

Table B3 Guideline Values of Vibration Velocity, v_i , for Evaluating the Effects of Short-term Vibration.
Source: DIN4150

Structural type	Vibration Velocity, v_i , in mm/s			
	Foundation			Plane of floor of uppermost full storey Frequency mixture
	less than 10Hz	10–50Hz	50–100Hz	
Commercial, Industrial or Similar	20	20 to 40	40 to 50	40
Dwellings or Similar	5	5 to 15	15 to 20	15
Particularly Sensitive	3	3 to 8	8 to 10	8

The guidelines state that:

'Experience to date has shown that, provided the values given in Table [B3] are observed, damage due to vibration, in terms of a reduction in utility value, is unlikely to occur. If the values of Table [B3] are exceeded, it does not necessarily follow that damage will occur. Should these values be significantly exceeded, further investigation is necessary'.

B1.2.2 Swiss Standard

The relevant Swiss standard is SN 640 312:1978. For steady-state vibration, from machines, traffic and construction in buildings, the limits are given in Table B4.

Table B4 Guideline Values of Vibration Velocity, v_i , for Evaluating the Effects of Steady State Vibration

Structural type	Vibration Velocity, v_i , in mm/s	
	Foundation	
	10 to 30Hz	30 to 60Hz
Commercial, Industrial including retaining walls	12	12 to 18
Foundation walls and floors in concrete or masonry. Retaining walls and ashlar construction	8	8 to 12
Foundations and basement floors concrete, with wooden beams on upper floors. Brick walls.	5	5 to 8
Particularly sensitive.	3	3 to 5

B1.2.3 British Standard

The relevant British standard is BS7385: Part 2: 1993⁶. This standard was developed from an extensive review of UK data, relevant national and international documents and other published data, which yielded very few cases of vibration-induced damage. This standard contains the most up-to-date research on vibration damage in structures. Part 2 of the standard gives specific guidance on the levels of vibration below which building structures are considered to be at minimal risk.

The standard proposes the limits listed in Table B5 for the foundations of the building.

⁶ BS 7385: Part 2: 1993 Evaluation and Measurement for vibration in Buildings: Guide to damage levels from ground-borne vibration