



DSA Structural Amendments under review are highlighted in GRAY

Template 23-26

2001 CBC - Chapter 23A
WOOD

Section - 2318A - TIMBER CONNECTORS AND FASTENERS

Subsection(s) - 2318A.3.1 - 2318A.3.4

1 **2318A.3 Nails and Spikes.**

2
3 **2318A.3.1 Allowable lateral loads.** Allowable lateral design
4 values, Z , for common wire and box nails driven perpendicular to
5 the grain of the wood, when used to fasten wood members
6 together, shall be as set forth in Tables 23A-III-C-1 and
7 23A-III-C-2.

8
9 *The allowable load on casing nails shall not exceed one half*
10 *that allowed for common nails.*

11
12 *Common wire nails or spikes driven parallel to the grain of the*
13 *wood or installed as toenails shall not be subjected to more than*
14 *one half of the lateral load allowed when driven perpendicular to*
15 *the grain. When toenails are driven in subdrilled pilot holes, a*
16 *value of two thirds of the allowable lateral load allowed for nails*
17 *driven perpendicular to the grain may be used. Pilot holes shall*
18 *have a diameter approximately 90 percent of the nail shank*
19 *diameter.*

20
21 *Toenails shall not be used to transfer lateral forces in excess of*
22 *150 pounds per foot (2190 N/m) from diaphragms to shear walls,*
23 *drag struts (collectors) or other elements, nor from shear walls to*
24 *diaphragms or other elements of public elementary and second-*
25 *ary schools, community college buildings, and state-owned or*
26 *state-leased essential services buildings.*

27
28 In Seismic Zones 3 and 4, toenails shall not be used to transfer
29 lateral forces in excess of 150 pounds per foot (2188 N/m) from
30 diaphragms to shear walls, drag struts (collectors) or other ele-
31 ments, or from shear walls to other elements.

32
33 **EXCEPTION:** Structures built in accordance with Section
34 2320A.

35
36 **2318A.3.2 Allowable withdrawal loads.** Allowable withdrawal
37 design values, *W*, for wire nails driven perpendicular to the grain
38 of the wood shall be as set forth in Table 23A-III-D.

39
40 *The use of nails driven perpendicular to the grain to resist loads*
41 *in withdrawal shall be limited to connections using not more than*
42 *four nails in a single connection.*

43
44 Nails driven parallel to the grain of the wood shall not be
45 allowed for resisting withdrawal forces.

46
47 *Toenails shall not be permitted to resist loads in withdrawal.*

48
49 **2318A.3.3 Spacing and penetration.** Common wire nails shall
50 have penetration into the piece receiving the point as set forth in
51 Tables 23A-III-C-1 and 23A-III-C-2. Nails or spikes for which the
52 gages or lengths are not set forth in Tables 23A-III-C-1 and
53 23A-III-C-2 shall have a required penetration of not less than
54 11 diameters, and allowable loads may be interpolated. Allowable
55 loads shall not be increased when the penetration of nails into the
56 member holding the point is larger than required by this section.

57 *Spacing shall be in accordance with Section 2316A.2, Item 33.*

58
59 *Common wire 10d, 12d and 16 d nails may be used to join two*
60 *members of 2-inch (51 mm) nominal thickness at the tabulated*
61 *values indicated for these nails.*

62
63 *Nails in plywood shall not be overdriven such that the nail*
64 *heads penetrate the face ply by more than the thickness of the nail*
65 *head or break the face-ply wood fibers.*

66
67 **2318A.3.4 [For DSA/SS, OSHPD] Corrosion resistance.** Nails
68 and spikes used in wet or exterior locations, such as exterior wall
69 coverings of hospitals, public elementary and secondary schools,
70 community college buildings, and state-owned or state-leased es-
71 sential services buildings, shall be corrosion resistant and shall
72 have a hot-dipped or tumbled galvanized coating of not less than
73 1.5 ounces of zinc per square foot (458 gm/m²) or be fabricated of
74 copper, stainless steel or brass.