



## Earthquake Resistant Design and Sustainability through Wooden Composites in Multi-Storey Structures

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Material: CLT (Cross-Laminated Timber)  
LVL (Laminated Veneer Lumber)

Application: Wood Building Systems

Topic: Design and Systems  
Seismic

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Italy  
New Zealand  
Wooden Structural Systems  
Wooden-Hybrid Structural Systems  
Post-Tensioning  
Connections  
Sustainability

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#### Summary:

In the past, while wood as a natural building material was preferred for only housing construction, today, engineered wood products are used as structural elements even in many different projects such as, schools, airport terminals, stadiums or indoor sport centres and finally in multi-storey houses nowadays. On the other hand, the sustainability is becoming a key focus. Engineered wood products are increasingly used for earthquake resistance as well as natural insulation and sustainable design. Recent studies indicate that the earthquake resistant design through engineered wood products is achievable and affordable. The seismic design of structures typically depends on the ductility of members and connections. The innovative design techniques with wooden composites ensure that the building is functional after a major earthquake event. Within the scope of this study, the earthquake resistant design approaches and experimental results of New Zealand, Canada and Italy are addressed for multi-storey wooden/wooden-hybrid structural systems. Member and connection types, posttensioning effectiveness, floor systems, sustainability and constructability will be focused.

Online Access: Free

#### Resource Link

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