



Minnesota Department of Transportation

Clarified Water Qualification Procedure

February 10, 2017

The Minnesota Department of Transportation will accept the use of clarified water in accordance with MnDOT Specification 3906. All sources of clarified mix water shall conform to the requirements of ASTM C1602 “Standard Specification for Mixing Water Used in the production of Hydraulic Cement Concrete,” and obtain MnDOT approval.

In order to obtain MnDOT approval, the Producer must demonstrate that the clarified water meets the requirements of ASTM C1602, by submitting the following to the MnDOT Concrete Engineer:

- Certified ready-mix plant-specific Clarified Water Quality Control Plan.
- Producer’s Quality Control test results.
- Samples for verification of initial approval of clarified water for use in MnDOT projects.
- Example certificate of compliance sheet, separately documenting the batch weights of the clarified water and potable mix water.

A. Clarified Water Quality Control Plan

A written plant-specific Clarified Water Quality Control Plan detailing the Producer’s approach to controlling the quality of clarified water is required. This plan shall include:

- A description of the water recycling system, including storage procedures and how the quality is monitored.
- The types and frequency of the physical and chemical testing, to be performed by the Producer, in compliance with *ASTM C1602 standards*.
- Identification of the lab personnel to conduct sample testing and contact information.

B. Testing

The Producer will test the clarified water source, as identified in Section 3.2.5 of ASTM C1602, for compliance with Table 1 and Table 2 of ASTM C1602 and MnDOT Specification 3906. Testing and submission of test results shall follow the frequencies listed in the Clarified Water Quality Control Plan, or more often when there is reason to believe that a change has occurred in the characteristics of the source. In no case, will MnDOT allow lower testing frequencies than listed in ASTM C1602.

Submit all test results on a monthly basis to the MnDOT Concrete Engineer at conc1off.dot@state.mn.us.

C. Verification Samples

Samples of the clarified mix water shall be taken for verification testing by an Agency Representative or other agreed upon procedure at a minimum of once per month. MnDOT will email the Producer the verification sample test results which will include a "Meets Requirements" or "Does Not Meet Requirements" disposition.

D. Non-compliance

If future samples of the clarified water do not meet MnDOT specifications or the uniformity requirements, the product may be disallowed and subject to other failing material procedures.

MnDOT reserves the right to collect field samples of these products for comparison to the reference samples, as stipulated in section 6 of AASHTO M-194-87, "Uniformity and Equivalence". Please also note that it is the Producer's responsibility to immediately notify MnDOT if the chemical formulation or process of producing the clarified water is changed or modified, or if the product is no longer being produced. If our testing determines that the chemical formulation has changed, without prior notification from the manufacturer, the Concrete Engineer may disallow the use of clarified water.

Sent reference samples, test data, and certification to:

Minnesota DOT
Attention: MnDOT Concrete Engineering Unit
1400 Gervais Ave.
Maplewood MN 55109

conc1off.dot@state.mn.us