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## SECTION 033053 - MISCELLANEOUS CAST-IN-PLACE CONCRETE

### 1.1 QUALITY ASSURANCE

- A. Quality Standard: ACI 301 (ACI 301M).

### 1.2 MATERIALS

- A. Formwork.
- B. Steel Reinforcement:

Retain "Recycled Content of Steel Products" Subparagraph below if recycled content is required for LEED Credit MR 4.

1. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than **[25]** **[60]** <Insert number> percent.
2. Reinforcing Bars: Deformed steel.
3. Welded Wire Reinforcement: **[Plain]** **[Deformed]** steel.

C. Concrete Materials:

1. Portland Cement: ASTM C 150, **[Type I]** **[Type II]** **[Type I/II]** **[Type III]** **[Type V]**.
2. Blended Hydraulic Cement: ASTM C 595, **[Type IS]** **[Type IP]** **[Type I (PM)]** **[Type I (SM)]**.
3. Aggregates: **[Normal weight]** **[Lightweight]**.
4. Synthetic Fiber: Polypropylene fibers.

D. Admixtures: **[Air entraining]** **[Water reducing]** **[Retarding]** **[Water reducing and retarding]** **[High range, water reducing]** **[High range, water reducing and retarding]** **[Plasticizing and retarding]**.

E. Vapor Retarder: **[Class A or B, plastic]** **[Class C, plastic]** **[Polyethylene, 10-mil- (0.25-mm-) thick]** sheet.

F. Curing Materials: **[Clear, waterborne, membrane-forming curing]** **[Clear, solvent-borne, membrane-forming curing and sealing]** **[Clear, waterborne, membrane-forming curing and sealing]** compound.

### 1.3 CONCRETE MIXTURES

Retain "Portland Cement Replacement" Paragraph below if required for LEED-NC, LEED-CS, or LEED for Schools Credit ID 1.

- A. Portland Cement Replacement: Use fly ash, ground granulated blast-furnace slag, and silica fume to reduce portland cement by 40 percent.
- B. Normal-Weight Concrete: Compressive Strength (28 Days): **[4500 psi (31 MPa)] [4000 psi (27.6 MPa)] [3500 psi (24.1 MPa)] [3000 psi (20.7 MPa)]**.
- C. Structural Lightweight Concrete: Compressive Strength (28 Days): **[3000 psi (20.7 MPa)]**.
- D. Mixing: **[Ready mixed] [Project site]**.

#### 1.4 INSTALLATION

- A. Formed-Surface Finish: **[Rough] [Smooth] [Rubbed]**.
- B. Unformed-Surface Finish: **[Scratch] [Float] [Trowel] [Trowel and fine broom] [Non-slip broom]**.

#### 1.5 FIELD QUALITY CONTROL

- A. Testing: By Owner-engaged agency.

END OF SECTION 033053