

State of Illinois  
Department of Transportation  
Division of Aeronautics

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**POLICY MEMORANDUM**

April 1, 2010

Springfield

Number 96-1

TO: CONSULTING ENGINEERS

SUBJECT: ITEM 610, STRUCTURAL PORTLAND CEMENT CONCRETE:  
JOB MIX FORMULA APPROVAL & PRODUCTION TESTING.

- I. This policy memorandum addresses the Job Mix Formula (JMF) approval process and production testing requirements when Item 610 is specified for an airport construction contract.
- II. PROCESS
  - a. The contractor may submit a mix design with recent substantiating test data or he may submit a mix design generated by the Illinois Division of Highways with recent substantiating test data for approval consideration. The mix design should be submitted to the Resident Engineer.
  - b. The Resident Engineer should verify that each component of the proposed mix meets the requirements set forth under Item 610 of the *Standard Specifications for Construction of Airports* and/or the contract special provisions.
  - c. The mix design should also indicate the following information:
    1. The name, address, and producer/supplier number for the concrete.
    2. The source, producer/supplier number, gradation, quality, and SSD weight for the proposed coarse and fine aggregates.
    3. The source, producer/supplier number, type, and weight of the proposed flyash and/or cement.
    4. The source, producer/supplier number, dosage rate or dosage of all admixtures.
  - d. After completion of Items b and c above, the mix with substantiating test data shall be forwarded to the Division of Aeronautics for approval. Once the mix has been approved, the production testing shall be at the rate in Section III as specified herein.

III. PRODUCTION TESTING

- a. One set of cylinders or beams, depending on the strength specified, shall be cast for acceptance testing for each day the mix is used. In addition, at least one slump and one air test shall be conducted for each day the mix is used. If more than 100 c.y. of the mix is placed in a given day, additional tests at a frequency of 1 per 100 c.y. shall be taken for strength, slump, and air. The concrete shall have a maximum slump of three inches (3") and minimum slump of one inch (1") when tested in accordance with ASTM C-143. The air content of the concrete shall be between 5% and 8% by volume. At no time shall the temperature of the concrete exceed 90 degrees Fahrenheit.
- b. If the total proposed amount of Item 610 Structural Portland Cement Concrete as calculated by the Resident Engineer is less than 50 c.y. for the entire project, the following shall apply:
  - The Resident Engineer shall provide calculations of the quantity of Item 610 to the Division of Aeronautics.
  - One set of cylinders or beams, depending on the strength specified, shall be cast for acceptance testing.
  - One air content and one slump test shall be taken for acceptance testing.
  - The concrete shall have a maximum slump of three inches (3") and minimum of one inch (1") when tested in accordance with ASTM C-143. The air content of the concrete shall be between 5% and 8% by volume. At no time shall the temperature of the concrete exceed 90 degrees Fahrenheit.
- c. The Resident Engineer shall collect actual batch weight tickets for every batch of Item 610 concrete used for the project. The actual batch weight tickets shall be kept with the project records and shall be available upon request of the Department of Transportation.

Steven J. Long, P.E.  
Acting Chief Engineer

Supersedes Policy Memorandum 96-1 dated January 1, 2004