

**AUTHORIZATION PROCEDURE FOR CONCRETE ANCHORAGE DEVICES**

All Mechanical Expansion Anchors ([shell and stud type](#)), Cast-in-Place Concrete Inserts and [Resin Capsules](#) to be used by the State of California Department of Transportation shall be on the Caltrans Authorized Material List before incorporation into any construction project. Authorization of the system requires the following:

- I. Manufacturer provides:
  - A. Drawing or product brochure with detailed information about the anchorage system (concrete anchorage device name, product number, dimensions, and material specifications)
  - B. Source Information for all the materials used on each system.
  - C. Evaluation reports by an ISO 17025 Certified Independent Testing Laboratory for each system submitted for prequalification
  - D. Proof of compliance with the 2010 Caltrans Standard Specifications, Section [75-1.03C](#).
  - E. Proof of compliance with California Test 681 "Method for Testing Creep Performance of Concrete Anchorage Systems" for shell and stud mechanical anchorage devices [and resin capsules](#).
  - F. Proof of compliance with California Test 682 "Method for Determining Ultimate Tensile Strength of Concrete Anchorage Devices" for cast-in place concrete inserts.
  - G. Manufacturer's installation instructions for each concrete anchoring device submitted for authorization.
  - H. Materials Test Report and Certificate of Compliance for Steel Rod
  - I. Material Test Report and Certificate of Compliance for Nut and Washer
  - J. Description of Quality Control Procedures
  - K. Description of Material Tracking
  - L. A copy of the following information (actual testing):
    - i. Concrete mix certificate. Must meet requirements of California Tests 681 and 682 as applicable
    - ii. Provide compressive strength test results with dates and mix number.
    - iii. Pictures and Drawings with dimensions of concrete slab meeting minimum requirements of California Tests 681 and/or 682
    - iv. Pictures and drawing of testing apparatus used on each test (California Test 681 and/or California Test 682 and/or proposed testing apparatus)

- v. Actual installation torque applied
  - vi. Actual pre-load applied to the installed concrete anchoring device
  - vii. Actual sustained tension load, loading rate, and length of time load was sustained
  - viii. Actual concrete temperature, when applicable
  - ix. Actual ambient temperature, when applicable
  - x. Actual displacement values when applicable
  - xi. Actual ultimate strength of the concrete anchorage device, when applicable
  - xii. Actual mean creep value calculation, when applicable
- M. Ship the required paperwork to Caltrans' Transportation Laboratory in Sacramento:

**California Department of Transportation  
Materials Engineering and Testing Services – MS #5  
Structural Materials Testing Branch  
5900 Folsom Boulevard  
Sacramento, CA 95819-4612**

- II. Caltrans will:
- A. Ensure all required documentation is received.
  - B. Review the technical information.
  - C. Upon evaluation of the technical information, issue an acceptance letter valid for two years or a rejection letter.
  - D. Update the Caltrans Authorized Material List, if applicable.
- III. Request a re-submittal of the pre-[authorization](#) package from the manufacturer every two years.
- IV. For more information, you may contact the Structural Materials Testing Branch at (916) 227-7251.