

DIVISION 03 - CONCRETE

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03 00 00. CONCRETE

03 00 03. GENERAL PROVISIONS

03 00 10. SPECIFICATIONS FORMAT: If design requires engineering by a structural engineer, follow specifications developed by the structural engineer. If no engineering is required, write a short form specification to suit job conditions. Also see 01 40 00.

.1 Aggregate for exterior concrete exposed to view shall be crushed limestone only.

.2 SHORT FORM SPECIFICATIONS: Write for small remodeling projects in which concrete work consists of the patching or repairing or filling holes in existing concrete.

03 00 20. STRUCTURAL DESIGN OF SLABS: Consideration shall be given in the design of floor and roof slabs to provide exposed construction which can be used as finished ceilings insofar as practicable. Such construction, however, shall be planned only if requirements for limits in heat losses and for noise control can be met.

03 00 30. DESIGN OF CONCRETE FOOTINGS: Tops of footings for exterior foundations should be at least 3'-0" below finish grade.

03 30 00. CAST-IN-PLACE CONCRETE

.1 ON-SITE SUPERVISION: The Associate or his approved representative shall observe the placing of all concrete and shall report non-compliance with specifications and drawings to the University Architect/Engineer.

.2 TEST REPORTS: A copy of all concrete test reports shall be furnished to the University Architect/Engineer's Office. Testing to comply with Division 03 50 00.1.2.

.3 MISCELLANEOUS REQUIREMENTS:

.3.1 INTERIOR BUILDING CONCRETE: Specify a mix which will give compressive strength of not less than 3,500 psi in 28 days; except that 2,500 psi concrete may be specified for filling over-excavations for footings.

.3.2 EXTERIOR CONCRETE: An approved air-entraining admixture shall be used for all concrete exposed to weather. Minimum strength shall be 4000 psi.

.3.3 INTEGRAL FINISH shall be specified for all floors. No separate topping.

.3.4 HARDENER TREATMENT: All finished floors that will be left exposed shall receive hardener treatment. Verify that the hardener used is compatible with the finish material curing requirements as listed by the manufacturer.

.3.5 PROTECTION FOR NOSINGS on concrete steps shall be provided by rounded cast nosing with non-slip surface.

.3.6 NON-SLIP SURFACING: Ramps, treads, and platform of stairs shall have non-slip surface when not covered with finish flooring materials.

03 30 00. CAST-IN-PLACE CONCRETE (Cont'd)

.3 MISCELLANEOUS REQUIREMENTS: (Cont'd)

.3.7 CURING COMPOUND CAPABILITY: Curing compound manufacturer is to provide certification that their product is compatible with the resilient flooring or carpet adhesive scheduled for the space.

03 33 00. ARCHITECTURAL CONCRETE:

.1 SPECIFICATIONS shall meet current standard specification for architectural concrete as published by the American Concrete Institute.

.2 A SAMPLE PANEL 4 by 8 feet in size shall be erected at the site when cast-in-place architectural concrete is to be used. Panel shall be protected from construction operations, but shall be left exposed to the elements. Apply curing compound if specified for the final product – see Division 03 37 00. Panel shall be left in place until the University Architect has approved all architectural concrete.

03 34 00. ROOF FILL: Lightweight concrete for roof fill shall be made with expanded shale aggregate. For consideration of other materials, the Associate shall submit his recommendation with complete back-up documentation to the University Architect/Engineer.

03 34 10. INSULATING CONCRETE ROOF DECKS: Concrete shall have the following characteristics:

Wet Density: 40-60 lbs. per cu. ft.
Dry Density: 20-30 lbs. per cu. ft.
Compressive Strength: 125-225 psi

03 37 00. CURING COMPOUNDS: Require a manufacturer's certification that the compounds used for architectural concrete are non-yellowing and non-staining. Compound must be applied to sample panels.

03 40 00. PRECAST CONCRETE

03 41 00. PRECAST STRUCTURAL CONCRETE: Base design and specifications on recommendations of the American Concrete Institute, ASTM tests and the Precast/Prestressed Concrete Institute (PSI).

03 41 10. PRECAST CONCRETE PANELS: Base design and specifications on recommendations of the American Concrete Institute, ASTM tests and the Precast/Prestressed Concrete Institute (PSI).

03 45 00. ARCHITECTURAL PRECAST CONCRETE: Follow the design and specification recommendations of the Precast/Prestressed Concrete Institute (PSI) for architectural precast concrete.

03 50 00. CEMENTITIOUS DECKS

.1 Include the following general requirements in the specifications.

.1.1 CERTIFICATE FROM MANUFACTURER OF MATERIALS: Upon completion of the installation, a certificate from the manufacturer of insulating materials used, stating that materials were installed by an approved applicator and that materials were installed in accordance with the drawings and specifications, shall be furnished to the Associate.

.1.2 TESTS: A minimum of 4 test cylinders prepared in accordance with ASTM C495 shall be taken during each day's placement. Tests shall be made by a testing laboratory employed and approved by the Associate. The cost of these tests will be reimbursed by the University. Written reports of the tests shall be sent directly to the Associate, with a copy to the University Architect/Engineer. Laboratory shall make tests for wet density, dry density, and compressive strength of each specimen.

END OF DIVISION 03 - CONCRETE