

## 700 MATERIAL DETAILS

Materials shall conform to the stated requirements and/or the requirements of the referenced specifications including modifications as noted.

*Copies of all Supplemental Specifications referenced in this section are on file with the City of Columbus Transportation Division.*

### 701 - CEMENTITIOUS MATERIALS

**Acceptance.** *Cements meeting the requirements of 701.01, 701.02, 701.03, 701.04, 701.05, 701.06, 701.08, 701.09, 701.10 and 701.11 and certified in accordance with Supplement Specification 1028; and Fly Ash meeting the requirements of 701.13 and certified in accordance with Supplement Specification 1026 may be used without prior sampling, testing and approval by the City. List for certified cement and fly ash sources are maintained by the Office of (ODOT) Materials Management.*

**701.01 Air-Entraining Portland Cement.** ASTM C 150, Type IA. The Gillmore time of set and the air-permeability (fineness) tests shall govern.

**701.02 Portland Cement.** ASTM C 150, Type II. The Gillmore time of set and the air-permeability (fineness) tests shall govern. This cement may be used provided 705.10 Admixture is added at the mixer.

**701.03 Air-Entraining Portland Blast-Furnace Slag Cement.** ASTM C 595, Type IS-A. The amount retained when wet sieved on No. 325 (45 µm) sieve shall govern. Maximum allowable replacement is 35 percent by weight.

**701.04 Portland Cement.** ASTM C 150, Type I. The Gillmore time of set and the air-permeability (fineness) tests shall govern. This cement may be used provided 705.10 Admixture is added at the mixer.

**701.05 High-Early Strength Portland Cement.** ASTM C 150, Type III. The Gillmore time of set shall govern. This cement may be used provided 705.10 Admixture is added at the mixer.

**701.06 Portland Blast-Furnace Slag Cement.** ASTM C 595, Type IS. The amount retained when wet sieved on No. 325 (45 µm) sieve shall govern. This cement may be used provided 705.10 Admixture is added at the mixture.

**701.07 Masonry Cement.** ASTM C 91.

**701.08 Expansive Hydraulic Cement.** ASTM C 845, Type K.

**701.09 Portland Pozzolan Cement.** ASTM C 595, Type IP except that the pozzolan constituent (fly ash) shall not exceed 15 percent by weight and the loss on ignition of the pozzolan constituent shall not exceed 6 percent. This cement may be used provided 705.10 Admixture is added at the mixer.

**701.10 Air-Entraining Portland Pozzolan Cement.** ASTM C 595, Type IPA except that the pozzolan constituent (fly ash) shall not exceed 15 percent by weight and the loss on ignition of the pozzolan constituent shall not exceed 6 percent.

**701.11 Ground Granulated Blast Furnace (GGBF) Slag.** *Provide ground granulated blast furnace (GGBF) conforming to ASTM C-989, Grade 100 minimum (manufacturer's certification is required).*

**701.12 Fly Ash for Use in Portland Cement Concrete.** *Provide fly ash conforming to ASTM C-618, Class C or F, except ensure a maximum loss on ignition of 3 percent.*