

SECTION 092400 - PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.1 M.S.U. ISSUES

- A. Where construction alterations are to existing facilities, the following shall apply:

1. Patched openings in plaster construction shall be reframed and lathed in as required to maintain original plaster thickness. Areas or openings to be patched shall have the existing finish coat chipped back one inch on base plaster, and base plaster two inches on lath or as required to overlap and bond the new plaster patch to the existing plaster. Areas to be patched or tied into shall be primed with an approved latex bonding-agent in accordance with manufacturer's recommendation.

1.2 SUMMARY

- A. This Section includes the following:

1. Nonstructural steel framing and furring.
2. Interior portland cement plasterwork on metal lath plaster bases.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.5 PROJECT CONDITIONS

- A. Comply with ASTM C 926 requirements.
- B. Interior Plasterwork: Maintain room temperatures at greater than 40 deg F for at least 48 hours before plaster application, and continuously during and after application.
1. Avoid conditions that result in plaster drying out during curing period. Distribute heat evenly; prevent concentrated or uneven heat on plaster.
 2. Ventilate building spaces as required to remove water in excess of that required for hydrating plaster in a manner that prevents drafts of air from contacting surfaces during plaster application and until plaster is dry.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 NONSTRUCTURAL STEEL FRAMING MEMBERS, GENERAL

A. Available Manufacturers:

1. Dale/Incor.
2. Dietrich Industries, Inc.
3. Phillips Manufacturing Co.

B. Components, General: Comply with ASTM C 1063. For steel sheet components not included in ASTM C 1063, comply with ASTM C 645 requirements for metal, unless otherwise indicated.

C. Cold-Rolled Channels: Base metal thickness of 0.0538 inch with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.

D. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.

2.3 STEEL FRAMING FOR CEILINGS

A. Suspended Furring:

1. Main Runners (Carrying Channels): Cold-rolled channels, 1-1/2 inches deep.
2. Cross Furring: Cold-rolled channels, 3/4 inch deep.

B. Direct Furring: Cold-rolled channels, 3/4 inch deep.

C. Tie Wire:

1. For tying main runners directly to beams or joists (where wire hangers are used between beams or joists), use double loop of 0.1205-inch-diameter wire.
2. For tying furring directly to concrete structure without main runners, use 0.0800-inch-diameter wire.
3. For tying furring directly to steel or wood structure without main runners, use double loop of 0.0625-inch-diameter wire, or quadruple loop of 0.0475-inch-diameter wire.
4. For saddle tying cross furring to main runners use 0.0625-inch-diameter wire, or double strand of 0.0475-inch-diameter wire.

D. Wire Hangers: 0.162-inch-diameter wire.

E. Hanger Attachments to Concrete: Power-actuated fasteners that use explosive powder, gas combustion, or compressed air or other gas to embed fasteners in concrete and that are suitable for application indicated. Fabricated from corrosion-resistant materials, with clips or other devices for attaching hangers. Capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by a qualified independent testing agency.

2.4 STEEL FRAMING FOR PARTITIONS

A. Steel Studs and Runners: ASTM C 645.

1. Protective Coating: ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
2. Minimum Base Metal Thickness: 0.0329 inch.
3. Depth: 3-5/8 inches for ceiling heights up to 10 feet, and 6 inches for heights over 10 feet.

B. Vertical Furring:

1. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
 - a. Protective Coating: ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
 - b. Minimum Base Metal Thickness: 0.0312 inch.
 - c. Depth: 1-1/2 inches.
2. Furring Channels: Cold-rolled channels, 3/4 inch deep.
 - a. Furring Brackets: Adjustable, corrugated-edge type fabricated from steel sheet with minimum bare steel thickness of 0.0312 inch.

2.5 METAL LATH

A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.

1. Available Manufacturers:
 - a. Dale/Incor.
 - b. Phillips Manufacturing Co.
2. Diamond-Mesh Lath: Self-furring.
 - a. Weight: 3.4 lb/sq. yd.

2.6 ACCESSORIES

A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

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

1. Available Manufacturers:
 - a. Dale/Incor.
 - b. Dietrich Industries, Inc.
 - c. Phillips Manufacturing Co.

2.7 MISCELLANEOUS MATERIALS

- A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of not fewer than three exposed threads.
- C. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

2.8 PLASTER MATERIALS

- A. Portland Cement: ASTM C 150, Type I.
 - 1. Color for Finish Coats: White.
- B. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.
- C. Sand Aggregate: ASTM C 897.
 - 1. Color for Job-Mixed Finish Coats: White.

2.9 PLASTER MIXES

- A. General: Comply with ASTM C 926 for applications indicated.
- B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
 - 1. Portland Cement Mixes:
 - a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
 - b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
- C. Job-Mixed Finish-Coat Mixes:
 - 1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

3.3 INSTALLING NONSTRUCTURAL STEEL FRAMING, GENERAL

- A. General: Comply with requirements in ASTM C 1063 for applications indicated.
 1. Comply with ASTM C 754 for installation of items not addressed in ASTM C 1063.
- B. Install supplementary framing, blocking, and bracing at terminations in plaster assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement.
 1. Isolate ceiling assemblies where they abut or are penetrated by building structure.
 2. Isolate partition framing and wall furring where it abuts structure, except at floor. At head of assemblies, install slip-type joints that avoid axial loading and that support assembly laterally.
- D. Soffits: Unless otherwise detailed on Drawings, install furred or suspended soffits to comply with requirements for ceiling installation; install framed soffits to comply with requirements for partition installation.

3.4 INSTALLING STEEL FRAMING FOR CEILINGS

- A. Suspend ceiling hangers from building structure as follows:
 1. Install hangers plumb and free of contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to limit deflection to 1/360 of span while supporting ceiling loads.
 3. Wire Hangers: Secure by looping and tying, either directly to structure or directly to fasteners that are secure and appropriate for substrate, in a manner that will not cause them to deteriorate or otherwise fail.
 4. Do not support ceilings directly from permanent metal forms. Secure to fastener devices that extend through forms.
 5. Do not attach hangers to steel deck tabs.
 6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 7. Do not connect steel framing to or suspend it from ducts, pipes, or conduit.

- B. Installation Tolerances: Install steel framing components for ceilings so members are level to within 1/4 inch in 10 feet measured lengthwise on each member and transversely between parallel members.
- C. Install steel framing components for ceilings in sizes and spacings indicated but not less than that required by the referenced steel framing and installation standards.
 - 1. Hanger Spacing: 48 inches o.c.
 - 2. Main Runner (Carrying Channel) Spacing: For suspended ceilings, 36 inches o.c.
 - 3. Cross-Furring Spacing: For suspended ceilings, 16 inches o.c.
 - 4. Furring Spacing: For furred ceilings, 16 inches o.c.

3.5 INSTALLING STEEL PARTITION FRAMING

- A. Install runners (tracks) at floors, ceilings, and structural walls and columns where plaster assemblies abut other construction.
- B. Installation Tolerance: Install each steel framing member so fastening surfaces vary in plane not more than 1/4 inch in 10 feet.
- C. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling.
- D. Install steel studs so flanges point in the same direction.
- E. Frame door openings with two studs installed at each jamb, unless otherwise indicated.
 - 1. Extend jamb studs through suspended ceilings and attach to underside of floor or roof structure above.
- F. Support Spacing:
 - 1. Install steel studs at 16 inches o.c., unless otherwise indicated.
 - 2. Install vertical furring at 16 inches o.c., unless otherwise indicated.

3.6 INSTALLING METAL LATH

- A. Expanded-Metal Lath: Install according to ASTM C 1063.

3.7 INSTALLING ACCESSORIES

- A. Install according to ASTM C 1063 and at locations indicated on Drawings.

3.8 PLASTER APPLICATION

- A. General: Comply with ASTM C 926.
 - 1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
 - 2. Grout hollow-metal frames, bases, and similar work occurring in plastered areas, with base-coat plaster material, before lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout at least 6 inches at each jamb anchor.
 - 3. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground, unless otherwise indicated. Where casing bead does not terminate

4. Provide plaster surfaces that are ready to receive field-applied finishes indicated.
- B. Plaster Finish Coats: Apply to provide float finish to match Architect's sample.
- C. Concealed Interior Plasterwork:
1. Where plaster application will be concealed behind built-in cabinets, similar furnishings, and equipment, apply finish coat.
 2. Where plaster application will be concealed above suspended ceilings and in similar locations, finish coat may be omitted.
 3. Where plaster application will be used as a base for adhesive application of tile and similar finishes, finish coat may be omitted.

3.9 CUTTING AND PATCHING

- A. Cut, patch, replace, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.10 CLEANING AND PROTECTION

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from doorframes, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 092400