

**AUTHORIZATION REQUIREMENTS AND ACCEPTANCE CRITERIA FOR
CONCRETE ADMIXTURES**

The Concrete Admixtures Prequalification Program establishes procedures to ensure that chemical admixtures and air-entraining admixtures meet the performance and acceptance criteria and that all concrete admixtures must be on the Authorized Materials List (AML) prior to being used on Caltrans projects.

1. Reference Documents:

- A. 2018 Caltrans Standard Specifications Section 90-1.02E: "Admixtures."
- B. ASTM C260: Standard Specification for Air-Entraining Admixtures for Concrete.
- C. ASTM C494: Standard Specification for Chemical Admixtures for Concrete.

2. Definitions:

- A. Supplier – an entity manufacturing or distributing concrete admixtures for use in a Caltrans project.
- B. Supplier's Laboratory – the supplier's concrete admixtures testing facility. This laboratory will verify the supplier's quality control and specification compliance testing. The supplier may contract out this work.
- C. Transportation Laboratory – the Department's Materials Engineering and Testing Services (METS) laboratories.

3. For new products, the supplier will provide the following:

- A. Letter of intent specifying the type of product, applications, and contact information.
- B. Authorized Material List Submittal Form TL-9502. For more information, please follow the link: <<https://dot.ca.gov/programs/engineering-services/product-evaluation-program>>
- C. Manufacturer's product data sheet.
- D. Safety Data Sheet.
- E. Test results showing compliance with applicable standards (ASTM C260 for air-entraining admixtures, ASTM C494 for non-air-entraining admixtures).
- F. Infrared (IR) curve of the admixture.
- G. When directed to do so, send a quart sample of the material for our testing to:

Transportation Laboratory
Attention: Kirolos Kelada
Concrete Admixtures Prequalification Program – Chemical Testing
Branch
5900 Folsom Boulevard
Sacramento, CA 95819

- H. Once it is determined that the admixture meets the acceptance criteria, it will be posted in the Department's Authorized Materials List website and the supplier will be notified.
- I. The authorization of concrete admixtures is valid for up to 5 years from the date it is placed on the AML.
- J. The Department reserves the right to sample, test, and remove the product from the AML at any time.

4. Performance and acceptance criteria:

- A. Concrete admixtures must contain < 1% chlorides.
- B. For air-entraining admixtures, products must show compliance to ASTM C260 section 4 "General Requirements" as well as the criteria in Table 1 "Physical Requirements"
- C. For chemical admixtures, products must show compliance to ASTM C494 section 5 "General Requirements" as well as the criteria in Table 1 "Physical Requirements"
- D. Lithium nitrate admixtures must be in an aqueous solution that complies with the following:
 - i) Lithium nitrate as LiNO_3 must be 30 ± 0.5 percent by weight
 - ii) Sulfate as SO_4 must be < 1,000 ppm
 - iii) Chloride as Cl must be < 1,000 ppm
 - iv) Alkalis as $\text{Na}_2\text{O} + 0.658 \text{K}_2\text{O}$ must be < 1,000 ppm

5. Reauthorization:

- A. The supplier must submit a reauthorization request for each product at least 60 calendar days prior to the reauthorization date. The renewal process is the same as the authorization process listed in section 3 of this document.
- B. Send a letter confirming that the concrete admixture and the manufacturing process has not changed since the last submittal.

Failure to submit a renewal request at least 60 days in advance may result in an authorized material expiring before the product submittal can be reviewed and re-authorized.



If you have any questions about the Concrete Admixtures Authorization Criteria, contact the Chemical Testing Branch, Kirolos Kelada at (916) 227-5242 or <Kirolos.Kelada@dot.ca.gov>.

For technical questions regarding the use of concrete admixtures, contact the Concrete Materials Testing Branch, Seyedhamed Sadati at (916) 227-7118 or <Seyedhamed.Sadati@dot.ca.gov>.