

WATERWAY DRAINABLE STUCCO ASSEMBLY

PORTLAND CEMENT PLASTER

SECTION 09 24 00 / 09220

The WATERWAY DRAINABLE STUCCO assembly is an enhanced traditional stucco system that can be configured as a back ventilated, or a dead air cavity wall cladding system. Both configurations are considered drainage systems in that intruding moisture is able to drain to the exterior. The basic system consists of a rain screen, which protects against moisture intrusion, a drainage cavity that captures intruding moisture and drains it to the exterior and a permeable air barrier, which not only protects against air infiltration into the interior of the building but also guards against liquid moisture intrusion and allows for water vapor diffusion.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Portland cement stucco and accessories.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER **** Delete any sections not relevant to this project; add as required.

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 04200 - Unit Masonry.
- C. Section 06160 - Sheathing.
- D. Section 07190 - Vapor Barriers.
- E. Section 07500 - Membrane Roofing.
- F. Section 07270 - Air Barrier.
- G. Section 07620 - Sheet Metal Flashing and Trim.
- H. Section 07900 - Sealants.
- I. Section 08400 - Exterior Entrance Doors.
- J. Section 08500 - Exterior Windows.
- K. Section 09260 - Gypsum Board Systems.

1.3 REFERENCES

**** NOTE TO SPECIFIER **** Delete references not required by the text of the edited section.

- A. ASTM A 641 - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
- B. ASTM C 91 - Standard Specification for Masonry Cement.
- C. ASTM C 150 - Standard Specification for Portland Cement.
- D. ASTM C 206 - Standard Specification for Finishing Hydrated Lime.
- E. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
- F. ASTM C 847 - Standard Specification for Metal Lath.
- G. ASTM C 897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plaster.
- H. ASTM C 926 - Standard Specification for Application of Portland Cement-Based Plaster.
- I. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring for Portland Cement Based Plaster.
- J. PCA (Portland Cement Association) - Plaster (Stucco) Manual.
- K. Plaster and Drywall Systems Manual, Third Edition.
- L. International Code Council - International Building Code.

1.4 SYSTEM DESCRIPTION

- A. General: Waterway Stucco Assembly is a fiber-reinforced, non-structural, plaster system comprised of a weather-resistive barrier, drainage mat, metal lath, Portland Cement plaster base overlaid with, fiberglass reinforcing mesh, wet base coat, and an elastomeric finish coat.
- B. The Waterway Stucco System is an enhanced traditional stucco system that can be configured as a back ventilated, or a dead air cavity wall cladding system. Both configurations are considered drainage systems in that intruding moisture is able to drain to the exterior. The basic system consists of a rain screen, which protects against moisture intrusion, a drainage cavity that captures intruding moisture and drains it to the exterior and a permeable air barrier, which not only protects against air infiltration into the interior of the building but also guards against liquid moisture intrusion and allows for water vapor diffusion.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. [Product Data]: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.

3. Installation methods.

C. Shop Drawings:

1. Elevations indicating locations of building expansion joints, control joints and construction joints. Details of construction at joints, terminations and perimeters.

**** NOTE TO SPECIFIER **** Delete samples if not required.

D. Samples:

1. Samples of the stucco system shall be of an adequate size as required to represent each color and texture to be utilized on the project, and shall be fabricated using the same tools and techniques to be utilized on the project.

2. Retain approved samples at the construction site throughout the application process.

**** NOTE TO SPECIFIER **** Delete selection samples if colors have already been selected.

3. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

4. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 QUALITY ASSURANCE

**** NOTE TO SPECIFIER **** Add requirements. Delete if not required.

A. Manufacturer Qualifications: Regularly engaged in manufacture of stucco systems for at least 15 years.

B. Installer Qualifications:

1. Provide proof of current contractor's license, bond, insurance and documentation of experience in application of Portland cement stucco for a minimum of three years.

2. Knowledgeable in the proper use and handling of stucco materials.

3. Employ skilled mechanics that are experienced and knowledgeable in Portland Cement stucco application, and familiar with the requirements of the specified work.

4. Successful completion of minimum of three projects of similar size and complexity to the specified project.

5. Able to provide the proper equipment, manpower and supervision on the job site to install the system in compliance with published specifications, details and the project specific construction documents and drawings.

**** NOTE TO SPECIFIER **** Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider the different types of work on the project.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.

2. Do not proceed with remaining work until workmanship and color are approved by Architect.

3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all materials to the construction site in their original, unopened packaging with labels intact.
- B. Inspect the materials upon delivery to assure that specified products have been received. Report defects or discrepancies to the responsible party according to the construction documents; do not use reported material for application.
- C. Protect coatings (pail products) from freezing and temperatures in excess of 90 degrees F (32 degrees C). Store away from direct sunlight.
- D. Protect Portland cement based materials (bag products) from moisture and humidity. Store under cover, off the ground, and in a dry location.
- E. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

- A. Environmental Requirements:
 - 1. Before, during, and following the application of the stucco, the ambient and surface temperatures must remain above 40 degrees F (4 degrees C) and below 120 degrees F (49 degrees C) for a minimum period of 24 hours.
 - 2. Provide supplementary heat for installation in temperatures less than 40 degrees F (4 degrees C). Prevent concentration of heat on uncured materials and vent fumes and other products of combustion to the outside to prevent contact with installed materials.
 - 3. Prevent uneven or excessive evaporation of moisture from stucco during hot, dry, or windy weather. For installation under any of these conditions provide special measures to properly moist cure the stucco.
 - 4. Provide protection of surrounding areas and adjacent surfaces from application of materials.
- B. Existing Conditions: Allow access to electrical outlets, clean potable water, and a suitable work area at the construction site throughout the application of the stucco.

1.9 SEQUENCING AND SCHEDULING

- A. Provide minimum 28-day cure of concrete and concrete masonry units before the installation of stucco.
- B. For load bearing concrete masonry and stud wall assemblies, commence the stucco installation after completion of all floor, roof construction and other construction that imposes dead loads on the walls to prevent excessive deflection (and potential cracking) of the stucco.
- C. Provide site grading such that the stucco terminates above earth grade a minimum 4 inches (102 mm) and above finished grade (pavers/sidewalk) a minimum 2 inches (51 mm). Provide increased clearance in freeze/thaw climates.
- D. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall with provide sill flashing. Coordinate installation of moisture barrier with window

and door installation to provide weather proofing of the structure substrate to prevent moisture infiltration and excess air infiltration.

E. For protruding or flush mount windows and doors exposed to weather, install head flashing immediately after windows and doors are installed.

F. Install diverter flashing, wherever water can enter wall assembly, to direct water to the exterior.

G. Install copings and sealant immediately after stucco finish coatings are dry.

H. Penetrations through stucco shall be properly sealed using sealant joints. Refer to Section 07920. Stucco assembly is a non-structural cladding, and blocking shall be provided for attachment of accessories.

I. The installation of the stucco shall be coordinated with all other construction trades.

J. Provide sufficient manpower to ensure continuous operation, free of cold joints, scaffolding lines, variations in texture, and similar items.

1.10 WARRANTY

A. Provide manufacturer's standard drainage and 5 year materials warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:

Stuc-O-Flex International, Inc.
17639 N. E. 67th Ct.
Redmond, WA 98052
Toll Free Tel: (800) 305-1045
Tel: (425)885-5085
Fax: (425)869-0107
Email: info@stucoflex.com.
Web: www.stucoflex.com

**** NOTE TO SPECIFIER **** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 FIBER REINFORCED CEMENT STUCCO MATERIALS

A. Stuc-O-Flex Fiber Reinforced Stucco is a factory-prepared proprietary mixture of Portland cement. It is a factory proportioned, fiber reinforced Portland Cement based stucco for trowel or pump application, field mixed with graded sand and water.

1. Stucco properties shall meet ASTM C 926 requirements for both plaster thickness and base coat proportions.
2. Synthetic fibers 1/2 inch to 2 inches (13 mm to 51 mm) in length and free of contaminants are to be added to the stucco mixture at a rate not exceeding 2 lbs. per cubic foot (1.5 kg per cubic meter) of Cementitious material.

**** NOTE TO SPECIFIER **** Alternate. Delete if not required.

B. Traditional Cement Stucco (Scratch & Brown): 3/4 inch (19 mm) minimum thickness compliant with the Code and local requirements.

C. Waterway Drainage Mat Profile #9714A or _____, is a drainage product consisting of a nylon core of fused, entangled filaments and a geotextile fabric bonded to one side. WATERWAY Drainage Mat is designed for use with traditional stucco, EIFS, cement and lap sidings and cultured stone applications as an exterior wall drain. This rainscreen provides a path and ventilation for incidental moisture between exterior wall finish materials and weather resistive barrier.

D. Waterway Therm-Flash - Butyl Flexible Flashing: a self adhering butyl rubber membrane with heavy duty foil surface.

E. Stuc-O-Base (Wet Base Coat): Proprietary polymer modified Cementitious base coat for embedding reinforcing mesh.

F. Stuc-O-Flex Elastomeric Finish: Stuc-O-Flex Elastomeric Acrylic Finish: Proprietary finish coat, crack, and fade resistance. It is a highly resilient 100 percent acrylic polymer. Aggregate size in each finish determines the texture and coverage of each product.

**** NOTE TO SPECIFIER **** Delete finish types not required.

1. Stuc-O-Flex Elastomeric Finish: Fine.
2. Stuc-O-Flex Elastomeric Finish: Sand.
3. Stuc-O-Flex Elastomeric Finish: Modified.
4. Stuc-O-Flex Elastomeric Finish: Putz.

**** NOTE TO SPECIFIER **** Following materials and accessories are not included in the manufacturer's warranty.

**** NOTE TO SPECIFIER **** Delete if not required.

2.3 ACCESSORY MATERIALS

A. Weather-Resistive Barrier: The weather-resistive barrier shall be a minimum Grade "D" Kraft building paper complying with UBC Standard 14-1 (Federal Specifications UUB 790a); or asphalt-saturated rag felt complying with UL Standard 55-A; or a recognized weather-resistive barrier recognized in a current ICBO ES evaluation report, such as Dupont Tyvek Stucco Wrap (ICBO ES ER-4000), or Simplex Products R-Wrap Protective Housewrap (ICBO ES ER-4449).

**** NOTE TO SPECIFIER **** Delete lath not required.

B. Lath:

1. Minimum No. 20 gauge 1 inch (25 mm) self-furred galvanized steel woven wire fabric in compliance with ASTM C 1032, or minimum 1.75 lb/sq. yd (1 kg/sm) galvanized steel diamond mesh metal lath in compliance with ASTM C 847 (recommended for residential and light commercial construction).
2. Diamond-Mesh, Expanded-Metal Lath: Self-furring, 2.5 lb/yd² (1.4 kg/m²), in compliance with ASTM C 847, minimum G60 galvanized finish in compliance with ASTM A 653 (recommended for residential and commercial construction).

** NOTE TO SPECIFIER ** Delete if not required.

C. Mesh:

1. Heavyweight Mesh: 6.0 oz/sq yd (203 g/sm) fiberglass woven reinforcing mesh, minimum tensile strength 210 Lbs/inch, protective coating to resist alkyl reaction with Portland Cement.

** NOTE TO SPECIFIER ** Alternate. Delete if not required.

2. Standard Mesh: 4.0 oz/sq yd (136 g/sm) from Stuc-O-Flex.

** NOTE TO SPECIFIER ** Delete fastener not required.

D. Mechanical Fasteners:

1. Wood or steel framing: 1/16 inch (1.6 mm) diameter wafer, pan-cake or modified truss head is acceptable.
2. Concrete or Masonry: Tap Cons or Rawl Spikes used with a washer.
3. As approved by Code.

** NOTE TO SPECIFIER ** Delete materials not required.

E. Corner mesh, vent screed, casing bead, weep screed, control and expansion joint accessories.

1. PVC plastic in compliance with ASTM standards D 1784 and ASTM C1063.
2. Zinc Alloy (99.9% pure zinc) in compliance with ASTM B 69.
3. Galvanized metal in compliance with ASTM A 653 with minimum G60 coating. G90 recommended for coastal applications and areas of high rainfall.

F. Water: Clean, cool, and potable.

G. Sand

1. Sand shall be clean and free from deleterious amounts of loam, clay, silts, soluble salts and organic matter. Sand gradation shall comply with Table 1 or Table 2 per ASTM C 144-97 and ASTM C 897-96.

PART 3 EXECUTION

3.1 EXAMINATION

A. Substrate:

1. Do not begin installation until substrates have been properly prepared.

2. Acceptable sheathing types include those typically approved for local use such as plywood, oriented strand board, water-resistant gypsum and others. Consult your local building code for approved materials.

- B. Prior to the application of the stucco, inspect surfaces for:
1. Contamination - algae, chalkiness, dirt, dust, efflorescence, form oil, fungus, grease, laitance, mildew or other foreign substances.
 2. Surface absorption and chalkiness.
 3. Cracks.
 4. Damage, deterioration, and moisture to the substrate.
 5. Verify that concrete surfaces to receive stucco are properly prepared to provide adequate bond.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

**** NOTE TO SPECIFIER ** Delete if not required.**

C. Concrete (Cast-in-Place): Provide a surface that is slightly scarified, water absorbent, straight and true to line and plane. Remove form ties and trim projecting concrete so it is even with the plane of the wall. Remove form release agents by washing with a trisodium phosphate detergent and rinsing with clean water. Establish surface profile by abrasive blasting, waterblasting, wire brushing, chipping or other appropriate means. Remove all dust, dirt, grease, laitance or other bond inhibiting material. Pre-moisten absorbent surfaces with water prior to placement of stucco.

**** NOTE TO SPECIFIER ** Delete if not required.**

D. Concrete Masonry Units: Remove projecting joint mortar so it is even with the plane of the wall. Remove surface contaminants such as efflorescence, existing paint or any other bond inhibiting material by sandblasting, waterblasting, wire brushing, chipping or other appropriate means. Pre-moisten the surface with water just prior to placement of stucco, or apply one uniform coat of bonding agent by brush or roller.

**** NOTE TO SPECIFIER ** Delete if not required.**

E. Gypsum sheathing in compliance with ASTM C79, Glass Mat Faced Gypsum Sheathing in compliance with ASTM C 1177, and Exterior or Exposure 1 wood based sheathing (plywood and OSB Oriented Strand Board):

1. Verify installation of sheathing in compliance with applicable requirement.

**** NOTE TO SPECIFIER ** Wood-based sheathing must be gapped 1/8 inch (3 mm) at edge and end joints to prevent cracking in the stucco. Delete if not required.**

2. Install wood based sheathing with 1/8 inch (3 mm) spacing at edge and end joints.

3. Protect the substrate with a weather-resistive barrier as required by the applicable code and install lath and accessories.

F. Ensure that metal flashing has been installed per Specification Section 07600 Flashing and Sheet Metal.

3.3 MIXING

**** NOTE TO SPECIFIER **** All material mixing are contained in the appropriate Product Information Sheets written and published by the specified manufacturer. Protect mixtures from frost, contamination, and evaporation.

A. Mixing Scratch and Brown (S&B) Stuc-O-Flex Fiber Reinforced, Three Coat Stucco:

1. Mixing Materials:

- a. 1.80 lb (36 kg) bag Stuc-O-Flex Scratch & Brown Coat (FRP).
- b. Scratch Coat - 180 to 220 lb (82 - 100 kg).
- c. Brown Coat - 180 to 200 lb (82- 100 kg).
- d. Fine aggregate.

2. Mixing Procedure:

- a. Add two-thirds to three-fourths of the required water to mixer. Adjust based on experience and required workability.
 - b. Add half of the required sand
 - c. Add pigments if used. N/A for this assembly
 - d. add Stuc-O-Flex Scratch & Brown Stucco.
 - e. Add remaining sand.
 - f. Mix until a uniform lump free texture is observed.
 - g. Add additional water to achieve desired workability.
 - h. Machine mixing for 4 to 5 minutes is recommended to obtain the maximum workability. Mixing over 5 minutes is not recommended.
3. For consistent results, use a mechanical mixer and measure the sand and the water. Mixing 4 minutes will improve the workability and water retention for hand application. Over mixing will entrain excess air, which will lower the compressive strength.

B. Mixing Stuc-O-Base (Wet Base Coat):

1. Stuc-O-Base, Wet Base coat should be mixed 1:1 by weight with fresh, dry Portland Cement type I or II. Product should be allowed to sit for 10 minutes, and then remixed to be ready for use.

C. Mixing Stuc-O-Flex Elastomeric Acrylic Finish:

1. Mix with paddle type mixer and 1/2 inch (13 mm) drill to assure consistency prior to use. Small amounts of clean water can be added to the Stuc-O-Flex Elastomeric Acrylic Finish to aid workability. Spraying the finish requires thinning with water, approximately 12-24 oz. of water per pail.
2. Application of Stuc-O-Flex Elastomeric Acrylic Finish varies greatly depending on the desired texture. Usually, the finish is trowel applied and textured with plastic floats while wet. Stuc-O-Flex Elastomeric Acrylic Finish can be sprayed on with proper equipment.

3.4 INSTALLATION

A. Coordinate the installation of corrosion resistant flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door

heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall. All trim and projecting architectural features must have a minimum 1:2 (27 degree) slope along their top surface. Increase slope for northern climates to prevent accumulation of ice/snow and water on surface. Where trim/feature or bottom surface of reveal projects more than 2 inches (51 mm) from the face of the wall plane, protect upward facing surface with waterproofing. Periodic inspections and increased maintenance may be required to maintain surface integrity of finish on weather exposed sloped surfaces. Limit projecting features to easily accessible areas and limit total area to facilitate maintenance and minimize maintenance burden.

** NOTE TO SPECIFIER ** Delete if not required.

B. Installation over cast-in-place concrete or concrete masonry units:

1. Install foundation weep screed at the base of the wall.
2. Install casing beads at stucco terminations: doors, windows and other through wall penetrations. Install two-piece expansion joints (or back-to-back casing beads) at joints in the supporting construction, building expansion joints, where the stucco is to be installed over dissimilar construction or substrates, at changes in building height, at floor lines, columns, and cantilevered areas. Install one-piece expansion joint at corners of windows, doors, and similar through wall penetrations, and every 250 sf (23 sm). Install corner bead at outside corners and corner lath or corner bead at inside corners. Install full accessory pieces where possible and avoid small pieces. Seal adjoining pieces by embedding ends in sealant. Abut vertical into horizontal joint accessories. Attach at no more than 7 inches (178 mm) on center into concrete/masonry with appropriate fasteners.
3. Pre-moisten concrete masonry units and absorbent concrete prior to the placement of stucco (unless bonding agent has been applied on the CMU surface).
4. Scratch Coat: Apply stucco with sufficient pressure to ensure intimate contact with the substrate and complete coverage to an approximate thickness of 3/8 inch (9 mm). Score the stucco upon completion of each panel in preparation for a second coat. Score horizontally.
5. Brown Coat: as soon as the first coat is firm enough to receive the second coat without damage, apply the second coat with sufficient pressure to ensure intimate contact with the first coat to an approximate thickness of 1/8, 1/4 or 3/8 inch (3, 6 or 9 mm) as needed to bring the stucco to a uniform thickness that matches the grounds of the 3/4 inch (19 mm) accessories. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with stucco.

** NOTE TO SPECIFIER ** Delete if not required.

B. Installation over Frame Construction with Sheathing:

** NOTE TO SPECIFIER ** Delete substrate if not required.

1. Sheathing:
 - a. Provide surface plane tolerance not to exceed 1/4 inch in 10 feet (6 mm in 3 m). Provide for repair of surface defects and leveling or resurfacing of surfaces that do not meet required tolerances.
 - b. Attach gypsum with fasteners spaced 6 inches (152 mm) on center in the field and 6 inches (15 cm) along the perimeter.

** NOTE TO SPECIFIER ** Delete substrate if not required.

2. Plywood:
 - a. Minimum 5/16 inch (7.9 mm) thickness with exterior glue is required for studs spaced a maximum of 16 inches (406 mm) on center. For studs spaced at 24 inches (610 mm) on center, 3/8-inch thick (9.5 mm) plywood with exterior glue shall be used. Plywood shall comply with UBC Standard 23-2 (US DOC PS1-95). Plywood shall be installed in accordance with the code and shall be installed in accordance with American Plywood Association recommendations requiring 1/8 inch (3.2 mm) spacing between sheets at ends and sides.

**** NOTE TO SPECIFIER **** Delete substrate if not required.

3. Oriented Strand Board (OSB):
 - a. OSB shall comply with specifications for Exposure 1, performance rated panels in UBC Standard 23-3 (US DOC PS2-92), and shall have a minimum thickness of 3/8 inch (9.5 mm). OSB shall be installed in accordance with the code and should be installed in accordance with American Plywood Association recommendations requiring 1/8 inch (3.2 mm) spacing between sheets at ends and sides.
4. Weather-Resistive Barrier:
 - a. Install two layers of asphalt-saturated kraft 60 minute Grade "D" breather type sheathing paper over substrate.
 - b. Lap barrier 3 inches (8 cm) minimum at horizontal terminations and 6 inches (15 cm) minimum at vertical terminations.
 - c. Weather-resistive barrier shall extend over flanges at window heads and jambs and extend under sill flange.
 - d. WATERWAY Self-adhered, flexible membrane flashing shall be used on transitions where a 6 inch horizontal lap or 9 inch vertical lap cannot be achieved between the weather-resistive barrier and adjoining flashing leg or nailing flange.
 - e. Any cuts required to be made in the weather-resistive barrier shall be weather lapped with additional barrier material.
 - f. Verify that terminations at windows, doors, and other openings are properly lapped and flashed.
 - g. Weather-resistive barrier shall be properly weather lapped, flashed and integrated with WaterWay Therm-Flash at all window, door, and louver openings.
5. Weep Screed Installation:
 - a. Install foundation weep screed at the base of the wall securely to framing with the appropriate fastener. Locate foundation weep screed so that it overlaps the joint between the foundation and framing by a minimum of 1 inch (25 mm). Locate the foundation weep screed minimum 4 inches (10 cm) above earth grade, 2 inches (51 mm) above finished grade.
6. The purposes of the typical accessories are as follows:
 - a. Corner Joints - Provides at internal angles.
 - b. Control Joints - Provide at stress concentrations in plaster.
 - c. Control joints shall be installed in walls to produce panels of no more than 144 sf (13 sm) in area and a length to width ratio not exceeding 2.5 to 1.0 for any panel. Control joints shall be spaced no further apart than 18 ft. (5.5 m) (ASTM C 1063) (ACI, Section 7.3).
 - d. Expansion Joint - Shall be placed at discontinuities in the substrate and at every floor line. Lath shall be discontinuous behind the expansion joint. The weather-resistive barrier, WATERWAY #9714A or profile # _____, and

lath shall lap over the top flange of the horizontal expansion joint. All horizontal expansion joints shall weep.

7. Waterway Drainage Mat 9714A or Profile # _____:
 - a. Refer to "Installation Guide for Flashing Windows/Doors ETF 201" latest edition.
 - b. Ensure that weather -resistive barrier is properly installed to allow proper detailing and installation of Waterway Drainage Mat
 - c. For a horizontal application, work from bottom to top (for vertical applications work from a corner). Wrap the building completely, stopping at wall ends. Ends should be terminated at a furring strip of matching thickness to prevent air movement to adjoining wall. Butt edges of the Waterway mat together. Do not overlap.
 - d. At window and door openings install WaterWay tightly to casings. Take care not to cut or damage weather-resistive barrier.
 - e. At the bottom of the mat, place a foundation weep screed, a "J" weep screed, or flashing with weeps. Weather-resistive barrier and mat should be placed over top of the back piece of the weep screed, termination bar, or flashing to create the proper weather lap.
 - f. At wall terminations, place a wood termination strip along the outside edge of each wall to create a wind dam for negative wind load.
8. Lath:
 - a. Metal lath shall be applied with long dimension of the sheets perpendicular to the framing/supports. Fasteners for attaching diamond mesh expanded metal lath to solid substrates (plywood or OSB) shall be not less than 1-1/4 inch (32 mm) long driven to a minimum penetration of 3/4 inch (19 mm) (ASTM C 1063, Section 7.10.2).
 - b. Diamond mesh self-furring expanded metal lath should be fasten securely through sheathing into structural framing at 7 inches (178 mm) on center maximum vertically and 16 inches (41 cm) on center horizontally. Wire tie at no more than 9 inches (229 mm) on center at side laps, accessory overlaps, and where end laps occur between supports.
 - c. c. Metal lath should be lapped 1/2 inch (13 mm) at the sides and 1 inch (25 mm) at the ends (ACI 524, Section 8.2).
9. Stucco Installation:
 - a. Scratch Coat: Apply stucco with sufficient pressure to key into and embed the metal lath. Apply sufficient material, approximately 3/8 inch (9mm), to cover the metal lath and to permit scoring the surface. Score the stucco upon completion of each panel in preparation for a second coat. Score horizontally.
 - b. Brown Coat: As soon as the first coat is firm enough to receive the second coat without damage, apply the second coat with sufficient pressure to ensure intimate contact with the first coat to an approximate thickness of 1/8, 1/4 or 3/8 inch (3, 6 or 9 mm) as needed to bring the stucco to a uniform thickness that matches the grounds of the 3/4 inch (19 mm) accessories. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with stucco.
 - c. Provide curing conditions required by the manufacturer and building code requirements for traditional stucco.

D. Wet Base Coat and Mesh Installation:

1. Apply the base coat in two layers as follows:
 - a. Apply first layer of base to brown coat surface at least 50 mils (1.3 mm) thick.

- b. Apply fiberglass woven reinforcing mesh to the surface of the base material. Trowel from the center to the edge of the mesh to avoid wrinkles. Mesh shall be continuous 8 inches (203 mm) around corners and doubled at inside corners. Lap mesh a minimum of 2-1/2 inches (64 mm) at mesh joints, and offset mesh joints at least 6 inches (152 mm) from corner mesh joints. Mesh laps shall not align with corners of window, door, and similar wall openings. Once attached, mesh color shall not be visible; however, mesh pattern should be slightly visible but not tactile, as the mesh shall not be fully embedded in the first layer of base. Do not remove material while troweling mesh. Mesh shall not be in contact with the brown coat nor protrude from the surface of the base coat.
- c. Apply second layer of Stuc-O-Base at least 30 mils (0.8 mm) thick.
- d. Completed base coat shall be 80 to 90 mils (2.0 to 2.3 mm) thick.
- e. Do not exceed 90 mils (2.3 mm) thickness. Mesh shall no longer be visible, color or pattern. If mesh, mesh pattern, or mesh ends are visible, apply additional base material.
- f. Trowel inside and outside comers with comer trowels, and trowel aesthetic grooves with groove trowels. Do not use wet brushes to smooth comers or grooves. Dry brushes may be used if needed.
- g. Allow a minimum of 4 hours, longer as required by drying conditions, between application of first and second layers of Stuc-O-Base material.

E. Stuc-O-Flex Elastomeric Acrylic Finish Installation:

1. Mask all areas not to receive finish, including areas to receive sealant, adjacent materials, and abutting areas of different color or texture finish, to provide straight, clean lines.
2. Mix finish thoroughly with a low speed, rust free mixer until a workable consistency is obtained. A small amount of clean water may be added to aid workability. If water is added, measure and add the same amount to all pails of finish to assure uniform color.
3. Apply finish to thoroughly clean, cured, and dry basecoat / stucco.
4. Apply finish with uniform texture. Apply with sufficient number of applicators so a wet edge is always maintained. Work continuously to prevent cold joints. Stop work only at joints, color changes, or inside/outside corners.
5. Avoid application in direct sunlight.
6. Provide final appearance to match approved samples to the satisfaction of the Architect/Owner.

F. Do not use finish on horizontal or near horizontal weather-exposed surfaces, such as tops of parapets, projecting ledges, sills, or other projecting features. Protect such surfaces with metal coping or flashing with drip edge.

G. Prevent application of finish over isolation, expansion, cold, or control joints in construction.

H. Prevent application of finish along inside edges of joint. Apply to outside face of wall only.

3.5 PROTECTION

A. Provide protection of installed materials from water infiltration into or behind them.

B. Provide protection of installed stucco from dust, dirt, precipitation, and freezing during installation.

C. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully cured and dry.

D. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Architect/Owner.

E. Secure fixtures, signs, and similar items, and make watertight.

END OF SECTION