

Anchor Bolt Design Provisions in the TMS 402-16 Code

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Abstract:

There were two major changes to the anchor bolt design provisions in the TMS 402-16 code. First, there was a 67% increase in the calculated masonry crushing strength under shear loading. The increase was justified based on a reexamination of the experimental data, and including new data since the last major change in 2008. The second change was to use an elliptical interaction equation with an exponent of 5/3 for combined tension and shear on an anchor bolt instead of a linear interaction equation. This was based on recommendations in the literature as the result of testing. In addition, there was a change to the seismic provisions in ASCE 7 that reduced the required increase in load from 2.5 to 2.0 when the failure of the anchor bolt was not governed by tensile or shear yielding. The effect of three changes together was to approximately double the calculated capacity of anchor bolts.

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