

Switzerland: Summary of Building Types, Vulnerability to Collapse and Occupancy

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WHE Construction Type or Material <i>refer to Table 2 for suggested category(ies)</i>	Description of construction type (type of load- bearing structure) <i>(refer to Tables 2 and 3 for suggested categories and sources of data to help answer this question)</i>	Estimate of probability of collapse (%) of the building type when subjected to the specified shaking intensity (expressed as a range) <i>(refer to instructions page 5)</i> (3) MMI / EMS / MSK				Fraction of population who LIVES in this building type <i>(refer to instructions for help in estimating)</i>		Fraction of WORKING population who WORKS in this building type <i>(refer to instructions on page 5 for help in estimating)</i>		Peak average number of occupants per building <i>(refer to instructions on page 5 for help in estimating)</i>
		IX (~0.65-1.24g)	VIII (~0.34-0.65g)	VII (~0.18-0.34g)	VI (~0.092-0.18g)	urban areas (4)	rural areas (5)	urban areas (6)	rural areas (7)	(8)
		(1)	(2)							
1	undressed stone masonry with timber floors	50-100	30-60	5-15	<5	2	11	1	2	---
11, 2	brick/concrete block/massive stone masonry in lime/cement mortar +	35-55	5-15	<5	0	5	14	4	3	---
9	brick/concrete block masonry in cement mortar with reinforced +	5-15	<5	<1	0	5	14	2	2	---
34	mixed structure of unreinforced masonry and reinforced concrete +	20-40	2-20	<2	0	9	14	4	2	---
14, 16, 17	reinforced concrete frames	5-15	<5	<1	0	1	0	14	5	---
21	reinforced concrete walls	5-15	<5	<1	0	9	7	11	3	---
19	reinforced concrete walls and frames	5-15	<5	<1	0	1	0	11	5	---
18, 22	precast concrete	10-20	2-10	<2	0	0	0	11	3	---
29, 31	timber structures	<5	<2	0	0	0	11	0	3	---
23-27	steel structures	<5	<1	0	0	0	0	14	5	---

Refer to Part 3 (next 3 pages) for tables and links that may help you fill out this form.

Other sources consulted:

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Brennet G., Peter K., Badoux M.: "Vulnérabilité et risque sismique de la ville Aigle, 1ère partie: Inventaire sismique et vulnérabilité du bâti traditionnel", Institut des Structures, Laboratoire de construction en Béton, EPFL, 2001

1. Construction types that represent a very small percentage only are neglected (i.e. reinforced concrete structures with earthquake resistant design). /2. Collapse, i.e. 50% volume reduction, is interpreted as Damage Grade 4 + 5 according to EMS 98. /3. Urban areas are defined as towns with more than 50'000 rather than 400 people per km² as in Switzerland also in small towns and villages people live close together, i.e. have more than 400 people per km².