



**ERRATA**  
to the 2018 and Prior Editions of  
*the National Design Specification® (NDS®) for Wood Construction*

**Page Revision**

166 Clarifies that the following calculations in Example E.7 Sample Solution of Row of Bolts is intended for a single-row bolted connection with a 3-1/2" thick main member and 1-1/2" thick side member:

**E.7 Sample Solution of Row of Bolts**

Calculate the net section area tension and row tear-out adjusted ASD design capacities for the single-shear single-row bolted connection represented in Figure E2.

**Main and Side Members:**

#2 grade Hem-Fir ~~2x4~~ lumber. See *NDS Supplement* Table 4A – Visually Graded Dimension Lumber for reference design values. Adjustment factors  $C_D$ ,  $C_T$ ,  $C_M$ , and  $C_i$  are assumed to equal 1.0 in this example for calculation of adjusted design values.

$$F_t' = 525 \text{ psi } (C_F) = 525(1.5) = 788 \text{ psi}$$

$$F_v' = 150 \text{ psi}$$

**Connection Details:**

Bolt diameter,  $D$ : 1/2 in.

Bolt hole diameter,  $D_h$ : 0.5625 in.

Adjusted ASD bolt design value,  $Z_{||}'$ : 550 lbs

(See NDS Table 12A for 3-1/2" main member thickness and 1-1/2" side member thickness. For this trial design, the group action factor,  $C_g$ , is taken as 1.0).

Adjusted ASD Connection Capacity,  $n Z_{||}'$ :

$$nZ_{||}' = (3 \text{ bolts})(550 \text{ lbs}) = 1,650 \text{ lbs}$$

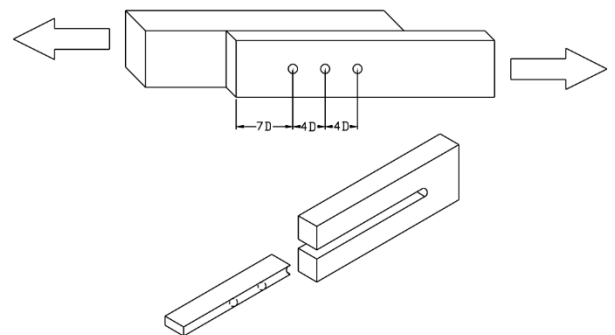
Adjusted For side member, adjusted ASD Net

Section Area Tension Capacity,  $Z_{NT}'$ :

$$Z_{NT}' = F_t' t [w - n_{row} D_h]$$

$$Z_{NT}' = (788 \text{ psi})(1.5'')[3.5'' - 1(0.5625'')] = 3,470 \text{ lbs}$$

**Figure E2 Single Row of Bolts**



Adjusted For side member, adjusted ASD Row Tear-Out Capacity,  $Z_{RT}'$ :

$$Z_{RTi}' = n_i F_v' t_{critical}$$

$$Z_{RT1}' = 3(150 \text{ psi})(1.5'')(2'') = 1,350 \text{ lbs}$$

In this sample calculation, the adjusted ASD connection capacity is limited to 1,350 pounds by row tear-out,  $Z_{RT}'$ .