



CODE REVIEW COMMITTEE

SACRAMENTO VALLEY ASSOCIATION OF BUILDING OFFICIALS

Committee Chair: Don Little PH: 916-774-5526

Committee Supported Responses Code Review Committee Question/Survey for January

Subject: 3X Framing Members

Given: CBC Table 23-II-I-1 footnote 3 requires shear wall sill plates and framing members receiving edge nailing from abutting panels to be 3x minimum where allowable shear values exceed 350 plf.

1. Does your jurisdiction allow the installation of 2X2 framing members in lieu of the required 3X vertical framing member?

YES	NO
13 57%	10 43%

If yes,

1a. Does your jurisdiction require an Engineer or Architect to approve the substitution?

YES	NO
15 65%	2 9%

1b. Does your jurisdiction require an Engineer or Architect to submit design calculations for "stitch" nailing of the 2-2x vertical framing members?

YES	NO
11 48%	6 26%

1c. Would your jurisdiction approve an Engineer or Architect's design justifying the use of a single 2x sill plate?

YES	NO
11 48%	8 35%

Comments by Spokespersons

- If the total wall design shear does not exceed 600 lbs per ft we would allow the 2x plate, but would have to be justified with calcs. If edge nail spacing is 3 " OC or less then the 3x member may still be required per 23-11-H notes 2,3.
- Footnote 3 specifically requires a single 3x member minimum.
- Only to resolve a correction in the field. We require full compliance with CBC Table 23-II-I-1 footnote 3 when performing the plan review. We also highlight these requirements on the plans to help prevent them from being overlooked in the field.
- No substitute is allowed when 3x member is required per table 23-II-I-1 and or table 23-II-H 1c) as long as the total wall design shear does not exceed 600 lbs per ft and complies with table 23-II-H.
- The "1997 SEAOC guidelines for wood diaphragms and shear walls" pg. 41 shows a condition with (2) 2x studs being bolted together as being acceptable.
- Not sill plates.
- Yes, in sill plates.
- We try to avoid substitutions, but if 2x material was already installed or part of an approved design, and an Architect or Engineer could provide justification, we would allow it.
- If 3x is missed by the contractor we have allowed an Engineered design approval as a fix.
- 2x is allowed provided shear loads doesn't exceed 600# and the engineer provides anchor bolt calcs.

Nonjurisdictional Comments

- The engineer can design for half anchor bolt spacing per CBC Volume 2 table 23-II-I-1 note 3 up to 600plf and use a 2x sill plate. A 2x plate would not be approved for 600plf and higher. This would require a 3x sill plate.

Code Review Committee Supported Responses – 3X Framing Members

1. Yes, 2- 2X vertical framing members could be substituted.
 - 1a. An Engineer or Architect would be required to approve the substitution.
 - 1b. Calculations and detail on the plans would be required.
 - 1c. This should be at the jurisdiction’s discretion if the shear load does not exceed 600#. However it is not recommended because of the limitations of the material capabilities of wood. An engineered design could be approved as a fix.

Subject: 1-Hr Shaft in a 3-Story Row House

Given: In a 3-story row house, type V-N, with a furnace in the attic and a duct shaft continuous from the attic to the first floor ceiling (see attached diagram),

2. Would your jurisdiction require this duct shaft to be rated with protected openings?

	YES		NO
	13	57%	10 43%

Comments by Spokespersons

- If the duct shaft is not passing through any rated assemblies given this is an SFD, fire blocking around the duct per 708.2.1-4 would be required.
- The shaft would not have to be rated but we would require lining it with gypsum board or similar material (to limit flamespread) and draftstopping at 10' intervals. Creating a rated/protected shaft will provide limited safety returns because the building has an open stairway from first floor to third floor.
- Sec 711.1 requires that the duct shaft be rated per Table 6-A (1 hour), and Sec 711.4 requires openings to the duct shaft be rated and self-closing. However under Exception 2, if the annular space around the duct (which comprises the "opening") is protected by through-penetration fire stops capable of providing a 1 hour fire resistant rating protection equivalent, then, even though the shaft itself would still require a 1 hour rating, the opening of the annular space between the horizontal assemblies and the shaft would be deemed properly protected.

Nonjurisdictional Comments

- Is this a single family dwelling with one occupant? If this is a single family dwelling fire blocking would be required per CBC 708 note 4.

Code Review Committee Supported Response – 1Hr Shaft in 3-Story Row House

Yes, the duct shaft shall be rated and openings protected with smoke and fire dampers. CBC Section 711.3 special provisions do not apply to 3-story buildings. (Note that the 2006 IBC Section 707.2, Exception 1 does not require a shaft enclosure for openings totally within an individual dwelling unit and connecting (4) stories or less.)