

## **DIVISION 09 - FINISHES**

Includes the following sections:

09 20 00	Plaster and Gypsum Board
09 24 00	Portland Cement Plaster – Standard
09 24 00	Portland Cement Plaster – Severe Weather Exposure
09 51 00	Acoustical Ceilings
09 60 00	Flooring
09 65 13	Base and Accessories
09 65 16	Resilient Sheet Flooring
09 65 16 13	Resilient Linoleum Flooring
09 65 19	Resilient Tile Flooring
09 68 00	Carpeting
09 90 00	Painting and Coating

<b>PLASTER AND GYPSUM BOARD</b>	<b>09 20 00</b>
---------------------------------	-----------------

Gypsum Board Finish Levels:

1. For occupied spaces and surfaces exposed to public view:
  - a. Provide a lightly textured finish over a Gypsum Association (GA) Level 4 finish
  - b. Smooth finish over a GA Level 5 finish may be used in specific areas if approved by the University's Representative.
2. For unoccupied areas, such as storage and mechanical rooms, provide a medium texture finish over a GA Level 3 finish.
3. For concealed spaces such as shafts or spaces above the ceiling areas, and areas where gypsum board is used as a substrate for tile, provide a GA Level 2 finish.

For exterior cement plaster, refer to the University's Standard Specification Sections 09 24 00 Portland Cement Plastering (Standard) Locations and 09 24 00 Portland Cement Plastering (Severe Weather Exposure).

<b>PORTLAND CEMENT PLASTER - STANDARD</b>	<b>09 24 00</b>
---	-----------------

For more information, refer to the University's Standard Specification Section 09 24 00 Portland Cement Plaster – Standard and Appendix H – Standard Plaster Installation and Details – Standard.

<b>PORTLAND CEMENT PLASTER – SEVERE WEATHER EXPOSURE</b>	<b>09 24 00</b>
--	-----------------

For more information, refer to the University's Standard Specification Section 09 24 00 Portland Cement Plaster – Severe Weather Exposure and Appendix I – Standard Plaster Installation and Details – Severe Weather Exposure.

**ACOUSTICAL CEILINGS****09 51 00**

Heavy-duty suspended grid.

**FLOORING****09 60 00**

If selecting flooring other than linoleum, vinyl composite tiles (VCT), roll carpet, or carpet tiles, consult the University's Representative to confirm the additional purchase and storage of attic stock for future repairs.

Plank flooring: Careful consideration shall be given prior to specifying vinyl or laminate plank flooring, including foot traffic, acoustics, maintenance, and storage of attic stock. Since product lines are routinely updated, flooring may need to be replaced in full in the event of significant wear or damage. Storage for attic stock must be available at project site, consult the University's Representative. In renovation projects, existing subfloor properties may be incompatible with the use of plank flooring.

**BASE AND ACCESSORIES****09 65 13**

Base: Thermoplastic rubber (TR) or thermoset vulcanized rubber (TS). Consult the University's Representative prior to specifying thermoplastic vinyl (TV) base.

Adhesives:

1. Aerosol adhesives shall not exceed the VOC limits specified in the Green Seal Standard GS-36.
2. Non-aerosol adhesives and primers shall not exceed the VOC limits specified in the South Coast Air Quality District Rule 1168.

**RESILIENT SHEET FLOORING****09 65 16**

General Requirements:

1. Chemical-use laboratories, glass wash or other areas where liquids are used or stored shall have watertight flooring.
  - a. Provide seam sealed, non-pervious, one piece flooring with a slip resistance coefficient of 0.6 or greater and at least a 4-inch continuous cove or equivalent. Flooring material to be compatible with the chemicals to be used or stored.
  - b. Flooring at Permanent Cabinets: Resilient flooring is required under fixed floor cases and cabinets.

**RESILIENT LINOLEUM FLOORING****09 65 16.13**

General Requirements: Linoleum shall not be used in wet environments.

Vinyl Composition Tiles (VCT):

1. Shall be 12 inches by 12 inches
2. Recommended in areas of heavy traffic
3. Shall not be used in area requiring water-tight flooring

**CARPETING****09 68 00**

Colors and shades selected should be of medium intensity (not so light as to easily show soiling or so dark as to show dust and lint). Multi-colored and non-directional patterns are desirable for their soil-hiding capability. Solid color carpet should not be used.

Carpet shall be certified by the California Gold Sustainable Carpet Standard at the gold or platinum level. Carpet tile systems shall not exceed the target emissions factors of the Carpet and Rug Institute's following programs:

1. Carpet: Green Label Plus Program and Testing Procedures.
2. Carpet Cushion: Green Label Program and Testing Procedure
3. Carpet Adhesive: Green Label Program and Testing Procedure.

Handicapped Requirement -  $4500 \text{ (min)} = (\text{yarn weight}) (36) \text{ divided by pile height.}$

**ROLL CARPET**

Type: Carpet shall be installed by direct glue-down method, unless otherwise noted, and shall be a woven or tufted product, meeting or exceeding the following criteria.

Construction - Woven or tufted

Texture - Loop pile

Fiber - 3rd or 4th generation continuous filament soil hiding nylon; Allied Chemical, DuPont, Badische, or equal.

Face Weight:

Woven: Minimum 25 oz.

Tufted: Minimum 28 oz.

Gauge: Minimum 1/8 inch

Density:

Woven: Minimum 5100

Tufted: Minimum 6000

Warranty: 10 year limited wear warranty.

Primary Backing: nonwoven synthetic

Secondary backing: High performance precoat laminated to a thermoplastic polyolefin compound with a fiberglass reinforced layer. Backing shall contain a minimum of 10 percent recycled content by total weight of product. Backing should be recyclable, PVC free, free of 4-PCH, brominated flame retardants, and phthalate plastizers.

**CARPET TILE**

Carpet Type: Carpet tile shall be manufactured by Shaw Commercial, Interface, Bentley, Patchcraft, Mohawk, Mannington, or equal, and in accordance with the following specifications.

Yarn - Solution Q nylon, post-consumer type 6 nylon, or type 6-6 nylon

Gauge - 85 sq. inches

Yarn Weight - 15 oz./sq. yard minimum

Stitches/6 inc. - 55.2.

Pile Height - 0.250 in.

Tile Size - 18 inches by 18 inches, 24 inches by 24 inches, or 18 inches by 36 inches

Warranty: 10 year limited wear warranty

Adhesive: Pressure sensitive, releasable adhesive from the same manufacturer as the carpet tile

<b>PAINTING AND COATING</b>	<b>09 90 00</b>
-----------------------------	-----------------

Materials shall be top-of-the-line products by firms with over 5 years manufacturing experience with a full product line. Prime coats and finish coats for any 1-paint system shall be the products of the same manufacturer.

Architectural coatings shall comply with the Green Seal Standards GS-11 and the most current LEED Requirements, whichever is more stringent.

1. Aromatic Compounds: the product shall contain no more than 1.0 percent by weight of the sum total of aromatic compounds. Testing for the concentration of these compounds shall be performed if they are determined to be present in the product during a materials audit.
2. Prohibited Chemicals: the manufacturer shall demonstrate that the following chemical compounds are not used as ingredients in the manufacture of the product.
  - a. Halomethanes: methylene chloride
  - b. Chlorinated ethanes: 1,1,1-trichloroethane
  - c. Aromatic solvents: benzene, toluene (methylbenzene), ethylbenzene
  - d. Chlorinated ethylenes: vinyl chloride
  - e. Polynuclear aromatics: naphthalene
  - f. Chlorobenzenes: 1,2-dichlorobenzene
  - g. Phthalate esters: di (2-ethylhexyl) phthalate, butyl benzyl, phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, dimethyl phthalate
  - h. Miscellaneous semi-volatile organics: isophorone
  - i. Metals and their compounds: antimony, cadmium, hexavalent chromium, lead, mercury
  - j. Preservatives (antifouling agents): formaldehyde
  - k. Ketones: methyl ethyl ketone, methyl isobutyl ketone
  - l. Miscellaneous volatile organics: acrolein, acrylonitrile

#### EXECUTION

Backprime all wood installed against steel, concrete, plaster, or tile, and all wood with surfaces exposed in exterior locations.

A single color matching walls and ceilings shall be used on all surfaces. Visible surfaces behind vents, grilles, etc., shall be painted flat black. Insides of all drawers, shelves inside cabinets, and other wood surfaces where scheduled or noted shall be given one coat of clear gloss lacquer, or clear polyurethane-base varnish.

#### VENTILATION

The room/space shall be supplied with 100 percent outside air during painting and for a period of 72 hours following completion of painting. The air leaving the room/space shall be exhausted only to the outside, with no distribution to any occupied spaces during painting and for a period of 72 hours following completion of painting.

**SECTION 09 24 00**

**PORTLAND CEMENT PLASTERING – STANDARD**

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes furnishing and installation of the following:
  - 1. Exterior portland cement plasterwork (stucco) with painted finish on metal lath over weather resistive barrier over continuous sheathing.
  - 2. Accessories.
- B. Cement plaster assembly shall comply with ASTM C926, ASTM C1063, and other applicable ASTM publications.

1.02 RELATED REQUIREMENTS

- A. Flexible Flashing: Section 07 65 00
- B. Water Resistive Barrier System 07 25 00

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Hold Preinstallation meeting in accordance with Section 01 31 19, Project Meetings. Attending shall be the University, Design Professional, Installer including personnel directly responsible for the installation, manufacturer's representative, and installers whose work interfaces with or affects the Work of this Section including installers of sheet metal.
  - 1. Provide all Submittals for approval a minimum of (7) days prior to preinstallation meeting.
  - 2. Ensure a clear understanding of the Contract Documents.
  - 3. Provide on-site inspection and acceptance of the substrate and pertinent structural details relating to the cement plaster system.
  - 4. Coordinate the work of the various trades involved in providing the cement plaster assembly and other components secured through the cement plaster.
  - 5. The Contractor shall attend the conference with personnel directly responsible for the installation of cement plaster assembly in its entirety, including flashing and sheet metal work. Conflicts shall be resolved in writing.
- B. Sequencing: Sequence installation so lath is installed closely to weather-resistive barrier and drainage layer to limit quantity of fasteners used for installation of weather-resistive barrier and drainage layer.

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For cement plaster system. Show locations and installation of control and expansion joints including plans, elevations, sections, details of components, penetrations through cement plaster assembly, and attachments to other work.
- C. References: Submit the following ASTM Application Specifications, latest editions.
  - 1. ASTM C 926

2. ASTM C 1063
3. Certification on company letterhead indicating that the ASTM standards have been reviewed in their entirety with the installer and that the installer agrees to comply with the applicable requirements therein during the installation of Portland cement plastering.

- D. Samples: For each texture and finish indicated.
- E. Qualifications: Work history data of successful warranted installations similar to that of this Project
- F. Certifications: Signed by manufacturer certifying that installer is a factory authorized certified applicator in good standing with the manufacturer and is qualified to perform the specified work and able to receive the required warranties.
- G. Sample Warranties: Sample copies of manufacturer and contractor warranties.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data.
- B. Warranty Documentation.

#### 1.06 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For portland cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Manufacturer Qualifications: Qualified manufacturer with staff available for the Project to provide site visits performed by a technical representative of the manufacturer at the intervals below. Contractor to coordinate manufacturer site visits.
1. Pre-installation meeting.
  2. Final inspection for issuance of warranty by a technical representative employed by weather barrier and cement plaster manufacturers specifically to inspect installation for warranty purposes.
- C. Applicator Qualifications: Qualified firm that is authorized by the membrane manufacturer prior to execution of agreement with minimum five years of documented experience as a certified applicator to install manufacturer's products for the specified warranty.
1. Applicator personnel trained and authorized by the manufacturer shall complete all work pertaining to the installation of the Work of this Sections, including membrane and flashings.
  2. Use adequate amounts of such qualified workmen who are thoroughly trained in the crafts and techniques required to properly install the type of cement plaster assembly specified and other work required to complete the Work specified and within the specified time.
- D. Source Limitations: Obtain components for cement plaster assembly from same manufacturer or approved by cement plaster manufacturer. Each component of cement plaster assembly shall be by single manufacturer and shall not vary on the Project.

- E. Suitability of Contract Documents: Verify that the Contract Documents are workable and not in conflict with the manufacturers' recommendations and instructions prior to the start of the Work.
  - 1. Start of the Work constitutes acceptance of project conditions and requirements.
- F. Mockups: Provide mockups listed below. Mockups shall remain on-site until accepted by University and Design Professional.
  - 1. Cement Plaster Mockups: Prior to application, install mockups of at least 50 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
    - a. Install mockups for each type of finish.
  - 2. Weather-resistive Barrier Mockups: Prior to installation, install mockups of weather-resistive barrier(s), including self-adhering flashings, non-adhesive flexible flashings, and sheet metal flashings, for each type of opening.
    - a. Install stand-alone mockups.
    - b. Weather-resistive barrier, sheet metal and cement plaster installers shall be present at mockup.
    - c. Mockup openings until mockups are in compliance with the Contract Documents.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project site in manufacturer's original, unopened packages and containers bearing the manufacturer's name and label, and the following information:
  - 1. Product name or title of material.
  - 2. Manufacturer's stock number and date of manufacture.
  - 3. Contents by volume, for pigment and vehicle constituents.
  - 4. Thinning instructions (if permitted).
  - 5. Installation/application instructions.
  - 6. Color name and number.
  - 7. Handling instructions and precautions.
  - 8. VOC content.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Store materials not in use in tightly covered containers in a well-ventilated area in an ambient temperature range of 50 degrees F to 85 degrees F unless manufacturers require more stringent temperature limits.
- D. Maintain containers in a clean condition, free of foreign materials and residue.
- E. Protect materials from freezing.
- F. Remove oily rags and waste daily.
- G. Store rolls on end.
- H. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.



- I. All materials which are determined to be damaged by the Design Professional, Owner or the manufacturer are to be removed from the job site and replaced at no cost to the Owner.
- J. Keep storage area neat and orderly.

#### 1.08 FIELD CONDITIONS

- A. Comply with ASTM C 926 requirements.
- B. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.
- C. Exterior Plasterwork: Apply plaster and allow for 24 hour dry time when ambient temperature is greater than 40 degrees F.
- D. No plaster shall be installed on the last two days of the scheduled work week to allow for moist curing to occur during the normal work week.
- E. Apply materials within the range of ambient and substrate temperatures recommended by the roofing manufacturer.

#### 1.09 WARRANTY

- A. Warranty, General: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Cement Plaster System Manufacturer Warranty: Submit a written warranty, executed by the manufacturer, agreeing to repair or replace cement plaster assembly that fail within the specified warranty period.
  - 1. Warranty Duration: One (1) year from the date of Substantial Completion.
- C. Weather Resistive Barrier Manufacturer Warranty: Manufacturer will pay the cost of materials and labor to correct problems found to be caused solely by the failure of the manufacturer's product to perform to manufacturer's published specifications.
  - 1. Warranty Period: Ten (10) years from date of substantial completion.
- D. Installer Warranty: Installer's warranty in which installer agrees to repair or replace cement plaster assembly that fails in materials or workmanship within the specified warranty period. Repair or replacement shall include entire assembly including, but not limited to, accessories and flashings.
  - 1. Warranty Period: Five (5) years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.01 CEMENT PLASTER SYSTEM

- A. Cement plaster system includes components listed.
  - 1. System Thickness: 7/8 inch.

## 2.02 PLASTER MATERIALS

- A. Pre-blended portland cement plaster (fibered): Factory proportioned, pre-sanded, fiber reinforced portland cement plaster with acrylic admixture in brown coat for trowel or pump application, field mixed with water.
  - 1. Subject to compliance with requirements, provide BMI 690 Standard with Fibers; BMI Products or equal, for scratch and brown coat for three-coat plasterwork.
- B. Scratch Coat: Fibered pre-blended Portland cement, and water.
- C. Brown Coat: Fibered pre-blended Portland cement, admixture and water.
- D. Finish: Ready-mixed cement-based textured wall finish. Subject to compliance with requirements, provide BMI Plain Stucco Finish; BMI Products or equal.
  - 1. Texture: To be selected by Design Professional.
  - 2. Finish: Prime and paint.
  - 3. Color: To be selected by Design Professional from paint manufacturer's full range of colors, including custom colors.

## 2.03 PLASTER MIXES

- A. Scratch Coat: Mix with water in accordance with manufacturer's published instructions.
- B. Brown Coat: Mix with water in accordance with manufacturer's published instructions. Mix acrylic admixture with brown coat at a ratio of 3 parts water to 1 part admixture.

## 2.04 Plaster MISCELLANEOUS MATERIALS

- A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Bonding Agent: Epoxy resin adhesive.
  - 1. Product: Sikadur 32, Hi-Mod LPL; Sika or equal.
- C. Acrylic Admixture: 100 percent acrylic polymer admixture for brown coat.
  - 1. Product: Acryl 60; Thoro System Products, Inc. or equal.

## 2.05 METAL LATH

- A. Woven-Wire Metal Lath: Woven-Wire Lath; ASTM C 1032; self-furring, with stiffener wire backing.
  - 1. Class 1 hot-dip galvanized in accordance with ASTM A641.
- B. Flat Rib Lath: Rib depth of not more than 1/8 inch.
  - 1. Meet or exceed Federal Spec. No. QQL-101C, and ASTM A653 Grade 33 G-40 coating.

## 2.06 WEATHER-RESISTIVE BARRIER – See Spec Section 07 25 00

## 2.07 CEMENT PLASTER REINFORCING LAYER

- A. Cement Plaster Reinforcing Layer: Provide base coat and mesh over brown coat at narrow window headers and jamb posts and where indicated. Subject to compliance with requirements, provide base coat and mesh by BMI Products or equal.
1. Base Coat: 777 Adhesive Basecoat or equal.
  2. Mesh: 4.5 oz./sq. yd. ASTM C-1116, BMI Standard Reinforcing Mesh or equal.

## 2.08 ACCESSORIES

- A. Manufacturer: Subject to compliance with requirements, provide accessories by Cemco Water Management Products or equal.
1. Material: G90 (sheet metal) or Class A (wire) hot-dip galvanized.
  2. Thickness: 26 gage.
- B. Zinc and Zinc-Coated (Galvanized) Accessories:
1. Foundation Weep Screed: Foundation weep screed with 3-1/2 inch flange and without holes.
    - a. Product: #34 Sill Screed by Cemco or equal
  2. Internal Expansion Joint: Double-V expansion joint formed to a 90 degree for inside corners, fabricated for movement due to expansion and contraction.
    - a. Product: Corner Expansion Joint #30 by Cemco or equal.
  3. External-Corner Reinforcement: Fabricated from metal wire with nailing strips along both sides.
    - a. Product: Cemcorner by Cemco or equal.
  4. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged "J" style; with expanded flanges where indicated.
    - a. Product: J-Series Casing Bead with 3-1/2 inch flange by Cemco or equal
    - b. Product: Expanded Flanges: #66 Expanded Flange Casing Bead by Cemco or equal
  5. Vertical Control Joints: One-piece double "J" type; with perforated flanges and removable protective tape on plaster face of control joint.
    - a. Product: Double "J" Control Joint (#XJ-15) by Cemco or equal
  6. Horizontal Control Joints: One-piece double "V" type; with perforated flanges and removable protective tape on plaster face of control joint. Provide horizontal control joint with one solid flange where indicated.
    - a. Product: Double "V" Control Joint (#15) by Cemco or equal
    - b. Product: Solid Flange: #15 Solid Leg Control Joint by Cemco or equal.
  7. Two-Piece Expansion Joints: Formed to produce slip-joint and square-edged reveal that is adjustable from 1/4-to-5/8-inch wide; with perforated flanges.
  8. Drip Screed: Drip head screed with 3-1/4 inch vertical flange and without holes.

- a. Product: #6 Drip Head Screed by Cemco or equal.
  - b. Arches: Prefabricate radiused drips for arch conditions.
9. Soffit Drip Edge: Soffit drip edge screed with 4 inch vertical flange and without holes.
- a. Product: #12 Soffit Drip Edge by Cemco or equal.
  - b. Arches: Prefabricate radiused drips for arch conditions.
- C. Extruded Aluminum Accessories:
- 1. Aluminum Reveal: Extruded aluminum channel screed, non-vented.
    - a. Product: Fry Reglet Channel Screed by Fry Reglet Corporation or equal.
    - b. Reveal Width: Match existing.
- D. Self-Adhered Flashings – See 07 25 00. [Note to Designer – Include Self-Adhered Flashing Specifications per Campus Standards]

## 2.09 FASTENERS

- A. Fasteners for Attaching Woven Wire Metal Lath to Wood Substrates: Galvanized furring nails.
- B. Fasteners for Attaching Weather Resistive Barrier to Substrates: Single chisel stainless steel staples.
- C. Fasteners for Attaching Drainage Layer to Substrates: Single chisel stainless steel staples.
- D. Fasteners for Attaching Line Wire to Substrates: Single chisel stainless steel staples or hot-dipped galvanized ring shanked nails by Maze Nails or equal.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. General Installation: Install in accordance with manufacturer's written instructions and recommendations.
- B. Examine substrates and conditions, with the Applicator present, under which cement plaster finish system will be applied for compliance with application requirements.
- C. Surfaces to receive cement plaster system must be thoroughly dry before materials are applied.
- D. Notify the Design Professional in writing of anticipated problems using products specified over existing substrates.
- E. Begin application only after unsatisfactory conditions have been corrected and surfaces to receive materials are thoroughly dry.
- F. Provide continuous backing for securement of cement plaster accessories.
- G. Start of application within a particular area will be construed as the Applicator's acceptance of surface conditions.

### 3.02 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated.
  - 1. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and product application.
  - 2. After completing operations in each area, reinstall items removed, using workers skilled in trades involved.
- B. Cleaning: Before applying materials or other surface treatments, clean substrates of substances that could impair bond of coating systems.
  - 1. Remove oil and grease before cleaning.
  - 2. Schedule cleaning and materials application so dust and other contaminants will not fall on wet, newly applied surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be receiving materials according to the manufacturers written instructions for the particular substrate conditions and as specified.
  - 1. Cementitious Surfaces: Prepare surfaces to receive materials. Sand blast off existing paints to achieve bare stucco surface.
  - 2. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar conditions by water blasting followed by a clear water rinse.
  - 3. Remove mildew and neutralize surfaces according to manufacturer's written recommendations before patching materials are applied.
  - 4. Do not apply materials over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.
- D. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.
- E. Prepare solid-plaster bases that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

### 3.03 WEATHER RESISTIVE BARRIER

- A. General: Cover sheathing with weather resistive barrier as follows.
- B. Install weather resistive barrier in accordance with manufacturer's written instructions and "best-practice" recommendations.
- C. Ensure substrate is properly installed, free of projections and irregularities that may be detrimental to proper installation of the weather resistant barrier.
- D. Install barrier over substrate, starting at the bottom of a wall, shingling upwards. Cover rough window and door openings.
  - 1. Shingle (to shed water) with existing weather resistive barrier to provide 100 percent sheathing coverage behind cement plaster.
  - 2. Attach barrier tight to substrate, free of voids, wrinkles, buckles and fishmouths.
  - 3. Secure barrier to wall with no more fasteners than is required to hold in place until lath is installed.
  - 4. Overlap corners a minimum of 6 inches.
  - 5. Lap requirements:

- a. 6 inch vertical overlap.
  - b. 4 inch horizontal overlap.
6. Cover barrier within 30 days of installation. Material must be removed and reinstalled beyond 30 days at no cost to the Owner.
  7. Integrate weather resistive barrier with self-adhering flashings at windows, doors, penetrations and where indicated.
- E. Inspect and repair barrier prior to application of lath and plaster. Repair damage including tears, perforations, water damaged and/or other similar damage to weather resistive barrier with self-adhering tape for a water shedding assembly.
1. Replace damaged weather resistive barrier where tape repairs are not practical.

### 3.04 INSTALLING METAL LATH

- A. Install in accordance with manufacturer's written instructions and recommendations, according to ASTM C 1063 and as indicated in Contract Documents, using more conservative fastening pattern.
- B. Fasteners shall be secured in v-grooves of metal self-furring lath. Where furring fasteners are specified, fasteners shall not be secured in v-grooves.
- C. Pattern: 16 inches horizontally and 6 inches vertically (similar to a framed wall).
- D. Fasteners shall project through metal studs not less than 3/8 inch or three full threads, whichever is greater, and penetrate wood substrates 1-1/4 inch minimum, unless more stringent requirements are indicated in ASTM C 1063.
- E. Fasteners shall engage not less than three strands of lath.
- F. Apply sealant over fasteners at open framing.
- G. Isolation: Where lathing and metal support system abuts building structure horizontally and where partition or wall abuts overhead structure, sufficiently isolate from structural movement to prevent transfer of loading from building structure.

### 3.05 INSTALLING ACCESSORIES

- A. Install in accordance with manufacturer's written instructions, according to ASTM C 1063 and at locations indicated on Drawings, using more conservative fastening pattern
- B. Reinforcement for External Corners:
  1. Install lath-type, external-corner reinforcement at exterior locations.
- C. Control Joints: Install control joints in specific locations approved by University's Representative for visual effect as follows:
  1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
    - a. Vertical Surfaces: 144 sq. ft. (13.4 sq. m).
    - b. Horizontal and other Nonvertical Surfaces: 100 sq. ft. (9.3 sq. m).
  2. At distances between control joints of not greater than 18 feet (5.5 m) on center.

3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
4. Where control joints occur in surface of construction directly behind plaster.
5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.
6. Where indicated in the Contract Drawings.

D. Miter inside/outside corners of accessories where they change direction.

### 3.06 MIXING

- A. Mix plaster and finish materials in accordance with manufacturer's written instructions and recommendations.

### 3.07 PLASTER APPLICATION

- A. General: Comply with ASTM C 926 and manufacturer's recommendations and written instructions.

1. Apply cement plaster without interruption to avoid cold joints in appearance. Abut wet cement plaster to set cement plaster at natural or architectural breaks in the wall such as expansion joints, terminations or changes in plane.
2. Do not install cement plaster during extremely hot, dry and/or windy conditions.
3. Do not install cement plaster during freezing conditions or on frozen substrates.
4. Do not install cement plaster onto grounds of accessories.
5. Completely embed lath and flanges of accessories and completely cover attachments with cement plaster.
6. Should cement plaster get into control or expansion joints, remove the cement plaster from within the joint before the cement plaster sets.
7. Clean and prepare area to receive plaster in accordance with manufacturer's recommendations.
8. Trowels used for application shall be stainless steel.

B. Clean and prepare area to receive repair plaster in accordance with manufacturer's recommendations.

C. Walls; Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork.

1. Factory proportioned, pre-sanded, fiber reinforced, portland cement based.

D. Scratch Coat: apply plaster with sufficient pressure to key into and embed the metal lath.

1. Apply sufficient material, 3/8-1/2 inch (9-13mm), to cover the metal lath and to permit scoring the surface.
2. Score the plaster upon completion of each panel in preparation for a second coat.
3. Score horizontally.
4. Moist cure the first coat for a minimum 48 hours. Fog as frequently as required during the moist cure period to prevent loss of moisture from the stucco, but no less than four times per day. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist curing can be diminished.

E. Brown Coat: Dampen the scratched surface with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with the first coat and as needed to bring the stucco to a uniform thickness that matches the

grounds of the accessories. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with plaster. Final thickness of cement plaster shall be minimum 5/8 inch, maximum 7/8 inch, to achieve required system thickness.

1. After the plaster has become slightly firm float the surface lightly with a darby or wood float to densify the surface and to provide a smooth, even surface.
  2. Moist cure after the plaster has set by lightly fogging for at least 48 hours. Fog as frequently as required during the moist cure period to prevent loss of moisture from the stucco, but no less than four times per day. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist curing can be diminished.
- F. Cement Plaster Reinforcing Layer: Install cement plaster reinforcing layer at corners of windows and other openings, narrow window headers and jamb posts and where indicated in strict accordance with manufacturer's written instructions and recommendations.
1. Do not begin application of base coat material when a chance of rain is forecast during, and for 24 hours after, application.
  2. Prepare substrate in accordance with manufacturer's written instructions and recommendations.
  3. Apply base coat material level, in one coat, 1/8 inch thickness.
  4. Immediately embed mesh into the base coat, smoothing wrinkles and working the mesh down and covering it with fresh material with a trowel.
    - a. Apply 9 inch by 12 inch detail mesh at 45 degree angle at corners of windows and other openings.
    - b. Double wrap mesh at all corners.
    - c. Overlap mesh on all edges 2-1/2 inches minimum.
    - d. Embed mesh starting at the top and work down when using full widths.
  5. Minimum thickness of cement plaster reinforcing layer shall be 1/16 inch when dry.
  6. Reapply base coat if necessary to achieve minimum thickness.
  7. Allow a minimum of 24 hours.
- G. Apply finish directly over the prepared brown coat in accordance with manufacturer's recommendations. Perform moisture tests to confirm that surfaces meet manufacturer's requirements prior to finish coat application
1. Do not apply finish coat until all irregularities have been corrected.
  2. Apply finish by spraying or troweling with a stainless steel trowel, depending on the finish specified. Follow these general rules for application of finish:
    - a. Allow brown coat surface to dry in accordance with manufacturer's recommendations.
    - b. Avoid application in direct sunlight.
    - c. Apply cement plaster finish in a nominal thickness of 1/8 inch.
    - d. Apply finish in a continuous application, and work a wet edge towards the unfinished wall area. Work to an architectural break in the wall before stopping to avoid cold joints.
    - e. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.
    - f. Do not install separate batches of finish side-by-side.



- g. Apply cement plaster finish with sufficient material and pressure to ensure a tight bond with base coat.
    - h. Apply cement plaster finish to a uniform thickness and in a consistent finish.
    - i. Do not apply finish into or over joints or accessories. Apply finish to outside face of wall only.
    - j. Do not apply finish over irregular or unprepared surfaces, or surfaces not in compliance with the requirements of the project specifications.
  3. Do not begin application of finish coat material when a chance of rain is forecast during, and for 24 hours after, application.
  4. Allow the application of sealants detailed prior to application of finish coat materials.
    - a. Protect sealants during application of finish coat materials.
    - b. Sealant shall cure a minimum of 14 days prior to finish coat application
- H. In severe drying conditions moist cure cement plaster as needed after plaster installation for optimum strength gain and resistance to cracking. Fog as frequently as required to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture.
- I. The finished installation must be true, plumb and square, with maximum tolerance of 1/8 inch in 10 feet in any direction.
- J. Paint in accordance with Division 09 "Painting and Coating."

### 3.08 PH TESTING OF CEMENT PLASTER PRIOR TO PRIMING AND PAINTING

- A. General: Cement plaster substrates shall be pH tested in accordance with paint manufacturer's recommendations.
- B. Fill cracks and holes prior to painting.
- C. Measure pH where fine cracking and areas with early signs of efflorescence are visible. Measure pH where building exterior has different exposure and temperature variations including sun-exposed and shady wall areas.
  1. Coordinate pH testing with Owner's Representative.
- D. Building exterior shall have pH less than 11 prior to priming and painting.

### 3.09 FIELD QUALITY CONTROL

- A. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when coating operations are being conducted:
  1. The Owner will engage the services of a qualified independent testing and inspecting agency to sample materials used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in presence of the Contractor.
  2. The testing and inspecting agency will perform appropriate tests, as required by the Owner.
  3. If results show materials do not comply with requirements, the Contractor may be directed to stop work, remove noncomplying materials, pay for testing, recoat surfaces coated with rejected materials, or remove rejected materials from previously coated surfaces if, on recoating with specified materials, the 2 materials are not compatible.

### 3.10 CLEANING

- A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from the Project site.
  - 1. After completing Work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods, being careful not to scratch or damage adjacent finished surfaces.

### 3.11 PROTECTION

- A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating as approved by the Consultant. Leave in an undamaged condition.
- B. Provide "Wet Paint" signs to protect newly applied materials. Remove temporary protective wrappings provided by others to protect their work after completing coating operations.
  - 1. After construction activities of other trades are complete, touch up and restore damaged or defaced surfaces.
- C. Provide protection of installed materials from water infiltration into or behind them.
- D. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully dry.
- E. Protect and clean landscaping free of cement plaster debris.

### 3.12 REPAIRS

- A. Repair or replace Work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed at no additional cost to University.

END OF SECTION 09 24 00

**SECTION 09 24 00**

**PORTLAND CEMENT PLASTERING – SEVERE WEATHER EXPOSURE**

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes furnishing and installation of the following:
  - 1. Rainscreen: Exterior, severe weather exposed portland cement plasterwork (stucco) with fluid applied air and water barrier, drainage layer, and metal lath over continuous sheathing.
  - 2. Accessories.
- B. Cement plaster assembly shall comply with ASTM C926, ASTM C1063, and other applicable ASTM publications.
- C. Plaster System for Severe Weather Exposure: The enhanced weather-barrier system is intended for use in locations that are exposed to, and un-protected from, prevailing wind and rain (typically South - Southwest) during inclement weather events, and in locations subjected to extreme temperature variations and directly exposed to the sun during the hottest parts of the day. Review with UCSC project manager to determine if the project site is in a location requiring the use of the enhanced weather-barrier system.

1.02 RELATED REQUIREMENTS

- A. Flexible Flashing: Section 07 65 00
- B. Water Resistive Barrier System 07 25 00
- C. Fluid-Applied Membrane Air Barriers 07 27 26

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Hold Preinstallation meeting in accordance with Section 01 31 19, Project Meetings. Attending shall be the University, Design Professional, Installer including personnel directly responsible for the installation, manufacturer's representative, and installers whose work interfaces with or affects the Work of this Section including installers of sheet metal.
  - 1. Provide all Submittals for approval a minimum of (7) days prior to preinstallation meeting.
  - 2. Ensure a clear understanding of the Contract Documents.
  - 3. Provide on-site inspection and acceptance of the substrate and pertinent structural details relating to the cement plaster system.
  - 4. Coordinate the work of the various trades involved in providing the cement plaster assembly and other components secured through the cement plaster.
  - 5. The Contractor shall attend the conference with personnel directly responsible for the installation of cement plaster assembly in its entirety, including flashing and sheet metal work. Conflicts shall be resolved in writing.
- B. Sequencing: Sequence installation so lath is installed closely to weather-resistive barrier and drainage layer to limit quantity of fasteners used for installation of weather-resistive barrier and drainage layer.

#### 1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For cement plaster system. Show locations and installation of control and expansion joints including plans, elevations, sections, details of components, penetrations through cement plaster assembly, and attachments to other work.
- C. References: Submit the following ASTM Application Specifications, latest editions.
  - 1. ASTM C 926
  - 2. ASTM C 1063
  - 3. Certification on company letterhead indicating that the ASTM standards have been reviewed in their entirety with the installer and that the installer agrees to comply with the applicable requirements therein during the installation of Portland cement plastering.
- D. Samples: For each texture and finish indicated.
- E. Qualifications: Work history data of successful warranted installations similar to that of this Project
- F. Certifications: Signed by manufacturer certifying that installer is a factory authorized certified applicator in good standing with the manufacturer and is qualified to perform the specified work and able to receive the required warranties.
- G. Sample Warranties: Sample copies of manufacturer and contractor warranties.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data.
- B. Warranty Documentation.

#### 1.06 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For portland cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Manufacturer Qualifications: Qualified manufacturer with staff available for the Project to provide site visits performed by a technical representative of the manufacturer at the intervals below. Contractor to coordinate manufacturer site visits.
  - 1. Pre-installation meeting.
  - 2. Final inspection for issuance of warranty by a technical representative employed by weather barrier and cement plaster manufacturers specifically to inspect installation for warranty purposes.
- C. Applicator Qualifications: Qualified firm that is authorized by the membrane manufacturer prior to execution of agreement with minimum five years of documented experience as a certified applicator to install manufacturer's products for the specified warranty.

1. Applicator personnel trained and authorized by the manufacturer shall complete all work pertaining to the installation of the Work of this Sections, including membrane and flashings.
  2. Use adequate amounts of such qualified workmen who are thoroughly trained in the crafts and techniques required to properly install the type of cement plaster assembly specified and other work required to complete the Work specified and within the specified time.
- D. Source Limitations: Obtain components for cement plaster assembly from same manufacturer or approved by cement plaster manufacturer. Each component of cement plaster assembly shall be by single manufacturer and shall not vary on the Project.
- E. Suitability of Contract Documents: Verify that the Contract Documents are workable and not in conflict with the manufacturers' recommendations and instructions prior to the start of the Work.
1. Start of the Work constitutes acceptance of project conditions and requirements.
- F. Mockups: Provide mockups listed below. Mockups shall remain on-site until accepted by University and Design Professional.
1. Cement Plaster Mockups: Prior to application, install mockups of at least 50 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
    - a. Install mockups for each type of finish.
  2. Weather-resistive Barrier Mockups: Prior to installation, install mockups of weather-resistive barrier(s), including self-adhering flashings, non-adhesive flexible flashings, and sheet metal flashings, for each type of opening.
    - a. Install stand-alone mockups.
    - b. Weather-resistive barrier, sheet metal and cement plaster installers shall be present at mockup.
    - c. Mockup openings until mockups are in compliance with the Contract Documents.

#### 1.07 Delivery, storage, and handling

- A. Deliver materials to the Project site in manufacturer's original, unopened packages and containers bearing the manufacturer's name and label, and the following information:
1. Product name or title of material.
  2. Manufacturer's stock number and date of manufacture.
  3. Contents by volume, for pigment and vehicle constituents.
  4. Thinning instructions (if permitted).
  5. Installation/application instructions.
  6. Color name and number.
  7. Handling instructions and precautions.
  8. VOC content.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Store materials not in use in tightly covered containers in a well-ventilated area in an ambient temperature range of 50 degrees F to 85 degrees F unless manufacturers require more stringent temperature limits.

- D. Maintain containers in a clean condition, free of foreign materials and residue.
- E. Protect materials from freezing.
- F. Remove oily rags and waste daily.
- G. Store rolls on end.
- H. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- I. All materials which are determined to be damaged by the Design Professional, Owner or the manufacturer are to be removed from the job site and replaced at no cost to the Owner.
- J. Keep storage area neat and orderly.

#### 1.08 FIELD CONDITIONS

- A. Comply with ASTM C 926 requirements.
- B. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.
- C. Exterior Plasterwork: Apply plaster and allow for 24 hour dry time when ambient temperature is greater than 40 degrees F.
- D. No plaster shall be installed on the last two days of the scheduled work week to allow for moist curing to occur during the normal work week.
- E. Apply materials within the range of ambient and substrate temperatures recommended by the roofing manufacturer.

#### 1.09 WARRANTY

- A. Warranty, General: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Cement Plaster System Manufacturer Warranty: Submit a written warranty, executed by the manufacturer, agreeing to repair or replace cement plaster assembly that fail within the specified warranty period.
  - 1. Warranty Duration: One (1) year from the date of Substantial Completion.
- C. Weather Resistive Barrier Manufacturer Warranty: Manufacturer will pay the cost of materials and labor to correct problems found to be caused solely by the failure of the manufacturer's product to perform to manufacturer's published specifications.
  - 1. Warranty Period: Ten (10) years from date of substantial completion.
- D. Installer Warranty: Installer's warranty in which installer agrees to repair or replace cement plaster assembly that fails in materials or workmanship within the specified warranty period. Repair or replacement shall include entire assembly including, but not limited to, accessories and flashings.

1. Warranty Period: Five (5) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.01 CEMENT PLASTER SYSTEM

- A. Cement plaster system includes components listed.

1. System Thickness: 7/8 inch.

### 2.02 PLASTER MATERIALS

- A. Pre-blended portland cement plaster (fibered): Factory proportioned, pre-sanded, fiber reinforced portland cement plaster with acrylic admixture in brown coat for trowel or pump application, field mixed with water.
  1. Subject to compliance with requirements, provide BMI 690 Standard with Fibers; BMI Products or equal, for scratch and brown coat for three-coat plasterwork.
- B. Scratch Coat: Fibered pre-blended Portland cement, and water.
- C. Brown Coat: Fibered pre-blended Portland cement, admixture and water.
- D. Finish: Ready-mixed cement-based textured wall finish. Subject to compliance with requirements, provide BMI Plain Stucco Finish; BMI Products or equal.
  1. Texture: To be selected by Design Professional.
  2. Finish: Prime and paint.
  3. Color: To be selected by Design Professional from paint manufacturer's full range of colors, including custom colors.

### 2.03 PLASTER MIXES

- A. Scratch Coat: Mix with water in accordance with manufacturer's published instructions.
- B. Brown Coat: Mix with water in accordance with manufacturer's published instructions. Mix acrylic admixture with brown coat at a ratio of 3 parts water to 1 part admixture.

### 2.04 Plaster MISCELLANEOUS MATERIALS

- A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Bonding Agent: Epoxy resin adhesive.
  1. Product: Sikadur 32, Hi-Mod LPL; Sika or equal.
- C. Acrylic Admixture: 100 percent acrylic polymer admixture for brown coat.
  1. Product: Acryl 60; Thoro System Products, Inc. or equal.

### 2.05 METAL LATH

- A. Woven-Wire Metal Lath: Woven-Wire Lath; ASTM C 1032; self-furring, with stiffener wire backing.

1. Class 1 hot-dip galvanized in accordance with ASTM A641.

B. Flat Rib Lath: Rib depth of not more than 1/8 inch.

1. Meet or exceed Federal Spec. No. QQL-101C, and ASTM A653 Grade 33 G-40 coating.

C. Furring shall be as deep as required to achieve metal lath furred away ¼ inch from drainage layer.

#### 2.06 DRAINAGE LAYER

A. Drainage Layer: 3/8 inch thick drainage layer consisting of a polymer core of fused entangled filaments bonded to a moisture resistant filter fabric. Subject to compliance with requirements, provide WaterWay 9010 Rainscreen Drainage Mat; Stucoflex.

#### 2.07 WEATHER-RESISTIVE BARRIER

A. Weather-Resistive Barriers: Polymeric cross-woven, non-perforated drainage wrap and asphalt-saturated kraft Grade "D" sheathing paper combined on one roll.

1. Subject to compliance with requirements, provide Hydrotex; Fortifiber or equal.

B. Weather-Resistive Barrier Criteria: Weather-resistive barrier shall comply with the following criteria:

1. Moisture Vapor Transmission: 52 Grams; ASTM E-96

2. Water Resistance: 95 minutes; ASTM D-779

3. Drainage Efficiency: 90.7 percent; ASTM E2273

4. Tensile Strength: MD- 70 lb-ft/inch, CD- 60 lb-ft/inch; ASTM D882

#### 2.08 CEMENT PLASTER REINFORCING LAYER

A. Cement Plaster Reinforcing Layer: Provide base coat and mesh over brown coat at narrow window headers and jamb posts and where indicated. Subject to compliance with requirements, provide base coat and mesh by BMI Products or equal.

1. Base Coat: 777 Adhesive Basecoat or equal.

2. Mesh: 4.5 oz./sq. yd. ASTM C-1116, BMI Standard Reinforcing Mesh or equal.

#### 2.09 ACCESSORIES

A. Manufacturer: Subject to compliance with requirements, provide accessories by Cemco Water Management Products or equal.

1. Material: G90 (sheet metal) or Class A (wire) hot-dip galvanized.

2. Thickness: 26 gage.

B. Zinc and Zinc-Coated (Galvanized) Accessories:

1. Foundation Weep Screed: Foundation weep screed with 3-1/2 inch flange and without holes.

a. Product: #34 Sill Screed by Cemco or equal



2. Internal Expansion Joint: Double-V expansion joint formed to a 90 degree for inside corners, fabricated for movement due to expansion and contraction.
    - a. Product: Corner Expansion Joint #30 by Cemco or equal.
  3. External-Corner Reinforcement: Fabricated from metal wire with nailing strips along both sides.
    - a. Product: Cemcorner by Cemco or equal.
  4. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged "J" style; with expanded flanges where indicated.
    - a. Product: J-Series Casing Bead with 3-1/2 inch flange by Cemco or equal
    - b. Product, Expanded Flanges: #66 Expanded Flange Casing Bead by Cemco or equal
  5. Vertical Control Joints: One-piece double "J" type; with perforated flanges and removable protective tape on plaster face of control joint.
    - a. Product: Double "J" Control Joint (#XJ-15) by Cemco or equal
  6. Horizontal Control Joints: One-piece double "V" type; with perforated flanges and removable protective tape on plaster face of control joint. Provide horizontal control joint with one solid flange where indicated.
    - a. Product: Double "V" Control Joint (#15) by Cemco or equal
    - b. Product, Solid Flange: #15 Solid Leg Control Joint by Cemco or equal.
  7. Two-Piece Expansion Joints: Formed to produce slip-joint and square-edged reveal that is adjustable from 1/4-to-5/8-inch wide; with perforated flanges.
  8. Drip Screed: Drip head screed with 3-1/4 inch vertical flange and without holes.
    - a. Product: #6 Drip Head Screed by Cemco or equal.
    - b. Arches: Prefabricate radiused drips for arch conditions.
  9. Soffit Drip Edge: Soffit drip edge screed with 4 inch vertical flange and without holes.
    - a. Product: #12 Soffit Drip Edge by Cemco or equal.
    - b. Arches: Prefabricate radiused drips for arch conditions.
- C. Extruded Aluminum Accessories:
1. Aluminum Reveal: Extruded aluminum channel screed, non-vented.
    - a. Product: Fry Reglet Channel Screed by Fry Reglet Corporation or equal.
    - b. Reveal Width: Match existing.
- D. Self-Adhered Flashings – See 07 25 00. [Note to Designer – Include Self-Adhered Flashing Specifications per Campus Standards]

## 2.10 FASTENERS

- A. Fasteners for Attaching Woven Wire Metal Lath to Wood Substrates: Galvanized furring nails.
- B. Fasteners for Attaching Weather Resistive Barrier to Substrates: Single chisel stainless steel staples.
- C. Fasteners for Attaching Drainage Layer to Substrates: Single chisel stainless steel staples.
- D. Fasteners for Attaching Line Wire to Substrates: Single chisel stainless steel staples or hot-dipped galvanized ring shanked nails by Maze Nails or equal.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. General Installation: Install in accordance with manufacturer's written instructions and recommendations.
- B. Examine substrates and conditions, with the Applicator present, under which cement plaster finish system will be applied for compliance with application requirements.
- C. Surfaces to receive cement plaster system must be thoroughly dry before materials are applied.
- D. Notify the Design Professional in writing of anticipated problems using products specified over existing substrates.
- E. Begin application only after unsatisfactory conditions have been corrected and surfaces to receive materials are thoroughly dry.
- F. Provide continuous backing for securement of cement plaster accessories.
- G. Start of application within a particular area will be construed as the Applicator's acceptance of surface conditions.

### 3.02 Preparation

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated.
  - 1. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and product application.
  - 2. After completing operations in each area, reinstall items removed, using workers skilled in trades involved.
- B. Cleaning: Before applying materials or other surface treatments, clean substrates of substances that could impair bond of coating systems.
  - 1. Remove oil and grease before cleaning.
  - 2. Schedule cleaning and materials application so dust and other contaminants will not fall on wet, newly applied surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be receiving materials according to the manufacturers written instructions for the particular substrate conditions and as specified.

1. Cementitious Surfaces: Prepare surfaces to receive materials. Sand blast off existing paints to achieve bare stucco surface.
  2. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar conditions by water blasting followed by a clear water rinse.
  3. Remove mildew and neutralize surfaces according to manufacturer's written recommendations before patching materials are applied.
  4. Do not apply materials over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.
- D. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.
- E. Prepare solid-plaster bases that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

### 3.03 WEATHER RESISTIVE BARRIER

- A. General: Cover sheathing with weather resistive barrier as follows.
- B. Install weather resistive barrier in accordance with manufacturer's written instructions and "best-practice" recommendations.
- C. Ensure substrate is properly installed, free of projections and irregularities that may be detrimental to proper installation of the weather resistant barrier.
- D. Install barrier over substrate, starting at the bottom of a wall, shingling upwards. Cover rough window and door openings.
1. Shingle (to shed water) with existing weather resistive barrier to provide 100 percent sheathing coverage behind cement plaster.
  2. Attach barrier tight to substrate, free of voids, wrinkles, buckles and fishmouths.
  3. Secure barrier to wall with no more fasteners than is required to hold in place until lath is installed.
  4. Overlap corners a minimum of 6 inches.
  5. Lap requirements:
    - a. 6 inch vertical overlap.
    - b. 4 inch horizontal overlap.
  6. Cover barrier within 30 days of installation. Material must be removed and reinstalled beyond 30 days at no cost to the Owner.
  7. Integrate weather resistive barrier with self-adhering flashings at windows, doors, penetrations and where indicated.
- E. Inspect and repair barrier prior to application of lath and plaster. Repair damage including tears, perforations, water damaged and/or other similar damage to weather resistive barrier with self-adhering tape for a water shedding assembly.
1. Replace damaged weather resistive barrier where tape repairs are not practical.

### 3.04 DRAINAGE LAYER INSTALLATION

- A. Prior to installing drainage layer, ensure the following:
1. Windows and doors have been properly flashed and sealed.

2. Fluid-applied water and air barrier is properly installed to allow drainage without water penetration.
- B. Install drainage layer in accordance with manufacturer's written instructions and recommendations.
- C. Install drainage layer in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed abutted.
- D. At window and door openings, cut tight to vertical part of window and door casings. Take care not to cut or damage weather-resistive barrier and waterproof coating.
- E. Secure drainage layer to wall with no more fasteners than is required to hold in place until lath is installed.

### 3.05 INSTALLING METAL LATH

- A. Install in accordance with manufacturer's written instructions and recommendations, according to ASTM C 1063 and as indicated in Contract Documents, using more conservative fastening pattern.
- B. Fasteners shall be secured in v-grooves of metal self-furring lath. Where furring fasteners are specified, fasteners shall not be secured in v-grooves.
- C. Pattern: 16 inches horizontally and 6 inches vertically (similar to a framed wall).
- D. Fasteners shall project through metal studs not less than 3/8 inch or three full threads, whichever is greater, and penetrate wood substrates 1-1/4 inch minimum, unless more stringent requirements are indicated in ASTM C 1063.
- E. Fasteners shall engage not less than three strands of lath.
- F. Apply sealant over fasteners at open framing.
- G. Isolation: Where lathing and metal support system abuts building structure horizontally and where partition or wall abuts overhead structure, sufficiently isolate from structural movement to prevent transfer of loading from building structure.

### 3.06 INSTALLING ACCESSORIES

- A. Install in accordance with manufacturer's written instructions, according to ASTM C 1063 and at locations indicated on Drawings, using more conservative fastening pattern
- B. Reinforcement for External Corners:
  1. Install lath-type, external-corner reinforcement at exterior locations.
- C. Control Joints: Install control joints in specific locations approved by University's Representative for visual effect as follows:
  1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
    - a. Vertical Surfaces: 144 sq. ft. (13.4 sq. m).
    - b. Horizontal and other Nonvertical Surfaces: 100 sq. ft. (9.3 sq. m).

2. At distances between control joints of not greater than 18 feet (5.5 m) on center.
3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
4. Where control joints occur in surface of construction directly behind plaster.
5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.
6. Where indicated in the Contract Drawings.

D. Miter inside/outside corners of accessories where they change direction.

### 3.07 MIXING

A. Mix plaster and finish materials in accordance with manufacturer's written instructions and recommendations.

### 3.08 PLASTER APPLICATION

A. General: Comply with ASTM C 926 and manufacturer's recommendations and written instructions.

1. Apply cement plaster without interruption to avoid cold joints in appearance. Abut wet cement plaster to set cement plaster at natural or architectural breaks in the wall such as expansion joints, terminations or changes in plane.
2. Do not install cement plaster during extremely hot, dry and/or windy conditions.
3. Do not install cement plaster during freezing conditions or on frozen substrates.
4. Do not install cement plaster onto grounds of accessories.
5. Completely embed lath and flanges of accessories and completely cover attachments with cement plaster.
6. Should cement plaster get into control or expansion joints, remove the cement plaster from within the joint before the cement plaster sets.
7. Clean and prepare area to receive plaster in accordance with manufacturer's recommendations.
8. Trowels used for application shall be stainless steel.

B. Clean and prepare area to receive repair plaster in accordance with manufacturer's recommendations.

C. Walls; Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork.

1. Factory proportioned, pre-sanded, fiber reinforced, portland cement based.

D. Scratch Coat: apply plaster with sufficient pressure to key into and embed the metal lath.

1. Apply sufficient material, 3/8-1/2 inch (9-13mm), to cover the metal lath and to permit scoring the surface.
2. Score the plaster upon completion of each panel in preparation for a second coat.
3. Score horizontally.
4. Moist cure the first coat for a minimum 48 hours. Fog as frequently as required during the moist cure period to prevent loss of moisture from the stucco, but no less than four times per day. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist curing can be diminished.

E. Brown Coat: Dampen the scratched surface with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with

the first coat and as needed to bring the stucco to a uniform thickness that matches the grounds of the accessories. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with plaster. Final thickness of cement plaster shall be minimum 5/8 inch, maximum 7/8 inch, to achieve required system thickness.

1. After the plaster has become slightly firm float the surface lightly with a darby or wood float to densify the surface and to provide a smooth, even surface.
  2. Moist cure after the plaster has set by lightly fogging for at least 48 hours. Fog as frequently as required during the moist cure period to prevent loss of moisture from the stucco, but no less than four times per day. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist curing can be diminished.
- F. Cement Plaster Reinforcing Layer: Install cement plaster reinforcing layer at corners of windows and other openings, narrow window headers and jamb posts and where indicated in strict accordance with manufacturer's written instructions and recommendations.
1. Do not begin application of base coat material when a chance of rain is forecast during, and for 24 hours after, application.
  2. Prepare substrate in accordance with manufacturer's written instructions and recommendations.
  3. Apply base coat material level, in one coat, 1/8 inch thickness.
  4. Immediately embed mesh into the base coat, smoothing wrinkles and working the mesh down and covering it with fresh material with a trowel.
    - a. Apply 9 inch by 12 inch detail mesh at 45 degree angle at corners of windows and other openings.
    - b. Double wrap mesh at all corners.
    - c. Overlap mesh on all edges 2-1/2 inches minimum.
    - d. Embed mesh starting at the top and work down when using full widths.
  5. Minimum thickness of cement plaster reinforcing layer shall be 1/16 inch when dry.
  6. Reapply base coat if necessary to achieve minimum thickness.
  7. Allow a minimum of 24 hours.
- G. Apply finish directly over the prepared brown coat in accordance with manufacturer's recommendations. Perform moisture tests to confirm that surfaces meet manufacturer's requirements prior to finish coat application
1. Do not apply finish coat until all irregularities have been corrected.
  2. Apply finish by spraying or troweling with a stainless steel trowel, depending on the finish specified. Follow these general rules for application of finish:
    - a. Allow brown coat surface to dry in accordance with manufacturer's recommendations.
    - b. Avoid application in direct sunlight.
    - c. Apply cement plaster finish in a nominal thickness of 1/8 inch.
    - d. Apply finish in a continuous application, and work a wet edge towards the unfinished wall area. Work to an architectural break in the wall before stopping to avoid cold joints.
    - e. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.
    - f. Do not install separate batches of finish side-by-side.

- g. Apply cement plaster finish with sufficient material and pressure to ensure a tight bond with base coat.
    - h. Apply cement plaster finish to a uniform thickness and in a consistent finish.
    - i. Do not apply finish into or over joints or accessories. Apply finish to outside face of wall only.
    - j. Do not apply finish over irregular or unprepared surfaces, or surfaces not in compliance with the requirements of the project specifications.
  3. Do not begin application of finish coat material when a chance of rain is forecast during, and for 24 hours after, application.
  4. Allow the application of sealants detailed prior to application of finish coat materials.
    - a. Protect sealants during application of finish coat materials.
    - b. Sealant shall cure a minimum of 14 days prior to finish coat application
- H. In severe drying conditions moist cure cement plaster as needed after plaster installation for optimum strength gain and resistance to cracking. Fog as frequently as required to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture.
- I. The finished installation must be true, plumb and square, with maximum tolerance of 1/8 inch in 10 feet in any direction.
- J. Paint in accordance with Division 09 "Painting and Coating."

### 3.09 PH TESTING OF CEMENT PLASTER PRIOR TO PRIMING AND PAINTING

- A. General: Cement plaster substrates shall be pH tested in accordance with paint manufacturer's recommendations.
- B. Fill cracks and holes prior to painting.
- C. Measure pH where fine cracking and areas with early signs of efflorescence are visible. Measure pH where building exterior has different exposure and temperature variations including sun-exposed and shady wall areas.
  1. Coordinate pH testing with Owner's Representative.
- D. Building exterior shall have pH less than 11 prior to priming and painting.

### 3.10 FIELD QUALITY CONTROL

- A. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when coating operations are being conducted:
  1. The Owner will engage the services of a qualified independent testing and inspecting agency to sample materials used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in presence of the Contractor.
  2. The testing and inspecting agency will perform appropriate tests, as required by the Owner.
  3. If results show materials do not comply with requirements, the Contractor may be directed to stop work, remove noncomplying materials, pay for testing, recoat surfaces coated with rejected materials, or remove rejected materials from previously coated surfaces if, on recoating with specified materials, the 2 materials are not compatible.

### 3.11 CLEANING

- A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from the Project site.
  - 1. After completing Work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods, being careful not to scratch or damage adjacent finished surfaces.

### 3.12 PROTECTION

- A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating as approved by the Consultant. Leave in an undamaged condition.
- B. Provide "Wet Paint" signs to protect newly applied materials. Remove temporary protective wrappings provided by others to protect their work after completing coating operations.
  - 1. After construction activities of other trades are complete, touch up and restore damaged or defaced surfaces.
- C. Provide protection of installed materials from water infiltration into or behind them.
- D. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully dry.
- E. Protect and clean landscaping free of cement plaster debris.

### 3.13 REPAIRS

- A. Repair or replace Work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed at no additional cost to University.

END OF SECTION 09 24 00