



DSC TECHNICAL BULLETIN 07-01

Subject: Post Installed Anchors in Concrete

Discussion:

ACI 318-05, D.3.3.2 requires that in regions of moderate or high seismic risk, post-installed anchors “shall have passed the Simulated Seismic Tests of ACI 355.2.”

Table R1.1.8.3 from ACI 318-05 defines moderate seismic risk as equivalent to Seismic Design Category (SDC) C, and high seismic risk as equivalent to SDC D, E, and F.

In addition, ACI 318-05, Appendix D, requires a Strength Design methodology for designing anchors in concrete elements.

ACI 355.2 requires that testing of anchors be performed in cracked concrete.

The ICC Evaluation Service (ICC-ES) has issued a series of memos on this issue. They can be found at:

http://www.icc-es.org/News/concrete_anchors_memo.pdf

Fasteners approved under the previous acceptance criteria AC01, AC58 and AC106 are no longer approved for design of anchors in concrete elements performed in accordance with the International Building Code 2006 (IBC-06).

To address the requirements of seismic design, strength design, and cracked concrete, ICC-ES has developed new acceptance criteria:

- AC 193 “Acceptance Criteria for Mechanical Anchors in Concrete Elements”

http://www.icc-es.org/criteria/pdf_files/ac193.pdf

- AC 308 “Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements.”

http://www.icc-es.org/criteria/pdf_files/ac308.pdf

Currently there are very few mechanical anchors on the market that meet the requirements of AC 193, and there are no adhesive anchors that meet the acceptance criteria of AC 308. Several manufacturers have testing programs underway to bring their anchors into compliance with these new acceptance criteria.

Recommendation:

For projects in Seismic Design Categories C-F, verify that all specified anchors meet the requirements of AC 193 or AC 308. Provide documentation of this compliance at the 100 % Draft Construction Documents deliverable.