

The new four - 750 pound deck to house connections referenced in 2015 IRC look good on paper but there are several issues.

Almost **all** sill plate to concrete foundation connections have oversized anchor bolts holes. With oversized anchor bolt holes there is the potential for impact loading at the anchor bolt to wood interface and the connection to the sill due to slip. Impact loads at a minimum are twice the initial force. For example, if the connection is rated for 750 lbs, the impact force at a minimum would be 1500lb. If there is space between the anchor bolt and the wood (which there is with over-sized anchor bolts holes) then the impact force is greater than 1500 lbs. This happens during slip or during a seismic event. The sill plate slips and creates an impact force greater than 1500 lbs because the initial "gap" between the anchor bolt and wood hole is closed. If the load is cyclical, as during an earthquake, the gap is now **greater** than the initial gap. Therefore the impact force is even greater than the initial "slip gap force" of +1500 lbs and could exceed 2.5 times the initial 750 lb load.

Many sill plate to concrete foundation connections have deteriorated sill plates due to termites and / or rot. **Any** connection into a deteriorated sill plate is a serious concern.

Many sill plates are already split at the anchor bolt to wood interface. Again, **any** connection into a split sill plate is a serious concern.

Precise alignment with the sill plate is needed so the NDS spacing in the sill is not violated. This can be a problem if customers want different deck to interior floor heights.

Once the first 750 lb connection is compromised, for example by any of the scenarios noted above, then the remaining three will fail like a zipper.

The new 750 lbs connections are an issue with brick veneer. Many houses in the north are brick veneer on the back wall.

Once again, the new 750 lb connections look good on paper but there are many issues, some but not all of which are noted above. That is why we believe Deck-Con is a superior solution to meet the original intent of the 1500 lb deck to house connection without the installation burden of many current solutions and more importantly without compromising safety.

Lance W. Broughton, P.E.

Deck-Con, LLC

