

SAMPLE SPECIFICATION

SECTION 03 300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods and services referenced in or related to this Section shall also be bound by the Related Documents identified in Division 01 Section "Summary."

1.2 SUMMARY

- A. Provide all formwork, reinforcing and concrete as required to complete the work shown on the Drawings. Install formwork, reinforcing, inserts and concrete as required in accordance with the Drawings, Specification and applicable Codes. The work shall include footings, foundation walls and buttresses, piers, concrete floors placed on metal deck, wood forms and slabs on grade, etc.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. STRUCTURAL FILL (Section 31 23 23.01)
- B. STRUCTURAL STEEL FRAMING (Section 05 12 00)

1.4 QUALITY ASSURANCE

- A. Concrete work shall conform to all requirements of A.C.I. 301-99 "Specifications for Structural Concrete ", published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the Supplemental Requirements below.
- B. Concrete supplier and Contractor shall certify that they are familiar with the above reference standard, and a copy shall be available on the job.
- C. A.C.I. Standard 301-99 is available from American Concrete Institute, P.O. Box 9094, Farmington Hills, Michigan 48333-9094.

1.5 SPECIAL QUALIFICATION REQUIREMENTS

- A. Reinforcing Steel Fabricator
- B. Reinforcing Steel Detailers

- 1. Because of the need for clear, readable, and accurate placing drawings, the rebar fabricator shall furnish to the Architect, prior to the production of any rebar placing drawings, the name of the detailer(s) proposed for this project, (whether in-house or outside) together with a brief list of projects on which he has worked, and at least three representative recent examples of his work. (The examples shall be of a similar nature to the work contemplated on this project.) If, in the opinion of the Architect and Engineer, the examples do not meet the standards expected, then other names must be submitted, until an acceptable detailer is named.

1.6 SUBMITTALS

- A. Submit letter stating that Contractor and supplier are familiar with reference standard.
- B. Submit reinforcing steel placing drawings, as required by paragraph 3.1.1.1a. of reference standard. Supplement paragraph 3.1.1.1a. as follows:
 - 1. Shop drawings for reinforcement detailing, fabricating, bending and placing concrete reinforcement shall comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures". The shop drawings shall show location, size and spacing of all reinforcing steel, sections and details of reinforcing, stirrup spacing, footing, buttress and pier schedules and bent bar diagrams and schedules. Include special reinforcing required for openings through the concrete structures. Scheduling of reinforcing bars is prohibited.
 - 2. Subsequent submissions of shop drawings shall be dated and numbered and shall have all revisions clearly noted with clouding of each revision.
 - 3. Scheduling of reinforcing steel on shop drawings is NOT acceptable. All reinforcing shall be properly labeled and indicated in elevations.
 - 4. Rebar Detailer shall draw elevations of all concrete walls and grade beams which shall indicate all pockets, openings, chases, etc. Elevations shall be drawn to a minimum 1/4" = 1'-0".
- C. Submit mix design and test results conforming to the requirements of paragraphs 4.1 and 4.2 of reference standard. Submit request for approval of admixture type, if different from that specified.
- D. Submit proposed layout of joint locations in slab on grade for review marked on a print of the Architectural Floor Plan.
- E. Submit detailed procedures to be followed during placement of concrete during cold and hot weather conditions in accordance with paragraph 3.2.E of the specification.

1.7 STORAGE AND HANDLING

- A. Store materials protected from exposure to harmful weather conditions and at a temperature above 40° Fahrenheit.

1.8 **WARRANTY FOR SLAB WATERPROOFING ADMIXTURE**

- A. Project warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. The manufacturer's standard warrantee document executed by an authorized company official. The manufacturer's warrantee is in addition to, and not a limitation of, other rights the owner may have under provisions of the contract documents.
 - 1. Warrantee Period: Five years commencing on the date of acceptance of the project by the Owner or Notice of Completion.
 - 2. Warrantee Terms: Terms to include moisture related failures, including all finish floor materials and labor.

PART 2 - PRODUCTS

2.1 STANDARD ITEMS

Furnish all items in accordance with A.C.I. STANDARD 301-99, except as noted below;

2.2 CONCRETE

A. Supplement paragraph 4.2.1.4 as follows:

Do not use admixtures containing calcium chloride. All concrete shall contain a water-reducing and densifying admixture such as MASTER BUILDERS POZZOLITH or an approved equal as follows:

1. All admixtures shall be incorporated as an integral part of the mix design.
2. Admixture shall be manufactured by a firm having not less than 10 years experience in manufacturing and field testing of the product.

B. Supplement paragraph 4.2.2.8 as follows:

Compressive strength of concrete shall be 3500 P.S.I.

C. Modify paragraph 4.2.3 as follows:

Proportion all concrete to resist destructive exposure.

D. Supplement paragraph 4.2.3 as follows:

The following portions of the structure are required to withstand sulfates: None

2.3 REINFORCING

A. Supplement paragraph 3.2.1.1 as follows:

All reinforcing bars shall conform to ASTM A 615 grade 60.

B. Supplement paragraph 3.3.2.4.b as follows:

All reinforcement shall be supported and fastened before concrete is placed and shall be secured against displacement within the tolerances permitted in ACI 301-99. The portions of all bar supports within 1/2" of the concrete surface of all surfaces exposed to view in the finished structure shall be non-corrosive or protected against corrosion.

2.4 SLABS

- A. Provide vapor barrier below slabs on grade. Vapor barrier shall meet the requirements of ASTM-E1745-97(2004) Class A, with a permeance of 0.01 US perms or less.

Manufactures: Subject to compliance with requirements, provide products by the following or equal:

"Stego Wrap 15 mil" - manufactured by Stego Industries, LLC, San Juan Capistrano, CA.

- B. Floor Hardener to be used in those areas where indicated to be Hardened Concrete (see Finish Schedule), is to be Hornolith as manufactured by Tamms Industries, Kirkland, Il., or equal used according to manufacturer's recommendations.

C. Concrete moisture proofing admixture for interior slab construction shall be Barrier-1 Inc., 1901 Tumblewater Blvd., Ocoee, Florida 34761
Ph: 407-484-2604 Fax : 407-656-8603 e-mail:rakoon@att.net
Manufacturer Representatives; Richard A. Koon

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Give Architect at least 2 working days notice before placing concrete. Execution shall be in accordance with A.C.I. STANDARD 301-99, except as noted below.

3.2 CONCRETE

- A. Discharge concrete from mixer within 1 1/2 hours of batching.
- B. Modify paragraphs 5.3.3.3.a and 5.3.3.3.b as follows:
 - 5.3.3.3.a. Rough Form Finish - for all concrete surfaces against earth, in spaces which are not accessible to the public, and where indicated on finish schedule.
 - 5.3.3.3.b. Smooth Form Finish - for all concrete except as specified in 5.3.3.3.a. All concrete exposed to the public shall be Architectural Concrete in accordance with Section 6, and shall receive a grout cleaned finish as specified in Paragraph 5.3.3.4.b.
- D. Supplement Section 6.1 as follows:

All concrete construction exposed to view by the public in the finished construction shall be considered architectural concrete.

3.3 SLABS ON GROUND

- A. Omit paragraph 5.3.2.6 and substitute the following:

Unless otherwise shown on plan, joints in floor slabs on ground shall be located in a square or rectangular pattern, arranged to suit layout, but having a maximum area of 400 square feet. Joints shall be so located as to avoid areas which are to receive ceramic tile type of finish. If a rectangular pattern is used, long dimension shall not exceed short by more than 50%.

NOTE: THERE ARE NO CONTROL JOINTS IN SUSPENDED FRAMED SLABS ON METAL DECK.
- B. Floor Hardener to be used in those areas where indicated to be Hardened Concrete (See Finish Schedule). Apply floor hardener after curing has been completed in accordance with manufacturer's recommendations.

D. Add Barrier-1 Admixture I strick accordance with manufacturer's recommendations to all ready mix concrete to be placed in interior slab on grade construction at the batch plant or at the job site at a

rate of 14oz per 100 lbs of cement. The minimum amount shall be 50oz per cubic yard.

1. A representative of Barrier-1 Admixture must be present at the jobsite during the mixing and placement of the first batch of treated concrete. The Contractor must not proceed without the Barrier 1 representative being present for the certification of the mix and placement process. Please provide 10 days notice of the placement of the first batch of treated concrete.

2. Manufacturer's onsite mixing instructions:

a. Add Barrier-1 Admixture to ready mix concrete truck, in the require dosage, and mix for 7 (seven) minutes before discharge at jobsite. Barrier-1 Admixture is to be used in lieu of designed mix water, not in addition to mix water.

b. Do not alter 0.45 water/cementitious materials ratio.

c. The addition of non-chlorinated admixtures is permitted.

3.5 REINFORCING

A. Supplement paragraph 3.3.2.5 as follows:

Welded wire fabric shall be overlapped wherever successive mats are continuous in such a way that the overlap measured between outermost cross wires of each fabric sheet is not less than the spacing of the cross wires plus 2 inches. Minimum clearance between the top of the slab and the top mat of welded wire at overlaps shall be maintained.

3.8 TESTING

A. Modify paragraph 1.6 as follows:

Testing agency will be selected by Owner upon Architect's recommendation. The services of 1.6.4 will be paid for by the Owner.

B. Testing of slabs containing Barrier-1 Waterproofing Admixture will be carried out by Barrier-1 to include: drilled sample cores on all project slabs. The sample cores will be sent to an independent laboratory and tested for permeability, the results will be provided as part of the warranty closeout documents.

END OF SECTION 03 30 00