

In-plane shear Capacity of Unreinforced Timbercrete (kN)

Wall Height (m)	Thickness of wall (mm)			
	95	120	150	200
0.4	0.1	0.1	0.1	0.1
0.6	0.1	0.2	0.2	0.3
0.8	0.3	0.3	0.4	0.6
1.0	0.4	0.5	0.6	0.9
1.2	0.6	0.7	0.9	1.2
1.8	1.3	1.7	2.1	2.8
2.4	2.4	3.0	3.7	5.0
3.0	3.7	4.7	5.8	7.8
4.0	6.6	8.3	10.4	13.8
5.0	10.3	12.9	16.2	21.6
6.0	14.8	18.6	23.3	31.1
7.0	20.1	25.4	31.7	52.3
8.0	26.2	33.1	41.4	55.2
9.0	33.2	42.0	52.4	69.9
10.0	41.0	51.8	64.7	86.3

These are based on unreinforced masonry, including bond strength of 0.2 MPa. If a damp-proof course is incorporated, the first course above the dpc must be prevented from sliding off by the installation of a suitable stop. The shear capacity may be increased by the incorporation of vertical reinforcement. Design of such systems may be carried out using Timbercrete design software.

A1,A2

TABLE 12.11
BRACING CAPACITY (kN) OF MASONRY WALLS UP TO 3.0 m HIGH

Wall length (m)	Unreinforced walls				Wall with tie down (see Figure 12.13)							
	Wall width (mm)				Tie down diameter 12 mm				Tie down diameter 16 mm			
					140		190		140		190	
	90	110	140	190	400 MPa	500 MPa	400 MPa	500 MPa	400 MPa	500 MPa	400 MPa	500 MPa
0.4	0.1	0.1	0.1	0.1	2.4	2.9	2.4	3.0	4.2	5.2	4.2	5.2
0.6	0.2	0.2	0.3	0.3	4.7	5.8	4.8	5.9	8.3	10.3	8.4	10.4
0.8	0.4	0.4	0.5	0.6	7.1	8.8	7.3	8.9	12	16	13	16
1.0	0.6	0.7	0.7	0.9	9.5	12	9.8	12	17	21	17	21
1.2	0.8	1.0	1.1	1.3	12	15	12	15	21	26	21	26
1.8	1.9	2.1	2.4	2.9	20	24	20	25	34	42	35	43
2.4	3.3	3.8	4.3	5.1	28	34	29	35	48	59	49	60
3.0	5.2	5.9	6.7	7.9	36	44	38	46	62	76	63	77
4.0	9.2	11	12	14	51	62	54	64	85	104	88	107
5.0	14	17	19	22	68	81	72	85	111	135	115	139
6.0	21	24	27	32	85	101	91	107	137	166	143	172
7.0	28	32	37	43	104	122	112	130	165	199	173	207
8.0	37	42	48	56	123	144	133	154	193	232	203	242
9.0	47	53	61	71	144	168	157	181	223	267	236	280
10.0	58	66	75	88	165	192	181	208	254	303	269	318