ENGLISH SUMMARY

THE STRUCTURAL ANALYSIS OF WOOD-FRAME SHEAR WALLS

Jarmo Leskelä
Mikko Kilpeläinen

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The objective of this article is to derive equations for the structural analysis of wood-frame shear walls. In order to transfer wind loads to the foundation, some form of wind resistant system is needed. The use of shear walls can quite often provide an effective and economic design. The wood shear walls can structurally be regarded as a cantilevered diaphragm loaded by a concentrated force applied at the top plate. The force may be transferred to the foundation using the sheets as bracing. The strength of the fasteners and the shear strength of the sheathing are often the most important factors that influence the load-bearing capacity of wall diaphragms. The end studs of the shear wall must be adequately anchored to the foundation in order to resist uplifting forces and shear forces respectively. In multi-storey buildings the shear walls must be connected to each other in a manner that allows these forces to be transmitted through the different levels of the building.