

ORDINANCE NO. 182845

An ordinance amending Article 1.5, Chapter IX of the Los Angeles Municipal Code to reflect local administrative changes and incorporate by reference portions of the 2013 Edition of the California Residential Code (CRC).

**THE PEOPLE OF THE CITY OF LOS ANGELES  
DO ORDAIN AS FOLLOWS:**

Section 1. Section 91.5.101 of the Los Angeles Municipal Code is amended to read as follows:

**SEC. 91.5.101. TITLE.**

Article 1.5 of Chapter IX of the Los Angeles Municipal Code shall collectively be known as the Los Angeles Residential Code or LARC. The provisions of the LARC for one- and two-family dwellings shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of detached one- and two-family dwellings, efficiency dwelling units, and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures. In addition to the LARC, Chapters 1, 11A, 11B, 17, 34, 63, 67, 70, 71, 72, 81, 89, 92, 93 and 96, and Section 3109 of the Los Angeles Building Code or LABC shall also be applicable to one- and two-family dwellings, efficiency dwelling units, and townhouses unless stated otherwise. Wherever the word "Code" is used in this Article, it shall mean the Los Angeles Building Code (LABC).

The LABC and the LARC adopt by reference portions of the 2013 California Building Code (CBC) or the 2013 California Residential Code (CRC) respectively.

**EXCEPTION:**

1. Live/work units complying with the requirements of Section 419 of the California Building Code shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the California Building Code when constructed under the California Residential Code for one- and two-family dwellings shall conform to Section 903.3.1.3 of the California Building Code.

2. Owner-occupied lodging houses with five or fewer guestrooms shall be permitted to be built in accordance with the California Residential Code for one- and two-family dwellings when equipped with a fire sprinkler system in accordance with Section R313.

Sec. 2. Section 91.5.301.1.4 of the Los Angeles Municipal Code is amended to read as follows:

**91.5.301.1.4. Seismic Design Provisions For Buildings Constructed On Or Into Slopes Steeper Than One Unit Vertical In Three Units Horizontal (33.3 Percent Slope).** The design and construction of new buildings and additions to existing buildings when constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope) shall comply with Section 91.1613.8 of the Los Angeles Municipal Code.

Sec. 3. Section 91.5.301.2.2.3.5.1 of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 4. Section 91.5.301.2.2.3.8 of the Los Angeles Municipal Code is added to read as follows:

**91.5.301.2.2.3.8. Anchorage of Mechanical, Electrical, or Plumbing Components and Equipment.** Mechanical, electrical, or plumbing components and equipment shall be anchored to the structure. Anchorage of the components and equipment shall be designed to resist loads in accordance with the International Building Code and ASCE 7, except where the component is positively attached to the structure and flexible connections are provided between the component and associated ductwork, piping, and conduit; and either:

1. The component weighs 400 lb (1,780 N) or less and has a center of mass located 4 ft (1.22 m) or less above the supporting structure; or
2. The component weighs 20 lb (89N) or less or, in the case of a distributed system, 5 lb/ft (73 N/m) or less.

Sec. 5. The first paragraph of Section 91.5.401.1 of the Los Angeles Municipal Code is amended to read as follows:

**91.5.401.1. Application.** The provisions of this Division shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this Division, the design and construction of foundations in flood hazard areas as established by Table 91.5.301.2(1) shall meet the provisions of Section R322. Wood foundations shall be designed and installed in accordance with AF&PA PWF.

Sec. 6. Section 91.5.501.1 of the Los Angeles Municipal Code is amended to read as follows:

**91.5.501.1. Application.** The provisions of this Division shall control the design and construction of the floors for all buildings including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment. Mechanical or plumbing fixtures

and equipment shall be attached (or anchored) to the structure in accordance with Section 91.5.301.2.2.3.8.

Sec. 7. Section 91.5.600 of the Los Angeles Municipal Code is amended to read as follows:

**SEC. 91.5.600. BASIC PROVISIONS.**

Chapter 6 of the CRC is hereby adopted by reference with the exceptions, modifications and additions set forth below. Additionally, Section R602.10.9.1 from the 2013 California Building Code is not adopted.

Sec. 8. Table 91.5.602.3(1) of the Los Angeles Municipal Code is amended to read as follows:

**TABLE 91.5.602.3(1)**

**Fastener Schedule For Structural Members**

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>	SPACING OF FASTENERS
<b>Roof</b>			
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2 1/2" x 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d (2 1/2" x 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie to rafter, face nail or 1 1/4" x 20 gauge ridge strap	3-10d (3" x 0.128")	—
5	Rafter or roof truss to plate, toe nail	3-16d box nails (3 1/2" x 0.135") or 3-10d common nails (3" x 0.148")	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss <sup>j</sup>
6	Roof rafters to ridge, valley or hip rafters: toe nail face nail	4-16d (3 1/2" x 0.135") 3-16d (3 1/2" x 0.135")	—
<b>Wall</b>			
7	Built-up studs-face nail	10d (3" x 0.128")	24" o.c.
8	Abutting studs at intersecting wall corners, face nail	16d (3 1/2" x 0.135")	12" o.c.
9	Built-up header, two pieces with 1/2" spacer	16d (3 1/2" x 0.135")	16" o.c. along each edge

10	Continued header, two pieces	16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	16" o.c. along each edge
11	Continuous header to stud, toe nail	4-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113")	—
12	Double studs, face nail	10d (3" × 0.128")	24" o.c.
13	Double top plates, face nail	10d (3" × 0.128")	24" o.c.
14	Double top plates, minimum 24-inch offset of end joints, face nail in lapped area	8-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	—
15	Sole plate to joist or blocking, face nail	16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	16" o.c.
16	Sole plate to joist or blocking at braced wall panels	3-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	16" o.c.
17	Stud to sole plate, toe nail	3-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113") or 2-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	—
18	Top or sole plate to stud, end nail	2-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	—
19	Top plates, laps at corners and intersections, face nail	2-10d (3" × 0.128")	—
20	1" brace to each stud and plate, face nail	2-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113") 2 staples 1 <sup>3</sup> / <sub>4</sub> " ×	—
21	1" × 6" sheathing to each bearing, face nail	2-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113") 2 staples 1 <sup>3</sup> / <sub>4</sub> "	—
22	1" × 8" sheathing to each bearing, face nail	2-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113") 3 staples 1 <sup>3</sup> / <sub>4</sub> "	—
23	Wider than 1" × 8" sheathing to each bearing, face nail	3-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113") 4 staples 1 <sup>3</sup> / <sub>4</sub> "	—
<b>Floor</b>			
24	Joist to sill or girder, toe nail	3-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113")	—
25	Rim joist to top plate, toe nail (roof applications also)	8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113")	6" o.c.
26	Rim joist or blocking to sill plate, toe nail	8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113")	6" o.c.
27	1" × 6" subfloor or less to each joist, face nail	2-8d (2 <sup>1</sup> / <sub>2</sub> " × 0.113") 2 staples 1 <sup>3</sup> / <sub>4</sub> "	—
28	2" subfloor to joist or girder, blind and face nail	2-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	—
29	2" planks (plank & beam - floor & roof)	2-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	at each bearing

30	Built-up girders and beams, 2-inch lumber layers	10d (3" × 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
31	Ledger strip supporting joists or rafters	3-16d (3 <sup>1</sup> / <sub>2</sub> " × 0.135")	At each joist or rafter

**TABLE 91.5.602.3(1)**

**Continued Fastener Schedule For Structural Members**

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER <sup>b, c, e, k</sup>	SPACING OF FASTENERS	
			Edges (inches) <sup>i</sup>	Intermediate supports <sup>c, e</sup> (inches)
<b>Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing</b>				
32	<sup>3</sup> / <sub>8</sub> " - <sup>1</sup> / <sub>2</sub> "	6d common (2" × 0.113") nail (subfloor wall) <sup>j</sup> 8d common (2 <sup>1</sup> / <sub>2</sub> " × 0.131") nail (roof) <sup>f</sup>	6	12 <sup>g</sup>
33	<sup>19</sup> / <sub>32</sub> " - 1"	8d common nail (2 <sup>1</sup> / <sub>2</sub> " × 0.131")	6	12 <sup>g</sup>
34	1 <sup>1</sup> / <sub>8</sub> " - 1 <sup>1</sup> / <sub>4</sub> "	10d common (3" × 0.148") nail or 8d (2 <sup>1</sup> / <sub>2</sub> " × 0.131") deformed nail	6	12
<b>Other wall sheathing<sup>h</sup></b>				
35	<sup>1</sup> / <sub>2</sub> " structural cellulosic fiberboard sheathing	1 <sup>1</sup> / <sub>2</sub> " galvanized roofing nail, <sup>7</sup> / <sub>16</sub> " crown or 1" crown staple 16 ga., 1 <sup>1</sup> / <sub>4</sub> " long	3	6
36	<sup>25</sup> / <sub>32</sub> " structural cellulosic fiberboard sheathing	1 <sup>3</sup> / <sub>4</sub> " galvanized roofing nail, <sup>7</sup> / <sub>16</sub> " crown or 1" crown staple 16 ga., 1 <sup>1</sup> / <sub>2</sub> " long	3	6

37	1/2" gypsum sheathing <sup>d</sup>	1 1/2" galvanized roofing nail; staple galvanized, 1 1/2" long; 1 1/4" screws, Type W or S	7	7
38	5/8" gypsum sheathing <sup>d</sup>	1 3/4" galvanized roofing nail; staple galvanized, 1 5/8" long; 1 5/8" screws, Type W or S	7	7
<b>Wood structural panels, combination subfloor underlayment to framing</b>				
39	3/4" and less	6d deformed (2" x 0.120") nail or 8d common (2 1/2" x 0.131") nail	6	12
40	7/8" - 1"	8d common (2 1/2" x 0.131") nail or 8d deformed (2 1/2" x 0.120") nail	6	12
41	1 1/8" - 1 1/4"	10d common (3" x 0.148") nail or 8d deformed (2 1/2" x 0.120") nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 Ksi = 6.895 MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.

b. Staples are 16 gauge wire and have a minimum 7/16-inch on diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table 91.5.602.3(2).

f. For regions having basic wind speed of 110 mph or greater, 8d deformed (2 1/2" x 0.120) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.

g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.

h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.

- i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
- j. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.
- k. Use of Staples in braced wall panels shall be prohibited in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

Sec. 9. Table 91.5.602.3(2) of the Los Angeles Municipal Code is amended to read as follows:

**TABLE 91.5.602.3(2)  
Alternate Attachments To Table 91.5.602.3(1)**

NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION <sup>a, b</sup> OF FASTENER AND LENGTH (inches)	SPACING <sup>c</sup> OF FASTENERS	
		Edges (inches)	Intermediate supports (inches)
<b>Wood structural panels subfloor, roof<sup>g</sup> and wall sheathing to framing and particleboard wall sheathing to framing<sup>f</sup></b>			
Up to 1/2	0.097 - 0.099 Nail 2 1/4	3	6
19/32 and 5/8	0.113 Nail 2	3	6
	0.097 - 0.099 Nail 2 1/4	4	8
23/32 and 3/4	0.097 - 0.099 Nail 2 1/4	4	8
1	0.113 Nail 2 1/4	3	6
	0.097 - 0.099 Nail 2 1/2	4	8
NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION <sup>a, b</sup> OF FASTENER AND LENGTH (inches)	SPACING <sup>c</sup> OF FASTENERS	
		Edges (inches)	Body of panel <sup>d</sup> (inches)
<b>Floor underlayment; plywood-hardboard-particleboard<sup>f</sup></b>			
<b>Plywood</b>			
1/4 and 5/16	1 1/4 ring or screw shank nail-minimum 12 1/2 ga. (0.099") shank diameter	3	6
	Staple 18 ga., 7/8, 3/16 crown width	2	5
11/32, 3/8, 15/32, and 1/2	1 1/4 ring or screw shank nail-minimum 12 1/2 ga. (0.099") shank diameter	6	8 <sup>e</sup>

$1^{9}/_{32}$ , $5/8$ , $2^{3}/_{32}$ and $3/4$	$1^{1}/2$ ring or screw shank nail- minimum	6	8
	$12^{1}/2$ ga. (0.099") shank diameter Staple 16 ga. $1^{1}/2$	6	8
<b>Hardboard<sup>f</sup></b>			
0.200	$1^{1}/2$ long ring-grooved underlayment nail	6	6
	4d cement-coated sinker nail	6	6
	Staple 18 ga., $7/8$ long (plastic coated)	3	6
<b>Particleboard</b>			
$1/4$	4d ring-grooved underlayment nail	3	6
	Staple 18 ga., $7/8$ long, $3/16$ crown	3	6
$3/8$	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., $1^{1}/8$ long, $3/8$ crown	3	6
$1/2$ , $5/8$	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., $1^{5}/8$ long, $3/8$ crown	3	6

For SI: 1 inch = 25.4 mm.

- a. Nail is a general description and may be T-head, modified round head or round head.
- b. Staples shall have a minimum crown width of  $7/16$ -inch on diameter except as noted. Use of staples in roof, floor, subfloor, and braced wall panels shall be prohibited in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.
- c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.
- d. Fasteners shall be placed in a grid pattern throughout the body of the panel.
- e. For 5-ply panels, intermediate nails shall be spaced not more than 12 inches on center each way.
- f. Hardboard underlayment shall conform to CPA/ANSI A135.4.
- g. Specified alternate attachments for roof sheathing shall be permitted for wind speeds less than 100 mph. Fasteners attaching wood structural panel roof sheathing to gable end wall framing shall be installed using the spacing listed for panel edges.

Sec. 10. Section 91.5.602.3.2 of the Los Angeles Municipal Code is added to read as follows.

**91.5.602.3.2. Top Plate.** Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and intersections with bearing partitions. End joints in top plates shall be offset at least 24 inches (610 mm). Joints in plates need not occur over studs. Plates shall be not less than 2 inches (51 mm) nominal thickness and have a width at least equal to the width of the studs.

**EXCEPTION:** In other than Seismic Design Category D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>, a single top plate may be installed in stud walls, provided the plate is adequately tied at joints, corners and interesting walls by a minimum 3 inch by 6 inch by 0.036 inch thick (76 mm by 152 mm by 0.914 mm) galvanized steel plate that is nailed to each wall or segment of wall by six 8d nails on each side, provided the rafters or joists are centered over the studs with a tolerance of no more than 1 inch (25 mm). The top plate may be omitted over lintels that are adequately tied to adjacent wall sections with steel plates or equivalent as previously described.

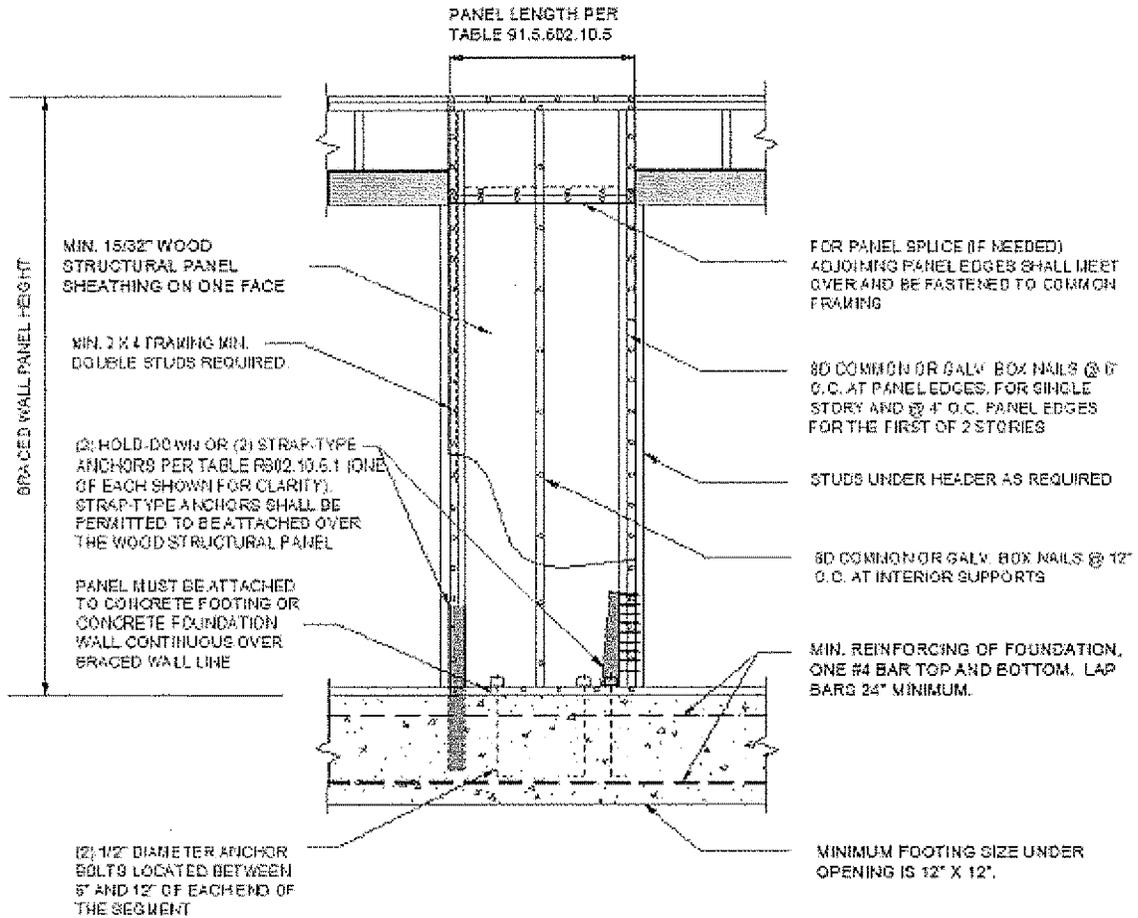
Sec. 11. Table 91.5.602.10.1.2(2) of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 12. Table 91.5.602.10.2 of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 13. Section 91.5.602.10.2.3 of the Los Angeles Municipal Code is added to read as follows:

**91.5.602.10.2.3. Minimum Number of Braced Wall Panels.** Braced wall lines with a length of 16 feet (4877 mm) or less shall have a minimum of two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have a minimum of two braced wall panels. No braced wall panel shall be less than 48 inches in length in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

Sec. 14. Figure 91.5.602.10.3.2 of the Los Angeles Municipal Code is amended to read as follows:

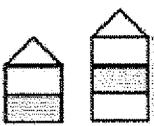


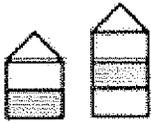
For SI: 1 inch = 25.4 mm.

**FIGURE 91.5.602.10.3.2  
METHOD ABW – ALTERNATE BRACED WALL PANEL**

Sec. 15. Table 91.5.602.10.3(3) of the Los Angeles Municipal Code is added to read as follows:

**TABLE 91.5.602.10.3(3)  
Bracing Requirements Based On Seismic Design Category**

<ul style="list-style-type: none"> <li>• SOIL CLASS D<sup>b</sup></li> <li>• WALL HEIGHT = 10 FEET</li> <li>• 10 PSF FLOOR DEAD LOAD</li> <li>• 15 PSF ROOF/CEILING DEAD LOAD</li> <li>• BRACED WALL LINE SPACING ≤ 25 FEET</li> </ul>			<b>MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE<sup>a</sup></b>				
Seismic Design Category	Story Location	Braced Wall Line Length (feet)	Method LIB <sup>c</sup>	Method GB <sup>e</sup>	Methods DWB, SFB, PBS, PCP <sup>e</sup> , HPS, CS-SFB <sup>d</sup>	Method WSP	Methods CS-WSP, CS-G
C (townhouses only)		10	2.5	2.5	2.5	1.6	1.4
		20	5.0	5.0	5.0	3.2	2.7
		30	7.5	7.5	7.5	4.8	4.1
		40	10.0	10.0	10.0	6.4	5.4
		50	12.5	12.5	12.5	8.0	6.8
		10	NP	4.5	4.5	3.0	2.6
		20	NP	9.0	9.0	6.0	5.1
		30	NP	13.5	13.5	9.0	7.7
		40	NP	18.0	18.0	12.0	10.2
		50	NP	22.5	22.5	15.0	12.8
		10	NP	6.0	6.0	4.5	3.8
		20	NP	12.0	12.0	9.0	7.7
		30	NP	18.0	18.0	13.5	11.5
		40	NP	24.0	24.0	18.0	15.3
		50	NP	30.0	30.0	22.5	19.1

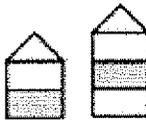
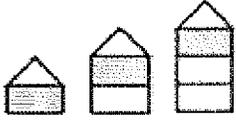
$D_0$		10	NP	5.6	5.6	1.8	1.6
		20	NP	11.0	11.0	3.6	3.1
		30	NP	16.6	16.6	5.4	4.6
		40	NP	22.0	22.0	7.2	6.1
		50	NP	27.6	27.6	9.0	7.7
		10	NP	NP	NP	3.8	3.2
		20	NP	NP	NP	7.5	6.4
		30	NP	NP	NP	11.3	9.6
		40	NP	NP	NP	15.0	12.8
		50	NP	NP	NP	18.8	16.0
		10	NP	NP	NP	5.3	4.5
		20	NP	NP	NP	10.5	9.0
		30	NP	NP	NP	15.8	13.4
		40	NP	NP	NP	21.0	17.9
		50	NP	NP	NP	26.3	22.3

(continued)

TABLE 91.5.602.10.3(3)

Continued Bracing Requirements Based On Seismic Design Category

<ul style="list-style-type: none"> <li>• SOIL CLASS <math>D^b</math></li> <li>• WALL HEIGHT = 10 FEET</li> <li>• 10 PSF FLOOR DEAD LOAD</li> <li>• 15 PSF ROOF/CEILING DEAD LOAD</li> <li>• BRACED WALL LINE SPACING <math>\leq 25</math> FEET</li> </ul>			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE <sup>a</sup>				
Seismic Design Category	Story Location	Braced Wall Line Length (feet)	Method LIB <sup>c</sup>	Method GB <sup>e</sup>	Methods DWB, SFB, PBS, PCP <sup>e</sup> , HPS, CS-SFB <sup>d</sup>	Method WSP	Methods CS-WSP, CS-G
$D_1$		10	NP	6.0	6.0	2.0	1.7
		20	NP	12.0	12.0	4.0	3.4
		30	NP	18.0	18.0	6.0	5.1
		40	NP	24.0	24.0	8.0	6.8

		50	NP	30.0	30.0	10.0	8.5	
		10	NP	NP	NP	4.5	3.8	
		20	NP	NP	NP	9.0	7.7	
		30	NP	NP	NP	13.5	11.5	
		40	NP	NP	NP	18.0	15.3	
		50	NP	NP	NP	22.5	19.1	
		10	NP	NP	NP	6.0	5.1	
		20	NP	NP	NP	12.0	10.2	
		30	NP	NP	NP	18.0	15.3	
		40	NP	NP	NP	24.0	20.4	
		50	NP	NP	NP	30.0	25.5	
	D <sub>2</sub>		10	NP	8.0	8.0	2.5	2.1
			20	NP	16.0	16.0	5.0	4.3
			30	NP	24.0	24.0	7.5	6.4
			40	NP	32.0	32.0	10.0	8.5
50			NP	40.0	40.0	12.5	10.6	
		10	NP	NP	NP	5.5	4.7	
		20	NP	NP	NP	11.0	9.4	
		30	NP	NP	NP	16.5	14.0	
		40	NP	NP	NP	22.0	18.7	
		50	NP	NP	NP	27.5	23.4	
		10	NP	NP	NP	NP	NP	
		20	NP	NP	NP	NP	NP	
		30	NP	NP	NP	NP	NP	
		40	NP	NP	NP	NP	NP	
		50	NP	NP	NP	NP	NP	
Cripple wall below one- or two-story dwelling		10	NP	NP	NP	7.5	6.4	
		20	NP	NP	NP	15.0	12.8	
		30	NP	NP	NP	22.5	19.1	
		40	NP	NP	NP	30.0	25.5	
		50	NP	NP	NP	37.5	31.9	

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound per square foot = 0.0479 kPa.

- Linear interpolation shall be permitted.
- Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the  $S_{ds}$  values associated with the Seismic Design Categories shall be permitted when a site-specific  $S_{ds}$  value is determined in accordance with Section 1613.3 of the *International Building Code*.
- Method LIB shall have gypsum board fastened to at least one side with nails or screws per Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at

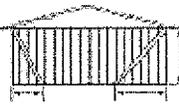
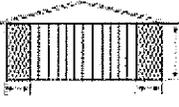
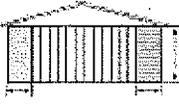
panel edges shall not exceed 8 inches.

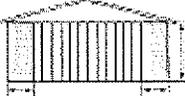
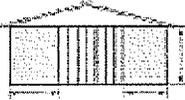
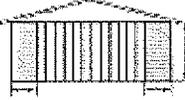
d. Method CS-SFB applies in SDC C only.

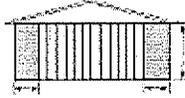
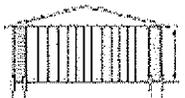
e. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub>.  
 Methods DWB, SFB, PBS, and HPS are not permitted in SDC D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub>.

Sec. 16. Table 91.5.602.10.4 of the Los Angeles Municipal Code is added to read as follows:

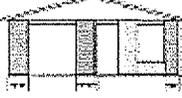
**TABLE 91.5.602.10.4  
 Bracing Methods<sup>f</sup>**

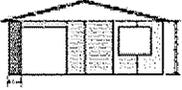
METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA <sup>a</sup>	
				Fasteners	Spacing
Intermittent Bracing Method	<b>LIB</b> Let-in-bracing	1 × 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d common nails or 3-8d (2 1/2" long x 0.113" dia.) nails	Wood: per stud and top and bottom plates
				Metal strap: per manufacturer	Metal: per manufacturer
	<b>DWB</b> Diagonal wood boards	3/4" (1" nominal) for maximum 24" stud spacing		2-8d (2 1/2" long x 0.113" dia.) nails or 2 - 1 3/4" long staples	Per stud
	<b>WSP</b> Wood structural panel (See Section R604)	15/32"		Exterior sheathing using 8d common nails (2.5" x 0.131") per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table 91.5.602.3(1) or 91.5.602.3(2)	Varies by fastener

<b>BV-WSP<sup>e</sup></b> Wood Structural Panels with Stone or Masonry Veneer (See Section R602.10.6.5)	15/32"	See Figure R602.10.6.5	8d common (2 1/2" x 0.131") nails	4" at panel edges 12" at intermediate supports 4" at braced wall panel end posts
<b>SFB</b> Structural fiberboard sheathing	1/2" or 25/32" for maximum 16" stud spacing		1 1/2" long x 0.12" dia. (for 1/2" thick sheathing) 1 3/4" long x 0.12" dia. (for 25/32" thick sheathing) galvanized roofing nails or 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field
<b>GB</b> Gypsum board	1/2"		Nails or screws per Table 91.5.602.3(1) for exterior locations Nails or screws per Table R702.3.5 for interior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
<b>PBS</b> Particleboard sheathing (See Section R605)	3/8" or 1/2" for maximum 16" stud spacing		For 3/8", 6d common (2" long x 0.113" dia.) nails For 1/2", 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field

<b>PCP</b> Portland cement plaster	See Section R703.6 for maximum 16 stud spacing		1 1/2" long, 11 gage, 7/16" dia. head nails	6" o.c. on all framing members
<b>HPS</b> Hardboard panel siding	7/16" for maximum 16" stud spacing		0.092" dia., 0.225" dia. head nails with length to accommodate 1 1/2" penetration into studs	4" edges 8" field
<b>ABW</b> Alternate braced wall	15/32"		See Section R602.10.6.1	See Section R602.10.6.1

**TABLE 91.5.602.10.4**  
**Continued Bracing Methods <sup>f</sup>**

METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA <sup>a</sup>	
				Fasteners	Spacing
Intermittent Bracing Methods	<b>PFH</b> Portal frame with hold-downs	15/32"		See Section R602.10.6.2	See Section R602.10.6.2
	<b>PFG</b> Portal frame at garage	15/32"		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	<b>CS-WSP</b> Continuously sheathed wood structural panel	15/32"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table 91.5.602.3(1) or 91.5.602.3(2)	Varies by fastener

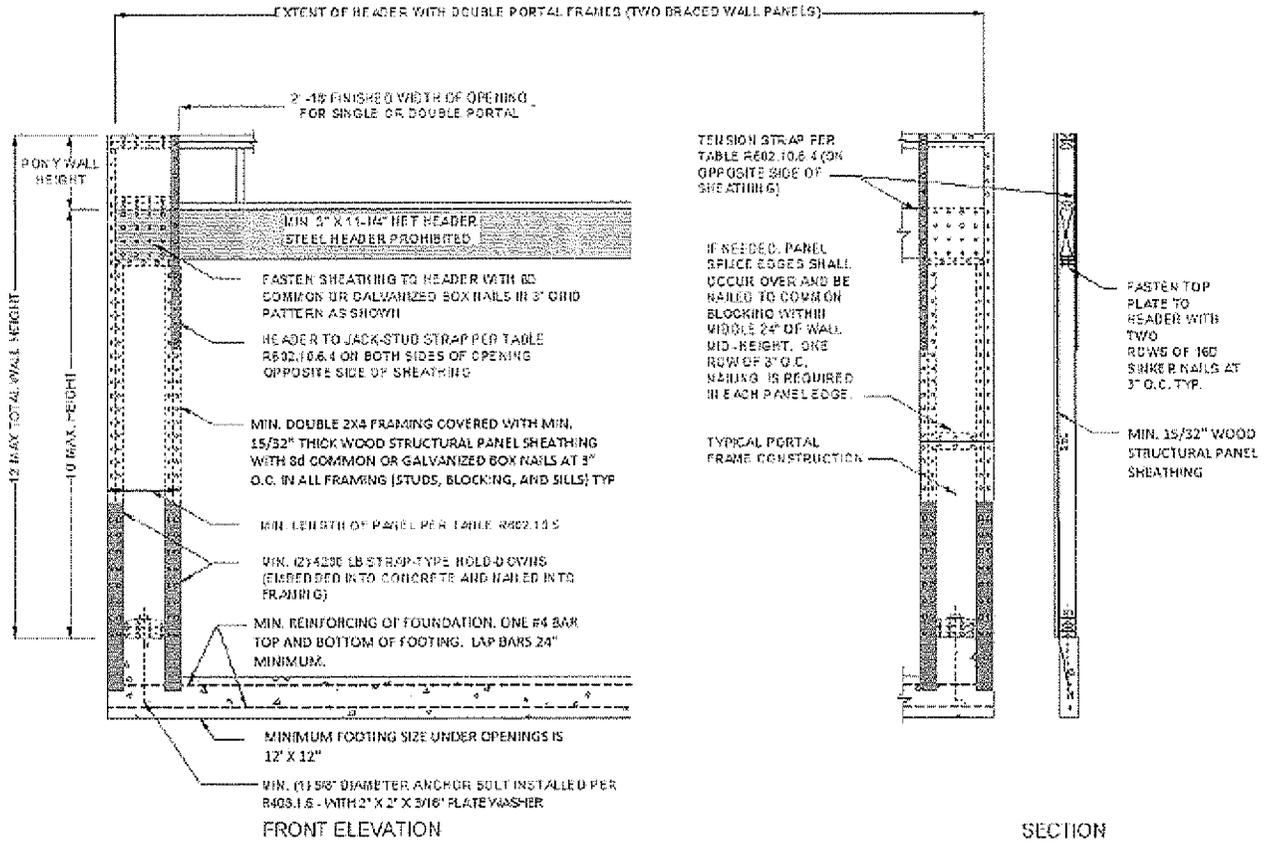
	<b>CS-G<sup>b, c</sup></b> Continuously sheathed wood structural panel adjacent to garage openings	15/32"		See Method CS-WSP	See Method CS-WSP
	<b>CS-PF</b> Continuously sheathed portal frame	15/32"		See Section R602.10.6.4	See Section R602.10.6.4
	<b>CS-SFB<sup>d</sup></b> Continuously sheathed structural fiberboard	1/2" or 25/32" for maximum 16" stud spacing		1 1/2" long x 0.12" dia. (for 1/2" thick sheathing) 1 3/4" long x 0.12" dia. (for 25/32" thick sheathing) galvanized roofing nails or 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 degree = 0.0175 rad, 1 pound per square foot = 47.8 N/m<sup>2</sup>, 1 mile per hour = 0.447 m/s.

- Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- Applies to panels next to garage door opening when supporting gable end wall or roof load only. May only be used on one wall of the garage. In Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>, roof covering dead load may not exceed 3 psf.
- Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R502.5(1). A full height clear opening shall not be permitted adjacent to a Method CS-G panel.
- Method CS-SFB does not apply in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub> and in areas where the wind speed exceeds 100 mph.
- Method applies to detached one- and two-family dwellings in Seismic Design Categories D<sub>0</sub> through D<sub>2</sub> only.
- Methods GB and PCP braced wall panel h/d ratio shall not exceed 1:1 in SDC D<sub>0</sub>, D<sub>1</sub>, and, D<sub>2</sub>. Methods LIB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D<sub>0</sub>, D<sub>1</sub>, and, D<sub>2</sub>.

Sec. 17. Figure 91.5.602.10.3.3 of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 18. Figure 91.5.602.10.6.2 of the Los Angeles Municipal Code is added to read as follows:



**FIGURE 91.5.602.10.6.2  
METHOD PFH – PORTAL FRAME WITH HOLD-DOWNS  
AT GARAGE DOOR OPENINGS**

Sec. 19. Section 91.5.602.10.3.3 of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 20. Table 91.5.602.10.4.1 of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 21. Figure 91.5.602.10.4.1.1 of the Los Angeles Municipal Code is deleted in its entirety.

Sec. 22. Table 91.5.602.10.5 of the Los Angeles Municipal Code is added to read as follows:

**TABLE 91.5.602.10.5**

**Minimum Length Of Braced Wall Panels**

METHOD (See Table R602.10.4)		MINIMUM LENGTH <sup>a</sup> (inches)					CONTRIBUTING LENGTH (inches)
		Wall Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP		48	48	48	53	58	Actual <sup>b</sup>
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 × Actual
LIB		55	62	69	NP	NP	Actual <sup>b</sup>
ABW	SDC A, B and C, wind speed < 110 mph	28	32	34	38	42	48
	SDC D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub> , wind speed < 110 mph	32	32	34	NP	NP	
PFH	Supporting roof only	24	24	24	24 <sup>c</sup>	24 <sup>c</sup>	48
	Supporting one story and roof	24	24	24	27 <sup>c</sup>	29 <sup>c</sup>	48
PFG		24	27	30	33 <sup>d</sup>	36 <sup>d</sup>	1.5 × Actual <sup>b</sup>
CS-G		24	27	30	33	36	Actual <sup>b</sup>
CS-PF		24	24	24	24 <sup>e</sup>	24 <sup>e</sup>	Actual <sup>b</sup>

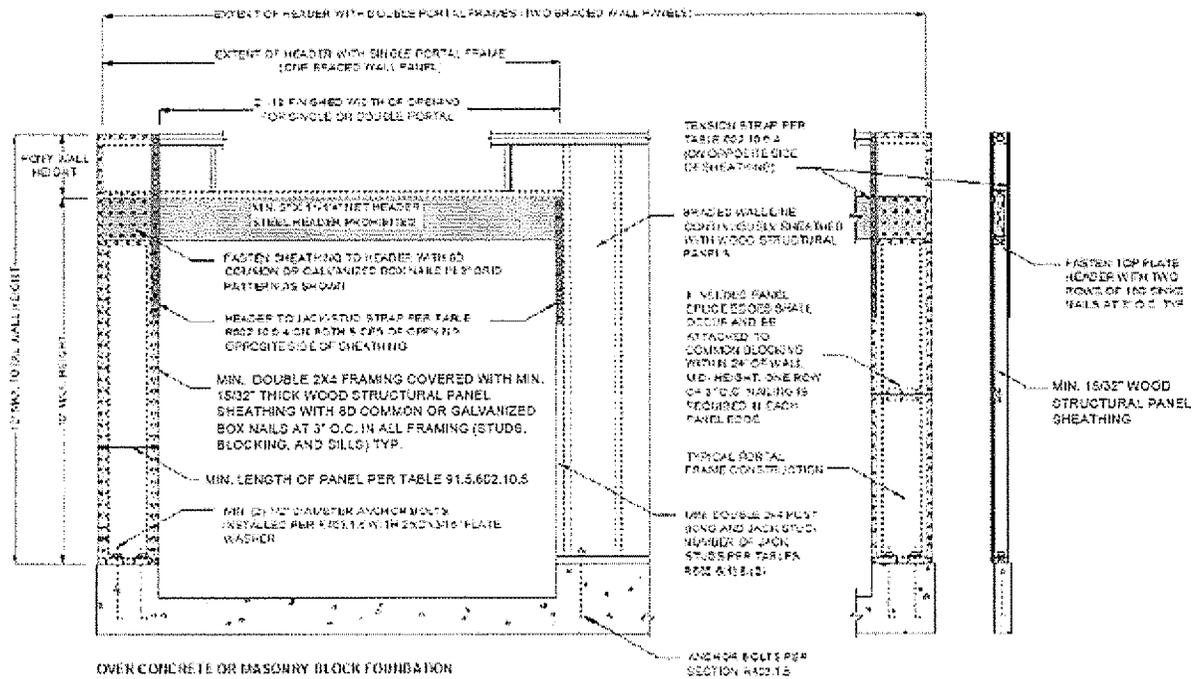
	Adjacent clear opening height (inches)						
	CS-WSP, CS-SFB	≤ 64	24	27	30	33	36
68		26	27	30	33	36	
72		27	27	30	33	36	
76		30	29	30	33	36	
80		32	30	30	33	36	
84		35	32	32	33	36	
88		38	35	33	33	36	
92		43	37	35	35	36	
96		48	41	38	36	36	
100		—	44	40	38	38	
104		—	49	43	40	39	
108		—	54	46	43	41	
112		—	—	50	45	43	
116		—	—	55	48	45	
120		—	—	60	52	48	
124		—	—	—	56	51	
128		—	—	—	61	54	
132		—	—	—	66	58	
136		—	—	—	—	62	
140	—	—	—	—	66		
144	—	—	—	—	72		

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s.

NP = Not Permitted.

- a. Linear interpolation shall be permitted.
- b. Use the actual length when it is greater than or equal to the minimum length.
- c. Maximum header height for PFH is 10 feet in accordance with Figure R602.10.6.2, but wall height may be increased to 12 feet with pony wall.
- d. Maximum opening height for PFG is 10 feet in accordance with Figure R602.10.6.3, but wall height may be increased to 12 feet with pony wall.
- e. Maximum opening height for CS-PF is 10 feet in accordance with Figure R602.10.6.4, but wall height may be increased to 12 feet with pony wall.

Sec. 23. Figure 91.5.602.10.6.4 of the Los Angeles Municipal Code is added to read as follows:



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

**FIGURE 91.5.602.10.6.4  
METHOD CS-PF – CONTINUOUSLY SHEATHED PORTAL FRAME  
CONSTRUCTION**

Sec. 24. The second unnumbered paragraph of Section 91.5.603.2.4 of the Los Angeles Municipal Code is amended to read as follows:

Where No. 8 screws are specified in a steel-to-steel connection, the required number of screws in the connection is permitted to be reduced in accordance with the reduction factors in Table R603.2.4, when larger screws are used or when one of the sheets of steel being connected is thicker than 33 mils (0.84 mm). When applying the reduction factor, the resulting number of screws shall be rounded up.

Sec. 25. Table 91.5.802.5.1(9) of the Los Angeles Municipal Code is amended to read as follows:

TABLE 91.5.802.5.1(9)

RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS<sup>a, b, c, d, e, f, h</sup>

RAFTER SLOPE	RAFTER SPACING (inches)	GROUND SNOW LOAD (psf)															
		20 <sup>g</sup>				30				50				70			
		Roof span (feet)															
		12	20	28	36	12	20	28	36	12	20	28	36	12	20	28	36
Required number of 16d common nails <sup>a, b</sup> per heel joint splices <sup>c, d, e, f</sup>																	
3:12	12	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	16	5	8	10	13	5	8	11	14	6	11	15	20	8	14	20	26
	24	7	11	15	19	7	11	16	21	9	16	23	30	12	21	30	39
4:12	12	3	5	6	8	3	5	6	8	4	6	9	11	5	8	12	15
	16	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	24	5	8	12	15	5	9	12	16	7	12	17	22	9	16	23	29
5:12	12	3	4	5	6	3	4	5	7	3	5	7	9	4	7	9	12
	16	3	5	6	8	3	5	7	9	4	7	9	12	5	9	12	16
	24	4	7	9	12	4	7	10	13	6	10	14	18	7	13	18	23
7:12	12	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	16	3	4	5	6	3	4	5	6	3	5	7	9	4	6	9	11
	24	3	5	7	9	3	5	7	9	4	7	10	13	5	9	13	17
9:12	12	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	16	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	24	3	4	6	7	3	4	6	7	3	6	8	10	4	7	10	13
12:12	12	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	5
	16	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	24	3	4	4	5	3	3	4	6	3	4	6	8	3	6	8	10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

- a. 40d box nails shall be permitted to be substituted for 16d common nails.
- b. Nailing requirements shall be permitted to be reduced 25 percent if nails are clinched.
- c. Heel joint connections are not required when the ridge is supported by a load-bearing wall, header or ridge beam.
- d. When intermediate support of the rafter is provided by vertical struts or purlins to a load-bearing wall, the tabulated heel joint connection requirements shall be permitted to be reduced proportionally to the reduction in span.
- e. Equivalent nailing patterns are required for ceiling joist to ceiling joist lap splices.
- f. When rafter ties are substituted for ceiling joists, the heel joint connection requirement shall be taken as the tabulated heel joint connection requirement for two-thirds of the actual rafter slope.
- g. Applies to roof live load of 20 psf or less.

h. Tabulated heel joint connection requirements assume that ceiling joists or rafter ties are located at the bottom of the attic space. When ceiling joists or rafter ties are located higher in the attic, heel joint connection requirements shall be increased by the following factors:

$H_C / H_R$	Heel Joint Connection Adjustment Factor
1/3	1.5
1/4	1.33
1/5	1.25
1/6	1.2
1/10 or less	1.11

where:

$H_C$  = Height of ceiling joists or rafter ties measured vertically above the top of the rafter support walls.

$H_R$  = Height of roof ridge measured vertically above the top of the rafter support walls.

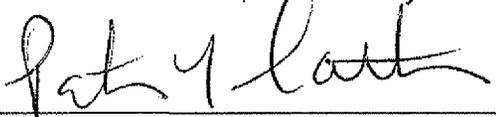
- i. Edge Distances, end distances and spacing for nails shall be sufficient to prevent splitting of the wood.

**Sec. 26. Urgency Clause.** The City Council finds and declares that this Ordinance is required for the immediate protection of the public peace, health and safety for the following reason: In order for the City of Los Angeles to facilitate a seamless transition with the State of California and its Residential Code and maintain predictability and streamlined case processing for the benefit of economic development during distressed times, it is necessary to immediately adopt the foregoing exceptions, modifications and additions to the California Residential Code. Additionally, the California Residential Code becomes effective on January 1, 2014 and the amendments to that code as reflected herein must be adopted by the City Council and become effective as soon as possible. The Council, therefore, with the Mayor's concurrence, adopts this ordinance to become effective upon publication pursuant to Los Angeles City Charter Section 253.

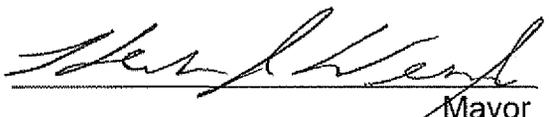
Sec. 27. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, by a vote of not less than three-fourths of all of its members, at its meeting of DEC 17 2013.

HOLLY L. WOLCOTT, Interim City Clerk

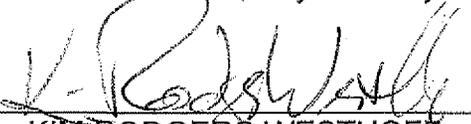
By   
Deputy

Approved DEC 23 2013

  
Mayor  
ACTING

Approved as to Form and Legality

MICHAEL N. FEUER, City Attorney

By   
KIM RODGERS WESTHOFF  
Deputy City Attorney

Date 12/10/13

File No. CF13-1214