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 Caltrans Standard Specifications, Section 75-3.02C.
   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.
   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.