

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

Delete SECTIONS 1401 and 1402 and replace with the following:

SECTION 1401

AIR-ENTRAINING ADMIXTURES FOR CONCRETE

1401.1 DESCRIPTION

This specification covers admixtures for use as air-entraining agents to be added to concrete mixtures. An air-entraining agent is defined as an admixture that is used as an ingredient of concrete, added to the batch immediately before or during mixing, for the purpose of entraining air.

1401.2 REQUIREMENTS

Provide material that complies with AASHTO M 154 for compressive and flexural strength, and resistance to freezing and thawing (relative durability).

1401.3 TEST METHODS

As specified in AASHTO M 154. Tests for bleeding, time of set, and length change are not required.

1401.4 PREQUALIFICATION

a. Each air-entraining admixture must be prequalified. Submit a written request to be evaluated for prequalification to the Bureau Chief of Construction and Materials. Provide the following for each brand and type of material to be evaluated:

(1) Name and address of the manufacturer.

(2) Brand name of the material.

(3) Two copies of a certified test report prepared by a laboratory regularly inspected by the Cement and Concrete Reference Laboratory (CCRL) of the National Institute of Standards and Technology, showing test results complying with the applicable requirements of AASHTO M 154. Also, include evidence that the laboratory is regularly inspected by CCRL. Test results are to be no more than 36 months out of date.

b. In lieu of the testing requirements above, submit results of tests from the AASHTO National Transportation Product Evaluation Program (NTPEP). Include the most recent NTPEP test report along with evidence that the product being offered is identical to the one reported in the NTPEP report. Test results will be evaluated in relation to applicable requirements of AASHTO M 154. NTPEP testing will be required for prequalification after June 1, 2016.

c. The Bureau of Construction and Materials will maintain a list of prequalified air-entraining admixtures. Products that have been prequalified by the above procedures will remain prequalified, as long as the formulation and manufacturing processes remain unchanged, and field experience indicates that the admixture functions appropriately. Any prequalified product that does not have a NTPEP test report on file as of January 1, 2019 will be removed from the list of prequalified air-entraining admixtures for concrete. Changes in the formulation, manufacturing process, or failure of the admixture to function appropriately will require a new prequalification.

1401.5 BASIS OF ACCEPTANCE

a. Prequalification as set forth under **subsection 1401.4**.

b. Receipt and approval of a Type C certification as specified in **DIVISION 2600**.

SECTION 1402

CHEMICAL ADMIXTURES FOR CONCRETE

1402.1 DESCRIPTION

This specification covers chemical admixtures to be added to concrete mixtures during mixing operations for the purposes listed below:

a. Type A – Water Reducing Admixture. An admixture that reduces the quantity of mixing water required to produce concrete of a given consistency.

b. Type B – Set Retarding Admixture. An admixture that retards the setting of concrete.

c. Type C - Accelerating Admixture. An admixture that accelerates the setting of concrete.

d. Type D – Water Reducing-Set Retarding Admixture. An admixture that reduces the quantity of mixing water required to produce concrete of a given consistency, and retards the setting of concrete.

e. Type E - Water Reducing and Accelerating Admixture. An admixture that reduces the quantity of mixing water required to produce concrete of a given consistency, and accelerates the setting of concrete.

f. Type F – Water-Reducing, High Range Admixture. An admixture that reduces the quantity of mixing water required to produce concrete of a given consistency by 12% or greater.

g. Type G – Water Reducing, High Range, and Retarding Admixture. An admixture that reduces the quantity of mixing water required to produce concrete of a given consistency by 12% or greater, and retards the setting of concrete.

h. Type S – Specific Performance Admixture. An admixture that provides a desired performance characteristic(s) other than reducing water content, or changing the time of setting of concrete, or both, without any adverse effects on the fresh, hardened, or durability properties of concrete.

i. Type I – Plasticizing Admixture. An admixture that produces flowing concrete without further addition of water.

j. Type II – Plasticizing and Set Retarding Admixture. An admixture that produces flowing concrete without further addition of water, and retards the setting of concrete.

NOTE: Flowing concrete is defined as having a slump equal to or greater than 7 ½ inches.

1402.2 REQUIREMENTS

a. Provide Type A, B, C, D, E, F, G, and S admixtures that comply with ASTM C 494.

b. Provide Type I and II plasticizing admixtures that comply with ASTM C 1017.

1402.3 TEST METHODS

a. Test Type A, B, C, D, E, F, G, and S admixtures as specified in ASTM C 494, with the following exception:

Provisional qualification, as stated in Table 1, Note C, will not be considered until at least 6 months of data has been established.

b. Test Type I and II plasticizing admixtures as specified in ASTM C 1017.

1402.4 PREQUALIFICATION

a. Each brand and type of admixture covered by this specification must be prequalified. Submit a written request to be evaluated for prequalification to the Engineer of Tests in the Bureau of Construction and Materials. Provide the following for each brand and type of material to be evaluated:

- (1) Name and address of the manufacturer.
- (2) Brand name of the material.
- (3) Type of material as defined in **subsection 1402.1**.
- (4) The chloride content of the admixture and whether or not chloride was added during its manufacture.
- (5) Recommended manner and time of adding the admixture to the concrete batch.
- (6) Two copies of a certified test report prepared by a laboratory regularly inspected by the Cement and Concrete Reference Laboratory (CCRL) of the National Institute of Standards and Technology, showing test results complying with the applicable requirements of ASTM C 494 or ASTM C 1017. Also, include evidence that the laboratory is regularly inspected by CCRL. Test results are to be no more than 36 months out of date.
- (7) An infra-red spectrum of the admixture which was used in the laboratory tests.
- (8) A one-liter sample from production of each brand and type of admixture being offered.

b. The manufacturer will be advised of the results of the review of the test results and test reports.

c. In lieu of the ASTM C 494 testing requirements and one-liter sample described above, submit results of tests from the AASHTO National Transportation Product Evaluation Program (NTPEP). Include the most recent NTPEP test report along with evidence that the product being offered is identical to the one reported in the NTPEP report. Test results will be evaluated in relation to the requirements of ASTM C 494. Provisional qualification will be considered once the 6 month compressive strength data is available on the NTPEP website. NTPEP testing will be required for prequalification of ASTM C 494 covered products after June 1, 2016.

d. The Bureau of Construction and Materials will maintain a list of prequalified chemical admixtures for concrete. Products that have been prequalified by the above procedures will remain prequalified, as long as the formulation and manufacturing processes remain unchanged, and field experience indicates that the admixture functions appropriately. Any prequalified ASTM C 494 covered product that does not have a NTPEP test report on file as of January 1, 2019 will be removed from the list of prequalified chemical admixtures for concrete. Changes in the formulation, manufacturing process, or failure of the admixture to function appropriately will require a new prequalification.

1402.5 BASIS OF ACCEPTANCE

a. Prequalification as set forth under **subsection 1402.4**.

b. Receipt and approval of a Type C certification as specified in **DIVISION 2600**.