



INFORMATION BULLETIN

# IB-016

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## Alternate Method for Distribution of Lateral Forces

The purpose of this Information Bulletin (IB) is to assist registered design professionals to meet the general requirements of Section 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. Common practice by design professionals has been to distribute the lateral forces in proportion to lengths of the shear walls along a braced wall line. However, wood shear wall rigidity is a function of other variables in addition to wall length, such as total vertical elongation of wall overturning anchorage system, nail slip, panel rigidity, etc. Lateral force distribution neglecting these other components of wood shear wall rigidity can result in underestimation of lateral forces in the wood shear walls.

To address this concern, design professionals can calculate the rigidity of individual wood shear walls along a braced wall line – a single line of resistance - and distribute the lateral forces in proportion to the shear wall rigidities; however, lengthy calculations are required to determine these wall rigidities. This IB provides an alternate method to meet the requirements of Section 1604.4 of the CBC. For wood frame buildings up to three stories in height, the distribution of lateral forces along a braced wall line may be proportioned to the wood shear walls based on diaphragm tributary areas, provided the following requirements are met:

1. Wood shear walls with a length less than one third of the length of the longest wood shear wall(s) along a braced wall line shall be neglected for the purposes of load distribution.

*Example: If a braced wall line consists of wood shear walls with lengths 4', 8', and 16', only the 8' and 16' wood shear walls shall be considered for load distribution purposes.*

2. Wood shear walls may be considered to be along a single braced wall line provided the maximum out of plane offset between such elements, perpendicular to the direction of loading, is less than four feet (4') or five percent (5%) of the building dimension, whichever is larger.

To request this information in an alternative format or to request a reasonable accommodation, please contact the Community Development Department at [longbeach.gov/lbcd](http://longbeach.gov/lbcd) and 562.570.3807. A minimum of three business days is requested to ensure availability; attempts will be made to accommodate requests with shorter notice.