



City of Long Beach
Department of Development Services
Building and Safety Bureau

**Alternate Method for Distribution of
Lateral Forces in Wood Frame Buildings**

Information
Bulletin
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The purpose of this Information Bulletin is to assist designers to meet the general requirements of §1604.4 of the California Building Code (CBC) for wood frame buildings utilizing wood structural panel shear walls to resist lateral forces. This code section requires lateral forces be distributed to the various vertical elements of the lateral-force-resisting system in proportion to their rigidities. The common practice by registered design professionals has been to distribute the lateral forces in proportion to their widths. Wood shear wall rigidity is a function of other variables in addition to the width such as vertical elongation of overturning anchorage, nail deformation, panel rigidity, etc.

For shear wall panels along the same line of resistance, the designer can calculate the rigidity of individual wall panels and distribute the shear in proportion to their rigidities; however lengthy calculations are required to determine the wall rigidities. This Information Bulletin provides an alternative method to meet the requirements of §1604.4 of the CBC by conforming to the following requirements as outlined below for light wood frame buildings of up to three stories in height:

1. The width of the widest wood structural panel(s) along a braced wall line does not exceed the width of the narrowest panel(s) by more than three times.

Example: If a line of resistance consists of 4', 8', and 16' panels, only the 8' panels can be combined with the 16' panels for load distribution purposes.

2. Shear walls may be considered to be in the same line of resistance provided the maximum out of plane offset between such elements, normal to the direction of loading, is less than four feet (4') or five percent (5%) of the building dimension, whichever is larger.