SECTION 09 24 23

Portland Cement-Based Plaster Exterior Sealed Cladding System

**(Notes to Specifier are accessible by pressing the ¶ (pilcrow) key)**

\*\*NOTE TO SPECIFIER\*\*

The Purpose of this Guide Specification is to assist the Specifier in developing a Project Specification for the use of products manufactured and distributed by United Gilsonite Laboratories (UGL). This guide has been prepared to be included as part of a complete project manual and is not intended to be a “stand-alone” document.

This Guide Specification will need to be carefully reviewed and edited by a qualified professional specifier for applicability on the specific project being developed.

Portland Cement-Based Plaster systems differ from region-to-region due to regional practices, regionally available products and regional climactic conditions. The system specified herein is designed predominately for hot/humid climate zones and may or may not be applicable in other areas. Specifiers are encouraged to consult United Gilsonite Laboratories (UGL) and the other manufacturers listed in this specification for guidance in developing specific regionally applicable specifications.

1. GENERAL
	* + 1. RELATED DOCUMENTS
				1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			2. SUMMARY
				1. Section Includes:

NOTE TO SPECIFIER: Delete application not required.

Waterproofing above grade exterior surfaces of concrete.

Installation of Portland Cement-Based Plaster Exterior Sealed Cladding System over wood framing and Oriented Strand Board (OSB) using screws.

Installation of Portland Cement-Based Plaster Exterior Sealed Cladding System over wood framing and Oriented Strand Board (OSB) using metal staples.

Installation of Portland Cement-Based Plaster Exterior Sealed Cladding System over metal framing and glass-mat gypsum sheathing.

Installation of Portland Cement-Based Plaster Exterior Sealed Cladding System over Masonry Blocks, Poured Concrete or CMU.

NOTE TO SPECIFIER: Delete SECTIONS BELOW NOT RELEVANT TO THIS PROJECT; ADD OTHERS AS REQUIRED.

* + - * 1. Related Sections:

Section 04 21 00 – Masonry Assemblies Unit Masonry.

Section 04 22 00 – Concrete Unit Masonry.

Section 05 40 00 – Light Gauge Cold-Formed Steel Framing.

Section 06 11 00 – Wood Framed Construction.

Section 06 16 00 - Sheathing.

Section 09 91 13 – Exterior Painting

* + - 1. references
				1. ASTM International (ASTM)

ASTM C150 – Standard Specification for Portland Cement.

ASTM C207 – Standard Specification for Hydrated Lime for Masonry Purposes.

ASTM C847 – Standard Specification for Metal Lath.

ASTM C897 – Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.

ASTM C920 – Standard Specification for Elastomeric Sealants.

ASTM C926 – Standard Specification for Application of Portland Cement-Based Plaster.

ASTM C933 – Standard Specification for Welded Wire Lath.

ASTM C1032 – Standard Specification for Woven Wire Plaster Base.

ASTM C1063 – Standard Specification for the Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.

ASTM C1787 – Standard Specification for Installation of Non-Metallic Plaster Bases (Lath) Used with Portland Cement-Based Plaster in Vertical Wall Applications.

ASTM C1861 – Standard Specification for Lathing and Furring Accessories, and Fasteners, for Interior and Exterior Portland Cement-Based Plasters.

ASTM D16 – Standard Terminology for Paint, Related Coatings, Materials and Applications.

ASTM D6904 – Standard Practice for Resistance to Wind-Driven Rain for Exterior Coatings Applied to Masonry.

* + - * 1. Florida Lath and Plater Bureau (FLAPB)

TB-ST 02-18 – Stucco on Block.

* + - * 1. The Stucco Institute

SCS – 01 Sealed Cladding System Installation Manual.

* + - 1. ACTION SUBMITTALS
				1. Product Data: For each type of product.

Include construction details, materials descriptions and tested physical properties.

Include manufacturer’s instructions for evaluating, preparing and treating substrate.

* + - * 1. Shop Drawings:

Show locations and extent of Portland Cement-Based Plaster Sealed Cladding System.

* + - * 1. Samples:

For each individual component product specified, samples shall be submitted upon request.

Samples of final assembled system with finish coat shall be 12 inches by 12 inches.

* + - 1. QUALITY ASSURANCE
				1. Qualifications:

Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products and systems.

Applicator Qualifications: Company with minimum of 5 years’ experience in application of Portland cement-based plaster as specified in this section on projects of similar size and scope, and employs installers and supervisors who have completed certification training by or from organizations acceptable to product manufacturers.

Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.

* + - * 1. Field Mock-up:

Install at Project site or pre-selected area of building an area for field mock-up, as directed by Architect.

Apply material in strict accordance with manufacturer’s written application instructions.

Manufacturer’s representative or designated representative will review technical aspects; surface preparation, application, and workmanship.

Field mock-up will include sample terminations, penetrations, control-joints, and other construction details.

Field mock-up will be standard for judging workmanship on remainder of Project.

Maintain field mock-up during construction for workmanship comparison.

Do not alter, move, or destroy field mock-up until Work is completed and approved by Architect.

Obtain Architect’s written approval of field mock-up before start of material application, including approval of aesthetics, color, texture, and appearance.

Subject to compliance with requirements, field mock-up may become part of the completed Work, if undamaged at time of Substantial Completion.

* + - 1. DELIVERY, STORAGE, AND HANDLING
				1. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.
				2. With the exception of bulk sand or water, deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
				3. Transport and store in unopened containers and keep in clean, dry condition protected from rain, dew, and humidity.
				4. Do not store bagged containers in direct contact with the ground.
				5. Do not allow liquid product to freeze.
			2. PROJECT CONDITIONS
				1. Environmental Requirements:

Portland Cement-Based Plaster: Maintain ambient and surface temperatures above 40 degrees F (4 degrees C) before, during and after application for a minimum of 24 hours. Protect from uneven and excessive evaporation. Protect from freezing for a period of not less than 24 hours after set has occurred.

Waterproof Face-Barrier Coating: Do not apply if rain is expected within 24 hours. Do not apply above 90 degrees F (32 degrees C) or below 50 degrees F (10 degrees C) or when temperatures are expected to fall below 40 degrees F (4 degrees C) within 24 hours.

* + - * 1. Substrate Preparation:

Do not apply Portland Cement-Based Plaster or Waterproof Face-Barrier Coating to substrates whose temperatures are below 40 degrees F (4 degrees C).

All wood based products shall be dry and have a moisture content below 16 percent.

Masonry block, poured concrete or CMU shall be bare and uncoated prior to direct application of Portland Cement Based Plaster.

Masonry block, poured concrete or CMU shall be evenly wet with potable water to a saturated, surface dry condition prior to application of Portland Cement-Based Plaster.

* + - 1. WARRANTY
				1. Waterproof Face Barrier Coating manufacturer agrees to replace product or refund product purchase price if product fails to provide a waterproof coating.

Warranty Period: 15 years from application.

Specific Warranty Limitations:

Review manufacturer website: <http://www.drylok.com/warranty/ugl-drylok-extreme-masonry-waterproofer-15-year-warranty.pdf> for complete warranty details.

Warranty Inspection: Manufacturer representative or designated representative.

1. PRODUCTS
	* + 1. MANUFACTURERs
				1. Subject to compliance with requirements, provide products from the following manufacturers:

Welded Wire Metal Lath:

ClarkDietrich, West Chester, OH 45069; Technical Service: 1-888-437-3244; Email: info@clarkdietrich.com; Website: [www.clarkdietrich.com](http://www.clarkdietrich.com).

Structa Wire Corporation; Vancouver, BC, V5N 1N2; Customer Service: 1-800-887-4708; Email: info@structawire.com; Website: [www.structawire.com](http://www.structawire.com).

Waterproof Face-Barrier Coating:

United Gilsonite Laboratories (UGL), Scranton, PA 18501; Customer Service: 1-800-845-5227 or 1-570-344-1202; Email: ugllabs@ugl.com; Website: [www.ugl.com](http://www.ugl.com)

* + - * 1. Substitutions: Not Permitted.
				2. Specifications and Drawings are based on manufacturer's proprietary literature.
				3. Limitation for Complete System: Obtain materials from listed manufacturers to create a complete tested system meeting the Florida Product Approval system Approval Number FL 30710-R1.
			1. MATERIALS
				1. Water Resistive Barrier.
				2. Welded Wire Metal Lath.

Basis-of-Design:

StructaLath No. 17 SFRC Twin Trac 2.5.

* + - * 1. Corrosion Resistant Fasteners.
				2. Portland cement-based plaster.
				3. Sand.
				4. Low-modulus, weather-resistant elastomeric sealant.
				5. Waterproof Face Barrier Coating

Basis-of-Design:

DRYLOK® EXTREME Masonry Waterproofer.

note TO SPECIFIER: COVERAGE: 100 SF/U.S. GAL. applied in two coats.

* + - 1. MIXING Portland CEMENT-BaSEd Plaster
				1. Portland Cement-Based Plaster Base Coats:

Mix ratios shall be per ASTM C926 TABLE 2.

Acceptable Mixes:

Portland Cement with Lime or Plastic (Stucco) Cement and Sand at a ratio of 1:4.

Plastic (Stucco) Cement and Sand at a ratio of 1:4.

Masonry Cement and Sand at a ratio of 1:4.

* + - * 1. Portland Cement-Based Plaster Finish Coats:

Mix ratio shall be per ASTM C926 TABLE 3.

Acceptable Mixes:

Portland Cement, Lime, Sand.

Portland Cement, Masonry Cement, Sand.

Masonry Cement, Sand.

Plastic (Stucco) Cement, Sand.

* + - 1. mixing Waterproof Face-Barrier Coating
				1. Stir thoroughly before and during application.
				2. Do not thin.
				3. Color:

White

note TO SPECIFIER: LIGHT SHADE Custom colors are available WITH ALKALI-PROOF UNIVERAL TINTING COLORS. maximum 2 oz. tinting color per gallon.

Custom color. Refer to Drawings.

1. eXECUTION
	* + 1. EXAMINATION
				1. Comply with Section 01 70 00.
			2. SURFACE PREPARATION

note TO SPECIFIER: delete if WOOD substrate not present.

* + - * 1. Ensure that substrates are sound, secure and suitable for lath and plaster.

note TO SPECIFIER: delete if concrete substrate not present.

* + - * 1. Ensure substrate has properly cured. Concrete should obtain 80 percent of design strength. If efflorescence is present, remove it with DRYLOK® ETCH or muriatic acid before proceeding.
			1. application – GENERAL
				1. Refer to **[Local Code]**, ASTM C926, ASTM C1063, FL30710-R1 and appropriate manufacturer’s product data sheet for additional installation requirements.

NOTE TO SPECIFIER: Delete application IF DIRECT APPLYING plaster TO Concrete block or cmu..

* + - 1. appLICATION – WEaTHER-RESISTANT BARRIER (WRB)
				1. General

Install in accordance with manufacturer’s instructions.

NOTE TO SPECIFIER: Delete application if direct applying plaster to concrete block or cmu.

* + - 1. Application – Lath and Trims
				1. General:

Install per ASTM C1063.

Trims shall be full length and installed plumb and level to within one-eighth inch in eight feet.

* + - * 1. Weep screed shall be installed at the base of all framed walls.
				2. Trims shall be installed per manufacturer’s instructions. Do not exceed 24 inches on center spacing.
				3. Lapping:

Side Laps – 1 mesh length, approximately 1.5 inches.

End Laps – Approximately 1.5-inches. Laps shall occur over a framing member.

Accessories – Lap flange of accessories by more than 50%.

* + - * 1. Fastening:

Staples – Minimum 1-inch leg x 1-inch crown.

Spacing:

Maximum 6-inch o.c. along horizontal dimension of twin track.

Attachment rows shall be spaced vertically at a maximum 6-inch o.c. offset 3-inch o.c. from preceding row.

Penetration:

Minimum 3/4-inch into wood framing.

Minimum 3/4-inch into wood sheathing.

Screws – Minimum #8 x 1-inch truss-head, K-lath.

Spacing:

Maximum 16-inch o.c. along horizontal dimension of twin track.

Attachment rows shall be vertically maximum 6-inch o.c. offset 8-inch o.c. from preceding row.

Penetration:

Minimum 3/4-inch into wood framing.

Minimum 3/4-inch into wood sheathing.

Minimum 3 full threads into metal framing.

* + - 1. Application – Portland cement-Based plaster
				1. General:

Install in accordance with The Sealed Cladding System Design Manual, available at [www.sealedcladdingsystems.com](http://www.sealedcladdingsystems.com).

Masonry block, poured concrete or CMU shall be bare and uncoated with water proofing or water repellant materials prior to direct applying Portland Cement-Based Plaster.

NOTE TO SPECIFIER: Delete direct application if applying plaster to metal lath over structural wood sheathing.

* + - * 1. First Coat (Scratch Coat) – Direct Application:

Evenly wet bare, uncoated surface with potable water to a saturated, surface dry condition.

Apply by hand-troweling or machine-spraying to a nominal thickness of 3/8-inch directly onto bare, uncoated surface.

As First Coat (Scratch Coat) becomes firm, score with a scarifying tool in the horizontal direction. Score in one direction only.

Allow First Coat (Scratch Coat) to become sufficiently rigid to accept Second Coat (Brown Coat).

* + - * 1. Second Coat (Brown Coat) – Direct Application:

Apply by hand-troweling to a nominal thickness of 1/8-inch to a total nominal plaster thickness of 1/2-inch.

Apply Second Coat (Brown Coat) to fill and complete First Coat (Scratch Coat).

Rod to a flat plane.

As excess moisture escapes Second Coat (Brown Coat), densify with a green wet float.

NOTE TO SPECIFIER: Delete metal lath application if direct applying plaster to masonry block, poured concrete or cmu.

* + - * 1. First Coat (Scratch Coat) – Metal Lath Application:

Apply by hand-troweling or machine-spraying to a nominal thickness of 3/8-inch.

First Coat (Scratch Coat) shall substantially cover the lath and be applied with sufficient pressure to encase lath in plaster.

As First Coat (Scratch Coat) becomes firm, score with a scarifying tool in the horizontal direction. Score in one direction only.

Allow First Coat (Scratch Coat) to become sufficiently rigid to accept Second Coat (Brown Coat).

* + - * 1. Second Coat (Brown Coat) – Metal Lath Application:

Apply by hand-troweling to a nominal thickness of 3/8-inch to a total nominal plaster thickness of 3/4-inch.

Apply Second Coat (Brown Coat) to fill and complete First Coat (Scratch Coat).

Rod to a flat plane.

As excess moisture escapes Second Coat (Brown Coat), densify with a green wet float.

* + - * 1. Moist Curing:

Provide sufficient moisture by fog or moist curing to achieve proper hydration of the Portland cement-based plaster.

Final curing time will depend on climatic and job conditions.

* + - 1. APPLICATION – SEalants
				1. A Relief Kerf shall be cut around all penetrations while Portland cement-based plaster is still in a soft green stage. Relief Kerf shall be at a 45-degree angle approximately 5/16-inch deep.
				2. All debris shall be removed from Relief Kerf prior to application of sealant. Damp brush seal all cut edges.
				3. Applied sealant shall be a low-modulus, weather-resistant elastomeric sealant. Acrylic Latex sealants are not permitted.
			2. Application – waterproof face-barrier coating
				1. Allow Portland cement-based plaster to cure to a pH of 9.0 or less before proceeding.
				2. Stir thoroughly during application.
				3. Apply coating directly on to bare plaster with a DRYLOK® Brush, nylon bristle brush or equivalent stiff fiber brush or roller or by spray equipment. Back-brush or back-roll first coat to fill pores of plaster and achieve uniformity.
				4. Two coats shall be applied. Each coat shall be 13-21 mils WFT. Allow first coat to cure 3 hours minimum, then apply second coat by brush, spray or roller.

note TO SPECIFIER: A THIRD TOP coat OF HIGH QUALITY LATEX PAINT can be APPLIED AFTER 24 HOURS.

* + - * 1. Examine finished surface after two coats and inspect for any open pores or pinholes. If observed, spot-treat rejected areas, repaint entire surface with another coat and reinspect.
			1. CLEANING
				1. Clean material from tools and equipment with water. Remove cured materials by washing or scraping.
			2. PROTECTION
				1. Protect work from damage of other trades during construction. Correct deficiencies or damage by cleaning or recoating, as approved by Architect.

END OF SECTION