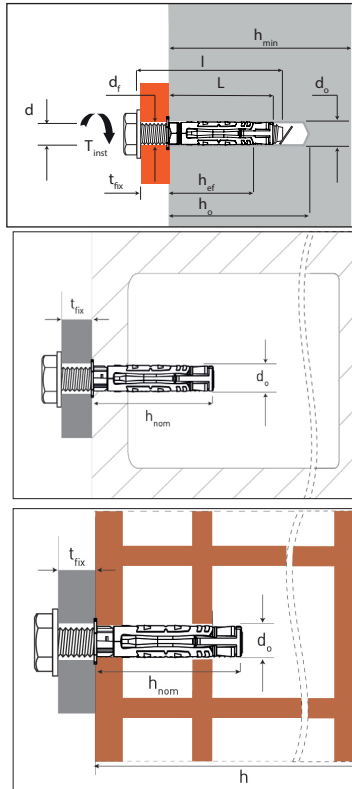


Bi-material, universal, heavy-duty sleeved anchor for concrete, solid and hollow masonry structures.
Version with zinc hex head screw



Technical Data

Anchor size	Anchorage depth (mm)	Fixture max. thickness (mm)	Screw size (ø x length) (mm)	Drilling depth (mm)	Drilling diameter (mm)	Min. concrete thickness (mm)	Clearance diameter (mm)	Sleeve length (mm)	Code
	h_{ef}	t_{fix}	$d \times l$	h_o	d_o	h_{min}	d_f	L	



M5/8*	40	-	M5x($t_{fix}+49$)	$l-(t_{fix}+10)$	8	90	6	49	569550
M6/10	43	-	M6x($t_{fix}+55$)	$l-(t_{fix}+10)$	10	90	7	55	569551
M8/12	46	-	M8x($t_{fix}+58$)	$l-(t_{fix}+15)$	12	100	9	58	569552
M10/15	57	-	M10x($t_{fix}+73$)	$l-(t_{fix}+20)$	15	120	11	73	569553
M12/18**	68	-	M12x($t_{fix}+85$)	$l-(t_{fix}+20)$	18	140	13	85	569554



M5x 60/10*	40	10	M5x60	60	8	90	6	49	569555
M6x65/10	43	10	M6x65	65	10	90	7	55	569556
M8x70/10	46	10	M8x70	70	12	100	9	58	569557
M10x90/15	57	15	M10x90	85	15	120	11	73	569558
M12x110/18**	68	25	M12x110	100	18	140	13	85	569559

Mechanical characteristics

Dimension screw	TRIDER/B	M5*	M6	M8	M10	M12**
Made of galvanised steel, with 8.8 screw						
f_{uk}	N/mm ²	Min. tensile strength	800	800	800	800
f_{yk}	N/mm ²	Yield strength	640	640	640	640
A_s	mm ²	Stressed cross-section	14,2	20,1	36,6	58,8
W_{el}	mm ³	Elastic section modulus	-	13	31	62
$M_{rk,s}^0$	Nm	Characteristic bending moment	7,2	12	30	60
M	Nm	Recommended bending moment	-	5	13	25
SW	mm	Key size	-	10	13	17

* Not included in ETA-21/0870 but included in ETA-22/0653

** Not included in ETA-21/0870 or ETA-22/0653

APPLICATION

- In electrical systems: fixing applications for conduit brackets, walkways, under-clamp brackets, metal guides, control panel brackets
- In heating and plumbing systems: anchoring applications of guides and brackets for under-clamps and air-conditioners
- Metalwork supports
- Enclosures, gates and railings
- Ladders, steps, rails
- Façade substructure brackets

MATERIALS

Body: cold-rolled steel, electrolytically galvanised $\geq 5\mu$, white-blue

Screw: high-strength hexagonal head, class 8.8 steel, 5 μ m electrolytically galvanised and with surface lubrication treatment

Expanding body: Modified copolymer, high resistance, black

Expansion cone: Electrolytically galvanised steel $\geq 5\mu$, white-blue

Washer: Cold-rolled steel, electrolytically galvanised $\geq 7\mu$, white-blue

TEMPERATURE D'IMPIEGO

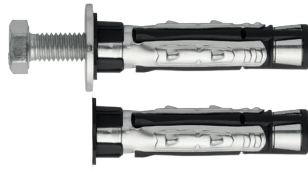
Installation temperature:

0°C ÷ +40°C

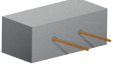


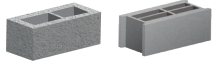
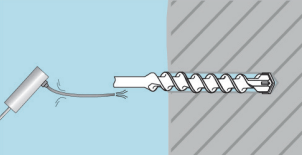
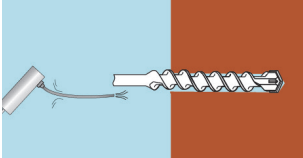
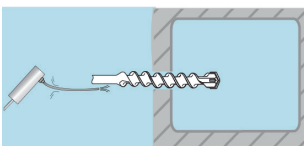
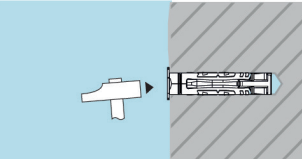
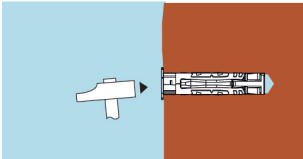
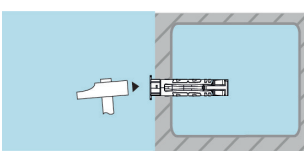
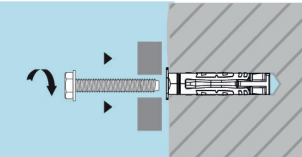
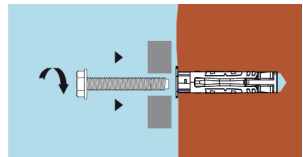
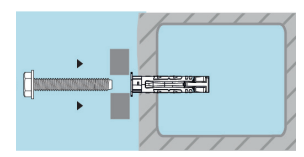
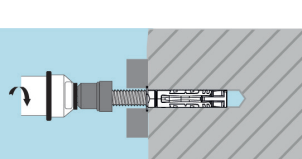
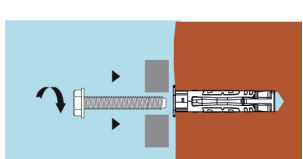
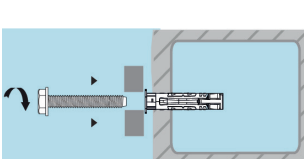
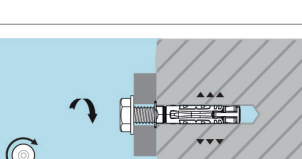
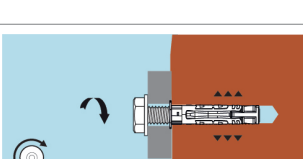
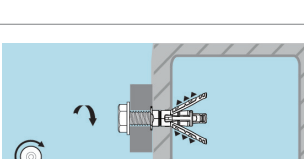
Working temperature:

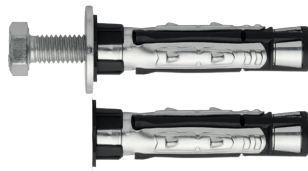
Short period: -20°C ÷ +80°C

Long period: -20°C ÷ +50°C

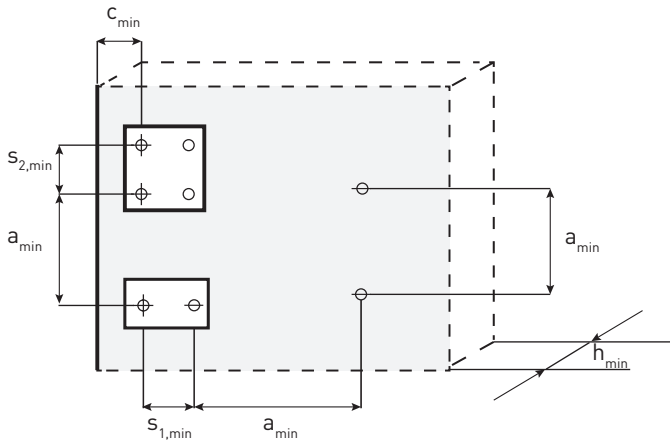


Installation method

CONCRETE	SOLID MASONRIES	HOLLOW CONCRETE BLOCKS	
 <p>Calcestruzzo fessurato e non da classe C20/25 a C50/60</p>	 <p>Danesi DM116 UNI12.6.25 $f_{t_2} \geq 42$ N/mm² Danesi DM116 UNI12.6.25 $f_{t_2} \geq 18$ N/mm²</p>	 <p>Poroton ALveolater 25/30 h19 $f_{t_2} \geq 6$ N/mm²</p>	 <p>Leca Blocco BC20 $f_{t_2} \geq 8$ N/mm² Parpaing B40 $f_{t_2} \geq 7,5$ N/mm² Parpaing B40 $f_{t_2} \geq 5,4$ N/mm²</p>
A	B	C.1	C.2
			<p>Proceed with drilling using: rotary percussion A and C.2, rotation only B and C.1, clean the hole</p>
			<p>Insert the anchor into the hole using a hammer</p>
			<p>Insert the screw through the fixable thickness into the anchor inside the hole</p>
			<p>Apply the appropriate T_{inst} torque for material A using a screwdriver. Screw manually until the appropriate T_{inst} torque for materials B and C is reached.</p>
			<p>Use a torque wrench to verify that the appropriate T_{inst} has been reached.</p>



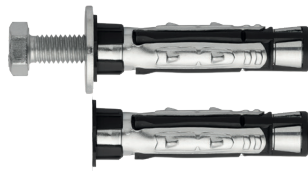
Spessore minimo del calcestruzzo, caratteristiche e distanze minime per la disposizione, bordo



Size		M5*	M6	M8	M10	M12**	
Embedment depth		h_{nom} (mm)	49	55	58	73	85
Minimum thickness of base material		h_{min} (mm)	90	90	100	120	140
Characteristic edge and spacing distance for full anchor capacity	CRACKED & NON CRACKED CONCRETE	$c_{cr} \geq$ (mm)	\	65	69	86	\
		$s_{cr} \geq$ (mm)	\	129	138	171	\
	MASONRIES	$c_{cr} \geq$ (mm)	200	200	200	200	\
		$s_{cr} \geq$ (mm)	200	200	200	200	\
Minimum distances	CRACKED & NON CRACKED CONCRETE	c_{min} (mm)	\	55	60	120	\
		per $S \geq$ (mm)	\	90	95	115	\
		a_{min} (mm)	\	90	95	115	\
		per $c \geq$ (mm)	\	55	60	120	\
		T_{inst} (Nm)	8	20	35	50	90
	SOLID MASONRIES	c_{min} (mm)	120	120	120	180	\
		$s_{2,min}$ (mm)	480	480	480	720	\
		$s_{1,min}$ (mm)	240	240	240	360	\
		T_{inst} (Nm)	3,5	15	20	30	\
	HOLLOW MASONRIES: Poroton type Alveolater 25/30 h19	HOLLOW MASONRIES: Poroton type Alveolater 25/30 h19	c_{min} (mm)	120	120	120	180
$s_{2,min}$ (mm)			480	480	480	720	\
$s_{1,min}$ (mm)			240	240	240	360	\
T_{inst} (Nm)			3,5	15	20	30	10
HOLLOW CONCRETE MASONRIES: Lecablocco BC20		c_{min} (mm)	100	100	100	100	\
		$s_{2,min}$ (mm)	400	400	400	400	\
		$s_{1,min}$ (mm)	200	200	200	200	\
		T_{inst} (Nm)	4	6	7	10	12
HOLLOW CONCRETE MASONRIES: Parpeing FABEMI B40	c_{min} (mm)	100	100	100	100	\	
	$s_{2,min}$ (mm)	400	400	400	400	\	
	$s_{1,min}$ (mm)	200	200	200	200	\	
	T_{inst} (Nm)	\	4	4	10	10	

* Not included in ETA-21/0870 but included in ETA-22/0653

** Not included in ETA-21/0870 or ETA-22/0653



Characteristic resistances in kN

The characteristic resistances shown here are for information purposes only and can only be used by applying the appropriate safety factors.

TENSILE

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
CRACKED & NON CRACKED CONCRETE - C20/25					
h_{nom} (mm)	49	55	58	73	85
N_{Rk} (kN)	4,1	5,0	5,5	10,0	22,8

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
MASONRIES					
h_{nom} (mm)	49	55	58	73	85
Hollow concrete block B40 $f_b \geq 7,5$ N/mm²					
N_{Rk} (kN)	\	0,9	1,2	1,2	2,0
Hollow concrete block B40 $f_b \geq 5,4$ N/mm²					
N_{Rk} (kN)	\	0,8	0,9	0,9	\
Hollow concrete block BC20 $f_b \geq 8$ N/mm²					
N_{Rk} (kN)	1,5	1,5	2,0	2,0	3,1
Solid clay brick $f_b \geq 18$ N/mm²					
N_{Rk} (kN)	0,9	2,0	2,0	2,5	\
Solid clay brick $f_b \geq 42$ N/mm²					
N_{Rk} (kN)	1,2	2,5	2,5	3,5	\
Hollow clay brick Poroton $f_b \geq 6$ N/mm²					
N_{Rk} (kN)	0,6	0,6	1,5	1,5	3,0
** Hollow clay brick Optibric PV 3+ $f_b \geq 8,75$ N/mm²					
N_{Rk} (kN)	\	0,8	\	\	\
** Hollow clay brick Porotherm GF R20 Th+ $f_b \geq 10$ N/mm²					
N_{Rk} (kN)	\	0,8	\	\	\
** Hollow clay brick Porotherm R30 $f_b \geq 8$ N/mm²					
N_{Rk} (kN)	\	0,8	1,5	1,5	\

* Not included in ETA-21/0870 but included in ETA-22/0653

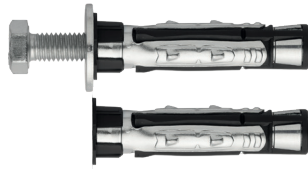
** Not included in ETA-21/0870 and ETA-22/0653

*** The values indicated correspond to steel failure

SHEAR

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
CRACKED & NON CRACKED CONCRETE - C20/25 TO C50/60					
h_{nom} (mm)	49	55	58	73	85
$V_{Rk,s}$ (kN)***	5,7	8,0	14,6	23,2	\

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
MASONRIES					
h_{nom} (mm)	49	55	58	73	85
Hollow concrete block B40 $f_b \geq 7,5$ N/mm²					
V_{Rk} (kN)	\	0,9	1,2	1,2	\
Hollow concrete block B40 $f_b \geq 5,4$ N/mm²					
V_{Rk} (kN)	\	0,8	0,9	0,9	\
Hollow concrete block BC20 $f_b \geq 8$ N/mm²					
V_{Rk} (kN)	1,5	1,5	2,0	2,0	\
Solid clay brick $f_b \geq 18$ N/mm²					
V_{Rk} (kN)	0,9	2,0	2,0	2,5	\
Solid clay brick $f_b \geq 42$ N/mm²					
V_{Rk} (kN)	1,2	2,5	2,5	3,5	\
Hollow clay brick Poroton $f_b \geq 6$ N/mm²					
V_{Rk} (kN)	0,6	0,6	1,5	1,5	\
** Hollow clay brick Optibric PV PV 3+ $f_b \geq 8,75$ N/mm²					
V_{Rk} (kN)	\	0,8	\	\	\
** Hollow clay brick Porotherm GF R20 Th+ $f_b \geq 10$ N/mm²					
V_{Rk} (kN)	\	0,8	\	\	\
** Hollow clay brick Porotherm R30 $f_b \geq 8$ N/mm²					
V_{Rk} (kN)	\	0,8	1,5	1,5	\


Design resistances for static loads in cracked and uncracked concrete (N_{Rk} , V_{Rk}) in kN

The recommended resistances shown here refer to a single anchor without edge or group effects. The recommended loads are determined by tests and analyses carried out in ETA-21/0870 for solid bricks, hollow bricks and hollow concrete bricks and in ETA-22/0653 for hollow and non-hollow concrete and are guaranteed for distances $\geq s_{cr}$ and a distance from the edge $\geq c_{cr}$.

TENSILE

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
CRACKED & NON CRACKED CONCRETE - C20/25					
h_{nom} (mm)	49	55	58	73	85
N_{Rec} (kN)	4,1	2,4	2,6	4,8	8,0

$$N_{Rec} = N_{Rd,uncr} / \gamma_F$$

$$\gamma_F = 1,4$$

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
MASONRIES					
h_{nom} (mm)	49	55	58	73	85
Hollow concrete block B40 $f_b \geq 7,5$ N/mm²					
N_{Rec} (kN)	\	0,2	0,3	0,3	0,6
Hollow concrete block B40 $f_b \geq 5,4$ N/mm²					
N_{Rec} (kN)	\	0,2	0,3	0,3	\
Hollow concrete block BC20 $f_b \geq 8$ N/mm²					
N_{Rec} (kN)	0,4	0,4	0,6	0,6	0,8
Solid clay brick $f_b \geq 18$ N/mm²					
N_{Rec} (kN)	0,3	0,6	0,6	0,7	\
Solid clay brick $f_b \geq 42$ N/mm²					
N_{Rec} (kN)	0,3	0,7	0,7	1,0	\
Hollow clay brick Poroton $f_b \geq 6$ N/mm²					
N_{Rec} (kN)	0,1	0,1	0,4	0,4	0,7
** Hollow clay brick Optibric PV 3+ $f_b \geq 8,75$ N/mm²					
N_{Rec} (kN)	\	0,2	\	\	\
** Hollow clay brick Porotherm GF R20 Th+ $f_b \geq 10$ N/mm²					
N_{Rec} (kN)	\	0,2	\	\	\
** Hollow clay brick Porotherm GF R30 $f_b \geq 8$ N/mm²					
N_{Rec} (kN)	\	0,2	0,4	0,4	\

$$N_{Rec} = N_{Rd} / \gamma_F$$

$$\gamma_F = 1,4$$

* Not included in ETA-21/0870 but included in ETA-22/0653

** Not included in ETA-21/0870 and ETA-22/0653

*** The values indicated correspond to steel failure

SHEAR

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
CRACKED & NON CRACKED CONCRETE - C20/25 TO C50/60					
h_{nom} (mm)	49	55	58	73	85
V_{Rec} (kN)***	\	4,6	7,8	13,3	\

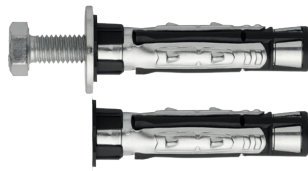
$$V_{Rec} = V_{Rd,s} / \gamma_F$$

$$\gamma_F = 1,4$$

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
MASONRIES					
h_{nom} (mm)	49	55	58	73	85
Hollow concrete block B40 $f_b \geq 7,5$ N/mm²					
V_{Rec} (kN)	\	0,2	0,3	0,3	\
Hollow concrete block B40 $f_b \geq 5,4$ N/mm²					
V_{Rec} (kN)	\	0,2	0,3	0,3	\
Hollow concrete block BC20 $f_b \geq 8$ N/mm²					
V_{Rec} (kN)	0,4	0,4	0,6	0,6	\
Solid clay brick $f_b \geq 18$ N/mm²					
V_{Rec} (kN)	0,3	0,6	0,6	0,7	\
Solid clay brick $f_b \geq 42$ N/mm²					
V_{Rec} (kN)	0,3	0,7	0,7	1,0	\
Hollow clay brick Poroton $f_b \geq 6$ N/mm²					
V_{Rec} (kN)	0,1	0,1	0,4	0,4	\
** Hollow clay brick Optibric PV 3+ $f_b \geq 8,75$ N/mm²					
V_{Rec} (kN)	\	0,2	\	\	\
** Hollow clay brick Porotherm GF R20 Th+ $f_b \geq 10$ N/mm²					
V_{Rec} (kN)	\	0,2	\	\	\
** Hollow clay brick Porotherm GF R30 $f_b \geq 8$ N/mm²					
V_{Rec} (kN)	\	0,2	0,4	0,4	\

$$V_{Rec} = V_{Rd} / \gamma_F$$

$$\gamma_F = 1,4$$


Recommended resistances for single anchor without edge and group effects (N_{Rec} , V_{Rec}) kN

The design resistances for static loads are determined through tests and performance data provided in the ETA and are guaranteed for distances $\geq s_{cr}$ and distances from the edge $\geq c_{cr}$. For designs with distances between anchors and distances from the edge less than those specified, it is recommended to refer to EN 1992-4 for design purposes.

TENSILE

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**	
CRACKED & NON CRACKED CONCRETE - C20/25						
h_{nom} (mm)	49	55	58	73	85	
N_{Rd} (kN)	C20/25	4,1	3,3	3,7	6,7	11,0
	C40/50	\	7,4	8,2	11,3	\

Distances s_{cr} e c_{cr} must be fulfilled
 $N_{Rd,uncr} = \min(N_{Rk,p,uncr} / \gamma_{Mc}; N_{Rk,s} / \gamma_{Ms,N})$
 $\gamma_{Mc} = 1,5$

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
MASONRIES					
h_{nom} (mm)	49	55	58	73	85
Hollow concrete block B40 $f_b \geq 7,5$ N/mm²					
N_{Rd} (kN)	\	0,4	0,5	0,5	0,8
Hollow concrete block B40 $f_b \geq 5,4$ N/mm²					
N_{Rd} (kN)	\	0,3	0,4	0,4	\
Hollow concrete block BC20 $f_b \geq 8$ N/mm²					
N_{Rd} (kN)	0,6	0,6	0,8	0,8	1,2
Solid clay brick $f_b \geq 18$ N/mm²					
N_{Rd} (kN)	0,4	0,8	0,8	0,9	\
Solid clay brick $f_b \geq 42$ N/mm²					
N_{Rd} (kN)	0,5	1,0	1,0	1,4	\
Hollow clay brick Poroton $f_b \geq 6$ N/mm²					
N_{Rd} (kN)	0,2	0,2	0,6	0,6	1,0
** Hollow clay brick Optibric PV 3+ $f_b \geq 8,75$ N/mm²					
N_{Rd} (kN)	\	0,3	\	\	\
** Hollow clay brick Porotherm GF R20 Th+ $f_b \geq 10$ N/mm²					
N_{Rd} (kN)	\	0,3	\	\	\
** Hollow clay brick Porotherm GF R30 $f_b \geq 8$ N/mm²					
N_{Rd} (kN)	\	0,3	0,6	0,6	\

Distances s_{cr} e c_{cr} must be fulfilled
 $N_{Rd} = N_{Rk} / \gamma_M$
 $\gamma_M = 2,5$

* Not included in ETA-21/0870 but included in ETA-22/0653
 ** Not included in ETA-21/0870 and ETA-22/0653
 *** The values indicated correspond to steel failure

SHEAR

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
CRACKED & NON CRACKED CONCRETE - C20/25 TO C50/60					
h_{nom} (mm)	49	55	58	73	85
$V_{Rd,s}$ (kN)***	\	6,4	11,0	18,6	\

$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$
 $\gamma_{Ms,V} = 1,25$

Size	Ø5*	Ø6	Ø8	Ø10	Ø12**
MASONRIES					
h_{nom} (mm)	49	55	58	73	85
Hollow concrete block B40 $f_b \geq 7,5$ N/mm²					
V_{Rd} (kN)	\	0,4	0,5	0,5	\
Hollow concrete block B40 $f_b \geq 5,4$ N/mm²					
V_{Rd} (kN)	\	0,3	0,4	0,4	\
Hollow concrete block BC20 $f_b \geq 8$ N/mm²					
V_{Rd} (kN)	0,6	0,6	0,8	0,8	\
Solid clay brick $f_b \geq 18$ N/mm²					
V_{Rd} (kN)	0,4	0,8	0,8	0,9	\
Solid clay brick $f_b \geq 42$ N/mm²					
V_{Rd} (kN)	0,5	1,0	1,0	1,4	\
Hollow clay brick Poroton $f_b \geq 6$ N/mm²					
V_{Rd} (kN)	0,2	0,2	0,6	0,6	\
** Hollow clay brick Optibric PV 3+ $f_b \geq 8,75$ N/mm²					
V_{Rd} (kN)	\	0,3	\	\	\
** Hollow clay brick Porotherm GF R20 Th+ $f_b \geq 10$ N/mm²					
V_{Rd} (kN)	\	0,3	\	\	\
** Hollow clay brick Porotherm GF R30 $f_b \geq 8$ N/mm²					
V_{Rd} (kN)	\	0,3	0,6	0,6	\

$V_{Rd} = V_{Rk} / \gamma_M$
 $\gamma_M = 2,5$