



**AUTHORIZATION REQUIREMENTS AND ACCEPTANCE CRITERIA FOR
CHEMICAL ADHESIVES**

The following requirements are necessary to authorize chemical adhesive intended for Drill and Bond Dowel (Chemical Adhesive) for inclusion on the Authorized Material List (AML). This program is administered by the Office of Roadway Materials Testing, Chemical Testing Branch. Chemical adhesive specifications are in Sections 41-10 and 51-1 of the 2018 Standard Specifications.

These acceptance criteria are based on Caltrans Bridge Design Aid, (BDA) 5-71, and Memo to Designers, MTD 21-1. Testing requirements for adhesive anchors are in American Concrete Institute (ACI) 355.4, Qualification of Post Installed Adhesive Anchors in Concrete.

1. For new materials, the manufacturer will provide the following:

- A. Authorized Material List Submittal Form TL-9502.
<<http://cefs.dot.ca.gov/jsp/forms.jsp>>
For more information see:
<<https://dot.ca.gov/programs/engineering-services/product-evaluation-program>>
- B. Submit data from an Independent Testing Evaluation Agency based on requirements in ACI 355.4. Submit a current copy of the current Evaluation Report from ICC, IAPMO, or other accredited agencies.
- C. Safety Data Sheet.
- D. When directed to do so, send a cartridge of chemical adhesive, a mixing nozzle and manual dispensing tool to the Chemical Testing Branch.
- E. Infrared scan of each component that is representative from material used in the original submittal to ICC-ES to be qualified.

2. Performance acceptance criteria:

The chemical adhesive will meet the minimum factored bond strength capacities, $\tau_{cr} \phi$,

Threaded Rod	Rebar
540 psi	490 psi

Apply all strength reduction factors necessary for consistency with the following conditions:

- Exterior exposure or damp environments
- Cracked concrete

- Water saturated concrete
- Periodic inspection
- No sustained tension
- Be qualified for horizontal and overhead installations
- Concrete compressive strength of 4000 psi. (The tabulated characteristic bond strength determined with a lower concrete compressive strength may be increased by a factor if indicated in the Evaluation Report)
- Long term peak in-service concrete temperature $\geq 110^{\circ}\text{F}$
- Short term peak in-service concrete temperature $\geq 165^{\circ}\text{F}$
- Non-seismic anchor

3. Send the submittal requirements and test sample to the Chemical Testing Branch.

Caltrans Transportation Laboratory
Attention: Sanchita Dey, (Chemical Adhesive)
5900 Folsom Boulevard
Sacramento, CA 95819

- A. When the submittal package has been evaluated and reviewed, the Department will notify the manufacturer of the findings. When all discrepancies are resolved to the satisfaction of the Department, the material will be placed on the AML.
- B. The Department reserves the right to sample, test, and remove the product from the AML at any time.

4. Reauthorization:

- A. Manufacturer will submit the most current Evaluation Report after the renewal date. When confirmation that the chemical adhesive still meets or exceeds the minimum factored bond strength capacity, the AML reauthorization date will be changed to the next Evaluation Report renewal date.

If you have questions about the Chemical Adhesive Authorization and Acceptance Criteria, contact the Sanchita Dey by phone at (916) 227-7912 or via e-mail sent to <sanchita.dey@dot.ca.gov>.