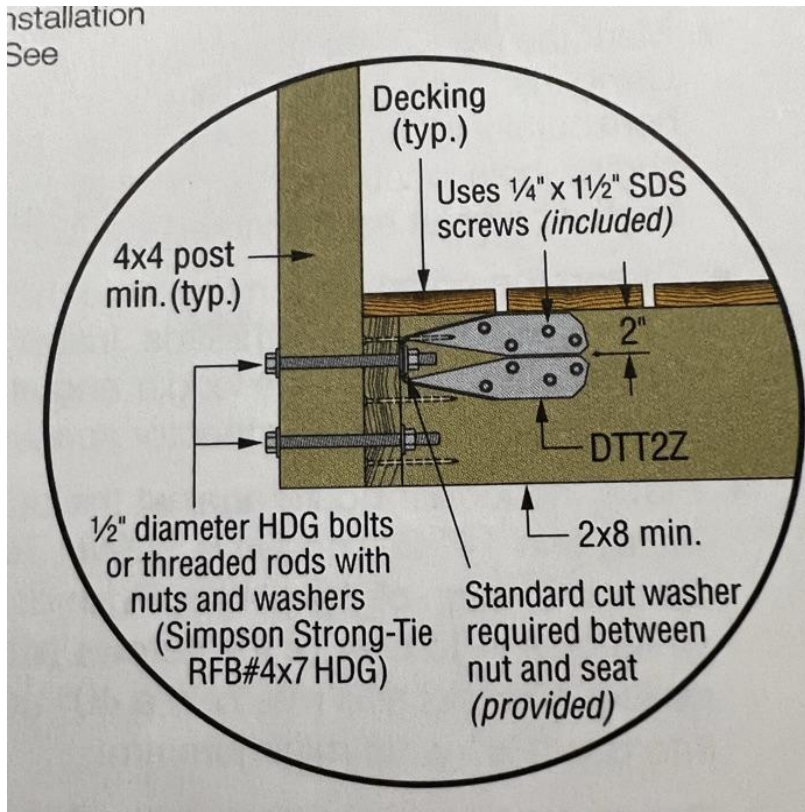


Deck Rails/Posts By Finn Home Inspections

Deck railings are supposed to support a 200 Lb. horizontal load, many railing systems are not strong enough and can fail allowing people leaning on deck railing to fall off the deck.

A common practice was to notch a 4X4 post cutting half the bottom off, see below. Unfortunately, these notched posts tend to split under load and break off. Load at notch is about 1,700 Lb. with a 200 Lb. load on railing.

Another possible failure is bending of the end joists or pulling the band joist off the joists, also causing a failure. So, the posts mount to the deck must be reinforced, see diagrams below. We are showing Strong-Tie companies fasteners, there are other means to accomplish what needs to be done, but in our opinion, these are the best.



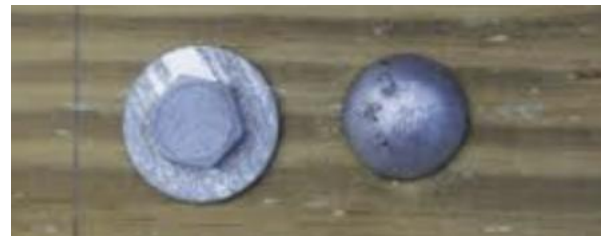
Proper installation of a Deck post.

Note the bolts are hex head with washers.

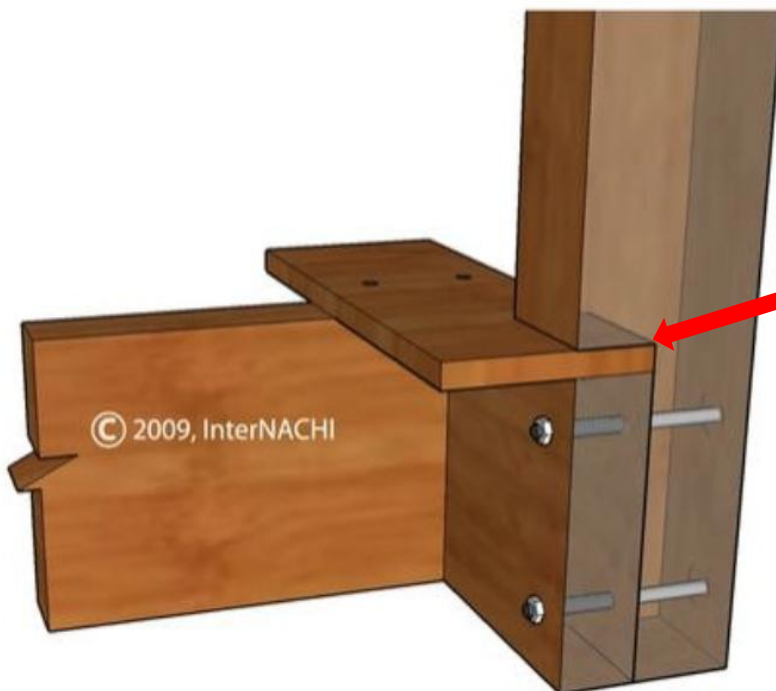
Carriage bolts are NOT proper in any of the deck connections. There must be bolts with washers.



Left: Carriage bolt, should not be used in deck construction



Proper bolt & washer. Carriage above not allowed



Notched deck railing post, with a horizontal load the 4X4 notched post splits vertically and fails.

With a 200 pound horizontal load on the top of the post the top bolt has a 1700 pound load, the wood bends and cracks at the inside of the notch, see arrow, this is a stress concentration point.