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EUROPÄISCHE NORM

EN 1996-1-2:2005/AC

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English version
Version Française
Deutsche Fassung

Eurocode 6 - Design of masonry structures - Part 1-2: General rules - Structural fire design

Eurocode 6 - Calcul des ouvrages en maçonnerie - Partie 1-2: Règles générales - Calcul du comportement au feu

Eurocode 6 - Bemessung und Konstruktion von Mauerwerksbauten - Teil 1-2: Allgemeine Regeln - Tragwerksbemessung für den Brandfall

This corrigendum becomes effective on 27 October 2010 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 27 octobre 2010 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 27.Oktober 2010 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No.:EN 1996-1-2:2005/AC:2010 D/E/F

1 Modifications to the Foreword

Links between Eurocodes and products harmonised technical specifications (ENs and ETAs), 2nd paragraph, replace:

"EN 1996-1-1: Common rules for reinforced and unreinforced masonry structures."

with:

"EN 1996-1-1: General rules for reinforced and unreinforced masonry structures".

Links between Eurocodes and products harmonised technical specifications (ENs and ETAs), 2nd paragraph, replace:

"EN 1996-3: Simplified calculation methods and simple rules for masonry structures"

with:

"EN 1996-3: Simplified calculation methods for unreinforced masonry structures".

National Annex for EN 1996-1-2, 2nd paragraph, add a new item at the very beginning of the list:

"

– 2.1.3(2) Parametric fire exposure;".

National Annex for EN 1996-1-2, 2nd paragraph, list, replace "2.2 (2)" *with* "2.2(2)".

National Annex for EN 1996-1-2, 2nd paragraph, list, replace "2.3 (2)" *with* "2.3(2)P".

National Annex for EN 1996-1-2, 2nd paragraph, list, delete the line:

"

– 2.4.2(3) Member analysis;".

National Annex for EN 1996-1-2, 2nd paragraph, list, replace "3.3.3.2 (1)" *with* "3.3.3.2(1)".

National Annex for EN 1996-1-2, 2nd paragraph, list, replace "3.3.3.3" *with* "3.3.3.3(1)".

National Annex for EN 1996-1-2, 2nd paragraph, last list entry, replace "constant c" *with*"constant c".

2 Modification to 1.2

Reference to EN 1996, replace:

"EN 1996 Design of masonry structures:
Part 1.1: Common rules for reinforced and unreinforced masonry structures
Part 2: Design, selection of materials and execution of masonry
Part 3: Simplified and simple rules for masonry structures"

with:

"EN 1996 Design of masonry structures:

Part 1-1: General rules for reinforced and unreinforced masonry structures
Part 2: Design considerations, selection of materials and execution of masonry
Part 3: Simplified calculation methods for unreinforced masonry structures".

3 Modifications to 1.6

1st paragraph, replace "EN 1991-1-1" *with* "EN 1996-1-1".

List of symbols, delete:

"f_b characteristic unit strength".

List of symbols, delete:

"h_{ef} effective height of the wall".

List of symbols, replace the definition of "α" with the following one: "the ratio of the applied design load on the wall to the design resistance of the wall;".

After the line with "Δt" and its definition, add:

"

$\Delta\Theta_1$ average temperature rise of the unexposed side;

$\Delta\Theta_2$ maximum temperature rise of the unexposed side at any point;".

4 Modification to 2.1.2

Paragraph (3), replace "140 °K" *with* "140 K" *and replace* "180 °K" *with* "180 K.".

5 Modifications to 2.1.3

Paragraph (2), in the first bullet point, replace "140°K" *with* "140 K" *and* "180°K" *with* "180 K".

Paragraph (2), replace the second bullet point with the following one:

"

- the average temperature rise of the unexposed side of the construction should be limited to $\Delta\Theta_1$ and the maximum temperature rise of the unexposed side should not exceed $\Delta\Theta_2$ during the decay phase.".

Paragraph (2), add the following NOTE:

"NOTE: The recommended values for maximum temperature rise during the decay phase are $\Delta\Theta_1$ = 200 K and $\Delta\Theta_1$ = 240 K. The choice to be made at the national level may be given in the National Annex.".

6 Modifications to 2.4.2

Paragraph (1), 1st line, replace "t=0" *with* "t = 0".

Paragraph (3), replace the second paragraph of NOTE 1 with:

“The values of partial factors for use in a Country may be found in its National Annex for EN 1990. Recommended values are given in EN 1990. The choice of expression (6.10) or (6.10)a and (6.10)b may also be found in the National Annex for EN 1990.”.

7 Modification to 4.3

Paragraph (4), end of paragraph (4), delete the text "[Rob, deleted render, as it is not considered to be a suitable finish!]".

8 Modification to 4.5

Paragraph (1), replace "the tables, in Annex B" *to* "Tables B.1 to B.6 in Annex B".

9 Modification to 5.3

Paragraph (5), end of the NOTE, delete the second punctuation sign ".".

10 Modifications to Annex B

Paragraph (3), end of the clause, delete "[deleted rendering or plaster again, ref to 4.2(1) is enough]".

Paragraph (4), replace "5mm" *with* "5 mm".

Paragraph (4), delete the additional space between "least" *and* "one".

1st columns of Tables B.1 to B.6, add 6 times "gross dry" *before* “density”.

In NOTE 1 after Table B.6, replace "perods" *with* "periods".

NOTE 4, replace the sections N.B.1 to N.B.5 with the following ones:

"

N.B.1 Clay masonry

Clay units conforming to EN 771-1

Table N.B.1.1 Clay Masonry Minimum thickness of separating non-loadbearing walls (Criterion EI) for fire resistance classifications

row number	material properties: gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1.	**Group 1S, 1, 2, 3 and 4 units**							
1.1	mortar : general purpose, thin layer, lightweight $500 \le \rho \le 2\,400$							
1.1.1 1.1.2		60/100 (50/70)	90/100 (50/70)	90/100 (60/70)	100/140 (70/100)	100/170 (90/140)	160/190 (110/140)	190/210 (170)

Table N.B.1.2 Clay masonry minimum thickness of separating loadbearing single-leaf walls (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	$5 \le f_b \le 75$ general purpose mortar $5 \le f_b \le 50$ thin layer mortar $1\,000 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1{,}0$	90 (70/90)	90 (70/90)	90 (70/90)	100 (70/90)	100/140 (90/140)	170/190 (110/140)	170/190 (170/190)
1S.1.3 1S.1.4	$\alpha \le 0{,}6$	90 (70/90)	90 (70/90)	90 (70/90)	100 (70/90)	100/140 (100/140)	170 (110/140)	170 (140/170)
1	**Group 1 units** mortar: general purpose, thin layer							
1.2	$5 \le f_b \le 75$ $800 < \rho \le 2\,400$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	90/100 (70/90)	90/100 (70/90)	90/100 (70/90)	100/170 (70/90)	140/170 (100/140)	170/190 (110/170)	190/210 (170/190)
1.2.3 1.2.4	$\alpha \le 0{,}6$	90/100 (70/90)	90/100 (70/90)	90/100 (70/90)	100/140 (70/90)	140/170 (100/140)	140/170 (110/170)	190/200 (170/190)
1.3	$5 \le f_b \le 25$ $500 \le \rho \le 800$							
1.3.1 1.3.2	$\alpha \le 1{,}0$	100 (100)	200 (170)	200 (170)	200 (170)	200/365 (200/300)	200/365 (200/300)	300/370 300/370
1.3.3 1.3.4	$\alpha \le 0{,}6$	100 (100)	170 (140)	170 (140)	200 (170)	200/365 (200/300)	200/365 (200/300)	300/370 (300/370)
2	**Group 2 units**							
2.1	Mortar: general purpose, thin layer $5 \le f_b \le 35$ $800 < \rho \le 2\,200$ $ct \ge 25\%$							
2.1.1 2.1.2	$\alpha \le 1{,}0$	90/100 (90/100)	90/100 (90/100)	90/100 (90/100)	100/170 (100/140)	140/240 (140)	190/240 (190/240)	190/240 (190/240)
2.1.3 2.1.4	$\alpha \le 0{,}6$	90/100 (90)	90/100 (90)	90/100 (90/100)	100/140 (100/140)	190/240 (100/140)	190/240 (140/190)	190/240 (190)

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness *ct* % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2.2	Mortar: general purpose, thin layer and lightweight $5 \le f_b \le 25$ $700 \le \rho \le 800$ $ct \ge 25\%$							
2.2.1 2.2.2	$\alpha \le 1{,}0$	nvg (100)	nvg (100)	nvg (90/170)	nvg (100/240)	nvg (140/300)	nvg (170/365)	nvg nvg
2.2.3 2.2.4	$\alpha \le 0{,}6$	nvg (100)	nvg (100)	nvg (90/140)	nvg (100/170)	nvg (100/300)	nvg (170/300)	nvg (190/300)
2.3	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 25$ $500 < \rho \le 900$ $16\% \le ct < 25\%$							
2.3.1 2.3.2	$\alpha \le 1{,}0$	nvg (100)	nvg (170)	nvg (90/170)	nvg (140/240)	nvg (140/300)	nvg (365)	nvg nvg
2.3.3 2.3.4	$\alpha \le 0{,}6$	nvg (100)	nvg (140)	nvg (90/140)	nvg (100/170)	nvg (140/300)	nvg (300)	190 nvg
3	**Group 3 units** mortar: general purpose, thin layer and lightweight							
3.1	$5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 12\%$							
3.1.1 3.1.2	$\alpha \le 1{,}0$	nvg (100)	nvg (200)	nvg (240)	nvg (300)	nvg (365)	nvg (425)	nvg nvg
3.1.3 3.1.4	$\alpha \le 0{,}6$	300/365 (300/365)	300/365 (300/365)	300/365 (300/365)	300/365 (300/365)	300/365 (300/365)	300/365 (300/365)	365 (365)
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose, thin layer							
4.1	$10 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 10\%$							
4.1.1 4.1.2	$\alpha \le 1{,}0$	90/100 (100)	90/100 (100)	90/100 (100)	140/170 (100)	140/240 (140)	170/240 (170/190)	190/240 (190)
4.1.3 4.1.4	$\alpha \le 0{,}6$	90/100 (90/100)	90/100 (100)	90/100 (90/100)	100/140 (100/140)	100/170 (100/140)	140/240 (140/190)	190/240 (190)
5	**Group 4 units** mortar: general purpose, thin layer and lightweight							
5.1	$5 \le f_b \le 35$ $500 \le \rho \le 1\,200$							
5.1.1 5.1.2	$\alpha \le 1{,}0$	nvg (200/240)	nvg (200/240)	nvg (200/240)	nvg (300)	nvg (365)	nvg (425)	nvg nvg
5.1.3 5.1.4	$\alpha \le 0{,}6$	nvg (200/240)	nvg (200/240)	nvg (200/240)	nvg (240)	nvg (300)	nvg (365)	nvg nvg

Table N.B.1.3 Clay masonry minimum thickness of non-separating loadbearing single-leaf walls ≥1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	$5 \le f_b \le 75$ general purpose mortar $5 \le f_b \le 50$ thin layer mortar $1\,000 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1,0$	100 (100)	100 (100)	100 (100)	240 (100)	365 (170)	490 (240)	nvg nvg
1S.1.3 1S.1.4	$\alpha \le 0,6$	100 (100)	100 (100)	100 (100)	170 (100)	240 (100)	300 (200)	nvg nvg
1	**Group 1 units**							
1.1	mortar: general purpose, thin layer $5 \le f_b \le 75$ $800 \le \rho \le 2\,400$							
1.1.1 1.1.2	$\alpha \le 1,0$	100 (100)	100 (100)	100 (100)	240 (100)	365 (170)	490 (240)	nvg nvg
1.1.3 1.1.4	$\alpha \le 0,6$	100 (100)	100 (100)	100 (100)	170 (100)	240 (100)	300 (200)	nvg nvg
1.2	$5 \le f_b \le 25$ $500 \le \rho \le 800$							
1.2.1 1.2.2	$\alpha \le 1,0$ $f_b < 5$ N/mm²	100 (100)	100 (100)	100 (100)	240 (100)	365 (170)	490 (240)	nvg nvg
1.2.3 1.2.4	$\alpha \le 0,6$ $f_b < 3$ N/mm²	100 (100)	100 (100)	100 (100)	170 (100)	240 (100)	300 (200)	nvg nvg
2	**Group 2 units**							
2.1	mortar: general purpose, thin layer $5 \le f_b \le 35$ $800 \le \rho \le 2\,200$ $ct \ge 25\%$							
2.1.1 2.1.2	$\alpha \le 1,0$	100 (100)	100 (100)	100 (100)	240 (100)	365 (170)	490 (240)	nvg nvg
2.1.3 2.1.4	$\alpha \le 0,6$	100 (100)	100 (100)	100 (100)	170 (100)	240 (100)	300 (200)	nvg nvg
2.2	$5 \le f_b \le 25$ $700 \le \rho \le 800$ $ct \ge 25\%$							
2.2.1 2.2.2	$\alpha \le 1,0$	100 (100/240)	100 (100/240)	100 (100/240)	240 (100/240)	365 (170/300)	490 (240/365)	nvg nvg
2.2.3 2.2.4	$\alpha \le 0,6$	100 (100/170)	100 (100/170)	100 (100/170)	170 (100/240)	240 (100/240)	300 (200/300)	nvg nvg
2.3	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 25$ $500 \le \rho \le 900$ $16\% \le ct \le 25\%$							
2.3.1 2.3.2	$\alpha \le 1,0$	nvg (100/240)	nvg (100/240)	nvg (100/240)	nvg (100/240)	nvg (170/300)	nvg (240/365)	nvg nvg
2.3.3 2.3.4	$\alpha \le 0,6$	nvg (100/170)	nvg (100/170)	nvg (100/170)	nvg (100/240)	nvg (100/240)	nvg (200/300)	nvg nvg
3	**Group 3 units**							

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
3.1	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 12\%$							
3.1.1 3.1.2	$\alpha \le 1{,}0$	nvg (100)	nvg (170)	nvg (240)	nvg (300)	nvg (365)	nvg (425)	nvg
3.1.3 3.1.4	$\alpha \le 0{,}6$	nvg (100)	nvg (140)	nvg (170)	nvg (240)	nvg (300)	nvg (365)	nvg
4	**Walls in which holes in units are filled with mortar or concrete**							
4.1	mortar: general purpose, thin layer $10 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 10\%$							
4.1.1 4.1.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	240 (100)	365 (170)	490 (240)	nvg nvg
4.1.3 4.1.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	170 (100)	240 (100)	300 (200)	nvg nvg
5	**Group 4 units**							
5.1	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$							
5.1.1 5.1.2	$\alpha \le 1{,}0$	nvg (100)	nvg (170)	nvg (240)	nvg (300)	nvg (365)	nvg (425)	nvg nvg
5.1.3 5.1.4	$\alpha \le 0{,}6$	nvg (100)	nvg (140)	nvg (170)	nvg (240)	nvg (300)	nvg (365)	nvg nvg

Table N.B.1.4 Clay masonry minimum length of non-separating loadbearing single-leaf walls <1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
1S	**Group 1S units**								
1S.1	$5 \le f_b \le 75$ general purpose mortar $5 \le f_b \le 50$ thin layer mortar $1\,000 \le \rho \le 2\,400$								
1S.1.1 1S.1.2	$\alpha \le 1{,}0$	nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
1S.1.3 1S.1.4	$\alpha \le 0{,}6$	nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
1	**Group 1 units**								
1.1	mortar: general purpose, thin layer $5 \le f_b \le 75$ $800 \le \rho \le 2\,400$								
1.1.1 1.1.2.	$\alpha \le 1{,}0$	100	990 (490)	990 (600)	990 (600)	nvg (730)	nvg nvg	nvg nvg	nvg nvg
1.1.3 1.1.4	$\alpha \le 1{,}0$	170	600 (240)	730 (240)	730 (240)	990 (365)	nvg (365)	nvg nvg	nvg nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness *ct* % of wall thickness	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
1.1.5		240	365	490	490	600	nvg	nvg	nvg
1.1.6			(170)	(170)	(170)	(240)	(240)	(365)	nvg
1.1.7		300	300	365	365	490	nvg	nvg	nvg
1.1.8			(170)	(170)	(170)	(200)	(240)	(300)	nvg
1.1.9	$\alpha \leq 0{,}6$	100	600	730	730	990	nvg	nvg	nvg
1.1.10			(365)	(490)	(490)	(600)	(730)	nvg	nvg
1.1.11		170	490	600	600	730	990	nvg	nvg
1.1.12			(240)	(240)	(240)	(240)	(300)	nvg	nvg
1.1.13		240	200	240	240	300	365	490	nvg
1.1.14			(170)	(170)	(170)	(170)	(240)	(300)	nvg
1.1.15		300	200	200	200	240	365	490	nvg
1.1.16			(170)	(170)	(170)	(170)	(170)	(240)	nvg
1.2	mortar: general purpose, thin layer $5 \leq f_b \leq 25$ $500 \leq \rho \leq 800$								
1.2.1	$\alpha \leq 1{,}0$	100	990	990	990	nvg	nvg	nvg	nvg
1.2.2			(490)	(600)	(600)	(730)	nvg	nvg	nvg
1.2.3		170	600	730	730	990	nvg	nvg	nvg
1.2.4			(240)	(240)	(240)	(365)	(365)	nvg	nvg
1.2.5		240	365	490	490	600	nvg	nvg	nvg
1.2.6			(170)	(170)	(170)	(240)	(240)	(365)	nvg
1.2.7		300	300	365	365	490	nvg	nvg	nvg
1.2.8			(170)	(170)	(170)	(200)	(240)	(300)	nvg
1.2.9	$\alpha \leq 0{,}6$	100	600	730	730	990	nvg	nvg	nvg
1.2.10			(365)	(490)	(490)	(600)	(730)	nvg	nvg
1.2.11		170	490	600	600	730	990	nvg	nvg
1.2.12			(240)	(240)	(240)	(240)	(300)	nvg	nvg
1.2.13		240	200	240	240	300	365	490	nvg
1.2.14			(170)	(170)	(170)	(170)	(170)	(240)	nvg
1.2.15		300	200	200	200	240	365	490	nvg
1.2.16			(170)	(170)	(170)	(170)	(170)	(240)	nvg
2	**Group 2 units**								
2.1	mortar: general purpose, thin layer $5 \leq f_b \leq 35$ $800 < \rho \leq 2\,200$ $ct \geq 25\%$								
2.1.1	$\alpha \leq 1{,}0$	100	990	990	990	nvg	nvg	nvg	nvg
2.1.2			(490)	(600)	(600)	(730)	nvg	nvg	nvg
2.1.3		170	600	730	730	990	nvg	nvg	nvg
2.1.4			(240)	(240)	(240)	(365)	(365)	nvg	nvg
2.1.5		240	365	490	490	600	nvg	nvg	nvg
2.1.6			(170)	(170)	(170)	(240)	(240)	(365)	nvg
2.1.7		300	300	365	365	490	nvg	nvg	nvg
2.1.8			(170)	(170)	(170)	(200)	(240)	(300)	nvg
2.1.9	$\alpha \leq 0{,}6$	100	600	730	730	990	nvg	nvg	nvg
2.1.10			(365)	(490)	(490)	(600)	(730)	nvg	nvg
2.1.11		170	490	600	600	730	990	nvg	nvg
2.1.12			(240)	(240)	(240)	(240)	(300)	nvg	nvg
2.1.13		240	200	240	240	300	365	490	nvg
2.1.14			(170)	(170)	(170)	(170)	(240)	(300)	nvg
2.1.15		300	200	200	200	240	365	490	nvg
2.1.16			(170)	(170)	(170)	(170)	(170)	(240)	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
2.2	$5 \le f_b \le 25$ $700 \le \rho \le 800$ $ct \ge 25\%$								
2.2.1 2.2.2	$\alpha \le 1{,}0$	100	990 (490)	990 (600)	990 (600)	nvg (730)	nvg nvg	nvg nvg	nvg nvg
2.2.3 2.2.4		170	600 (240)	730 (240)	730 (240)	990 (365)	nvg (365)	nvg nvg	nvg nvg
2.2.5 2.2.6		240	365 (170)	490 (170)	490 (170)	600 (240)	nvg (240)	nvg (365)	nvg nvg
2.2.7 2.2.8		300	300 (170)	365 (170)	365 (170)	490 (200)	nvg (240)	nvg (300)	nvg nvg
2.2.9 2.2.10	$\alpha \le 0{,}6$	100	600 (365)	730 (490)	730 (490)	990 (600)	nvg (730)	nvg nvg	nvg nvg
2.2.11 2.2.12		170	490 (240)	600 (240)	600 (240)	730 (240)	990 (300)	nvg nvg	nvg nvg
2.2.13 2.2.14		240	200 (170)	240 (170)	240 (170)	300 (170)	365 (240)	490 (300)	nvg nvg
2.2.15 2.2.16		300	200 (170)	200 (170)	200 (170)	240 (170)	365 (170)	490 (240)	nvg nvg
2.3	$5 \le f_b \le 25$ $500 \le \rho \le 900$ $16\% < ct \le 25\%$								
2.3.1 2.3.2	$\alpha \le 1{,}0$	100	nvg (490)	nvg (600)	nvg (600)	nvg (730)	nvg nvg	nvg nvg	nvg nvg
2.3.3 2.3.4		170	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (365)	nvg (365)	nvg nvg
2.3.5 2.3.6		240	nvg (170)	nvg (170)	nvg (170)	nvg (240)	nvg (240)	nvg (365)	nvg nvg
2.3.7 2.3.8		300	nvg (170)	nvg (170)	nvg (170)	nvg (200)	nvg (240)	nvg (300)	nvg nvg
2.3.9 2.3.10	$\alpha \le 0{,}6$	100	nvg (365)	nvg (490)	nvg (490)	nvg (600)	nvg (730)	nvg nvg	nvg nvg
2.3.11 2.3.12		170	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (300)	nvg nvg	nvg nvg
2.3.13 2.3.14		240	nvg (170)	nvg (170)	nvg (170)	nvg (170)	nvg (240)	nvg (300)	nvg nvg
2.3.15 2.3.16		300	nvg (170)	nvg (170)	nvg (170)	nvg (170)	nvg (170)	nvg (240)	nvg nvg
2.3.17 2.3.18		365	nvg (100)	nvg (170)	nvg (170)	nvg (170)	nvg (240)	nvg (240)	nvg nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
3	**Group 3 units**								
3.1	mortar: general purpose and lightweight $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 12\%$								
3.1.1 3.1.2	$\alpha \le 1{,}0$	240	nvg (240)	nvg (240)	nvg (240)	nvg (300)	nvg (300)	nvg (365)	nvg nvg
3.1.3 3.1.4		300	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (300)	nvg nvg
3.1.5 3.1.6		365	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg nvg
3.1.7 3.1.8	$\alpha \le 0{,}6$	240	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (240)	nvg (365)	nvg nvg
3.1.9 3.1.10		300	nvg (170)	nvg (170)	nvg (170)	nvg (170)	nvg (240)	nvg (240)	nvg nvg
3.1.11 3.1.12		365	nvg (170)	nvg (170)	nvg (170)	nvg (170)	nvg (240)	nvg (240)	nvg nvg
4	**Walls in which holes in units are filled with mortar or concrete**								
4.1	mortar: general purpose and thin layer $10 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 10\%$								
4.1.1 4.1.2	$\alpha \le 1{,}0$	100	990 (490)	990 (600)	990 (600)	nvg (730)	nvg nvg	nvg nvg	nvg nvg
4.1.3 4.1.4		170	600 (240)	730 (240)	730 (240)	990 (365)	nvg (365)	nvg nvg	nvg nvg
4.1.5 4.1.6		240	365 (240)	490 (170)	490 (170)	600 (240)	nvg (2 40)	nvg (365)	nvg nvg
4.1.7 4.1.8		300	300 (170)	365 (170)	365 (170)	490 (200)	nvg (240)	nvg (300)	nvg nvg
4.1.9 4.1.10	$\alpha \le 0{,}6$	100	600 (365)	730 (490)	730 (490)	990 (600)	nvg (730)	nvg nvg	nvg nvg
4.1.11 4.1.12		170	490 (240)	600 (240)	600 (240)	730 (240)	990 (300)	nvg nvg	nvg nvg
4.1.13 4.1.14		240	200 (170)	240 (170)	240 (170)	300 (170)	365 (240)	490 (300)	nvg nvg
4.1.15 4.1.16		300	200 (170)	200 (170)	200 (170)	240 (170)	365 (170)	490 (240)	nvg nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness *ct* % of wall thickness	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
5	**Group 4 units**								
5.1	mortar: general purpose and lightweight $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$								
5.1.1 5.1.2	$\alpha \le 1{,}0$	240	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
5.1.3 5.1.4		300	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
5.1.5 5.1.6		365	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
5.1.7 5.1.8	$\alpha \le 0{,}6$	240	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
5.1.9 5.1.10		300	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
5.1.11 5.1.12		365	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.1.5 Clay masonry minimum thickness of separating loadbearing and non-loadbearing single and double leaf fire walls (Criteria REI-M and EI-M) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness *ct* % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	$5 \le f_b \le 75$ general purpose mortar $5 \le f_b \le 50$ thin layer mortar $1\,000 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1{,}0$	240 (170)	240 (170)	240 (170)	240 (170)	365 (365)	365 (365)	nvg nvg
1S.1.3 1S.1.4	$\alpha \le 0{,}6$	240 (170)	240 (170)	240 (170)	240 (170)	365 (365)	365 (365)	nvg nvg
1	**Group 1 units**							
1.1	$5 \le f_b \le 75$ $800 \le \rho \le 2\,400$							
1.1.1 1.1.2	$\alpha \le 1{,}0$	240 (170)	240 (170)	240 (170)	240 (170)	365 (365)	365 (365)	nvg nvg
1.1.3 1.1.4	$\alpha \le 0{,}6$	240 (170)	240 (170)	240 (170)	240 (170)	365 (365)	365 (365)	nvg nvg
1.2	$5 \le f_b \le 25$ $500 \le \rho \le 800$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	240 (170)	240 (170)	240 (170)	240/300 (170/240)	365 (365)	365 (365)	nvg nvg
1.2.3 1.2.4	$\alpha \le 0{,}6$	240 (170)	240 (170)	240 (170)	240/300 (170/240)	365 (365)	365 (365)	nvg nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2	**Group 2 units**							
2.1	mortar: general purpose, thin layer $5 \le f_b \le 35$ $800 \le \rho \le 2\,200$ $ct \ge 25\%$							
2.1.1 2.1.2	$\alpha \le 1{,}0$	240 (170)	240 (170)	240 (170)	240 (170)	365 (365)	365 (365)	nvg nvg
2.1.3 2.1.4	$\alpha \le 0{,}6$	240 (170)	240 (170)	240 (170)	240 (170)	365 (365)	365 (365)	nvg nvg
2.2	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 25$ $700 \le \rho \le 800$ $ct \ge 25\%$							
2.2.1 2.2.2	$\alpha \le 1{,}0$	240/365 (170/240)	240/365 (170/240)	240/365 (170/240)	240/365 (170/300)	365 (365)	365 (365)	nvg nvg
2.2.3 2.2.4	$\alpha \le 0{,}6$	240/365 (170/240)	240/365 (170/240)	240/365 (170/240)	240/365 (170/240)	365 (365)	365 (365)	nvg nvg
2.3	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 25$ $500 \le \rho \le 900$ $16\% \le ct \le 25\%$							
2.3.1 2.3.2	$\alpha \le 1{,}0$	365 (170)	365 (170)	365 (170)	365 (170/365)	nvg (365)	nvg (365)	nvg nvg
2.3.3 2.3.4	$\alpha \le 0{,}6$	365 (170)	365 (170)	365 (170)	365 (170/300)	nvg (365)	nvg (365)	nvg nvg
3	**Group 3 units**							
3.1	mortar: general purpose, lightweight, thin layer, vertical perforation $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 12\%$							
3.1.1 3.1.2	$\alpha \le 1{,}0$	nvg (365)	nvg (365)	nvg (365)	nvg (365)	nvg nvg	nvg nvg	nvg nvg
3.1.3 3.1.4	$\alpha \le 0{,}6$	nvg (365)	nvg (365)	nvg (365)	nvg (365)	nvg nvg	nvg nvg	nvg nvg
4	**Walls in which holes in units are filled with mortar or concrete**							
4.1	mortar: general purpose, thin layer, $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 10\%$							
4.1.1 4.1.2	$\alpha \le 1{,}0$	240 (170)	240 (170)	240 (170)	240 (170)	nvg nvg	nvg nvg	nvg nvg
4.1.3 4.1.4	$\alpha \le 0{,}6$	240 (170)	240 (170)	240 (170)	240 (170)	nvg nvg	nvg nvg	nvg nvg
5	**Group 4 units**							
5.1	mortar: general purpose, lightweight, thin layer, $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 12\%$							
5.1.1 5.1.2	$\alpha \le 1{,}0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness *ct* % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
5.1.3 5.1.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.1.6 Clay masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness *ct* % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	$5 \leq f_b \leq 75$ general purpose mortar $5 \leq f_b \leq 50$ thin layer mortar $1\,000 \leq \rho \leq 2\,400$							
1S.1.1 1S.1.2	$\alpha \leq 1,0$	90 (90)	90 (90)	90 (90)	100 (90)	100 (100)	nvg nvg	nvg nvg
1S.1.3 1S.1.4	$\alpha \leq 0,6$	90 (90)	90 (90)	90 (90)	100 (90)	100 (100)	nvg nvg	nvg nvg
1	**Group 1 units**							
1.1	mortar: general purpose, thin layer $5 \leq f_b \leq 75$ $800 \leq \rho \leq 2\,400$							
1.1.1 1.1.2	$\alpha \leq 1,0$	90 (90)	90 (90)	90 (90)	100 (90/100)	100/170 (100)	nvg nvg	nvg nvg
1.1.3 1.1.4	$\alpha \leq 0,6$	90 (90)	90 (90)	90 (90)	100 (90)	100/140 (100)	nvg nvg	nvg nvg
1.2	mortar: general purpose, thin layer $5 \leq f_b \leq 25$ $500 \leq \rho \leq 800$							
1.2.1 1.2.2	$\alpha \leq 1,0$	100 (100)	170 (140)	170 (140)	240 (200)	365 (300)	nvg nvg	nvg nvg
1.2.3 1.2.4	$\alpha \leq 0,6$	100 (100)	140 (140)	170 (140)	200 (170)	300 (300)	nvg nvg	nvg nvg
2	**Group 2 units**							
2.1	mortar: general purpose, thin layer, $5 \leq f_b \leq 35$ $800 < \rho \leq 2\,200$ $ct \geq 25\%$							
2.1.1 2.1.2	$\alpha \leq 1,0$	100 (100)	100 (100)	100 (100)	140/170 (100)	170/240 (100/140)	nvg nvg	nvg nvg
2.1.3 2.1.4	$\alpha \leq 0,6$	100 (100)	100 (100)	100 (100)	100/140 (100)	170 (100/140)	nvg nvg	nvg nvg
2.2	$15 \leq f_b \leq 25$ $700 \leq \rho \leq 800$ $ct \geq 25\%$							
2.2.1 2.2.2	$\alpha \leq 1,0$	100 (100)	100 (100)	100 (100)	170 (100)	240 (140)	nvg nvg	nvg nvg
2.2.3 2.2.4	$\alpha \leq 0,6$	100 (100)	100 (100)	100 (100)	140 (100)	170 (100)	nvg nvg	nvg nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³] combined thickness ct % of wall thickness	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2.3	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 25$ $500 \le \rho \le 900$ $16\% \le ct < 25\%$							
2.3.1 2.3.2	$\alpha \le 1{,}0$	nvg (100)	nvg (100)	nvg (100/170)	nvg (100/240)	nvg (140/300)	nvg nvg	nvg nvg
2.3.3 2.3.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100/140)	140 (100/170)	170 (100/300)	nvg nvg	nvg nvg
3	**Group 3 units**							
3.1	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 12\%$							
3.1.1 3.1.2	$\alpha \le 1{,}0$	nvg (100)	nvg (170)	nvg (240)	nvg (300)	nvg (365)	nvg nvg	nvg nvg
3.1.3 3.1.4	$\alpha \le 0{,}6$	nvg (100	nvg (140)	nvg (170)	nvg (240)	nvg (300)	nvg nvg	nvg nvg
4	**Walls in which holes in units are filled with mortar or concrete**							
4.1	mortar: general purpose and thin layer $10 \le f_b \le 35$ $500 \le \rho \le 1\,200$ $ct \ge 10\%$							
4.1.1 4.1.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	170 (100)	240 (140)	nvg nvg	nvg nvg
4.1.3 4.1.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	140 (100)	170 (100)	nvg nvg	nvg nvg
5	**Group 4 units**							
5.1	mortar: general purpose, thin layer and lightweight $5 \le f_b \le 35$ $500 \le \rho \le 1\,200$							
5.1.1 5.1.2	$\alpha \le 1{,}0$	nvg (100)	nvg (170)	nvg (240)	nvg (300)	nvg (365)	nvg nvg	nvg nvg
5.1.3 5.1.4	$\alpha \le 0{,}6$	nvg (100)	nvg (140)	nvg (170)	nvg (240)	nvg (300)	nvg nvg	nvg nvg

N.B.2 Calcium silicate masonry

Calcium silicate units conforming to EN 771-2

Table N.B.2.1 Calcium silicate masonry minimum thickness of separating non-loadbearing separating walls (Criteria EI) for fire resistance classifications

row number	material properties: gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1S , 1, 2 and 3 units**							
1.1	mortar: general purpose, $600 \le \rho \le 2\,400$							
1.1.1 1.1.2		70 (50)	70/90 (70)	70/90 (70)	100 (90)	100/140 (90/140)	140/170 (140)	140/200 (170)
1.2	mortar: thin layer $600 \le \rho \le 2\,400$							
1.2.1 1.2.2		70 (50)	70/90 (70)	70/90 (70)	100 (100)	100/140 (100/140)	140/170 (140)	140/200 (170)

Table N.B.2.2 Calcium silicate masonry minimum thickness of separating loadbearing single-leaf walls (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	mortar: general purpose $12 \le f_b \le 75$ $1\,700 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1{,}0$	90 (90)	90 (90)	90 (90)	100 (90/100)	100/170 (100/140)	170 (170)	140/190 (140/190)
1S.1.3 1S.1.4	$\alpha \le 0{,}6$	90 (90)	90 (90)	90 (90)	100 (90/100)	100/10 (100/140)	170 (170)	140/190 (140/190)
1S.2	mortar: thin layer $12 \le f_b \le 15$ $1\,700 \le \rho \le 2\,400$							
1S.2.1 1S.2.2	$\alpha \le 1{,}0$	90 (90)	90 (90)	90 (90)	100 (90/100)	100/170 (100/140)	170 (170)	140/190 (140/190)
1S.2.3 1S.2.4	$\alpha \le 0{,}6$	90 (90)	90 (90)	90 (90)	100 (90/100)	100/170 (100/140)	170 (170)	140/190 (140/190)
1	**Group 1 units**							
1.1	mortar: general purpose $12 \le f_b \le 75$ $1\,400 \le \rho \le 2\,400$							
1.1.1 1.1.2	$\alpha \le 1{,}0$	90 / 100 (90 / 100)	90 / 100 (90 / 100)	90 / 100 (90 / 100)	100 (90 /100)	140 / 200 (140)	190 / 240 (170 / 190)	190/240 (140)
1.1.3 1.1.4	$\alpha \le 0{,}6$	90 / 100 (90 / 100)	90 / 100 (90 / 100)	90 / 100 (90 / 100)	100 (100)	120/40 (100)	170 / 200 (140)	190/200 (140)
1.2	mortar: thin layer $12 \le f_b \le 75$ $1\,400 \le \rho \le 2\,400$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	90 / 100 (90 / 100)	90 / 100 (90 / 100)	90 / 100 (90 / 100)	100 (90 /100)	140 / 200 (140)	190 / 240 (170 / 190)	190/240 (140)
1.2.3 1.2.4	$\alpha \le 0{,}6$	90 / 100 (90 / 100)	90 / 100 (90 / 100)	90 / 100 (90 / 100)	100 (100)	120/40 (100)	170 / 200 (140)	190/200 (140)
2	**Group 2 units**							

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2.1	mortar: general purpose $6 \le f_b \le 35$ $700 \le \rho \le 1\,600$							
2.1.1 2.1.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100/140 (100)	200 (170)	240 (190)	nvg nvg
2.1.3 2.1.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100 (100)	140 (100)	200 (140)	nvg nvg
2.2	mortar: thin layer $6 \le f_b \le 35$ $700 \le \rho \le 1\,600$							
2.2.1 2.2.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100/140 (100)	200 (170)	240 (190)	nvg nvg
2.2.3 2.2.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100 (100)	140 (100)	200 (140)	nvg nvg

Table N.B.2.3 Calcium silicate masonry minimum thickness of non-separating loadbearing single-leaf walls ≥1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	mortar: general purpose $15 \le f_b \le 75$ $1\,700 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100/140 (100)	200 (170)	240 (190)	nvg nvg
1S.1.3 1S.1.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100/140 (100)	170 (170)	200 (170)	nvg nvg
1S.2	mortar: thin layer $15 \le f_b \le 75$ $1\,700 \le \rho \le 2\,400$							
1S.2.1 1S.2.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100/140 (100)	200 (170)	240 (190)	nvg nvg
1S.2.3 1S.2.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100/140 (100)	170 (170)	200 (170)	nvg nvg
1	**Group 1 units**							
1.1	mortar: general purpose $12 \le f_b \le 75$ $1\,400 \le \rho \le 2\,400$							
1.1.1 1.1.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	140 (100)	200 (170)	240 (190)	nvg nvg
1.1.3 1.1.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100/140 (100)	170 (100)	200 (170)	nvg nvg
1.2	mortar: thin layer $12 \le f_b \le 75$ $1\,400 \le \rho \le 2\,400$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100/140 (100)	200 (170)	240 (190)	nvg nvg
1.2.3 1.2.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100/140 (100)	170 (100)	200 (170)	nvg nvg
2	**Group 2 units**							

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2.1	mortar: general purpose, $6 \leq f_b \leq 35$ $700 \leq \rho \leq 1\,600$							
2.1.1 2.1.2	$\alpha \leq 1{,}0$	100 (100)	100 (100)	100 (100)	140 (100)	200 (170)	240 (200)	nvg nvg
2.1.3 2.1.4	$\alpha \leq 0{,}6$	100 (100)	100 (100)	100 (100)	140 (100)	170 (100)	200 (170)	nvg nvg
2.2	mortar: thin layer $6 \leq f_b \leq 35$ $700 \leq \rho \leq 1\,600$							
2.2.1 2.2.2	$\alpha \leq 1{,}0$	100 (100)	100 (100)	100 (100)	140 (100)	200 (170)	240 (200)	nvg nvg
2.2.3 2.2.4	$\alpha \leq 0{,}6$	100 (100)	100 (100)	100 (100)	140 (100)	170 (100)	200 (170)	nvg nvg

Table N.B.2.4 Calcium silicate masonry minimum length of non-separating loadbearing single-leaf walls <1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
1	**Group 1 and Group 2 units**								
1.1	mortar: general purpose, thin layer $15 \le f_b \le 75$ $1\,700 \le \rho \le 2\,400$								
1.1.1 1.1.2	$\alpha \le 1,0$	100	490 (365)	630 (490)	630 (490)	990 (730)	1 000 (990)	1 000 nvg	1 000 nvg
1.1.3 1.1.4		140	365 (300)	490 (365)	490 (365)	730 (630)	990 (730)	1 000 nvg	1 000 nvg
1.1.5 1.1.6		150	365 (300)	490 (365)	490 (365)	730 (630)	990 (730)	1 000 nvg	1 000 nvg
1.1.7 1.1.8		170	240 (240)	240 (240)	240 (240)	300 (240)	300 (240)	490 (300)	nvg nvg
1.1.9 1.1.10		200	240 (240)	240 (240)	240 (240)	300 (240)	300 (240)	490 (300)	nvg nvg
1.1.11 1.1.12		240	170 (nvg)	170 (nvg)	170 (nvg)	240 (170)	240 (170)	365 nvg	nvg nvg
1.1.13 1.1.14		300	170	170	170	170	170	300 (200)	nvg nvg
1.1.15 1.1.16		365	nvg (100)	170 (nvg)	170 (nvg)	170 (nvg)	170 (nvg)	240 (nvg)	nvg nvg
1.1.17 1.1.18	$\alpha \le 0,6$	100	365 (300)	490 (365)	490 (365)	730 (615)	1 000 (990)	1 000 nvg	nvg nvg
1.1.19 1.1.20		140	300 (240)	300 (300)	300 (300)	615 (490)	730 (615)	990 (730)	nvg nvg
1.1.21 1.1.22		150	300 (240)	300 (300)	300 (300)	615 (490)	730 (615)	990 (730)	nvg nvg
1.1.23 1.1.24		170	240 (240)	240 (240)	240 (240)	240 (240)	240 (240)	365 (365)	nvg nvg
1.1.25 1.1.26		200	240 (240)	240 (240)	240 (240)	240 (240)	240 (240)	365 (365)	nvg nvg
1.1.27 1.1.28		240	170 nvg	170 nvg	170 nvg	170 nvg	170 nvg	300 nvg	nvg nvg
1.1.29 1.1.30		300	170 nvg	170 nvg	170 nvg	170 nvg	170 nvg	240 nvg	nvg nvg
1.1.31 1.1.32		365	170 nvg	170 nvg	170 nvg	170 nvg	170 nvg	170 nvg	nvg nvg

Table N.B.2.5 Calcium silicate masonry minimum thickness of separating loadbearing and non-loadbearing sigle and double leaf fire walls (Criteria REI-M and EI-M) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	mortar: general purpose $12,5 \le f_b \le 35$ $1\,700 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1,0$	170/240 nvg	170/240 nvg	170/240 nvg	170/240 nvg	240/300 nvg	240/300 nvg	nvg nvg
1S.1.3 1S.1.4	$\alpha \le 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg (170)	nvg nvg	nvg nvg	nvg nvg
1S.2	mortar: thin layer $12,5 \le f_b \le 35$ $1\,700 \le \rho \le 2\,400$							
1S.2.1 1S.2.2	$\alpha \le 1,0$	170/240 nvg	170/240 nvg	170/240 nvg	170/240 nvg	240/300 nvg	240/300 nvg	nvg nvg
1S.2.3 1S.2.4	$\alpha \le 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg (170)	nvg nvg	nvg nvg	nvg nvg
1	**Group 1 units**							
1.1	mortar: general purpose $12,5 \le f_b \le 35$ $1\,400 \le \rho \le 2\,400$							
1.1.1 1.1.2	$\alpha \le 1,0$	240 nvg	240 nvg	240 nvg	240 nvg	300 nvg	300/365 nvg	nvg nvg
1.1.3 1.1.4	$\alpha \le 0,6$	nvg nvg	nvg nvg	nvg nvg	170 nvg	nvg nvg	240 nvg	nvg nvg
1.2	mortar: thin layer $12,5 \le f_b \le 35$ $1\,400 \le \rho \le 2\,400$							
1.2.1 1.2.2	$\alpha \le 1,0$	240 nvg	240 nvg	240 nvg	240 nvg	300 nvg	300/365 nvg	nvg nvg
1.2.3 1.2.4	$\alpha \le 0,6$	nvg nvg	nvg nvg	nvg nvg	170 nvg	nvg nvg	240 nvg	nvg nvg
2	**Group 2 units**							
2.1	mortar: general purpose $6 \le f_b \le 35$ $700 \le \rho \le 1\,600$							
2.1.1 2.1.2	$\alpha \le 1,0$	300 nvg	300 nvg	300 nvg	300 nvg	300/365 nvg	365/490 nvg	nvg nvg
2.1.3 2.1.4	$\alpha \le 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
2.2	mortar: thin layer $6 \le f_b \le 35$ $700 \le \rho \le 1\,600$							
2.2.1 2.2.2	$\alpha \le 1,0$	300 nvg	300 nvg	300 nvg	300 nvg	300/365 nvg	365/490 nvg	nvg nvg
2.2.3 2.2.4	$\alpha \le 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.2.6 Calcium silicate masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1S	**Group 1S units**							
1S.1	mortar: general purposer $12 \le f_b \le 35$ $1\,700 \le \rho \le 2\,400$							
1S.1.1 1S.1.2	$\alpha \le 1{,}0$	90 (90)	90 (90)	90 (90)	100 (90/100)	140/170 (100/140)	170 (170)	190 (190)
1S.1.3 1S.1.4	$\alpha \le 0{,}6$	90 (90)	90 (90)	90 (90)	100 (90/100)	140/170 (100/140)	170 (170)	190 (190)
1S.2	mortar: thin layer $12 \le f_b \le 35$ $1\,700 \le \rho \le 2\,400$							
1S.2.1 1S.2.2	$\alpha \le 1{,}0$	90 (90)	90 (90)	90 (90)	100 (90/100)	140/170 (100/140)	170 (170)	190 (190)
1S.2.3 1S.2.4	$\alpha \le 0{,}6$	90 (90)	90 (90)	90 (90)	100 (90/100)	140/170 (100/140)	170 (170)	190 (190)
1	**Group 1 units**							
1.1	mortar: general purpose $8 \le f_b \le 48$ $1\,400 \le \rho \le 2\,400$							
1.1.1 1.1.2	$\alpha \le 1{,}0$	90/100 (90/100)	90/100 (90/100)	90/100 (90/100)	100 (90/100)	140/200 (140)	190/240 (170/190)	190/240 nvg
1.1.3 1.1.4	$\alpha \le 0{,}6$	90/100 (90/100)	90/100 (90/100)	90/100 (90/100)	100 (100)	140 (100)	170/200 (140)	190/200 nvg
1.2	mortar: thin layer $8 \le f_b \le 48$ $1\,400 \le \rho \le 2\,400$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	90/100 (90/100)	90/100 (90/100)	90/100 (90/100)	100 (90/100)	140/200 (140)	190/240 (170/190)	190/240 nvg
1.2.3 1.2.4	$\alpha \le 0{,}6$	90/100 (90/100)	90/100 (90/100)	90/100 (90/100)	100 (100)	120/140 (100)	170/200 (140)	190/200 nvg
2	**Group 2 units**							
2.1	mortar: general purpose $6 \le f_b \le 35$ $700 \le \rho \le 1\,000$							
2.1.1 2.1.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100 (100)	200 (170)	240 (190)	nvg nvg
2.1.3 2.1.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100 (100)	140 (100)	200 (140)	nvg nvg
2.2	mortar: thin layer $6 \le f_b \le 35$ $700 \le \rho \le 1\,000$							
2.2.1 2.2.2	$\alpha \le 1{,}0$	100 (100)	100 (100)	100 (100)	100 (100)	200 (170)	240 (190)	nvg nvg
2.2.3 2.2.4	$\alpha \le 0{,}6$	100 (100)	100 (100)	100 (100)	100 (100)	140 (100)	200 (140)	nvg nvg

N.B.3 Dense and lightweight aggregate concrete masonry

Dense and lightweight aggregate concrete units conforming to EN 771-3

Table N.B.3.1 Dense and lightweight aggregate concrete masonry minimum thickness of separating non-loadbearing separating walls (Criteria EI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1 units** mortar: general purpose, thin layer, lightweight							
1.1	lightweight aggregate $2 \le f_b \le 15$ $400 \le \rho \le 1\,600$							
1.1.1 1.1.2		50 (50)	70 (50)	70 / 90 (50/70)	70/ 140 (60/70)	70 / 140 (70 / 140)	90 / 140 (70 / 140)	100 / 190 (70 / 170)
1.2	dense aggregate $6 \le f_b \le 35$ $1\,200 \le \rho \le 2\,400$							
1.2.1 1.2.2		50 (50)	70 (50)	70 / 90 (50 /70)	90/140 (70)	90 / 140 (70/ 90)	100/190 (90 / 100)	100 / 190 (100 / 170)
2	**Group 2 units** mortar: general purpose, thin layer, lightweight							
2.1	lightweight aggregate $2 \le f_b \le 15$ $240 \le \rho \le 1\,200$							
2.1.1 2.1.2		50 (50)	70 (50)	70 / 100 (50/90)	70 / 90 (70)	100 / 140 (70/140)	100 / 200 (90 / 100)	140/200 (100 / 200)
2.2	dense aggregate $6 \le f_b \le 35$ $720 \le \rho \le 1\,650$							
2.2.1 2.2.2		50 (50)	70 (50)	70 / 100 (50 / 70)	70 / 90 (70)	90 / 200 (90/140)	100 / 200 (90 / 140)	125 / 200 (100/ 200)
3	**Group 3 units** mortar: general purpose, thin layer, lightweight							
3.1	lightweight aggregate $2 \le f_b \le 10$ $160 \le \rho \le 1\,000$							
3.1.1 3.1.2		nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.2	dense aggregate $6 \le f_b \le 20$ $480 \le \rho \le 1\,000$							
3.2.1 3.2.2		100 nvg	nvg nvg	150 nvg	200 nvg	nvg nvg	nvg nvg	nvg nvg
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose and thin layer							
4.1	lightweight aggregate $2 \le f_b \le 10$ $160 \le \rho \le 1\,000$							
4.1.1 4.1.2		nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2	dense aggregate $6 \le f_b \le 20$ $480 \le \rho \le 1\,000$							
4.2.1 4.2.2		nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.3.2 Dense and lightweight aggregate concrete masonry minimum thickness of separating loadbearing single-leaf walls (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1 units** mortar: general purpose, thin layer, lightweight							
1.1	lightweight aggregate $2 \le f_b \le 15$ $400 \le \rho \le 1\,600$							
1.1.1	$\alpha \le 1,0$	90 / 170	90 / 170	90 / 170	100 / 170	100 / 190	140 / 240	150 / 300
1.1.2		(90 / 140)	(90 / 140)	(90 / 140)	(90 / 140)	(90 / 170)	(100 / 190)	(100 / 240)
1.1.3	$\alpha \le 0,6$	70 / 140	70 / 140	70 / 140	90 / 170	90 / 170	100 / 190	100 / 240
1.1.4		(60 / 100)	(60 / 100)	(60 / 100)	(70 / 100)	(70 / 140)	(90 / 170)	(90 / 190)
1.2	dense aggregate $6 \le f_b \le 35$ $1\,200 \le \rho \le 2\,400$							
1.2.1	$\alpha \le 1,0$	90 / 170	90 / 170	90 / 170	90 / 170	100 / 190	140 / 240	150 / 300
1.2.2		(90/140)	(100/140)	(90/140)	(90/140)	(90/170)	(100/190)	(100/240)
1.2.3	$\alpha \le 0,6$	70 / 140	90 / 140	70 / 140	90 / 170	90 / 170	100 / 190	140 / 240
1.2.4		(60 / 100)	(70/ 100)	(70 / 100)	(70 / 100)	(70 / 140)	(90 / 170)	(100 / 190)
2	**Group 2 units** mortar: general purpose, thin layer, lightweight							
2.1	lightweight aggregate $2 \le f_b \le 15$ $240 \le \rho \le 1\,200$							
2.1.1	$\alpha \le 1,0$	90 / 170	100 / 170	100 / 170	100 / 170	100 / 190	140 / 240	150 /300
2.1.2		(90 / 140)	(90 / 140)	(90 / 140)	(90/140)	(100/170)	(140/190)	(140/240)
2.1.3	$\alpha \le 0,6$	70/140	70/140	90/140	90/170	100/ 170	125/190	140/240
2.1.4		(70/100)	(70/100)	(70/100)	(70/100)	(90/140)	(100/170)	(125/190)
2.2	dense aggregate $6 \le f_b \le 35$ $720 \le \rho \le 1\,650$							
2.2.1	$\alpha \le 1,0$	90 / 170	100 / 170	100 / 170	100 / 170	100 / 190	140 / 240	150 /300
2.2.2		(90 / 140)	(90 / 140)	(90 / 140)	(100/140)	(100/170)	(140/190)	(150/240)
2.2.3	$\alpha \le 0,6$	90/140	90/140	100/140	100/170	100/170	140/190	150/240
2.2.4		(70/100)	(90/100)	(90/100)	(90/100)	(100/140)	(125/170)	(140/190)
3	**Group 3 units** mortar: general purpose, thin layer, lightweight							
3.1	lightweight aggregate $2 \le f_b \le 10$ $160 \le \rho \le 1\,000$							
3.1.1	$\alpha \le 1,0$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.2		nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.3	$\alpha \le 0,6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2	dense aggregate $6 \le f_b \le 20$ $480 \le \rho \le 1\,000$							
3.2.1	$\alpha \le 1,0$	nvg	nvg	nvg	140	140/200	200	nvg
3.2.2		nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.3	$\alpha \le 0,6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose and thin layer							
4.1	lightweight aggregate $2 \le f_b \le 10$ $160 \le \rho \le 1\,000$							
4.1.1	$\alpha \le 1{,}0$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.2		nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.3	$\alpha \le 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2	dense aggregate $6 \le f_b \le 20$ $480 \le \rho \le 1\,000$							
4.2.1	$\alpha \le 1{,}0$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.2		nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.3	$\alpha \le 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg

Table N.B.3.3 Dense and lightweight aggregate concrete masonry minimum thickness of non-separating loadbearing single-leaf walls ≥1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1 units** mortar: general purpose, thin layer, lightweight							
1.1	lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$							
1.1.1	$\alpha \le 1{,}0$	170	170	170	240	300	300	365
1.1.2		(170)	(170)	(170)	(170)	(240)	(240)	(300)
1.1.3	$\alpha \le 0{,}6$	170	170	170	190	240	240	300
1.1.4		(140)	(140)	(140)	(170)	(190)	(240)	(240)
1.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$							
1.2.1	$\alpha \le 1{,}0$	170	170	170	240	300	300	365
1.2.2		(170)	(170)	(170)	(170)	(240)	(240)	(300)
1.2.3	$\alpha \le 0{,}6$	170	170	170	190	240	240	300
1.2.4		(140)	(140)	(140)	(170)	(190)	(240)	(240)
2	**Group 2 units** mortar: general purpose, thin layer, lightweight							
2.1	lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$							
2.1.1	$\alpha \le 1{,}0$	170	170	170	240	300	300	365
2.1.2		(170)	(170)	(170)	(170)	(240)	(240)	(300)
2.1.3	$\alpha \le 0{,}6$	170	170	170	190	240	240	300
2.1.4		(140)	(170)	(140)	(170)	(190)	(240)	(240)
2.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$							
2.2.1	$\alpha \le 1{,}0$	170	170	170	240	300	300	365
2.2.2		(170)	(170)	(170)	(170)	(240)	(240)	(300)

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2.2.3 2.2.4	$\alpha \leq 0,6$	170 (140)	170 (170)	170 (140)	190 (170)	240 (190)	240 (240)	300 (240)
3	**Group 3 units** mortar: general purpose, thin layer, lightweight							
3.1	lightweight aggregate $2 \leq f_b \leq 8$ $400 \leq \rho \leq 1\,400$							
3.1.1 3.1.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.1.3 3.1.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$							
3.2.1 3.2.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.2.3 3.2.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose and thin layer							
4.1	lightweight aggregate $2 \leq f_b \leq 8$ $400 \leq \rho \leq 1\,400$							
4.1.1 4.1.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.1.3 4.1.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$							
4.2.1 4.2.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2.3 4.2.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.3.4 Dense and lightweight aggregate concrete masonry minimum length of non-separating loadbearing single-leaf walls <1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
1	**Group 1 units** mortar: general purpose, thin layer, lightweight								
1.1	lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$								
1.1.1	$\alpha \le 1{,}0$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.3		170	365/490	490	490	1 000	1 000	1 000	1 000
1.1.4			(365)	nvg	nvg	(490)	nvg	nvg	nvg
1.1.5		240	240	300	300	365	1 000	1 000	nvg
1.1.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.7		300	240	240	240	300	365	490	nvg
1.1.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.9	$\alpha \le 0{,}6$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.11		170	240	365	365	490	1 000	1 000	nvg
1.1.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.13		240	170	240	240	300	365	365	nvg
1.1.14			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.15		300	170	240	240	240	300	300	nvg
1.1.16			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$								
1.2.1	$\alpha \le 1{,}0$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.3		170	300/365	nvg	490	365/1 000	1 000	1 000	nvg
1.2.4			(240)	nvg	nvg	(300)	(365)	(490)	nvg
1.2.5		240	240	300	300	365	1 000	1 000	nvg
1.2.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.7		300	240	240	240	300	365	490	nvg
1.2.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.9	$\alpha \le 0{,}6$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.11		170	240	nvg	nvg	300	365	490	nvg
1.2.12			(240)	nvg	nvg	(240)	(300)	(365)	nvg
1.2.13		240	170	240	240	300	365	490	nvg
1.2.14			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.15		300	170	240	240	240	300	365	nvg
1.2.16			nvg	nvg	nvg	nvg	nvg	nvg	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
2	**Group 2 units** mortar: general purpose, thin layer, lightweight								
2.1	lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$								
2.1.1	$\alpha \le 1{,}0$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.3		170	365/490	490	490	1 000	1 000	1 000	nvg
2.1.4			(365)	nvg	nvg	(490)	nvg	nvg	nvg
2.1.5		240	240	300	300	365	1 000	1 000	nvg
2.1.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.7		300	240	240	240	300	365	490	nvg
2.1.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.9	$\alpha \le 0{,}6$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.11		170	240	365	365	490	1 000	1 000	nvg
2.1.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.13		240	170	240	240	300	365	490	nvg
2.1.14			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.15		300	170	240	240	240	300	365	nvg
2.1.16			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$								
2.2.1	$\alpha \le 1{,}0$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.3		170	300/365	nvg	490	365/1 000	1 000	1 000	nvg
2.2.4			(240)	nvg	nvg	(300)	(365)	(490)	nvg
2.2.5		240	240	300	300	365	1 000	1 000	nvg
2.2.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.7		300	240	240	240	300	365	490	nvg
2.2.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.9	$\alpha \le 0{,}6$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.11		170	240	nvg	nvg	300	365	490	nvg
2.2.12			(240)	nvg	nvg	(240)	(300)	(365)	nvg
2.2.13		240	170	240	240	300	365	490	nvg
2.2.14			nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2.15		300	170	240	240	240	300	365	nvg
2.2.16			nvg	nvg	nvg	nvg	nvg	nvg	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
3	**Group 3 units** mortar: general purpose, thin layer, lightweight								
3.1	Lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$								
3.1.1	$\alpha \le 1{,}0$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.3		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.4			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.5		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.7	$\alpha \le 0{,}6$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.9		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.11		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$								
3.2.1	$\alpha \le 1{,}0$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.3		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.4			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.5		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.7	$\alpha \le 0{,}6$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.9		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.11		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose and thin layer								
4.1	lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$								
4.1.1	$\alpha \le 1{,}0$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.3		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.4			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.5		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.7	$\alpha \le 0{,}6$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.9		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.11		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.1.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
4.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$								
4.2.1	$\alpha \leq 1{,}0$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.3		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.4			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.5		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.7	$\alpha \leq 0{,}6$	240	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.9		300	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.11		365	nvg	nvg	nvg	nvg	nvg	nvg	nvg
4.2.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg

Table N.B.3.5 Dense and lightweight aggregate concrete masonry minimum thickness of separating loadbearing and non-loadbearing single and double leaf fire walls (Criteria REI-M and EI-M) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1 units** mortar: general purpose, thin layer, lightweight							
1.1	lightweight aggregate $2 \leq f_b \leq 8$ $400 \leq \rho \leq 1\,400$							
1.1.1	$\alpha \leq 1{,}0$	nvg	nvg	nvg	300	nvg	nvg	nvg
1.1.2		nvg	nvg	nvg	(240)	nvg	nvg	nvg
1.1.3	$\alpha \leq 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$							
1.2.1	$\alpha \leq 1{,}0$	nvg	nvg	nvg	240	nvg	nvg	nvg
1.2.2		nvg	nvg	nvg	(170)	nvg	nvg	nvg
1.2.3	$\alpha \leq 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
2	**Group 2 units** mortar: general purpose, thin layer, lightweight							
2.1	lightweight aggregate $2 \leq f_b \leq 8$ $400 \leq \rho \leq 1\,400$							
2.1.1	$\alpha \leq 1{,}0$	nvg	nvg	nvg	300	nvg	nvg	nvg
2.1.2		nvg	nvg	nvg	(240)	nvg	nvg	nvg
2.1.3	$\alpha \leq 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.1.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
2.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$							
2.2.1	$\alpha \leq 1{,}0$	nvg	nvg	nvg	240	nvg	nvg	nvg
2.2.2		nvg	nvg	nvg	(170)	nvg	nvg	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
2.2.3 2.2.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3	**Group 3 units** mortar: general purpose, thin layer, lightweight							
3.1	lightweight aggregate $2 \leq f_b \leq 8$ $400 \leq \rho \leq 1\,400$							
3.1.1 3.1.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.1.3 3.1.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$							
3.2.1 3.2.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
3.2.3 3.2.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose and thin layer							
4.1	lightweight aggregate $2 \leq f_b \leq 8$ $400 \leq \rho \leq 1\,400$							
4.1.1 4.1.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.1.3 4.1.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2	dense aggregate $6 \leq f_b \leq 20$ $1\,400 \leq \rho \leq 2\,000$							
4.2.1 4.2.2	$\alpha \leq 1,0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2.3 4.2.4	$\alpha \leq 0,6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.3.6 Dense and lightweight aggregate concrete masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1 units** mortar: general purpose, thin layer, lightweight							
1.1	lightweight aggregate $2 \le f_b \le 15$ $400 \le \rho \le 1\,600$							
1.1.1	$\alpha \le 1{,}0$	90	90	90	100/240	100/240	nvg	nvg
1.1.2		(90)	(90)	(90)	(90/170)	(90/170)	nvg	nvg
1.1.3	$\alpha \le 0{,}6$	70	70	70	90	90	nvg	nvg
1.1.4		(60)	(60)	(60)	(2 x 70)	(70)	nvg	nvg
1.2	dense aggregate $6 \le f_b \le 20$ $1\,200 \le \rho \le 2\,200$							
1.2.1	$\alpha \le 1{,}0$	90	90	90	90/170	100/170	nvg	nvg
1.2.2		(90)	(90)	(90)	(90/170)	(90/170)	nvg	nvg
1.2.3	$\alpha \le 0{,}6$	70	70	70	90	90	nvg	nvg
1.2.4		(60)	(70)	(70)	(70)	(70)	nvg	nvg
2	**Group 2 units** mortar: general purpose, thin layer, lightweight							
2.1	lightweight aggregate $2 \le f_b \le 8$ $400 \le \rho \le 1\,400$							
2.1.1	$\alpha \le 1{,}0$	90	100	100	100/240	100/240	nvg	nvg
2.1.2		(90)	(90)	(90)	(90/170)	(100/240)	nvg	nvg
2.1.3	$\alpha \le 0{,}6$	70	70	90	90	100	nvg	nvg
2.1.4		(70)	(70)	(70)	(70)	(90)	nvg	nvg
2.2	dense aggregate $6 \le f_b \le 35$ $1\,400 \le \rho \le 2\,000$							
2.2.1	$\alpha \le 1{,}0$	90	100	100	100/170	100/170	nvg	nvg
2.2.2		(90)	(90)	(90)	(100/170)	(100/170)	nvg	nvg
2.2.3	$\alpha \le 0{,}6$	90	100	100	100	100/170	nvg	nvg
2.2.4		(70)	(90)	(90)	(90)	(100)	nvg	nvg
3	**Group 3 units** mortar: general purpose, thin layer, lightweight							
3.1	lightweight aggregate $2 \le f_b \le 10$ $400 \le \rho \le 1\,400$							
3.1.1	$\alpha \le 1{,}0$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.2		nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.3	$\alpha \le 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.1.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$							
3.2.1	$\alpha \le 1{,}0$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.2		nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.3	$\alpha \le 0{,}6$	nvg	nvg	nvg	nvg	nvg	nvg	nvg
3.2.4		nvg	nvg	nvg	nvg	nvg	nvg	nvg
4	**Walls in which holes in units are filled with mortar or concrete** mortar: general purpose and thin layer							

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
4.1	lightweight aggregate $2 \le f_b \le 15$ $400 \le \rho \le 1\,400$							
4.1.1 4.1.2	$\alpha \le 1{,}0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.1.3 4.1.4	$\alpha \le 0{,}6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2	dense aggregate $6 \le f_b \le 20$ $1\,400 \le \rho \le 2\,000$							
4.2.1 4.2.2	$\alpha \le 1{,}0$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
4.2.3 4.2.4	$\alpha \le 0{,}6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

N.B.4 Autoclavad aerated concrete masonry

Autoclaved aerated concrete units conforming to EN 771-4

Table N.B.4.1 Autoclaved aerated concrete masonry minimum thickness of separating non-loadbearing walls (Criteria EI) for fire resistance classifications

row number	material properties: gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1S and 1 units**							
1.1	Mortar: general purpose, thin layer							
1.1.1 1.1.2	$350 \le \rho \le 500$	50/70 (50)	60/65 (60/65)	60/75 (60/75)	60/100 (60/70)	70/100 (70/90)	90/150 (90/115)	100/190 (100/190)
1.1.3 1.1.4	$500 \le \rho \le 1\,000$	50/70 (50)	60 (50/60)	60 (50/60)	60/100 (50/60)	60/100 (60/90)	90/150 (90/100)	100/190 (100/190)

Table N.B.4.2 Autoclaved aerated concrete masonry minimum thickness of separating loadbearing single-leaf walls (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1S and 1 units**							
1.1	mortar: general purpose, thin layer $2 \le f_b \le 4$ $350 \le \rho \le 500$							
1.1.1 1.1.2	$\alpha \le 1{,}0$	90/115 (90 / 115)	90/115 (90 / 115)	90/140 (90 / 115)	90/200 (90 / 200)	90/225 (90/ 225)	140/300 (140/240)	150/300 (150/300)
1.1.3 1.1.4	$\alpha \le 0{,}6$	90/115 (90 / 115)	90/115 (90/115)	90/115 (90/115)	100/150 (90/115)	90/175 (90/150)	140/200 (140/200)	150/200 (150/200)
1.2	mortar: general purpose, thin layer $4 < f_b \le 8$ $500 \le \rho \le 1\,000$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	90/100 (90/100)	90/100 (90/100)	90/150 (90/100)	90/170 (90/150)	90/200 (90/170)	125/240 (100/200)	150/300 (100/240)
1.2.3 1.2.4	$\alpha \le 0{,}6$	90/100 (90/100)	90/100 (90/100)	90/100 (90/100)	90/150 (90/100)	90/170 (90/125)	125/140 (125/140)	150/240 (150/200)

Table N.B.4.3 Autoclaved aerated concrete masonry minimum thickness of non-separating loadbearing single-leaf walls ≥1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness or length (mm) t_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1S and 1 units**							
1.1	mortar: general purpose, thin layer $2 \le f_b \le 4$ $350 \le \rho \le 500$							
1.1.1 1.1.2	$\alpha \le 1,0$	170 (150)	170 (150)	170/200 (150)	240 (170)	240/300 (240)	300 (240)	300 (300)
1.1.3 1.1.3	$\alpha \le 0,6$	125 (100)	150 (125)	150/170 (125/150)	170 (150)	170 (150)	240 (170)	300 (200)
1.2	mortar: general purpose, thin layer $4 < f_b \le 8$ $500 \le \rho \le 1\,000$							
1.2.1 1.2.2	$\alpha \le 1,0$	125 (100)	125 (100)	150/170 (125/150)	170 (150)	240 (170)	240 (170)	240 (240)
1.2.3 1.2.4	$\alpha \le 0,6$	100 (100)	100 (100)	125/150 (100/125)	150 (125)	150 (125)	170 (150)	240 (170)

Table N.B.4.4 Autoclaved aerated concrete masonry minimum length of non-separating loadbearing single-leaf walls <1,0m in length (Criterion R) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
1	**Group 1S and 1 units**								
1.1	mortar: general purpose, thin layer $2 \le f_b \le 4$ $350 \le \rho \le 500$								
1.1.1	$\alpha \le 1,0$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.2			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.3		125	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.4			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.5		150	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.7		170	490	490	490	1000	1000	1000	1000
1.1.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.9		200	365	490	490	1000	1000	1000	1000
1.1.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.11		240	300	365	365	615	730	730	730/990
1.1.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.13		300	240	300	300	490	490	615	615/730
1.1.14			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.15		365	200	240	240	365	490	615	615/730
1.1.16			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.17	$\alpha \le 0,6$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.18			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.19		125	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.20			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.21		150	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.22			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.23		170	365	365	365	490	490	490/615	1 000
1.1.24			nvg	nvg	nvg	nvg	nvg	nvg	nvg

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	wall thickness [mm]	Minimum wall length (mm) l_F for fire resistance classification R for time (minutes) $t_{fi,d}$						
			30	45	60	90	120	180	240
1.1.25		200	240	365	365	365	490	490/615	1 000
1.1.26			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.27		240	240	240	240	300	365	365/615	730
1.1.28			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.29		300	240	240	240	240	300	300/490	615
1.1.30			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.1.31		365	170	170	170	240	240	240/365	615/490
1.1.32			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2	mortar: general purpose, thin layer $4 < f_b \leq 8$ $500 \leq \rho \leq 1\,000$								
1.2.1	$\alpha \leq 1{,}0$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.2									
1.2.3		125	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.4			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.5		150	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.6			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.7		170	365/490	365/490	365/490	730	1000	1000	1000
1.2.8			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.9		200	240/365	365	365/490	615	730	730	730/990
1.2.10			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.11		240	240/300	300	240/365	490/615	615/730	615/730	615/730
1.2.12			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.13		300	200/240	240	240/300	365/490	365/490	490/615	490/615
1.2.14			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.15		365	170/200	200	175/240	300/365	365/490	490/615	365/615
1.2.16			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.17	$\alpha \leq 0{,}6$	100	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.18			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.19		125	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.20			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.21		150	nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.22			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.23		170	300/365	300	300/365	365/490	365/490	490/615	615
1.2.24			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.25		200	200/240	300	300/365	300/365	365/490	490/615	615
1.2.26			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.27		240	200/240	200	200/240	240/300	300/365	490/615	615
1.2.28			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.29		300	200/240	200	200/240	200/240	240/300	365/490	490
1.2.30			nvg	nvg	nvg	nvg	nvg	nvg	nvg
1.2.31		365	150/240	150	150/240	200/240	200/240	300/365	365
1.2.32			nvg	nvg	nvg	nvg	nvg	nvg	nvg

Table N.B.4.5 Autoclaved aerated concrete masonry minimum thickness of separating loadbearing and non-loadbearing single and double leaf fire walls (Criteria REI-M and EI-M) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI-M and EI-M for time (minutes) $t_{fi,d}$					
		30	60	90	120	180	240
1	**Group 1S and 1 units**						
1.1	mortar: general purpose, thin layer $2 \le f_b \le 4$ $350 \le \rho \le 500$						
1.1.1 1.1.2	$\alpha \le 1{,}0$	300 nvg	300 nvg	300 nvg	365 nvg	365 nvg	nvg nvg
1.1.3 1.1.4	$\alpha \le 0{,}6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg
1.2	mortar: general purpose, thin layer $4 < f_b \le 8$ $500 \le \rho \le 1\,000$						
1.2.1 1.2.2	$\alpha \le 1{,}0$	300/240 nvg	300/240 nvg	300/240 nvg	365/300 nvg	365/300 nvg	nvg nvg
1.2.3 1.2.4	$\alpha \le 0{,}6$	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg	nvg nvg

Table N.B.4.6 Autoclaved aerated concrete masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (Criteria REI) for fire resistance classifications

row number	material properties: unit strength f_b [N/mm²] gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$						
		30	45	60	90	120	180	240
1	**Group 1S and 1 units**							
1.1	mortar: general purpose, thin layer $2 \le f_b \le 4$ $350 \le \rho \le 500$							
1.1.1 1.1.2	$\alpha \le 1{,}0$	90 (90)	90 (90)	90 (90)	100 (100)	100 (100)	150/170 nvg	150/225 nvg
1.1.3 1.1.4	$\alpha \le 0{,}6$	90 (90)	90 (90)	90 (90)	90 (90)	90/125 (90/125)	150 (150)	150/200 (150/200)
1.2	mortar: general purpose, thin layer $4 < f_b \le 8$ $500 \le \rho \le 1\,000$							
1.2.1 1.2.2	$\alpha \le 1{,}0$	90 (90)	90 (90)	90 (90)	100 (100)	100 (100)	125/240 (100/200)	150/240 (100/200)
1.2.3 1.2.4	$\alpha \le 0{,}6$	90 (90)	90 (90)	90 (90)	100 (100)	100 (100)	125 (125)	150 (150)

N.B.5 Manufactured stone masonry

Manufactured stone units conforming to EN 771-5

Table N.B.5.1 Manufactured stone masonry minimum thickness of separating non-loadbearing separating walls (Criteria EI) for fire resistance classifications

row number	material properties: gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	60	90	120	180	240
1	**Group 1 units**						
1.1	Mortar: general purpose, thin layer, lightweight $1\,200 \le \rho \le 2\,200$						
1.1.1 1.1.2		50 (50)	70/ 90 (50/70)	90 (70)	90/ 100 (70/ 90)	100 (90/100)	100/170 (100/140)

Table N.B.5.2 Manufactured stone masonry minimum thickness of separating loadbearing single-leaf walls (Criteria REI) for fire resistance classifications

row number	material properties: gross dry density ρ [kg/m³]	Minimum wall thickness (mm) t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	60	90	120	180	240
1	**Group 1 units**						
1.1	Mortar: general purpose, thin layer, lightweight $1\,200 \leq \rho \leq 2\,200$						
1.1.1 1.1.2	$\alpha \leq 1{,}0$	90/170 (90/140)	90/170 90/140	90/170 (90/140)	100/190 (90/170)	140/240 (100/190)	150/300 (100/240)
1.1.3 1.1.4	$\alpha \leq 0{,}6$	70/140 (60/100)	70/140 (70/100)	90/170 (70/100)	90/170 (70/140)	100/190 (90/170)	140/240 (100/190)

END OF NOTES

".

11 Modification to C.1

Paragraph (2), replace "gross density" *with* "gross dry density" *in five places.*

12 Modifications to C.2

Paragraph (2), replace formula (C1) with " $N_{\mathrm{Ed}} \leq N_{\mathrm{Rd,fi}\theta_2}$ ".

Paragraph (3), replace formula (C2) with " $N_{\mathrm{Rd,fi}\theta_2} = \Phi\left(f_{\mathrm{d}\theta_1} A_{\theta_1} + f_{\mathrm{d}\theta_2} A_{\theta 2}\right)$ ".

Paragraph (4), formula (C3b), below "where:"*, add the following new definition as a first line:*

" θ_2 temperature above which the material has no residual strength in °C;".

Paragraph (4), in the definitions, change "20 °C" *to* "t_{Fr}".

Paragraph (4), Figure C.3, titles of subfigures C.3(a) to C.3(g), replace "gross density" *with* "gross dry density".

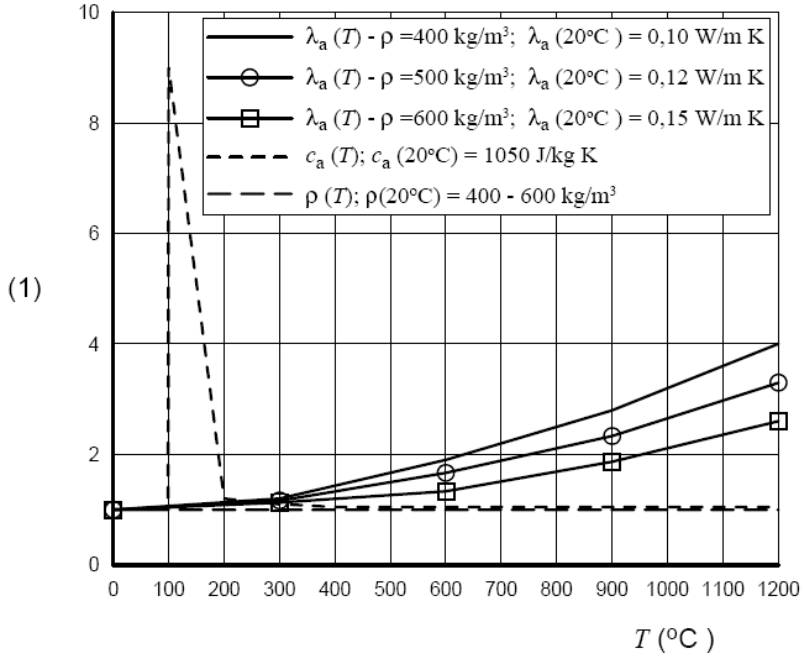
13 Modifications to D.3

Figure D.1, titles of subfigures D.1.(a) to D.1.(d), replace "D.1." *with* "D.1".

Figure D.1(d), replace the subfigure with the following one:

"

(1)



".

Figure D.1(d), Key, replace:

"λ_a heat conductivity"

with:

"λ_a thermal conductivity".

Figure D.1(d), Key, definition of "ρ*", replace* "density" *with* "gross dry density".

Figure D.2(a), replace the title with the following one: "Calculation values of thermal strain ε_T of clay units (group 1) with a normalised compressive strength range of 12 – 20 N/mm² and with a gross dry density range of 900 – 1 200 kg/m³".

Figure D.2.(b), replace "D.2." *with* "D.2".

Figure D.2(b), replace the title with the following one: "Calculation values of temperature-dependant stress-strain diagrams of clay units (group 1) with a normalised compressive strength range of 12 – 20 N/mm² and with a gross dry density range of 900 – 1 200 kg/m³".

Figure D.2(c), replace the title with the following one: "Calculation values of thermal strain ε_T of calcium silicate units (solid) with a normalised compressice strength range of 12 – 20 N/mm² and with a gross dry density range of 1 600 – 2 000 kg/m³".

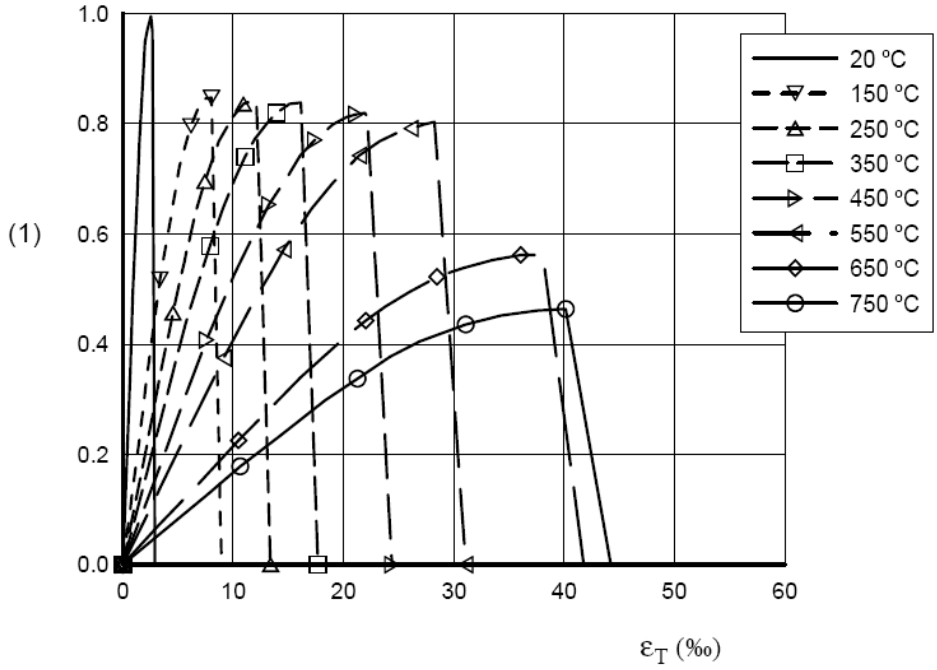
Figure D.2(d), replace the title with the following one: "Calculation values of thermal stress- strain diagrams for calcium silicate units (solid) with a normalised compressive strength range of 12 – 20 N/mm² and with a gross dry density range of 1 600 – 2 000 kg/m³".

Figure D.2(e), replace the title with the following one: "Calculation values of thermal strain ε_T for lightweight aggregate concrete units (pumice) with a normalised compressice strength range of 4 – 6 N/mm² and with a gross dry density range of 600 – 1 000 kg/m³".

Figure D.2(f), replace the title with the following one: "Calculation values of temperature-dependant stress-strain diagrams for lightweight aggregate concrete units (pumice) with a normalised compressive strength ratio of 4 – 6 N/mm² and with a gross dry density range of 600 – 1 000 kg/m³".

Figure D.2(f), replace the figure with the following one:

"



".

Between Figure D.2(f) and the key, add the following two figures:

"

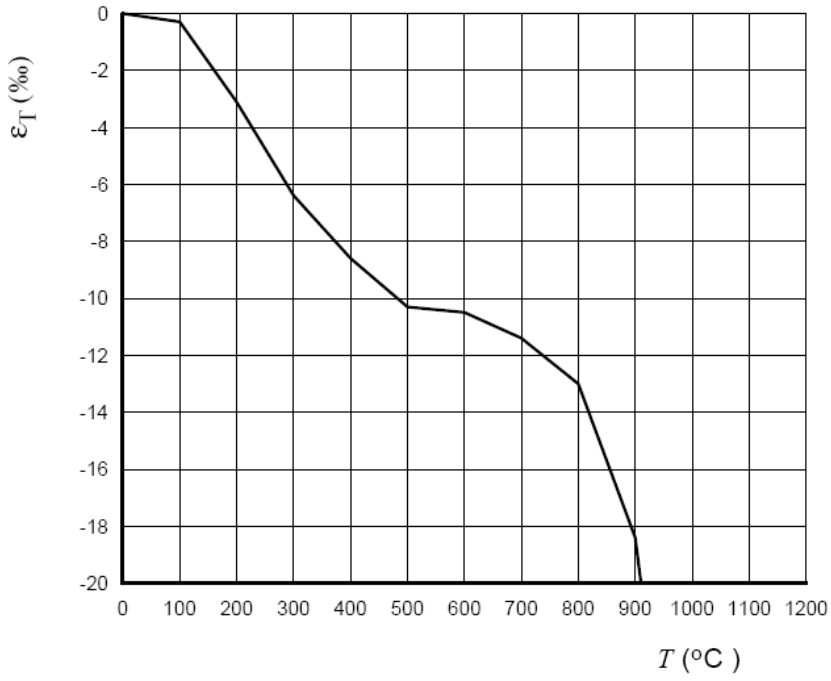


Figure D.2(g): Calculation values of thermal strain ε_T of autoclaved aerated concrete units with a normalised compressive strength range of 4 – 6 N/mm² and with a gross dry density range of 400 – 600 kg/m³

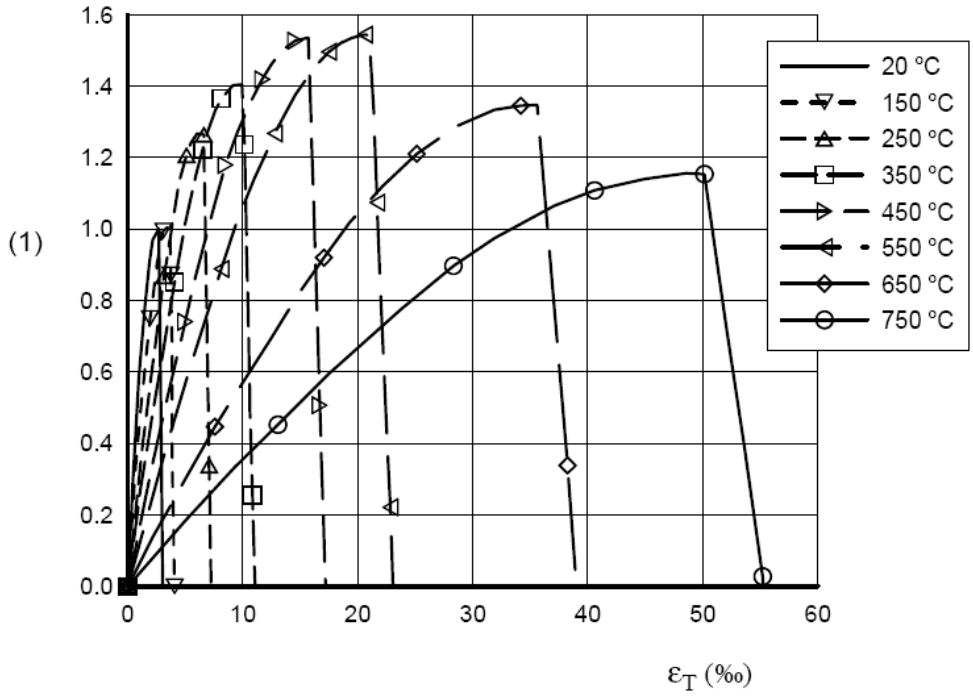


Figure D.2(h): Calculation values of temperature-dependant stress and strain of autoclaved aerated concrete units with a normalised compressive strength range of 4 – 6 N/mm² and with a gross dry density range of 400 – 600 kg/m³

".

14 Modifications to Annex E

Figure E.1, title, replace:

"Figure E.1: Cross-section of connections, wall to floor or roof, of non-loadbearing masonry walls"

with:

"Figure E.1: Cross-section of connections, wall to floor or roof, of non-loadbearing masonry walls".

Figure E.6, title, replace:

"Figure E.6: Connection with no structural requirements."

with:

"Figure E.6: Connection with no structural requirements".