BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G45.130.1
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CONCRETE AND MORTAR
ADMIXTURES

Part **Page**

1. GENERAL

1.01 The term "admixture," as used in concrete work, signifies a substance which may be combined with the usual constituents of concrete or mortar for its effect on certain normal characteristics of the cement products or for the purpose of adding properties not normally possessed by them.

1.02 In general, the improvement in the properties of portland cement mixtures which is usually attributed to the use of admixtures can be obtained by careful attention to the basic factors governing the selection of materials, the mixing and placing and the curing of concrete as outlined in these sections.

1.03 For their value in developing the properties desired in certain specialized uses for cement mortar in conduit construction, the worth of two types of admixtures is recognized and discussed in this section. Their use for other purposes or the use of any other type of admixture in conduit construction is not recommended.

2. INERT FILLERS

2.01 The group of admixtures known as inert fillers includes a number of finely ground naturally occurring materials, such as clay, sand and certain special types of earth. The value of this type of admixture in conduit construction lies mainly in its contribution toward workability through its capacity for absorbing water. This action tends to increase the fattiness of a given mix and improve its handling properties.

2.02 By the addition of an inert filler in the recommended quantities to the mortar used in the preparation of mortar bandages, the mixture will be found to trowel more readily and less effort will be required to obtain a uniform layer of mortar of the desired thickness. Its ability to hold water aids in preventing the bandage from drying out too rapidly. It also helps in the proper application of the bandage by enabling the mortar to be evened out more readily as the bandage is stroked against the conduit.

2.03 Recommendations for using a material of this type in the preparation of cement mortar for bandage joints are included in G45.160.1.

3. ACCELERATORS

3.01 Where it is required to seal masonry surfaces against seepage or flow of water, it is desirable to employ a material which possesses quick-setting characteristics so that the tendency for the seal to be forced or washed away by the action of the water will be offset by the rapid gain in strength of the patching material.

3.02 Waterplug, which comes packed ready for use, is generally the most convenient and reliable material to use for this purpose. However, where Waterplug is not readily available or where the unusually rapid setting characteristics of this material are not required, ordinary portland cement can be adapted, by the use of an accelerator, to develop quick-setting properties to the degree desired.

3.03 The accelerator recommended for this purpose is commercial calcium chloride, available in the form of white crystals at most builder's supply houses, hardware or drug stores. It is used in solution form, the standard solution consisting of 5 pounds of calcium chloride dissolved in 1-1/2 gallons of water. The solution is substituted for the mixing water ordinarily employed in the preparation of patching mortar, as described in G43.410.1.