

G. Division 3 - Concrete1. Concrete

a. General

- 1) State tolerances required. Reference: Practice for Concrete Form work (ACI 347-78).
- 2) State responsibility for design of form work.
- 3) All concrete shall be minimum 3,000 PSI design strength or as determined by structural consultant.
- 4) For pre-cast concrete the manufacturing plant shall be certified by the pre-cast/pre-stressed concrete institute.
- 5) Use re-usable forms to reduce waste.

b. Materials

- 1) State materials required in form work panels and columns (rectangular, round).
- 2) State type of form ties required. Note special requirements.

c. Execution

- 1) Define quality of form work construction required (finish, joints, layout).
- 2) State responsibilities for supplying and building in of inserts (reglets, anchors, water stops, etc.)
- 3) State minimum stripping and reshoring requirements.
- 4) Provide description of various types of formed surfaces required for the project.

2. Concrete Reinforcement

a. General

- 1) Statement of proposed inspection and testing
 - 2) State shop drawing requirements not covered in General Conditions, such as scale, standard (e.g. ACI 315-74) and any special items to be covered.
 - 3) Reinforcing shall be grade 60 or as recommended by the structural consultant. This should be coated to prevent corrosion.
- b. Materials
- 1) State quality of reinforcement to be used including both rods and welded wire fabric.
 - 2) Define requirements for bending (i.e. standards, shops versus field bending).
 - 3) Fiberglass mesh can be used for concrete sidewalks.
- c. Execution
- 1) State standards for placing including cover, spacing and chairing.
3. Cast-in-place concrete
- a. General
- 1) Require records of all concrete delivered to site including date, delivery slip number, location in project, tests made and weather conditions.
 - 2) Require submittal of concrete mix for approval before work commences.
 - 3) State testing proposed and who will appoint and pay the testing company.
 - 4) State environmental restrictions to be adhered to (i.e., define "cold" and "hot" weather) and protection required.
- b. Material

- 1) State requirements for water, cement aggregate for the project including any special requirements such as white cement, sulfate resisting cement, colored aggregate, etc.
- 2) Define admixtures required such as water reducing, air entraining, etc.
- 3) Define water stops to be used.
- 4) Define other products required for this work such as non-shrink grout, curing agents, polyethylene, etc.
- 5) Concrete Mix - Define requirements for mix design such as by whom, specified strength versus durability to environment, special density, placing requirements, etc.

c. Execution

- 1) State requirements for placing, including vibrating, suitability of ground/forms to receive concrete, protection from weather, precautions to insure uniform pour to obviate cold joints, honeycombing, etc., and pumping.
- 2) State requirements for construction, control and expansion joints.
- 3) Define where water stops are required if not covered on drawings.
- 4) State any requirements to apply to other trades such as mechanical, electrical and structural steel.
- 5) Define requirements for finishing concrete such as for paint, sandblasting, bushhammering, etc.
- 6) State requirements for saw cutting such as timing, spacing, depth and finishing.

4. Concrete Finishing

a.	<u>Finish Type</u>	<u>Location</u>
	Screened and Bull Floated	Skim coats, pits
	Screened, Bull Floated and Scored with Wire Brush	Base slab for tile or bonded topping
	Powered Steel Trowel Finish	Floors which receive resilient flooring, carpet, or future floor
	Powered Steel Trowel Finish	Interior exposed slabs With Non-Slip Swirls
	Wood Float Finish with Brooming	Exterior exposed slabs
	Hardened Concrete with Powered Steel Trowel	Exposed slabs in shipping, receiving and hockey rink slabs

5. Curing

Specify method of curing that is compatible with floor finishes to be applied. Do not use curing compound on floors or stairs to be painted.

6. Floor Sealer

Use non-toxic and V.O.C. free sealers.