DECLARATION OF PERFORMANCE

No. DoP-25/0543-R-KF2

1. Unique identification code of the product type: **R-KF2**
2. Intended use: **Bonded anchor RAWLPLUG R-KF2, R-KF2-S, R-KF2-W with threaded rods and rebars made of galvanized carbon steel, stainless steel, and high-corossion-resistant stainless steel for use in masonry.**
3. Producer: **RAWLPLUG S.A., ul. Kwidzyńska 6, 51-416 Wrocław, Poland**
4. System(s) of assessment and verification of constancy of performance: **System 1**
5. European Assessment Document: **EAD 330076-01-0604; May 2021**
6. European Technical Assessment: **ETA-25/0543; 2025-07-22**
   Technical Assessment Unit: **ETA-Danmark A/S**
   Notified body or bodies: **1020**
   Certificate numer and type: 1020-CPR-090-066561
7. Declared performance characteristics:

Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance for static and quasi-static loading	Table C1 – C91
Characteristic resistance and displacements for seismic loading	No performance assessed

Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	No performance assessed
Resistance to fire under tension and shear loading with and without lever arm, minimum edge distances and spacing	No performance assessed

Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content, emission and/or release of dangerous substances	No performance assessed

Brick type: Solid Clay Brick Mz, 2DF

Table C1: Description of the brick

Brick type	Solid Clay Brick Mz, 2DF	
Brick dimensions	mm	l: ≥240 b: ≥115 h: ≥113
Code	-	EN 771-1
Compressive strength	N/mm^2	≥ 20
Density	kg/dm^3	2,0
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C2: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	6,5	10,0
	M10	85	8,5	13,0
	M12	95	10,0	14,0
	M16	105	11,5	17,0

Table C3: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**Ø**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	6,5	9,5
	10	85	8,0	12,0
	12	95	10,0	13,5
	16	105	10,5	17,0

Table C4: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	a_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	5,0	9,5	2
	M10	85	7,5	10,5	2
	M12	95	9,0	11,0	2
	M16	105	10,0	13,0	2

Table C5: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	a_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	5,0	8,5	2
	10	85	7,0	9,5	2
	12	95	8,5	11,0	2
	16	105	10,0	14,0	2

Table C6: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,23	0,24	0,25	0,31
δ_{N0}	[mm]	0,46	0,48	0,50	0,62
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,65	0,70	0,73	0,75
δ_{N0}	[mm]	0,98	1,05	1,10	1,13

Table C7: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,25	0,28	0,30	0,34
δ_{N0}	[mm]	0,50	0,56	0,60	0,68

Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,66	0,69	0,72	0,74
δ_{N0}	[mm]	0,99	1,04	1,08	1,11

Brick type: Clay Masonry Units

Table C8: Description of the brick

Brick type	Clay Masonry Units	
Brick dimensions	mm	l: ≥215 b: ≥102,5 h: ≥65
Code	-	EN 771-1
Compressive strength	N/mm^2	≥ 20
Density	kg/dm^3	2,0
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C9: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	7,5	9,5
	M10	85	9,0	13,0
	M12	95	10,5	13,5
	M16	105	13,0	18,5

Table C10: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	7,0	10,0
	10	85	8,5	12,0
	12	95	9,5	13,5
	16	105	11,0	17,5

Table C11: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	6,0	9,5	2
	M10	85	7,5	10,5	2
	M12	95	8,5	11,5	2
	M16	105	10,0	15,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C12: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	5,5	8,5	2
	10	85	7,5	10,0	2
	12	95	7,0	13,0	2
	16	105	9,5	15,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C13: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,24	0,28	0,32	0,33
δ_{N0}	[mm]	0,48	0,56	0,64	0,66
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,61	0,65	0,69	0,78
δ_{N0}	[mm]	0,92	0,98	1,04	1,17

Table C14: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,27	0,31	0,36	0,38
δ_{N0}	[mm]	0,54	0,62	0,72	0,76
Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,66	0,72	0,73	0,80
δ_{N0}	[mm]	0,99	1,08	1,10	1,20

Brick type: Solid silica brick, 1DF

Table C15: Description of the brick

Brick type	Solid silica brick, 1DF	
Brick dimensions	mm	l: ≥240 b: ≥115 h: ≥52
Code	-	EN 771-2
Compressive strength	N/mm^2	≥ 20
Density	kg/dm^3	2,0
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C16: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	9,0	11,5
	M10	85	12,5	14,5
	M12	95	13,0	18,0
	M16	105	15,5	23,5

Table C17: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	8,5	10,0
	10	85	10,0	11,0
	12	95	12,5	14,5
	16	105	13,0	20,5

Table C18: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	8,5	10,5	2
	M10	85	10,5	12,0	2
	M12	95	12,0	14,0	2
	M16	105	15,0	19,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C19: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	7,5	10,0	2
	10	85	10,0	9,5	2
	12	95	10,5	13,0	2
	16	105	13,5	18,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C20: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,25	0,31	0,32	0,36
δ_{N0}	[mm]	0,50	0,62	0,64	0,72
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,7	0,75	0,83	0,85
δ_{N0}	[mm]	1,05	1,13	1,25	1,28

Table C21: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,23	0,28	0,30	0,37
δ_{N0}	[mm]	0,46	0,56	0,60	0,74
Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,75	0,78	0,85	0,90
δ_{N0}	[mm]	1,13	1,17	1,28	1,35

Brick type: Solid normal weight concrete brick Vbn, 1DF

Table C22: Description of the brick

Brick type	Solid normal weight concrete brick Vbn, 1DF	
Brick dimensions	mm	l: ≥240 b: ≥115 h: ≥70
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 6
Density	kg/dm^3	0,7
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C23: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	4,0	6,0
	M10	85	5,0	7,0
	M12	95	5,5	8,0
	M16	105	7,0	10,0

Table C24: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**Ø**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	3,5	5,5
	10	85	4,0	6,5
	12	95	4,5	7,0
	16	105	6,0	9,5

Table C25: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	3,5	5,5	2
	M10	85	3,5	5,5	2
	M12	95	4,5	6,5	2
	M16	105	5,5	8,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C26: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	7,5	10,0	2
	10	85	10,0	9,5	2
	12	95	10,5	13,0	2
	16	105	13,5	18,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C27: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,25	0,31	0,32	0,36
δ_{N0}	[mm]	0,50	0,62	0,64	0,72
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,7	0,75	0,83	0,85
δ_{N0}	[mm]	1,05	1,13	1,25	1,28

Table C28: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,25	0,31	0,32	0,36
δ_{N0}	[mm]	0,50	0,62	0,64	0,72
Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,70	0,75	0,83	0,85
δ_{N0}	[mm]	1,05	1,13	1,25	1,28

Brick type: Solid blocks

Table C29: Description of the brick

Brick type	Solid blocks	
Brick dimensions	mm	l: ≥390 b: ≥190 h: ≥140
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 7,5
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C30: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	5,5	7,0
	M10	85	6,5	8,0
	M12	95	7,5	1,0
	M16	105	8,0	13,5

Table C31: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	4,5	7,0
	10	85	6,0	7,5
	12	95	6,5	10,0
	16	105	7,0	12,5

Table C32: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	4,5	6,5	2
	M10	85	6,0	7,5	2
	M12	95	6,0	9,5	2
	M16	105	6,5	11,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C33: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	4,5	6,5	2
	10	85	5,0	7,5	2
	12	95	5,5	9,0	2
	16	105	6,0	10,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C34: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,16	0,17	0,25	0,28
δ_{N0}	[mm]	0,32	0,34	0,50	0,56
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,51	0,56	0,67	0,72
δ_{N0}	[mm]	0,77	0,84	1,01	0,72

Table C35: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,18	0,20	0,27	0,34
δ_{N0}	[mm]	0,36	0,40	0,54	0,68
Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,55	0,62	0,7	0,75
δ_{N0}	[mm]	0,83	0,93	1,05	1,13

Brick type: AAC2

Table C36: Description of the brick

Brick type	**AAC2**	
Brick dimensions	mm	l: ≥599 b: ≥100 h: ≥240
Code	-	EN 771-4
Compressive strength	N/mm^2	≥ 2
Density	kg/dm^3	0,22
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C37: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	1,5	1,5
	M10	85	2,0	2,0
	M12	95	2,0	2,5

Table C38: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**Ø**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	1,0	1,5
	10	85	1,5	2,0
	12	95	2,0	2,5

Table C39: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	1,5	1,5	2
	M10	85	2,0	2,0	2
	M12	95	2,0	2,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C40: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	1,0	1,0	2
	10	85	1,5	1,5	2
	12	95	1,5	2,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C41: Displacements under tension and shear loading – threated rods

Displacement under tension loading				
Size of rod		M8	M10	M12
δ_{N0}	[mm]	0,10	0,10	0,14
δ_{N0}	[mm]	0,20	0,20	0,28
Displacement under shear loading				
Size of rod		M8	M10	M12
δ_{N0}	[mm]	0,35	0,36	0,47
δ_{N0}	[mm]	0,53	0,54	0,71

Table C42: Displacements under tension and shear loading – rebars

Displacement under tension loading				
Size of rebar		8	10	12
δ_{N0}	[mm]	0,11	0,12	0,15
δ_{N0}	[mm]	0,22	0,24	0,30
Displacement under shear loading				
Size of rebar		8	10	12
δ_{N0}	[mm]	0,39	0,40	0,42
δ_{N0}	[mm]	0,59	0,60	0,63

Brick type: AAC7

Table C43: Description of the brick

Brick type	AAC7	
Brick dimensions	mm	l: ≥599 b: ≥100 h: ≥240
Code	-	EN 771-4
Compressive strength	N/mm^2	≥ 6
Density	kg/dm^3	0,65
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C44: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	4,0	6,0
	M10	85	4,0	7,0
	M12	95	5,0	7,0

Table C42: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	3,0	5,0
	10	85	4,0	6,0
	12	95	4,0	6,0

Table C43: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	3,5	5,5	2
	M10	85	3,5	6,5	2
	M12	95	4,5	6,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C44: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	3,0	5,0	2
	10	85	3,5	6,0	2
	12	95	4,0	6,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C45: Displacements under tension and shear loading – threated rods

Displacement under tension loading				
Size of rod		M8	M10	M12
δ_{N0}	[mm]	0,14	0,15	0,19
δ_{N0}	[mm]	0,28	0,30	0,38
Displacement under shear loading				
Size of rod		M8	M10	M12
δ_{N0}	[mm]	0,60	0,67	0,73
δ_{N0}	[mm]	0,90	1,01	1,10

Table C46: Displacements under tension and shear loading – rebars

Displacement under tension loading				
Size of rebar		8	10	12
δ_{N0}	[mm]	0,15	0,18	0,23
δ_{N0}	[mm]	0,30	0,6	0,46
Displacement under shear loading				
Size of rebar		8	10	12
δ_{N0}	[mm]	0,66	0,72	0,76
δ_{N0}	[mm]	0,99	1,08	1,14

Brick type: Aggregate Concrete

Table C47: Description of the brick

Brick type	Aggregate Concrete	
Brick dimensions	mm	l: ≥440 b: ≥100 h: ≥215
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 3,6
Density	kg/dm^3	0,7
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C48: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	**M**	**h_{ef}**	**N_{Rk} 1)**	**V_{Rk} 2)**
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	2,0	3,0
	M10	85	3,5	4,5
	M12	95	4,0	5,0
	M16	105	4,5	5,5

Table C49: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	1,5	7,0
	10	85	3,0	7,5
	12	95	4,0	10,0
	16	105	4,0	12,5

Table C50: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	1,5	2,5	2
	M10	85	2,5	3,5	2
	M12	95	3,5	3,5	2
	M16	105	4,5	4,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C51: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	1,5	2,0	2
	10	85	3,0	3,0	2
	12	95	3,0	3,5	2
	16	105	3,0	4,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C52: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,08	0,09	0,13	0,15
δ_{N0}	[mm]	0,16	0,18	0,26	0,30
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,25	0,36	0,45	0,52
δ_{N0}	[mm]	0,38	0,54	0,68	0,78

Table C53: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,11	0,14	0,17	0,19
δ_{N0}	[mm]	0,22	0,28	0,34	0,38
Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,29	0,39	0,48	0,55
δ_{N0}	[mm]	0,44	0,59	0,72	0,83

Brick type: Aggregate Concrete

Table C54: Description of the brick

Brick type	Aggregate Concrete	
Brick dimensions	mm	l: ≥440 b: ≥100 h: ≥215
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 7,3
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C55: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	M8	80	4,0	5,5
	M10	85	5,5	7,5
	M12	95	7,0	8,5
	M16	105	8,0	10,5

Table C56: Characteristic resistance under tension and shear loading – single anchor-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
without	8	80	3,5	5,0
	10	85	4,5	6,5
	12	95	6,0	8,5
	16	105	6,5	10,0

Table C57: Characteristic resistance under tension and shear loading – anchor group-threaded rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance	α_g
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	M8	80	3,0	4,0	2
	M10	85	5,0	7,0	2
	M12	95	6,0	7,0	2
	M16	105	6,5	10,5	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C58: Characteristic resistance under tension and shear loading – anchor group-rebars

Sleeve	Rebar size	Effective embedment depth	Characteristic resistance	Characteristic resistance	a_g
d_s x l_s	Ø	h_{ef}	N_{Rk} 1)	V_{Rk} 2)	
[-]	[-]	[mm]	[kN]	[kN]	[-]
without	8	80	3,5	4,5	2
	10	85	4,5	5,5	2
	12	95	6,0	7,0	2
	16	105	6,5	10,0	2
Group of two anchors: $N_{Rk}^g = \alpha_{g,N} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V} * V_{Rk}$ (with the relevant α_g) Group of four anchors: $N_{Rk}^g = \alpha_{g,N\parallel} * \alpha_{g,N\perp} * N_{Rk}$ and $V_{Rk}^g = \alpha_{g,V\parallel} * \alpha_{g,V\perp} * V_{Rk}$					

Table C59: Displacements under tension and shear loading – threated rods

Displacement under tension loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,11	0,13	0,15	0,16
δ_{N0}	[mm]	0,22	0,26	0,30	0,32
Displacement under shear loading					
Size of rod		M8	M10	M12	M16
δ_{N0}	[mm]	0,28	0,32	0,37	0,45
δ_{N0}	[mm]	0,42	0,48	0,56	0,68

Table C60: Displacements under tension and shear loading – rebars

Displacement under tension loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,12	0,15	0,18	0,21
δ_{N0}	[mm]	0,24	0,30	0,36	0,42
Displacement under shear loading					
Size of rebar		8	10	12	16
δ_{N0}	[mm]	0,30	0,33	0,40	0,48
δ_{N0}	[mm]	0,45	0,50	0,60	0,72

Brick type: Hollow Aggregate Concrete

Table C61: Description of the brick

Brick type	Hollow Aggregate Concrete	
Brick dimensions	mm	l: ≥440 b: ≥140 h: ≥215
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 7,3
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C62: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	3,0	3,5
16x85	M10	85	4,5	6,0
16x130	M10	130	5,0	6,5
16x85	M12	85	5,5	6,0
16x130	M12	130	5,0	7,5

Table C63: Displacements under tension and shear loading – threated rods

Displacement under tension loading						
Size of rod		M8	M10	M10	M12	M12
δ_{N0}	[mm]	0,12	0,14	0,16	0,18	0,19
δ_{N0}	[mm]	0,24	0,28	0,32	0,36	0,38
Displacement under shear loading						
Size of rod		M8	M10	M10	M12	M12
δ_{N0}	[mm]	0,29	0,32	0,35	0,36	0,48
δ_{N0}	[mm]	0,44	0,48	0,53	0,54	0,72

Brick type: Hollow Clay Brick

Table C64: Description of the brick

Brick type	Hollow Clay Brick	
Brick dimensions	mm	l: ≥440 b: ≥140 h: ≥215
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 12
Density	kg/dm^3	0,9
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C65: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	2,0	3,0
16x85	M10	85	3,0	4,0
16x130	M10	130	3,5	5,0
16x85	M12	85	4,0	5,0
16x130	M12	130	4,5	7,0
20x85	M16	85	4,0	7,5

Table C66: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,11	0,13	0,14	0,18	0,21	0,22
δ_{N0}	[mm]	0,22	0,26	0,28	0,36	0,42	0,44
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,25	0,28	0,30	0,33	0,36	0,38
δ_{N0}	[mm]	0,38	0,42	0,45	0,50	0,54	0,57

Brick type: Hollow Clay Brick

Table C67: Description of the brick

Brick type	Hollow Clay Brick	
Brick dimensions	mm	l: ≥300 b: ≥240 h: ≥238
Code	-	EN 771-1
Compressive strength	N/mm^2	≥ 20
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C68: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	2,5	3,5
16x85	M10	85	4,0	5,0
16x130	M10	130	4,0	6,5
16x85	M12	85	4,5	6,5
16x130	M12	130	5,5	8,0
20x85	M16	85	5,0	8,5

Table C69: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,16	0,17	0,19	0,23	0,24	0,25
δ_{N0}	[mm]	0,32	0,34	0,38	0,46	0,48	0,50
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,33	0,35	0,40	0,42	0,46	0,53
δ_{N0}	[mm]	0,50	0,53	0,60	0,63	0,69	0,80

Brick type: Hollow Silica Brick

Table C70: Description of the brick

Brick type	Hollow Silica Brick	
Brick dimensions	mm	l: ≥248 b: ≥240 h: ≥238
Code	-	EN 771-2
Compressive strength	N/mm^2	≥ 20
Density	kg/dm^3	1,4
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C71: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	6,0	8,5
16x85	M10	85	9,0	11,5
16x130	M10	130	11,0	15,5
16x85	M12	85	10,5	16,0
16x130	M12	130	12,0	20,0
20x85	M16	85	13,0	20,0

Table C72: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,15	0,17	0,17	0,121	0,23	0,32
δ_{N0}	[mm]	0,30	0,34	0,34	0,42	0,46	0,64
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,55	0,64	0,65	0,71	0,74	0,82
δ_{N0}	[mm]	0,83	0,96	0,98	1,07	1,11	1,23

Brick type: Hollow Silica Brick

Table C73: Description of the brick

Brick type	Hollow Silica Brick	
Brick dimensions	mm	l: ≥248 b: ≥240 h: ≥238
Code	-	EN 771-2
Compressive strength	N/mm^2	≥ 12
Density	kg/dm^3	1,4
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C74: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	5,5	7,0
16x85	M10	85	7,5	10,5
16x130	M10	130	9,0	12,0
16x85	M12	85	8,5	13,0
16x130	M12	130	9,5	14,0
20x85	M16	85	10,5	17,5

Table C75: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,16	0,17	0,19	0,23	0,24	0,25
δ_{N0}	[mm]	0,32	0,34	0,38	0,46	0,48	0,50
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,33	0,35	0,40	0,42	0,46	0,53
δ_{N0}	[mm]	0,50	0,53	0,60	0,63	0,69	0,80

Brick type: Hollow Masonry Units

Table C76: Description of the brick

Brick type	Hollow Masonry Units	
Brick dimensions	mm	l: ≥215 b: ≥102,5 h: ≥65
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 20
Density	kg/dm^3	1,4
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C77: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	5,5	8,5
16x85	M10	85	8,5	12,0
16x130	M10	130	10,5	15,0
16x85	M12	85	8,5	11,5
16x130	M12	130	13,0	18,0
20x85	M16	85	13,0	20,5

Table C78: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,73	0,75	0,81	0,84	0,85	0,93
δ_{N0}	[mm]	1,10	1,13	1,22	1,26	1,28	1,40
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,18	0,21	0,22	0,34	0,35	0,39
δ_{N0}	[mm]	0,36	0,42	0,44	0,68	0,70	0,78

Brick type: Hollow Lightweight Concrete Brick

Table C79: Description of the brick

Brick type	Hollow Lightweight Concrete Brick	
Brick dimensions	mm	l: ≥495 b: ≥240 h: ≥238
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 2
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C80: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	2,0	2,5
16x85	M10	85	2,0	2,5
16x130	M10	130	2,5	3,0
16x85	M12	85	2,5	3,0
16x130	M12	130	2,5	3,5
20x85	M16	85	3,0	4,0

Table C81: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,11	0,11	0,12	0,14	0,18	0,19
δ_{N0}	[mm]	0,22	0,22	0,24	0,28	0,36	0,38
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,34	0,35	0,42	0,45	0,55	0,56
δ_{N0}	[mm]	0,51	0,53	0,63	0,68	0,83	0,84

Brick type: Hollow Normal Weight Concrete Brick

Table C82: Description of the brick

Brick type	Hollow Normal Weight Concrete Brick	
Brick dimensions	mm	l: ≥500 b: ≥200 h: ≥200
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 4
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C83: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	2,5	3,0
16x85	M10	85	2,5	3,5
16x130	M10	130	3,0	3,5
16x85	M12	85	3,0	4,0
16x130	M12	130	3,5	4,5
20x85	M16	85	3,5	5,0

Table C84: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,09	0,10	0,10	0,14	0,15	0,18
δ_{N0}	[mm]	0,18	0,20	0,20	0,28	0,30	0,36
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,31	0,40	0,42	0,45	0,55	0,55
δ_{N0}	[mm]	0,47	0,60	0,63	0,68	0,83	0,83

Brick type: Hollow Normal Weight Concrete Brick

Table C85: Description of the brick

Brick type	Hollow Normal Weight Concrete Brick	
Brick dimensions	mm	l: ≥500 b: ≥200 h: ≥200
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 10
Density	kg/dm^3	0,8
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C86: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	3,0	3,0
16x85	M10	85	3,5	4,5
16x130	M10	130	4,0	5,5
16x85	M12	85	4,0	5,0
16x130	M12	130	4,5	6,0
20x85	M16	85	5,0	7,5

Table C87: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,12	0,14	0,14	0,16	0,16	0,21
δ_{N0}	[mm]	0,24	0,28	0,28	0,32	0,32	0,42
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,25	0,28	0,34	0,36	0,44	0,46
δ_{N0}	[mm]	0,38	0,42	0,51	0,54	0,66	0,69

Brick type: TeknoAmerBlok

Table C88: Description of the brick

Brick type	TeknoAmerBlok	
Brick dimensions	mm	l: ≥400 b: ≥200 h: ≥200
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 12,5
Density	kg/dm^3	1,2
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C89: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	3,5	5,0
16x85	M10	85	4,5	5,5
16x130	M10	130	4,5	6,0
16x85	M12	85	5,0	7,0
16x130	M12	130	6,0	8,0
20x85	M16	85	6,0	9,0

Table C88: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,16	0,18	0,18	0,22	0,22	0,27
δ_{N0}	[mm]	0,32	0,36	0,36	0,44	0,44	0,54
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,16	0,18	0,18	0,22	0,22	0,27
δ_{N0}	[mm]	0,32	0,36	0,36	0,44	0,44	0,54

Brick type: Thermal Block

Table C89: Description of the brick

Brick type	Thermal Block	
Brick dimensions	mm	l: ≥390 b: ≥190 h: ≥120
Code	-	EN 771-3
Compressive strength	N/mm^2	≥ 7,5
Density	kg/dm^3	2
Partial safety factor γ_M = 2,5 (in the absence of other national regulation) 1) $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ 2) $V_{Rk} = V_{Rk,b} = V_{Rk,c} = V_{Rk,s}$		

Table C90: Characteristic resistance under tension and shear loading – single anchor-threated rods

Sleeve	Anchor size	Effective embedment depth	Characteristic resistance	Characteristic resistance
d_s x l_s	M	h_{ef}	N_{Rk} 1)	V_{Rk} 2)
[-]	[-]	[mm]	[kN]	[kN]
12x50	M8	50	3,0	4,0
16x85	M10	85	4,0	5,0
16x130	M10	130	4,5	5,5
16x85	M12	85	3,5	5,5
16x130	M12	130	4,5	6,0
20x85	M16	85	5,0	7,0

Table C91: Displacements under tension and shear loading – threated rods

Displacement under tension loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,13	0,14	0,18	0,22	0,23	0,25
δ_{N0}	[mm]	0,26	0,28	0,36	0,44	0,46	0,50
Displacement under shear loading							
Size of rod		M8	M10	M10	M12	M12	M16
δ_{N0}	[mm]	0,29	0,30	0,32	0,43	0,44	0,50
δ_{N0}	[mm]	0,44	0,45	0,48	0,36	0,66	0,75

The performance of the product identified above is in conformity with the set of declared performance characteristic. This declaration of performance is issued in accordance with Regulation (EU) No 305/2011 under the sole responsibility of the manufacturer identified above.

Signed by:

Radosław Koelner
Wrocław, 2026-01-26

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