

Z-values to determine seismic risk

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These tables are provided to help territorial authorities determine whether the area in which a building is located is a low, medium or high seismic risk area, and for engineers who carry out seismic assessments of potentially earthquake-prone buildings in accordance with the EPB methodology.

The Z factor used to determine the seismic risk area is in accordance with the Standard that is cited in the Verification Method for Building Code Clause B1-Structure and applied when the new system for identifying, assessing and managing earthquake-prone buildings came into force on 1 July 2017.

The area in which a building is located has:

- a low seismic risk if the area has a Z factor that is less than 0.15; and
- a medium seismic risk if the area has a Z factor that is greater than or equal to 0.15 and less than 0.3; and
- a high seismic risk if the area has a Z factor that is greater than or equal to 0.3.

Source: NZS 1170.5:2004 (Incorporating Amendment No 1). Reproduced with permission from Standards New Zealand.

North Island

#	Location	Z
1	Kaitia	0.10
2	Paihia/Russell	0.10
3	Kaikohe	0.10
4	Whangarei	0.10
5	Dargaville	0.10
6	Warkworth	0.13
7	Auckland	0.13
8	Manakau City	0.13
9	Waiuku	0.13
10	Pukekohe	0.13
11	Thames	0.16
12	Paeroa	0.18
13	Waihi	0.18
14	Huntly	0.15
15	Ngaruawahia	0.15
16	Morrinsville	0.18
17	Te Aroha	0.18
18	Tauranga	0.20
19	Mount Maunganui	0.20

#	Location	Z-16
20	Hamilton	0.16
21	Cambridge	0.18
22	Panmure/Russell	0.17
23	Matamata	0.18
24	Te Aroha	0.20
25	Butterfield	0.20
26	Waikato	0.21
27	Otorohanga	0.13
28	Te Kaiti City	0.18
29	Wairakei	0.21
30	Pokereone	0.24
31	Kawerau	0.28
32	Whakatane	0.28
33	Wairangi	0.28
34	Ruatorua	0.23
35	Murupara	0.29
36	Tairāpiti	0.28
37	Tairāpiti	0.28
38	Tairāpiti	0.27
39	Wairangi/Maunganui	0.26
40	Wairangi	0.27
41	Waitara	0.18
42	New Plymouth	0.19
43	Inglewood	0.19
44	Stratford	0.22
45	Putarua	0.24
46	Hawera	0.24
47	Otorohanga	0.19
48	Te Kaiti	0.26
49	Mangakino	0.27
50	Waiotapu	0.22
51	Napier	0.29
52	Wairakei	0.30
53	Wairakei	0.30
54	Waipawa	0.43
55	Waipukurau	0.40
56	Tairāpiti	0.28
57	Wairakei	0.29
58	Pungarehu	0.27
59	Feilding	0.36
60	Palmerston North	0.39
61	Dannevirke	0.42
62	Wairakei	0.42
63	Palmerston North	0.42
64	Foxton/Foxton Beach	0.26

#5	Location	Z	Z
66	Kaitia	0.40	0.40
67	Waihi	0.18	0.18
68	Waihi	0.18	0.18
69	Waihi	0.18	0.18
70	Waihi	0.18	0.18
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198	Waihi	0.18	0.18
199	Waihi	0.18	0.18
200	Waihi	0.18	0.18

103	Geraldine	0.19	
104	Ashburton	0.20	
77	Takaka	0.23	
105	Fairlie	0.24	
78	Motueka	0.26	
106	Temuka	0.17	
79	Nelson	0.27	
107	Timaru	0.15	
80	Pictou	0.30	
108	Mt Cook	0.38	
81	Blenheim	0.33	
109	Twizel	0.27	
82	St Arnaud	0.36	
110	Waimate	0.14	
83	Westport	0.30	
111	Cromwell	0.24	
84	Reefton	0.37	
112	Wanaka	0.30	
85	Murchison	0.34	
113	Arrowtown	0.30	
86	Springs Junction	0.45	
114	Alexandra	0.21	
87	Hanmer Springs	0.55	
115	Queenstown	0.32	
88	Seddon	0.40	
116	Milford Sound	0.54	
89	Ward	0.40	
117	Palmerston	0.13	
90	Cheviot	0.40	
118	Oamaru	0.13	
91	Greymouth	0.37	
119	Dunedin	0.13	
92	Kaikoura	0.42	
120	Mosgiel	0.13	
93	Harihari	0.46	
121	Riverton	0.20	
94	Hokitika	0.45	
122	Te Anau	0.36	
95	Fox Glacier	0.44	
123	Gore	0.18	
96	Franz Josef	0.44	
124	Winton	0.20	
97	Otira	0.60	
125	Balclutha	0.13	
98	Arthurs Pass	0.60	
126	Mataura	0.17	
99	Rangiora	0.33	
127	Bluff	0.15	
100	Darfield	0.30	
128	Invercargill	0.17	
101	Akaroa	0.30	
129	Oban	0.14	
102	Christchurch	0.30	
103	Geraldine	0.19	
104	Ashburton	0.20	
105	Fairlie	0.24	
106	Temuka	0.17	
107	Timaru	0.15	
108	Mt Cook	0.38	New Zealand Government
109	Twizel	0.27	
110	Waimate	0.14	
111	Cromwell	0.24	
112	Wanaka	0.30	
113	Arrowtown	0.30	
114	Alexandra	0.21	
115	Queenstown	0.32	
116	Milford Sound	0.54	
117	Palmerston	0.13	
118	Oamaru	0.13	
119	Dunedin	0.13	
120	Mosgiel	0.13	

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