

SECTION 09220
PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Metal framing and furring.
 - 2. Metal lath and accessories.
 - 3. Portland cement plaster.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and General and Supplementary Conditions.
- B. Product Data for each product specified.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cementitious materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
- B. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes.

1.5 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Provide heat and protection, temporary or permanent, as required to protect each coat of plaster from freezing for at least 24 hours after application. Distribute heat uniformly to prevent concentration of heat on plaster near heat sources; provide deflection or protective screens.
- B. Warm-Weather Requirements: Protect plaster against uneven and excessive evaporation and from strong flows of dry air, both natural and artificial. Apply and cure plaster as required by climatic and job conditions to prevent dry out during cure period. Provide suitable coverings, moist curing, barriers to deflect sunlight and wind, or combinations of these, as required.
- C. Exterior Plaster Work: Do not apply plaster when ambient temperature is below 40 deg F.
- D. Protect contiguous work from soiling and moisture deterioration caused by plastering. Provide temporary covering and other provisions necessary to minimize harmful spattering of plaster on other work.

PART 2 - PRODUCTS

2.1 METAL SUPPORTS FOR SUSPENDED AND FURRED CEILINGS

- A. General: Size metal ceiling supports to comply with ASTM C 1063, unless otherwise indicated.
- B. Cast-in-Place and Postinstalled Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials, with holes or loops for attaching hanger wires; and with capability to sustain, without failure, a load equal to 5 times that imposed by ceiling

construction, as determined by testing according to ASTM E 488 conducted by a qualified independent testing agency.

1. Cast-in-place type designed for attachment to concrete forms.
2. Expansion anchor.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.

D. Channels: Cold-rolled steel, minimum 0.0598-inch- thick base (uncoated) metal and 7/16-inch-wide flanges, and as follows:

1. Carrying Channels: 1-1/2 inches deep, 475 lb/1,000 feet.
2. Furring Channels: 3/4 inch deep, 300 lb/1,000 feet.
3. Finish: ASTM A 653, G60 hot-dip galvanized coating for framing where indicated.

2.2 LATH

A. Expanded-Metal Lath: Comply with ASTM C 847 for material, type, configuration, and other characteristics indicated below.

1. Material: Fabricate expanded-metal lath from sheet metal conforming to the following:
 - a. Galvanized Steel: Structural-quality, zinc-coated (galvanized) steel sheet complying with ASTM A 653, G60 minimum coating designation, unless otherwise indicated.
2. Diamond-Mesh Lath: Comply with the following requirements:
 - a. Configuration: Flat.
 - 1) Weight: 3.4 lb/sq. yd.

2.3 ACCESSORIES

A. General: Comply with material provisions of ASTM C 1063 and the requirements indicated below; coordinate depth of accessories with thicknesses and number of plaster coats required.

1. Zinc-Alloy Components: ASTM B 69, 99 percent pure zinc.

B. Metal Corner Reinforcement: Expanded, large-mesh, diamond-metal lath fabricated from zinc-alloy or welded-wire mesh fabricated from 0.0475-inch- diameter, zinc-coated (galvanized) wire and specially formed to reinforce external corners of portland cement plaster on exterior exposures while allowing full plaster encasement.

C. Cornerbeads: Small nose cornerbeads fabricated from the following metal, with expanded flanges of large-mesh diamond-metal lath allowing full plaster encasement.

1. Zinc Alloy: Minimum 0.0207 inch thick.

D. Casing Beads: Square-edged style, with expanded flanges of the following material:

1. Zinc Alloy: Minimum 0.0207 inch thick.

E. Curved Casing Beads: Square-edged style, fabricated from aluminum coated with clear plastic, preformed into curve of radius indicated.

F. Control Joints: Prefabricated, of material and type indicated below:

1. Zinc Alloy: Minimum 0.0207 inch thick.
2. One-Piece Type: Folded pair of non-perforated screeds in M-shaped configuration, with expanded or perforated flanges.
 - a. Provide removable protective tape on plaster face of control joints.

G. Lath Attachment Devices: Material and type required by ASTM C 1063 for installations indicated.

2.4 PLASTER MATERIALS

A. Base-Coat Cements: Type as indicated below:

1. Portland cement, ASTM C 150, Type I.

B. Job-Mixed Finish-Coat Cement: Material and color as indicated below:

1. Portland cement, ASTM C 150, Type I.

- C. Cement Color: Gray.
- D. Factory-Prepared Finish Coat: Manufacturer's standard factory-packaged blend of portland cement, ASTM C 150, Type I or III; hydrated lime, Type S, ASTM C 206 or ASTM C 207; aggregate, ASTM C 897; and compatible with base coat and finish texture indicated; in color indicated below:
 - 1. White.
- E. Sand Aggregate for Base Coats: ASTM C 897.
- F. Aggregate for Finish Coats: ASTM C 897 system and as indicated below:
 - 1. Manufactured or natural sand, white in color.

2.5 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable.

2.6 PLASTER MIXES AND COMPOSITIONS

- A. General: Comply with ASTM C 926 for base- and finish-coat mixes as applicable to plaster bases, materials, and other requirements indicated.
- B. Base-Coat Mixes and Compositions: Proportion materials for respective base coats in parts by volume per sum of cementitious materials for aggregates to comply with the following requirements for each method of application and plaster base indicated. Adjust mix proportions below within limits specified to attain workability.
- C. Three-Coat Work over Metal Lath: Base-coat proportions as indicated below:
 - 1. Scratch Coat: 1 part portland cement, 3/4 to 1-1/2 parts lime, 2-1/2 to 4 parts aggregate.
 - 2. Brown Coat: 1 part portland cement, 3/4 to 1-1/2 parts lime, 3 to 5 parts aggregate.
- D. Job-Mixed Finish Coats: Proportion materials for finish coats in parts by volume for cementitious materials and parts by volume per sum of cementitious materials to comply with the following requirements:
 - 1. Proportions using sand aggregates as indicated below:
 - a. 1 part portland cement, 3/4 to 1-1/2 parts lime, 3 parts sand.
- E. Factory-Prepared Finish Coats: Add water only; comply with finish coat manufacturer's written instructions.

2.7 MIXING

- A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION OF LATH AND FURRING, GENERAL

- A. Standards: Comply with ML/SFA 920, "Guide Specifications for Metal Lathing and Furring," and with requirements of ASTM C 1063.
- B. 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. Install slip- or cushion-type joints to absorb deflections but maintain lateral support.
 - 1. Frame both sides of control joints independently and do not bridge joints with furring and lathing or accessories.
- C. Install additional framing, furring, runners, lath, and beads, as required to form openings and frames for other work as indicated. Coordinate support system for proper support of framed work that is not indicated to be supported independently of metal furring and lathing system.

3.2 INSTALLATION OF CEILING SUSPENSION SYSTEMS

- A. Preparation and Coordination: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure inserts and other structural anchorage provisions have been installed to receive ceiling hangers in a manner that will develop their full strength and at spacings required to support ceiling.
 - 1. Furnish concrete inserts, and other anchorage devices indicated, to other trades for installations well in advance of time needed for coordination with other work.
- B. Hanger Installation: Attach hangers to structure above ceiling to comply with ML/SFA 920, "Guide Specifications for Metal Lathing and Furring," and with referenced standards.
 - 1. Do not attach hangers to metal deck tabs.
- C. Install ceiling suspension system components of sizes and spacings indicated, but not in smaller sizes or greater spacings than those required by referenced lathing and furring installation standards.
 - 1. Wire Hangers: Space 0.16-inch- diameter wire hangers not over 48 inches o.c., parallel with and not over 36 inches perpendicular to direction of carrying channels, unless otherwise indicated, and within 6 inches of carrying channel ends.
 - 2. Carrying Channels: Space carrying channels not over 36 inches o.c. with 48-inch o.c. hanger spacing.
 - 3. Furring Channels to Receive Metal Lath: Space furring channels not over 16 inches o.c. for 3.4-lb/sq. yd. diamond-mesh lath, 19 inches o.c. for 3.4-lb/sq. yd. flat rib lath, or 24 inches o.c. for 3.4-lb/sq. yd. 3/8-inch rib lath.

3.3 LATHING

- A. Install metal lath for the following applications where plaster base coats are required. Provide appropriate type, configuration, and weight of metal lath selected from materials indicated that comply with referenced ML/SFA specifications and ASTM lathing installation standards.
 - 1. Suspended and furred ceilings using 3.4-lb/sq. yd. minimum weight, diamond-mesh lath.

3.4 PREPARATIONS FOR PLASTERING

- A. Clean plaster bases and substrates for direct application of plaster, removing loose material and substances that may impair the Work.

3.5 INSTALLATION OF PLASTERING ACCESSORIES

- A. General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and in alignment during plastering. Install accessories of type indicated at following locations:
 - 1. External Corners: Install corner reinforcement at external corners.
 - 2. Terminations of Plaster: Install casing beads, unless otherwise indicated.
 - 3. Control Joints: Install at locations indicated or, if not indicated, at locations complying with the following criteria and approved by CM:
 - a. Where an expansion or contraction joint occurs in surface of construction directly behind plaster membrane.
 - b. Distance between Control Joints: Not to exceed 18 feet in either direction or a length-to-width ratio of 2-1/2 to 1.
 - c. Horizontal Surfaces: Not more than 100 sq. ft. in area.
 - d. Where plaster panel sizes or dimensions change, extend joints full width or height of plaster membrane.

3.6 PLASTER APPLICATION

- A. Plaster Application Standard: Apply plaster materials, composition, and mixes to comply with ASTM C 926.
- B. Do not use materials that are frozen, caked, lumpy, dirty, or contaminated by foreign materials.
- C. Do not use excessive water in mixing and applying plaster materials.
- D. Flat Surface Tolerances: Do not deviate more than plus or minus 1/8 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed at any location on surface.
- E. Sequence plaster application with installation and protection of other work so that neither will be damaged by installation of other.
- F. Number of Coats: Apply plaster of composition indicated, to comply with the following requirements:
 - 1. Three Coats: Over metal lath.
- G. Finish Coats: Apply finish coats to comply with the following requirements:
 - 1. Float Finish: Apply finish coat to a minimum thickness of 1/8 inch to completely cover base coat, uniformly floated to a true even plane with fine-textured finish matching CM's sample.
- H. Moist-cure plaster base and finish coats to comply with ASTM C 926, including written instructions for time between coats and curing in "Annex A2 Design Considerations."

3.7 CUTTING AND PATCHING

- A. Cut, patch, replace, repair, and point up plaster as necessary to accommodate other work. Repair cracks and indented surfaces. Point-up finish plaster surfaces around items that are built into or penetrate plaster surfaces. Repair or replace work to eliminate blisters, buckles, check cracking, dry outs, efflorescence, excessive pinholes, and similar defects. Repair or replace work as necessary to comply with required visual effects.

3.8 CLEANING AND PROTECTING

- A. Remove temporary covering and other provisions made to minimize spattering of plaster on other work. Promptly remove plaster from door frames, windows, and other surfaces not to be plastered. Repair surfaces stained, marred or otherwise damaged during plastering work. When plastering work is completed, remove unused materials, containers, equipment, and plaster debris.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure plaster work is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 09220