





# Dynamic Performance of Tall Mass-Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue2737>

Author: Pangavhane, Swapnil  
MagarPatil, Dr H. R.

Year of Publication: 2020

Country of Publication: India

Format: Journal Article

Material: CLT (Cross-Laminated Timber)  
Glulam (Glue-Laminated Timber)

Application: Wood Building Systems

Topic: Seismic  
Wind

Keywords: India  
Core Wall  
Time-History Analysis  
Lateral Load  
Earthquake  
Performance  
ETABS

Language: English

Research Status: Complete

Series: Journal of Engineering Sciences

**Summary:**

The construction materials used in the building tall structures are responsible for extremely high carbon emissions. Therefore, to address this issue building designers are constantly looking at alternative sustainable construction materials. A new type of timber called MassTimber as a material for construction is now attracting the building designers because of its sustainability advantages. Mass-timber is an innovative type of engineered timber with improved structural properties making it suitable for the construction of tall and heavy structures. This paper is intended to study the performance of tall mass-timber buildings under the most severe dynamic loading conditions of India. Three models of mass-timber buildings are analyzed in ETABS under the seismic and wind loads according to the demands of most severe earthquake zone-V and one of the windiest regions at Bhuj, India. It is observed that the mass participation during seismic activities is considerably low and the wind loads are considerably higher than the seismic loads. It is concluded that with a suitable lateral load resisting structural system mass-timber buildings can perform adequately.

Online Access: Free

**Resource Link**

<https://jespublication.com/upload/2020-110736.pdf>