

When placing concrete by pumping is authorized, the use of pump-aid admixtures approved by the Department will be allowed provided they are used in accordance with the manufacturer's recommendations.

## **SECTION 216—WATER FOR USE WITH CEMENT OR LIME**

### **216.01—Description.**

These specifications cover water for use in mixing with cement or lime.

### **216.02—Detail Requirements.**

Water shall be clean, clear, and free from oil, acid, salt, alkali, organic matter, or other deleterious substances.

Water that has been approved for drinking purposes may be accepted without testing for use in hydraulic cement concrete, cement, or lime stabilization. Water from other sources and pumping methods shall be approved by the Engineer before use.

The acidity or alkalinity of water will be determined colorimetrically or electrometrically. Water shall have a pH between 4.5 and 8.5. When subjected to the mortar test in accordance with the requirements of AASHTO T26, water shall produce a mortar having a compressive strength of at least 90 percent of a mortar of the same design using distilled water.

Wash water from hydraulic cement concrete mixer operations will be permitted to be reused in the concrete mixture provided it is metered and is 25 percent or less of the total water. A uniform amount of wash water shall be used in consecutive batches, with subsequent admixture rates adjusted accordingly to produce a workable concrete conforming to the specifications. Wash water shall conform to the acceptance criteria of ASTM C94, Tables 1 and 2.

## **SECTION 217—HYDRAULIC CEMENT CONCRETE**

### **217.01—Description.**

These specifications cover materials, design criteria, and mixing and testing procedures for hydraulic cement concrete.

### **217.02—Materials.**

Hydraulic cement concrete shall consist of hydraulic cement, fine aggregate, coarse aggregate, water, and admixture(s) mixed in the approved proportions for the various classes of concrete by one of the methods designated hereinafter.