EARTHQUAKE SAFETY OF BINDERHOLZ CLT BBS BUILDINGS

BBS buildings are constructed with panels of a maximum width of 1.25 m. The panels are joined to one another by mechanical fasteners. The connection between the BBS boards, which make up the walls and ceilings, is done through metal plates, nails with improved adhesion and self-drilling screws. Usage of plates with limited sizes makes handling and installation easy and, owing to the integration of a great number of mechanical connections, enhances ductility as well as the building’s capacity to dissipate energy generated by the earthquake.
Se(T): given the same type of ground and elastic absorption, the parameter decreases with the increasing resonance period of the structure (T). T increases with increasing flexibility and ductility, that means with a rising number of mechanical joints.

Mechanical connections lend ductility and the capacity to dissipate energy to wooden structures. With an increasing number of connecting elements, the ductility of the building increases.
Case 1 Building with binderholz CLT BBS panels and vertical joints in conjunction with mechanical connections (with 1,25 m):

\[ F_{s,d1} \text{ low} \quad F_{s,d1} < F_{s,d2} \]

Dissipation of energy in both the end joints and the vertical joints

Case 2 Building with undivided walls:

\[ F_{s,d2} \text{ high} \quad F_{s,d2} > F_{s,d1} \]

Dissipation of energy only in the end joints