502 Cement Quality Management Plan

502.1 Introduction

502.1.1 The purpose of the Cement Quality Management Plan is to establish the procedures for becoming pre-qualified as a source of cement for the Utah Department of Transportation. The Management Plan is to assure the Utah Department of Transportation that cement manufacturers are capable of producing and furnishing quality cement.

502.2 Procedures for the Establishment of a Qualified Source of Cement.

502.2.1 Applicants shall submit to the Central Materials Testing Lab (CMTL) Engineer a letter requesting it be designated as a qualified source. The letter shall include the following:

(a) Certify the plant maintains a quality control program.

(b) Certify each type cement for which it requests be designated as a qualified source meets or exceeds the current ASTM C-150 requirements.

(c) Name, position, address, and telephone number of an individual at each production location who may be contacted for data, shipping information, and to whom reports of tests shall be directed.

(d) Signed by a representative of the producer having legal authority to bind the company.

502.2.2 The producer requesting status as a qualified source agrees to provide the UDOT with the following:

(a) A brief outline of the procedures used to evaluate the finished product including; sampling and testing frequency and the sample preparation employed. Also include chemical analysis methods used such as X-ray, atomic absorption spectroscopy and/or wet chemistry.

(b) Submit copies of the inspection reports for each inspection by Cement and Concrete Reference Laboratory (CCRL).

(c) As requested the results of all applicable chemical and physical tests required by ASTM C-150 on the most recent 40 samples (20 pairs) tested per type. The results shall be submitted in the format outlined in ASTM C-183 in particular the table entitled "Test Data" with the critical limits calculated as described. When the source is to be qualified for cement meeting specific optional requirements (alkali, false set, heat of hydration), test data for these properties shall be provided, critical limits calculated, and quality history charts prepared. The producer may submit data on additional pairs of samples to update the quality history and indicate new critical limits at any time.

(d) A copy of the manufactures quality control plan.

502.3 Acceptance of a Producer as Qualified Source.

502.3.1 The CMTL Engineer or his representative will evaluate the information and data submitted as outlined in section 502.2. A determination from this information will be the basis for acceptance as a qualified source.

502.3.2 The producer will be advised in writing of acceptance as a pre-qualified source by the CMTL Engineer. Designation of a plant as a qualified source will be made separately for each type of cement. An updated list of producers indicating the types of cement for which each is a qualified source will be maintained by the CMTL and made available to authorized agencies and producers as requested.

502.4 Removal of a Producer from the Qualified Source List.

502.4.1 A producing plant may be removed from the list of qualified sources for a type of cement if test results of any two consecutive samples of that type fail to conform with any specification property; or if an individual project sample fails to meet the requirements of the project specifications.
502.4.2 A producing plant may also be removed for failure to submit data as requested as described in paragraph 502.2.2 C.

502.4.3 Prior to removing a plant from the list of qualified sources, the CMTL will take appropriate measures to confirm the validity of the sampling procedures that yielded the results. The CMTL will in addition confer with the manufacturer.

502.4.4 Failure to conform with Section 502.6.

502.4.5 The manufacturer will be advised immediately by telephone followed by written notice from the CMTL of disqualification as a source. Test data and/or field performance data will be provided to indicate the cause for such action.

502.4.6 Each manufacturer’s cement type will be removed from the qualified source list and the manufacturer will be required to re-apply as a qualified source for that type if it is not supplied to a UDOT controlled project within a 12 month period.

502.5 Procedures for Reinstatement to Qualified List.

502.5.1 Once a plant is removed from the qualified list as a source of a type of cement, a producer may gain reinstatement in the following manner:

(a) Submit a written request to the CMTL Engineer requesting such action. This request shall present reasons why it is to be anticipated that the circumstances that led to removal will not be expected to recur.

(b) If requested, provide the CMTL with samples of current production for test and evaluation.

(c) If the data provided indicate the reasons that led to removal are not expected to recur, the CMTL Engineer will reinstate the plant to the list of qualified sources for that type of cement in writing.

502.6 Procedures for Maintaining a Qualified Source of Cement

502.6.1 The plant and terminal facilities of a producer participating in this program will be visited on a random basis by a representative of the CMTL in order to achieve the following:

(a) Review of procedures employed, project requirements and guidance in the functional procedures of the program.

(b) Promote better understanding and good working relationships between the UDOT, CMTL and the manufacturer.

(c) Give the CMTL an opportunity to maintain current knowledge of production and storage facilities of the cement mills and terminals.

502.7 The Qualified Source of Cement Agrees to Provide the UDOT with the Following:

(a) Obtain a minimum of two split samples per month of each cement type. Ship one part of the split sample to the CMTL engineer and retain the other half of the split for chemical and physical testing. The manufacturer will present chemical results to the CMTL within 24 hours after the split is made. Failure of the producer to conform with ASTM C-150, ASTM C-183, or this procedure, shall disqualify the manufacturer.

502.8 Project Samples.

502.8.1 Cement from a qualified manufacturer delivered to the project site or concrete producing plant may be sampled by a representative of UDOT anytime a material is suspect. The procedures for taking project samples will be in accordance with ASTM C-183 to insure that the material sampled represents material shipped. When the test results of any two consecutive samples of that type exceed the limit for any applicable specification property, an increased in sampling intervals as determined by CMTL can and/or will occur.