stucoflex.com www.stucoflex.com

2.02 MATERIALS

- A. Fiberglass Reinforcing Mesh - Balanced open weave fiberglass reinforcing mesh, treated for compatibility with other materials of the system. The fabric shall not be less than 4.4 oz (\pm 10%) per square yard.

Optional:

High impact resistant and additional shear strength. This assembly consists of an additional layer of Light Armor (15 oz.) Mesh or Armor (21 oz.) mesh embedded in STUC-O-FLEX PRM base coat or Stuc-O-Base. The heavier mesh is always installed under the lighter mesh. In no case should the Armor mesh be used without the regular mesh (4.4 oz) over it.

- B. Base coat - PRM (Polymer Reinforced Mortar) Base or Stuc-O-Base is a fiber reinforced, 100% acrylic polymer modified cement base coat that has good water resistance and vapor permeability.
- C. Finish Coat functions as the weathering surface. It is a factory mixed Finish supplied by STUC-O-FLEX in various colors, finishes and textures.
- D. Water - shall be clean and potable.

2.03 PROPERTIES

The Stuc-O-Flex coatings comply with following test standards:

TEST	METHOD	RESULT
ELONGATION % (FINISH)		105 Percent
WATER VAPOR TRANSMISSION	ASTM-E96	14 GRAINS PER HOUR / SQ. FT. (AVERAGE)
SALT SPRAY RESISTANCE	B-117	300 HOURS NO DELETERIOUS EFFECTS
ACCELERATED WEATHERING	G-23-81	2000 HOURS NO DELETERIOUS EFFECTS
ABSORPTION FREEZE THAW	60 CYCLES	NO CRACKING, CHECKING
TENSILE BOND	ASTM C-297	127.9 PSF
WATER PENETRATION TEST	ASTM-E-331	NO WATER PENETRATION

		OCCURRED ON SUBSTRATE
WATER RESISTANCE TEST	ASTM D-2247	NO CRACKING, BLISTERING, PEELING OR COMPROMISE
MILDEW / FUNGUS RESISTANCE	810 B	NO MOLD OR MILDEW GROWTH DURING TEST
WIND DRIVEN RAIN		NO DELAMINATION, NO WATER INTRUSION
FIRE TESTING TUNNEL TEST	ASTM E-84	FLAME SPREAD < 25 SMOKE DEVELOPED < 450 CLASS "A" FIRE RATED

Contact Stuc-O-Flex Technical center for additional details 1-800-305-1045.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to proceeding, carefully inspect preparatory and installed work of other trades and verify that such work is correct and completed to the point where Stuc-O-Flex product installation may properly proceed.
- B. Substrate shall be dry, sound and free of release agents (silicones, oils, etc.), paint and other residue or coatings.
- C. The substrate shall have no planar irregularities greater than 1/4" in 8 feet.
- D. Notifications - The General Contractor and the Architect shall be advised of any discrepancies. Work shall not proceed until all unsatisfactory conditions are corrected and the substrate is acceptable, clean and free of any contaminants, including completion of all appropriate flashing and other waterproofing details.

3.02 INSTALLATION

- A. Base coat and Reinforcing Fabric
 - 1. Apply STUC-O-FLEX PRM (polymer reinforced mortar) or STUC-O-BASE, Base coat - Using a stainless steel trowel, apply a minimum 1/16" thickness of Base Coat to the surface of the substrate.
 - 2. Install Reinforcing Fabric
 - a. Immediately place the reinforcing fabric against the wet Base coat and by troweling from the center to the edges, embed the fabric into the Base coat.
 - b. The reinforcing fabric must be continuous, free of wrinkles and be fully embedded in the Base coat. All corners and edges shall be overlapped at least 2 1/2".
 - c. For construction not detailed with control joints at door, window and other openings, additional "butterfly" strips of 9" x 12" regular reinforcing mesh will be embedded within the base coat at a 45 degree angle at each corner during base coat application.
 - d. Allow at least 24 hours drying time. Additional time may be required at low temperatures or with high humidity conditions.
 - e. Where shown on plans, the High Impact Mesh is to be installed as follows: the Armor Mesh is first embedded into the Base coat. The Base coat is

allowed to dry for 24 hours. Then another coat of Base coat is applied over the first application to embed the regular reinforcing mesh.

- B. Finish Coat
 - 1. Thoroughly mix the STUC-O-FLEX factory prepared finish coat. Use a high-speed mixer with paddle and stir until a uniform consistency is obtained. If necessary, add small amounts of clean, potable water (not to exceed 12 oz. per pail) to adjust workability.
 - 2. Use Finish color and texture as it conforms to previously submitted and approved sample.
 - 3. Use clean stainless steel trowels to apply Finish coat directly over the Base coat. (Some finishes may be spray applied -- please consult with manufacturer).
 - 4. Special texture and grain effects are obtained by troweling. Consistent troweling techniques by all mechanics on the job should be used to achieve uniformity in appearance.

- C. Sealants
 - 1. Properly installed Sealant system must be incorporated to prevent water intrusion behind Stuc-O-Flex Coating materials

STUC-O-FLEX

PERM-FLEX ASSEMBLY

DIRECT APPLICATION TO CEMENT BOARD SUBSTRATES

Coating Material Application Instructions

APPLICATION INSTRUCTIONS

Prior to any installation work, the following conditions must be met:

1. Check that the framing/sheathing is structurally sound, dry, and clean.
2. The framing/sheathing is in accordance with contract documents and specifications.
3. Check that the moisture content of the sheathing does not exceed 19%.
4. Check that all roof terminations, mechanical equipment, decks, windows and doors are appropriately flashed to protect against water intrusion.
5. Code compliant "Weather Resistive Barrier" properly installed to prevent potential moisture penetration behind substrate is mandatory for compliance.

Note: Flashings, weather resistive barriers, and proper waterproofing of Stuc-O-Flex transitions along with good construction practice is essential to long-term performance of the exterior wall coatings

If any of the conditions above are not properly met, immediately notify the General Contractor, the Architect, or the Owner. Work should not continue until such time that all unsatisfactory conditions are corrected.

Step One – Base Coat & Embedding Fiberglass Mesh

1. Embedding the reinforcing fiberglass mesh in Base coat
 - A. Pre-cut the mesh to workable lengths.
 - B. Apply 1/16" to 1/8" of Base coat to the substrate sheathing.
 - C. Immediately trowel mesh vertically into the wet Base coat starting in the middle of the mesh working towards to edges.
 - D. Fiberglass mesh is generally applied vertically and must be lapped at least 2 1/2" at all edges.
 - E. Embed reinforcing 9" x 12" butterfly mesh at a 45° angle at all corners of openings where construction details do not provide for joints.
 - F. Let cure for a minimum of 24 hours before application of the finish. Weather conditions will affect time needed to cure.

Notes: Before application of the STUC-O-FLEX Finish Coat :

1. Make sure the Base coat & Fiberglass mesh layer is dry and hard. Moisture content must be 19 percent or less. Check, using moisture meter.
2. Remove any irregularities (trowel marks) with a Goldblatt Sand Stone.
3. In some instances it may be necessary to skim-coat hollows with additional Base Coat if the substrate was not perfectly flat.

Step Two - Application of STUC-O-FLEX Finishes

Mixing Instructions for all STUC-O-FLEX Finishes

Open pail. Mix thoroughly with Jiffler mixer, taking care to avoid excessive up and down motion with drill and blade. Too much vertical motion will introduce air into the Finish and may inhibit proper curing. Small amounts of water may be added (maximum 12 oz.) to adjust workability.

Applications of STUC-O-FLEX Finishes shall commence only when adequate labor force and equipment is available to maintain a wet edge insuring a systematic installation free of cold joints.

1. STUC-O-FLEX Finishes
 - A. STUC-O-FLEX "T" or "Modified" Finish - Consistency of STUC-O-FLEX Finish will be similar to creamy stucco. Color is integral and will dry darker on the wall than the shade appears in the pail. Apply STUC-O-FLEX Finish using a stainless steel trowel to the thickness of the largest aggregate within the product and float smooth for a sand finish appearance. Various textures can be accomplished with troweling and floating of the STUC-O-FLEX Finish. Maintain a wet edge. Finish thickness must be a minimum 1/16" inch.
 - B. PUTZ-FLEX Finish - Coarse, wormy type texture. PUTZ-FLEX is applied with a stainless steel trowel and pulled tightly to the largest aggregate. Circular texturing is

achieved with a stainless steel trowel or plastic float. Vertical texturing is achieved with up and down motions 12" to 24" using a wood float or plastic float.

2. Normal temperatures (50 to 70 degrees F.) usually will promote a "dry to the touch" condition after 8 - 12 hours. Curing time, however, is approximately two weeks.
3. Observe instructions on the label including - Do not apply when temperature is below 40 degrees F. or will drop below freezing within 24 hours of application. Finish must be protected from direct moisture and freezing temperatures until dry (Normally 24 hours). No additives may be used.

NOTE: Flashing, Sealant, Proper Design and continued maintenance must prevent water intrusion behind any and all Stuc-O-Flex manufactured materials.