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6. PLASTERING MATERIALS

6.1 GENERAL

6.1.1 Standard Specifications.—Where published standard specifications are referred to herein, they shall be those of the latest date of adoption. (1)

(1) Where any reference is made in these specifications to ASTM, ACI, U.S. Federal Specifications, AIA or CSI, applicable excerpts will be found in Specification Reference 1.8.

6.2 QUALITY AND USE OF MATERIALS

6.2.1 Quality.—The materials provided and installed shall be new and of the quality required by this Section.

6.2.2 Use of Gypsum Plaster.—Gypsum plaster may be used on any type of base for fire resistive or structural purposes, but shall not be used where it will be subjected to alternate wetting and drying or continuous moisture exposure, or for exterior plaster, except in protected areas defined by building codes or building departments.

6.2.3 Use of Portland Cement Plaster.—Portland cement plaster or Portland cement-lime plaster may be used for any purpose in any location but shall not be applied over gypsum lath, gypsum masonry or gypsum plaster, except where expressly permitted by the building code having jurisdiction. (2)

(2) On exterior eave overhangs or soffits, portland cement plaster may be applied over gypsum lath backing when plaster is reinforced as for other solid backing.

6.2.4 Delivery of Materials.—Deliver materials so as to insure uninterrupted progress of the work.

6.2.5 Containers.—Deliver all manufactured materials in the original packages or containers bearing the name of the manufacturer and brand.

6.2.6 Protection of Materials.—Keep all cementitious materials dry until used. Keep materials off the ground, under cover, and clear of damp walls or other damp surfaces.

6.3 GYPSUM PLASTERS

6.3.1 Gypsum Plasters.—Shall be neat (or) mill-mixed (or) wood fibered (or) bond (or) gauging, gypsum plaster (as specified for their particular use) complying with the "Standard Specifications for Gypsum Plasters," ASTM Designation: C28. (3)

(3) For definitions and uses of gypsum plasters see Glossary, Specification Reference 1.9.

6.4 LIME

6.4.1 Hydrated Lime.—Both dolomite and high calcium, used in the preparation of lime putty, shall be a standard brand conforming to the "Standard Specifications for Special Hydrated Lime," ASTM Designation: C206.

6.4.2 Quicklime.—Used in the manufacture of lime putty, shall conform to "Standard Specifications for Quicklime for Structural Purposes," ASTM Designation: C5.

6.4.3 Lime Putty.—Shall weigh no less than 83 lbs. per cubic foot and shall be made of hydrated lime or quicklime.

6.5 PORTLAND CEMENT

6.5.1 Portland Cement.—For plaster shall conform to "Standard Specifications for Portland Cement," ASTM Designation: C150, Type I, Type II or Type III. (4)

(4) Type I is for use in general plastering. Should always be specified with addition of plasticizers for workability.

Type II should be used when the plaster will be exposed to moderate sulphate action (alkali).

Type III should be specified or approved for use when high early strength is desirable.

6.5.2 Air-entraining Portland Cement.—Shall conform to Standard Specifications ASTM Designation: C175, Type I-A, Type II-A or Type III-A.

6. PLASTERING MATERIALS

6.5.3 Plastic Cement. — Shall meet the requirements of "Standard Specifications for Portland Cement," ASTM Designation: C150, Type I or Type II except in respect to the limitations on insoluble residue, air-entrainment, and additions subsequent to calcination. Plasticizing agents may be added to portland cement Types I and II in the manufacturing process, but not in excess of 12 percent of the total volume.

When plastic or waterproofed cement is used, no lime or other plasticizer may be added to the cement plaster at the time of mixing. (5)

6.6 AGGREGATES

6.6.1 Gypsum Basecoat Plaster Aggregates.—Shall comply with "Tentative Specifications for Inorganic Aggregates for Use in Interior Plaster," ASTM Designation: C35. (6)

6.6.2 Grading.—Aggregate for gypsum basecoat plaster, except as provided elsewhere in these specifications, shall be graded within the following limits:

Sieve Size	Percentage Retained on Each Sieve					
	Perlite by Volume		Vermiculite by Volume		Sand by Weight	
	Max.	Min.	Max.	Min.	Max.	Min.
No. 4	0	—	0	—	0	—
No. 8	5	0	10	0	5	0
No. 16	60	10	75	40	30	5
No. 30	95	45	95	65	65	30
No. 50	98	75	98	75	95	65
No. 100	100	88	100	90	100	90

6.6.3 Gypsum-Lime Smooth Finish Aggregate.—Aggregates for use in gypsum-lime smooth finish, such as silica sand, perlite, etc., shall be graded within the following limits:

Sieve Size	Percentage Retained on Each Sieve			
	Perlite by Volume		Sand by Weight	
	Max.	Min.	Max.	Min.
No. 20	0	—	0	—
No. 30	10	0	10	0
No. 100	100	40	100	40
No. 200	100	70	100	70

6.6.4 Portland Cement Plaster Sand.—Except as provided elsewhere in these specifications, shall be clean and well graded from coarse to fine, meeting the requirements of ASTM C144-62T, except gradation of sand shall conform to the following requirements:

Sieve Size	Percent Retained (by Weight) On Each Sieve	
	Max.	Min.
No. 4	0	0
No. 8	10	0
No. 16	40	10
No. 30	65	30
No. 50	90	70
No. 100	100	90-95

(5) Some portland cement manufacturers add asbestos fiber up to 3 percent of weight of cement at the mill during blending of ingredients. In such cases, container is so labeled. See 6.8.1.

(6) Sand, wherever it is practicable, should be washed natural sand.

6.7 PROPRIETARY AND SPECIAL PURPOSE PLASTERS

6.7.1 Manufactured Finishes (exterior and interior).—When factory mixed shall comply with the general requirements of the "Specifications and Standards for Manufactured Stucco Finishes," prepared by the Stucco Manufacturers Association, 15926 Kittridge, Van Nuys, California; or with requirements of applicable building codes. (7) (8)

6.7.2 Acoustical Plaster.—Shall develop a noise reduction co-efficient of Texture and color shall closely approximate sample in architect's office or in job office. Upon completion of application, the lathing and plastering contractor may be required to submit to the architect a dated and signed Certificate of Compliance, showing name of contractor, name and address of project, and certifying that the factory-manufactured acoustical plaster has been applied in accordance with installation specifications set forth by the architect and the manufacturer. (9)

6.7.3 Veneer Plaster. (10)

6.7.4 Marblecrete.—Shall be an exposed aggregate finish consisting of natural or integrally colored aggregate, partially embedded in a white or colored bedding coat of portland cement or portland cement-lime plaster. Marblecrete shall be applied over portland cement plaster base coats, (or) concrete (or) masonry surfaces. (11)

6.8 ADDITIVES AND ADMIXTURES (for portland cement plaster).

6.8.1 Asbestos Fiber.—Add up to 3 percent of weight of cement in portland cement plaster to control segregation of aggregate.

6.8.2 Lime. (12)

6.8.3 Other Additives and Admixtures.—Plasticizing or air-entraining agents, when used, shall not reduce the compressive strength of the mortar more than 15 percent below the strength of the mortar without the plasticizing or air-entraining. Use additives or admixtures only upon approval of the architect or as specified herein. (13)

6.9 WATER

6.9.1 Mixing Water.—Shall be clean, fresh, suitable for domestic consumption, and free from such amounts of mineral and organic substances as would affect the set of gypsum plaster. (14)

6.10 BONDING AGENTS

6.10.1 Liquid Bonding Agents.—Shall be a non-oxidizing, non-crystallizing, liquid resinous water emulsion which will provide a permanent bond for gypsum, lime putty, cement or acoustical plaster finishes to gypsum or cement plaster, concrete, masonry, wood, steel, painted or unpainted, old or new, damp or dry surfaces. It shall be unaffected by oxygen and perfectly stable when the emulsion has dried out. It shall lose none of its flexibility or adhesive strength and it shall be completely free from any tendency to harden or craze crack. It shall be non-toxic, non-deteriorating, vermin proof, and incapable of supporting flame. When dry, it shall be free from failure of bond in temperatures ranging from minimum -35°F., to maximum 300°F. It shall have minimum tensile strengths varying from 50 to 600 per square inch, depending upon the materials being bonded together and a minimum shear strength of 175 lbs. per square inch when properly cured and dried samples are tested. It shall be certified to be non-deteriorating as shown by minimum two year controlled laboratory tests. (15)

(7) For material specification of various manufactured finishes see Specification Reference No. 10, Stucco Finishes.

(8) Interior and exterior finishes may be colored in the field, although it is difficult to accomplish uniformity of color. When desired, architect should specify the addition of pure mineral oxides guaranteed by manufacturer.

(9) Specify N.R.C. required for each project. Certificate of Compliance blank forms are obtainable from the CLPCA or from local chapters of CLPCA.

(10) See Specification Reference No. 9.

(11) Specify which type of base. See Specification Reference No. 10, Stucco Finishes, for Marblecrete specification.

(12) For material specification see 6.4.

(13) Specify type of admixture required. When plasticizing or air-entraining agents are used, the amounts will vary with the agent used and the degree of plasticity or air-entraining desired. The kind and amount of plasticizing or air-entraining agent necessary for proper workability should be determined in advance of starting the job. The smallest amount needed should be used to secure the desired plasticity or air-entraining.

(14) Water containing salt or alum, or water in which tools have been washed, accelerate the set. Water containing organic or vegetable matter may retard the set.

(15) Bonding agents are not waterproofing agents.