

BULLETIN: 2013 CBC USE OF ADHESIVE ANCHOR

Purpose: DSA bulletins are official notifications to stakeholders regarding any issue that affects a broad group of external stakeholders as well as DSA staff. Bulletins are generally used to provide notification of a specific concern arising from an event or previously unknown condition pertaining to building code requirements.

Background: This bulletin addresses the acceptance of adhesive anchors in concrete under the 2013 California Building Code (CBC).

The CBC adopts ACI 318 "Building Code Requirements for Structural Concrete" Appendix D for the design of anchors in concrete. Under the 2010 and prior editions of the CBC, ACI 318 did not include design or testing provisions for adhesive anchor products in its scope. Instead, provisions for testing, assessment, and design requirements for these products have been incorporated in the ICC Evaluation Service (ICC-ES) criteria AC308 "Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements." In order to obtain an Evaluation Report, manufacturers submit testing and assessment reports in accordance with the criteria for review and acceptance by evaluation service staff. The published Evaluation Report includes limitations on use, inspection requirements, design parameters, and design provisions for the adhesive anchor system as a substitute for cast-in anchors in accordance with the alternate materials and method provisions in CBC Section 104.11 and California Administrative Code (CAC) Section 4-304.

Under the 2013 CBC, the 2011 edition of ACI 318 is adopted by reference. ACI 318-11 Appendix D contains, for the first time, design provisions for adhesive anchors and requires product specific testing in accordance with the new ACI standard, ACI 355.4-11 "Qualification of Post-Installed Adhesive Anchors in Concrete and Commentary." While the testing requirements in ACI 355.4 are similar to those contained in prior editions of ICC-ES AC308, additional testing is required and additional restrictions are placed on the use of these products. ICC-ES adopted a significant revision to AC308 in June of 2013 to comply with these new requirements. The June revision also includes additional test requirements agreed upon by the Concrete Anchor Manufacturer Association. In order to obtain an Evaluation Report showing compliance with the 2012 IBC, and thus the 2013 CBC, adhesive anchor manufacturers are required to submit testing and assessment reports in accordance with the June 2013 revision of AC308. ICC-ES has established a compliance deadline of July 15, 2014, for manufacturers to deliver their submittals to ICC-ES in order for evaluation service staff to issue updated evaluation reports by January 15, 2015.

For projects with an adhesive anchor system submitted prior to the issuance of an evaluation report that includes recognition of that product under the 2012 IBC (e.g. ACI 318-11 and ACI 355.4-11), DSA will, for a limited time, accept an evaluation report for the product that includes recognition under the 2009 IBC, with the following modifications:

1. The design and installation of adhesive anchors shall comply with ACI 318-11 Appendix D. The design equations provided in Section 4.0 of the Evaluation Report shall be disregarded.
2. The characteristic bond stresses, τ_{cr} and τ_{uncr} , as listed in the Evaluation Report shall be based on long term elevated temperatures of not less than 110 degrees F. If the installation conditions require a higher temperature range, then that higher temperature shall be used to establish the characteristic bond stresses.
3. Inspection and installation verification testing of adhesive anchors shall be in accordance with 2013 CBC and ACI 318-11.

For projects, addenda, deferred submittals, and construction change documents with an adhesive anchor system submitted after **January 15, 2015**, DSA will no longer accept evaluation reports that do not include recognition for the 2012 IBC in accordance with the June 2013 or later revisions of AC308.

This bulletin references evaluation reports issued by the ICC Evaluation Service, LLC under their published criteria, but it does not preclude evaluation reports and listings by other services. See DSA IR A-5 for acceptance of products and evaluation reports.