SECTION 09 23 00

PLASTERING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for materials, labor, equipment and services necessary to complete all plastering.

1.02 REFERENCE STANDARDS

A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

B. ASTM C28/C28M - Standard Specification for Gypsum Plasters; 2010.

C. ASTM C35 - Standard Specification for Inorganic Aggregates for Use in Gypsum Plaster; 2001 (Reapproved 2014).

D. ASTM C150/C150M - Standard Specification for Portland Cement; 2016.

E. ASTM C206 - Standard Specification for Finishing Hydrated Lime; 2014.

F. ASTM C631 - Standard Specification for Bonding Compounds for Interior Gypsum Plastering; 2009 (Reapproved 2014).

G. ASTM C842 - Standard Specification for Application of Interior Gypsum Plaster; 2005 (Reapproved 2010).

H. ASTM C897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters; 2015.

I. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster; 2015b.

J. American National Specifications Institute (ANSI), latest edition.
   1. A 42.1 - Portland Cement Lime Plastering Exterior and Interior

K. Gypsum Construction Handbook, USG Corporation, latest edition.

1.03 SUBMITTALS

A. Product Data
   1. Provide manufacturers' specifications and application instructions for each type of material specified, including the following:
      a. Plaster
      b. Bonding Compound
      c. Plaster Accessories
   2. Hydrated Lime
   3. Aggregates for Base Coat Plaster

B. Quality Control Submittals
   1. Certificates: Provide material certificates from Manufacturers, Material supplier, and Contractor certifying that each material complies with, or exceeds the specified requirements.
   2. Certificates - Bonding Agent for white coat plaster ceilings: Provide all manufacturers' certificates of compliance (above), together with a copy of the approved testing laboratory reports and samples for test and approval.

C. Quality Assurance Submittals
   1. Installers affidavit certifying a minimum of five years experience installing items specified and three projects of similar scope.

1.04 QUALITY ASSURANCE

A. Qualifications
   1. Company specializing in plaster installation having more than five years experience with the application of specified materials and experience on at least three projects of similar scope to project specified.

B. Regulatory Requirements
   1. Building Code: Work of this Section to conform to all requirements of the New York City Building Code and all applicable regulations of other governmental authorities.
   2. Fire Resistance Ratings: Where ratings are indicated, match applicable assemblies tested per ASTM E 119 by Fire Testing Laboratories.

C. Single Source Responsibility
   1. Obtain materials from a single source for each type of material required to assure consistency in quality of performance and appearance.

D. Plaster Mock-up Samples.
   1. Before commencing plaster work, submit the following mock-up samples to the Project Architect for approval:
      a. 8"x16"x2" concrete block with a two-coat system of plaster (base and finish), stepped to show construction and thickness of each coat. Provide sample for each type of plaster to be used on project.
      b. 12"x12" metal lath with a three-coat system of plaster (scratch, brown, finish), stepped to show construction and thickness of each coat. Provide sample for each type of plaster to be used on project.

E. Field Samples.
   1. At the commencing of plaster work provide a completed plastering of two walls, including an inside corner, floor to ceiling for approval. If initial Work is not acceptable, make corrections until Work is approved.
   2. Do not proceed until the plastering work on the sample walls has been approved in writing by the Project Architect.
   3. All subsequent plastering work to conform in workmanship and appearance to that of the sample walls.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver manufactured materials in original sealed container, with manufacturer's label intact and legible.

B. Store all cement, gypsum and lime off ground, under cover and in a dry area.

C. Protect contiguous Work from soiling, spattering, moisture, deterioration and other harmful effects which might result from plastering.

1.06 FIELD CONDITIONS

A. Environmental Requirements
   1. Do not use frozen materials in plaster mixes.
   2. Do not apply plaster to surfaces that are frozen or contain frost.
   3. Do not apply plaster when ambient temperature is less than 50oF, unless permission is given in writing by the Authority.
   4. Maintain required temperatures for a minimum of 24 hours prior to application, during application and until plaster has cured.

1.07 SEQUENCING AND SCHEDULING

A. Coordinate plaster installation with all other Work by other trades, above, supported by or penetrating walls, ceilings and soffits, including electrical, heating and ventilating and plumbing and drainage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Gypsum Plaster
   1. Subject to compliance with requirements, provide products from one of the following manufacturers, conforming to ASTM C28:
      a. Gold Bond Building Products Div., National Gypsum Co., Charlotte, NC.
         1) Gypsum Neat Plaster: "Two-Way Hardwall Plaster".
         2) Gypsum Gauging Plaster: "Super-White Gauging Plaster".
         3) Gypsum Ready-Mixed Base Coat Plasters. "Gypsolite".
      b. United State Gypsum Co.; Architectural Products Division, Chicago, IL.
         1) Gypsum Neat Plaster / Basecoat Plaster:
         2) "Red-Top Gypsum Plaster".
         3) "Red-Top Two-Purpose Plaster".
         4) "Structo-Base", where high strength gypsum neat plaster is shown.
         5) Gypsum Gauging Plaster:
         6) "Champion White Gauging Plaster"
         7) "Red-Top Gypsum Plaster"
         8) "Star White Gauging Plaster"
         9) "Red Top - Keene's Cement"
         10) "Structo - Gauging Plaster"

B. Portland Cement Plaster
   1. Subject to compliance with requirements, provide products conforming to ASTM C926
   2. Base Coat Cements: ASTM C926
      a. Portland Cement ASTM C150, Type I or III.
   3. Finish Coat Cements
      a. Portland Cement, ASTM C150, Type I, white.

C. Finishing Hydrated Lime
   1. Subject to compliance with requirements, provide products conforming to ASTM C206, Type S or Type N.
      a. United States Gypsum Co.
         1) "Ivory Finish Lime" - Type S
         2) "Red Top Finish Lime" - Type N

2.02 PLASTER MATERIALS

A. Aggregates for Base Coat Plaster; ASTM C35. Type as listed below:
   1. Sand aggregate, conforming to ASTM C897
   2. Perlite aggregate, conforming to ASTM C 35
   3. Vermiculite aggregate, where shown.

B. Water
   1. Potable, free of substances capable of affecting plaster set or of damaging plaster, lath or accessories.

C. Bonding Agent
   1. Comply with ASTM C631; and requirements listed below:
      a. Material for Bonding agent: a resinous water-emulsion that will bond new plaster base or finish coats to concrete surfaces.
      b. Material Viscosity: equal to that of ordinary paint and suitable for application by brushing or spraying.
      c. Inert to oxygen and perfectly stable when water has dried out.
      d. Vermin-proof, non-toxic, non-deteriorating and incapable of supporting flame.
      e. Temperature range of from minus 35oF to plus 300oF. without failure of bond.

f. Minimum tensile strengths varying from 50 to 600 lbs. per sq. inch, depending upon materials being bonded together, and a minimum shear strength of 175 lbs. per sq. inch when properly cured and dried samples are tested.
g. Bonding agent shall be job-approved for at least five years without any failures.

D.

2.03 PLASTER MIXES

A. Gypsum Plaster Base Coat Compositions
1. Comply with ASTM C842 and manufacturer's directions for gypsum plaster base coat proportions which correspond to application methods and plaster bases indicated below:
a. Three-Coat Work Over Metal Lath:
1) Scratch Coat: 1 part Gypsum neat plaster with 2 parts sand.
2) Brown Coat: 1 part Gypsum neat plaster with 3 parts sand.
3) Finish Coat: as in B below.
b. Two-Coat Work Over Concrete:
1) Base coats of 1 part Gypsum neat plaster with 21/2 parts sand.
2) Finish coat: as in B below.
c. Two-Coat Work Over Unit Masonry:
1) Base coats of 1 part Gypsum neat plaster with 2 parts sand or Gypsum Ready-mix plaster with mill mixed perlite.
2) Finish coat: as in B below.

B. Gypsum Troweled Finish Coat
1. Comply with ASTM C842 and manufacturer's directions and proportion materials in parts by dry weight for finish coat as follows:
a. Gypsum Gauging Plaster: 1 part plaster to 2 parts lime.
1) Over lightweight aggregate base coats, if any, add 1/2 cu. ft. of perlite finish or 50 lbs. of No. 1 white silica sand per 100 lbs. of plaster.
2) Where float finish is shown, add 8 parts of sand.
3) Mechanically mix aggregate materials for plaster to comply with referenced application standard and with recommendations of plaster manufacturer.

C. Portland Cement Base Coat Compositions
1. Comply with ASTM C926 and manufacturer's directions for Portland cement base coat proportions that correspond to application methods and plaster bases indicated below:
a. Base coat over concrete or unit masonry: 1 part Portland cement to 3 parts sand with 10% hydrated lime added.
b. First coat must dry out and be thoroughly wet down before applying second or finishing coat.

D. Portland Cement Finishing Coat over Concrete or Unit Masonry:
1. Comply with ASTM C926 and manufacturer's directions for Portland cement finishing coat proportions.
a. 1 part Portland cement to 2 parts sand with 10% hydrated lime added.

E. Vermiculite Plaster Mix.
1. Three coats over metal lath for fireproofing in areas where required:
a. Scratch coat - 100 lbs. Gypsum to 2 cubic ft. Vermiculite.
b. Brown coat - 100 lbs. Gypsum to 2 cubic ft. Vermiculite.
c. Finishing coat - White finishing coat as specified in Article 2.03 G below.
2. In certain locations, the vermiculite plaster fireproofing serves as the finished exposed ceiling. Finishing coat to be a white finishing coat as specified in Article 2.03 G below.
3. Total thickness of vermiculite plaster, including white finishing coat, when required, of one inch measured from the face of the metal lath unless otherwise shown on Drawings.

F. Keene's Cement Plaster Mix
1. For use on walls, ceilings, and other surfaces indicated on Drawings or specified to be of Keene's Cement (Toilet Rooms, or areas of High Moisture):

a. Three coat application over concrete or unit masonry.
    1) Base coat: 1 part Portland cement to 3 parts sand with 10% hydrated lime added.
    2) Brown coat: to 150 lbs. of lime putty add 1,000 lbs. (60-No.2 shovelfuls) of sand and gage this mixture with 100 lbs. of Keene's cement.
    3) Finish coat: 400 lbs. of Keene's cement to 100 lbs. of lime putty. Soak hydrated lime used for the lime putty in water tight boxes at least 24 hours before using for Type N and 30 minutes for Type S.

G. White Finishing Coat Mix
1. For use on all plastered surfaces, unless otherwise specified or indicated on Drawings:
    a. Hard plaster white finishing coat: 3 parts white lime putty, one part of Plaster of Paris, and the addition of a small portion of fine white sand.
    b. Lime Putty: Properly slacked quicklime or finishing hydrated lime wet into a paste and allowed to stand for 24 hours for Type N or 30 minutes for Type S before Plaster of Paris is incorporated. Sieve hydrated lime into a watertight box three-quarters full of water.
        1) Add a small portion of fine white sand to lime putty before Plaster of Paris is incorporated.
        2) Add sand to the quicklime while it is being slackened or to hydrated lime while being sieved into water.
        3) Do not add neat gypsum plaster, retarder or dope to the white finishing plaster.

H. Cement leveling coat for Mosaic Artwork - Where specified.
1. Provide a cement leveling coat in thickness indicated on Drawings to receive Mosaic Artwork mixed in the following proportions:
    a. One part Portland cement, one-half part hydrated lime and three parts clean sand.
2. Application to the surface shall be straight and plumb to within 5/8-inch of the finished Mosaic surface and then given a fine cross scratch for binding purposes. Coordinate with Artist/ Architect.

2.04 MECHANICAL MIXING

A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable reference standard and with recommendations of plaster manufacturers.

PART 3 EXECUTION

3.01 EXAMINATION OF SURFACES

A. Examine substrate surfaces to receive Work of this Section, preparatory Work performed by other trades, and conditions at the building. Report any defects or unsatisfactory conditions for correction to the Authority.

B. Starting of Work will be construed as acceptance of all substrate surfaces and conditions as satisfactory.

C. Partitions, grounds, furring, corners, lathing, etc., shall be in place, straight and plumb, before beginning plastering, and if any of the Work is found to be imperfect notify the Authority to rectify it.

D. Do not start plastering until all plaster work can be satisfactorily protected from exposure to water including water infiltration from roof leaks, wall openings, groundwater, flooding and other sources.

E. Do not apply finish plastering unless the permanent glazed windows have been installed throughout the building, except by special permission of the Authority in writing.

F. Mixing of scratch and brown coats of plaster inside of any part of the building is prohibited. Mixing finish white coat of plaster is permitted inside of the building in locations approved by the Authority.

G. The use of a machine made lime mortar mixed at the building or an approved gypsum plaster for all surfaces required to be plastered, except surfaces as are specified to have other finishes, shall be an option subject to review and approval by the Authority.

3.02 PREPARATION

A. Protection
   1. Provide protection for radiators and convectors in rooms to be plastered.
   2. Protect the Work of other trades from soiling or spattering using cover cloths or other approved means of protection. Should soiling or spattering occur, it can be removed by cleaning with wet sponges or brushes before the plaster or mortar sets, in a manner to avoid scratching, staining or other damage.

3.03 PLASTER APPLICATION, GENERAL

A. Apply gypsum plaster materials, composition, mixes and finishes indicated to comply with ASTM C 842.

B. Apply portland cement plaster materials, compositions, and mixes to comply with ASTM C 926.

C. Provide a two coat leveling surface where cork display board is indicated as a wall surface, consisting of one brown coat and one white coat. See Drawings for extent of Work.

D. Plaster concrete surfaces and concrete fireproofing with scratch and brown coats of "Bond Plaster" with a white finishing coat. Scratch coat of neat bond plaster. Brown coat of neat bond plaster and sand in equal parts by weight. Apply brown coat to the scratch coat before the scratch coat has set. Do not exceed 1/4" thickness.

E. Allow each coat of gypsum mortar, excepting where bond plaster is required, to dry out in accordance with the manufacturer's directions prior to application of the following coat. After coat has dried out, thoroughly dampen surface prior to application of the following coat.

F. Bring first coat of plaster to a plane by screeding horizontally or other approved method. Float to an even, straight and true surface. Travel finish coat to a compact, hard, very smooth, polished surface. Soft, porous or unpolished surfaces and surfaces that show brush marks will not be accepted and such rejected white finish plastering will have to be removed down to the brown coat and properly re-plastered.

G. Plaster well up to the grounds and down to floor lines, and screed all walls true and plumb. No imperfect angles or corners will be acceptable under any circumstances and any imperfect Work will call for re-plastering of all portions rejected by the Authority.

H. Do all patching required to complete the general construction Work of this Contract, leaving the Work clean and perfect in every particular at completion of the building.

I. Extend the plaster work of ceilings so as to cover the concrete filling of the holes left for steam pipes, finishing around the sleeves to make the ceiling work complete. If the sleeves are not set and the holes not filled when the plastering is begun, plaster as far as the pipe holes where keys are formed. Extend the plaster work and finish after the sleeves are set and the holes filled.

J. Extend all plastering close to all openings and pipes, down to floors and behind all cabinets, wardrobes, trim, base and other wood finishes. White coat may be omitted behind wood finish, such as paneled wall surfaces and behind cabinets with solid backs, provided that the brown coat is finished smooth to receive the vinyl base.

K. White coat is required behind all movable cabinets and behind all cabinets furnished by others or any other movable equipment indicated to be furnished "by others". Install white coat on all locations where acoustic tile is to be cemented in place.

L. In rooms and locations where vinyl base is to be installed, extend plastering, including white coat, down to the cement under floor. Finish to be smooth to receive the base.

M. Plaster finish walls above the Keene's cement wainscots flush with the screeds specified.

N. Finished surfaces to be plumb and level, or uniformly sloped or curved where so required. Intersections of walls and ceilings and all intersections of walls and other surfaces to be finished square unless otherwise shown. Do not deviate more than 1/8" in 10'-0" from a true plane in finished plaster surfaces, as measured by a 10'-0" straight edge placed at any location on surface.

O. Sand smooth-troweled finishes lightly to remove travel marks and arises.

3.04 OPTIONAL WHITE COAT PLASTER CEILING

A. Apply one full covering of bonding agent by brushing or spraying over concrete beams and the underside of concrete slabs to receive the white coat of plaster. Prior to application of bonding agent, remove all oil, dust, dirt, grease, wax and loose material from concrete surfaces.

B. In areas where slabs or beams have bulges or depressions more than 1/2" in 4-feet when measured with a straight edge, they shall be leveled-up with a brown coat of gypsum plaster and screeded to within 1/8" to 3/16" below the finished plaster surface. The brown coat for leveling shall be applied over the bonding agent.

C. Apply a white skim coat of plaster 1/8" to 3/16" thick over the bonding agent or brown coat.

D. Metal cornerites (strips of metal lath) will not be required at interior corners between white coat plaster ceilings and plaster walls.

3.05 PATCHING AND PROTECTING

A. Repair, point up and patch plaster surfaces after work of other trades is in place and at such times as directed by the Architect.

B. Point up around fixtures, outlet boxes, switches, plates, fittings, piping, conduit, frames and other items abutting or extending through the plaster.

C. Just before painting is started, thoroughly examine all plaster surfaces. Cut out and repair all imperfect portions, cracks and other defects and leave all plaster in a sound, unblemished, clean and satisfactory condition.

D. Protect finished plaster surfaces against damages, soiling and defacement.

E. Protect plaster work against freezing and premature drying.

3.06 CLEANING

A. Remove temporary protection and enclosure of other Work. Promptly remove plaster from door frames, windows, and other surfaces which have been stained, marred or otherwise damaged during plastering. When plastering is completed, remove unused materials, containers and equipment and clean floors of plaster debris.

B. Provide final protection and maintain conditions in a manner suitable to the Architect which ensures plaster work being without damage or deterioration at time of issuance of the Certificate of Final Completion.

END OF SECTION