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ENGINEERING BULLETIN

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: HIGH ALKALI CEMENT-REACTIVE AGGREGATES-
FLY ASH MIX DESIGN ACCEPTANCE PROCEDURES

Subject Code 7.42-1

Distribution:

Main Office

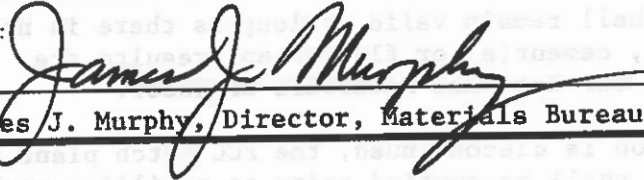
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APPROVED:


James J. Murphy, Director, Materials Bureau

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The current specification for 701-01, Portland Cement provides for the acceptance of high alkali cement (in excess of 0.70%) with use limitations. This includes the restriction on the use of high alkali cement with potentially reactive aggregates that have been identified by an "X" in the approved list "SOURCES OF FINE AND COARSE AGGREGATES".

A special note is included in the proposals for contracts let on and after September 14, 1989 that permits the contractor the option of using high alkali cement with potentially reactive aggregates for all the standard mixes (Classes A through J, except Class F) providing that 15% of the cement weight is replaced by fly ash from a source appearing in the Department's approved list. The note directs the contractor to request approval for this option in accordance with Department's written directives. These directives are as follows:

1. The contractor shall submit, at least 30 calendar days prior to usage, a written request to the Regional Materials Engineer to utilize this option and the request shall include at least the following:
 - a. The name and location of the Portland Cement Concrete (PCC) batch plant supplying the concrete which is capable of meeting Department requirements for storage and proportioning of fly ash.
 - b. The name(s) and source(s) of the high alkali cement to be used.
 - c. The name(s) and source(s) of the potentially reactive aggregate to be used.
 - d. The name and source of the fly ash to be used.
2. The Regional Materials Engineer shall forward the request with their concurrence and/or comments to the Director, Materials Bureau for further action.
3. In addition, the cement company shall submit to the Director, Materials Bureau a request to ship high alkali cement to PCC batch plants supplying concrete for Department contracts.
4. The Director, Materials Bureau will review the request and inform both the cement company and the Regional Materials Engineer of the action taken.

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5. When approval is granted by Director, Materials Bureau, the Regional Materials Engineer shall generate mix designs for the PCC batch plant for all standard Classes of concrete (Classes A through J, except Class F) which include a 15% (exactly) replacement of fly ash for the cement.
6. The approval of this option shall remain valid as long as there is no change in the source of aggregate(s), cement(s) or fly ash and results are satisfactory as determined by the Regional Materials Engineer.
7. If, for any reason, this option is discontinued, the PCC batch plant silo containing high alkali cement shall be emptied prior to refilling with low alkali cement.
8. The Regional Materials Engineer shall notify the Director, Materials Bureau when the option is discontinued. The Materials Bureau will then notify the cement company that it is no longer authorized to ship high alkali cement as previously permitted.