

If the portal frame is being used as prescriptive bracing, any hold-down device rated at 3,500 lb. (ASD) or higher is acceptable (was 4,200 lb.**). However, since the derivation of engineered design values was based on a strap-tie hold-down as shown in APA TT-100, an embedded-strap hold-down must be used for engineered design.

With respect to the with hold-down portal frame, we approached Simpson with the same question. They said that a strap type hold-down would have considerably less deflection than an HDU. Conversely, making the substitution would increase the deflection of the portal frame and it MAY not work in conjunction with the other lateral force resisting elements in the system. If it were a free-standing garage it would probably be OK.

**Testing conducted by Simpson, APA, and Qualtim determined that at the performance of the portal frame with hold downs was not impacted by the reduction of the hold down capacity to 3,500 lbf. In fact independent testing conducted by Qualtim showed that the system did not start losing capacity until the hold down capacity was reduced to less than 3,000 lbf.

The 2015 IBC code change number S291 was passed at the Portland Oregon, Final Action Hearing in October 2012. There was no negative testimony. This code change, developed jointly by Simpson Strong Tie and APA was a result of testing done by both APA and Simpson. As a result, the 2015 IBC portal frame method will have only two (2) bottom plates at the base of the portal frame leg and the anchor capacity will be decreased to 3,500 psi.

We are proposing the same change for the IRC and there is little doubt that it will be approved as it has been approved for the IBC. We do not expect any negative testimony.

Regards,
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