1001.01 Purpose. This supplement describes the approval procedure for air entraining agents, Item 705.10, and chemical admixtures, Item 705.12.

1001.02 Submission for Preapproval. Manufacturer’s requesting approval for their admixtures will provide a sample to an independent laboratory. Include with the sample the required production acceptance ranges defined in section 6 of ASTM C 494 or section 5.4.1 and 5.4.3 of ASTM C 260 to the independent laboratory. The independent laboratory will test the sample to show compliance with 705.10 and/or 705.12.

The primary contact for the Office of Materials Management is the Cement & Concrete Engineer. The manufacturer will submit to Office of Materials Management the following:

A. Certified test data from the independent laboratory meeting Item 101.03 and documenting compliance with the applicable specification. Test data must not be more than five years old based on the date the test was completed. The test report will also document the required production acceptance ranges along with the actual test values measured by the independent laboratory.

B. A written agreement to notify the Office of Materials Management of any change in formulation, raw materials, or production methods used in the manufacture of the listed material.

C. Sample, at least one quart (1 liter) in size
D. Current SDS sheet

E. Current Product Technical Data Sheet stating the dosage rates, Oz/hundredweight, for each admixture

F. An infrared spectrophotometric scan, method of sampling and material used in the crystal

G. Contact information for the person(s) serving as a liaison to the Department

1001.03 Chloride Content Limitation. Air entraining agents and chemical admixtures contributing more than 50 parts per million (ppm) chloride ions by weight of cementitious content may not be used without written permission from the Director. Chloride Contribution data should therefore be submitted expressed as ppm by weight of cement at a dosage rate of 1 fluid ounce per 100 pounds (33 mL/50 kg) of cementitious content.

Example: A commonly used admixture has a chloride content of 2.2 ppm at a dosage rate of 1 fluid ounce per 100 pounds (33 ml/50 kg) of cementitious content. Assume we are mixing Class QC 1 concrete using 600 pounds of cementitious content per cubic yard (356 kg/m³), and propose adding the above admixture at a rate of 4 fluid ounces per 100 pounds (130 mL/50 kg) of cementitious content. The chloride ion content contributed by weight of cementitious content is found by multiplying the actual dosage rate of 4 fluid ounces (130 mL) by the ppm at 1 fluid ounce per 100 pounds (33 mL/50 kg) of cementitious content. In this case that is 4 X 2.2 = 8.8 ppm (130/33 X 2.2 = 8.8 ppm). Since 8.8 ppm is less than the 50 ppm allowed, this admixture can be used at the proposed rate of 4 fluid ounces per 100 pounds (130 mL/50 kg) of cementitious content.

1001.04 Initial Acceptance of Product. The Office of Materials Management will review the submittal for completeness; review the certified test data; and run verification tests on the sample. If the submittal’s independent test data and verification testing meets the specification requirements, the product will be added to the Department’s Qualified Products List (QPL).

1001.05 Re-certification. By January 1 of each year, the manufacturer will certify the material is not altered or changed from that originally approved. Include the uniformity & equivalence values, in tabular form, for each product manufactured the prior year and a technical data sheet stating dosage rates by type with the letter. List each uniformity test as a minimum, maximum and average. The manufacturer will resubmit certified data and samples with any notification of change.

1001.06 Manufacturer’s Elective Submittal Data. The manufacturer may supply the Department acceptance ranges for viscosity, pH and ash content for their products. These values will not be used for acceptance or rejection but will allow the Department to clarify and evaluate the reasons for a failed sample.
1001.07 Random Quality Assurance Testing. Air entraining agents and chemical admixtures will be randomly sampled at concrete producer plants. Include the uniformity & equivalence values, in tabular form, for each product manufactured. A one quart (1 L) sample will be obtained, by plant personnel and in the presence of the Department representative, from the concrete producer’s dispensing unit in a manner that is representative of the procedure used to introduce the material into the concrete. The sample will be submitted to the Office of Materials Management, Chemical Section, for testing.

1001.08 Notification of Test Results. The manufacturer will be notified of the failure of a quality assurance sample by informal means such as email or a fax containing the material sample information and test results. The manufacturer will have thirty days from the date of notification to resolve the problem and supply the Office of Materials Management with a split sample and an acceptable explanation and solution to solve the problem. If two unresolved failures of the same product occur within those thirty days, the product will be subject to suspension from the Qualified Product List. Three unresolved failures, of the same product, within those thirty days, will cause the failed product to be removed from the Qualified Product List.

1001.09 Dispute Resolution. The producer may appeal any product’s loss of acceptance. Submit a written appeal to the Administrator, Office of Materials Management, with the reasons the product should not have lost acceptance. The Administrator will have 30 days to respond with a decision. If the producer does not accept the Administrator’s decision, appeal the decision to the Qualified Products List Appeal Board (QPLAB).
APPENDIX

I. Methods of testing
   A. The air entraining agents are tested under ASTM C 233
   B. The chemical admixtures are evaluated under ASTM C 494 with the following exceptions:
   C. Specific gravity
      i. Apparatus
         - PAAR DMA 48 Density Meter
      ii. Method
         - according to manufacturer’s instructions.