



concrete



natural
stone



solid brick

Vorpa VHS

Heavy duty anchor with European Technical Assessment for non cracked concrete

products group



VHS C [M]
* **VHS D INOX A2**
with hexagonal head
screw

ETA version approved for

- non-cracked concrete
C20/25 - C50/60 - M6-M12



VHS B
with stud and nut

All versions suitable for

- non-cracked concrete
- natural stone
- solid brick



VHS F
* **VHS FI INOX A2**
with countersunk head screw



VHS OS
with eyebolt



VHS PF
with 8.8 hexagonal head
screw



ETAG 001-02
for non cracked concrete

(cen/ts 1992-4 Metodo A)



To fix

- plates
- plants engineering
- stairs
- window and door frames
- profiles
- gates
- railings

product information

Characteristics

- through steel anchor with slots on the body and on the expansion conical nut with European Technical Assessment for non cracked concrete
- smooth expansion thanks to the slots on the body and on the expansion conical nut
- high setting quickness through the object to be fixed
- high performances

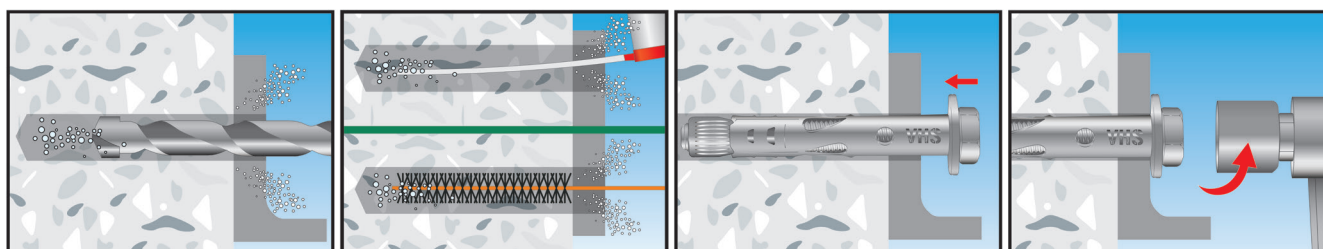
Installation

- through-setting anchor

Suggestion for use

- choose the right size of the anchor according to the load
- always check load bearing capacity values in the table
- respect the installation data
- **clean the hole before the installation**

installation sequence



Examples of applications





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solid brick

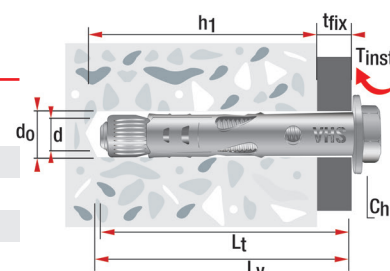
product code and technical data



VHS C
with 8.8 hexagonal head screw

Code	Description	L _t mm	Screw d x L _v mm	d ₀ mm	h ₁ mm	t _{fix} max mm	T _{inst} Nm	Ch
* 1725	VHS C 8/4-45	45	M6x50	8	50	4	10	10
1726	VHS C 8/24-65	65	M6x70	8	50	24	10	10
*1726L	VHS C 8/35-80	80	M6x80	8	50	35	10	10
1724	VHS C 8/54-100	100	M6x100	8	50	54	10	10
* 1727	VHS C 10/5-50	50	M8x55	10	55	5	25	13
1728	VHS C 10/25-70	70	M8x75	10	55	25	25	13
* 5567	VHS C 10/35-80	80	M8x80	10	55	35	25	13
3473	VHS C 10/45-100	100	M8x100	10	55	45	25	13
4473	VHS C 10/65-120	120	M8x120	10	55	65	25	13
* 1729	VHS C 12/5-60	60	M10x65	12	60	5	40	17
1730	VHS C 12/25-80	80	M10x80	12	60	25	40	17
3475	VHS C 12/45-100	100	M10x100	12	60	45	40	17
4475	VHS C 12/65-120	120	M10x120	12	60	65	40	17
* 1732	VHS C 12/75-130	130	M10x130	12	60	75	40	17
5560	VHS C 16/10-90	90	M12x90	16	85	10	65	19
5561	VHS C 16/30-110	110	M12x110	16	85	30	65	19
5562	VHS C 16/50-130	130	M12x130	16	85	50	65	19

* Not included in ETA



h₁ = Min. hole depth
L_t = Anchor length
L_v = Screw length
d₀ = Hole diameter
d = Screw diameter
t_{fix} = Fixture thickness
t_{inst} = Torque
Ch = Spanner
L_b = Stud length
L₀ = Eyebolt length



ETAG 001-02
for non cracked concrete

(cen/ts 1992-4 Metodo A)



VHS D INOX A2
with A2 SS hexagonal head screw

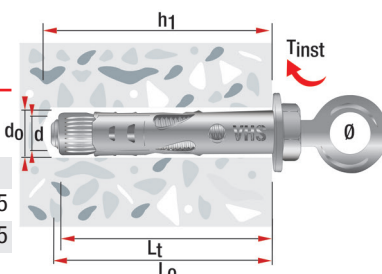


Code	Description	L _t mm	Screw d x L _v mm	d ₀ mm	h ₁ mm	t _{fix} max mm	T _{inst} Nm	Ch
2525	VHS D A2 8/4-45	45	M6x50	8	50	4	10	10
2526	VHS D A2 8/24-65	65	M6x70	8	50	24	10	10
5483	VHS D A2 8/35-80	80	M6x80	8	50	35	10	10
2500	VHS D A2 8/54-100	100	M6x100	8	50	54	10	10
2527	VHS D A2 10/5-50	50	M8x55	10	55	5	25	13
2528	VHS D A2 10/25-70	70	M8x75	10	55	25	25	13
5480	VHS D A2 10/35-80	80	M8x80	10	55	35	25	13
2473	VHS D A2 10/45-100	100	M8x100	10	55	45	25	13
5473	VHS D A2 10/65-120	120	M8x120	10	55	65	25	13
2529	VHS D A2 12/5-60	60	M10x65	12	60	5	40	17
2530	VHS D A2 12/25-80	80	M10x80	12	60	25	40	17
2475	VHS D A2 12/45-100	100	M10x100	12	60	45	40	17
5475	VHS D A2 12/65-120	120	M10x120	12	60	65	40	17
5476	VHS D A2 16/10-90	90	M12x90	16	85	10	65	19
5477	VHS D A2 16/30-110	110	M12x110	16	85	30	65	19
5479	VHS D A2 16/50-130	130	M12x130	16	85	50	65	19



VHS OS
with eyebolt

Code	Description	L _t mm	Eyebolt d x L ₀ mm	d ₀ mm	h ₁ mm	T _{inst} Nm	Ø
575	VHS OS 8/45	45	M6x55	8	55	6	10±0,5
576	VHS OS 10/50	50	M8x60	10	60	15	11,8±0,5
577	VHS OS 12/60	60	M10x73	12	85	30	14,5±0,5





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natural stone



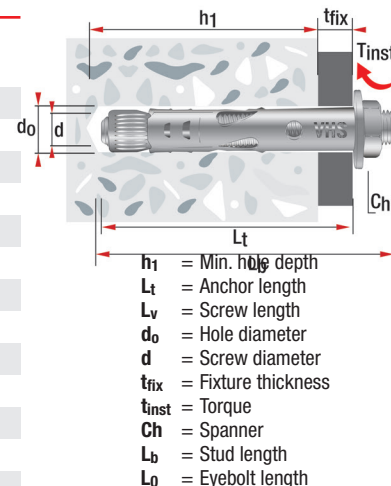
solid brick

product code and technical data



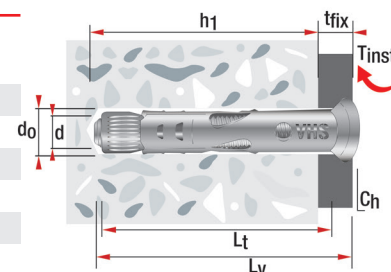
VHS B
with stud and nut

Code	Description		L_t mm	Screw $d \times L_b$ mm	d_o mm	h_1 mm	t_{fix} max mm	T_{inst} Nm	Ch
535	VHS B	8/4-45	45	M6x57	8	50	4	6	10
536	VHS B	8/24-65	65	M6x73	8	50	24	6	10
2534	VHS B	8/54-100	100	M6x110	8	50	54	6	10
537	VHS B	10/5-50	50	M8x60	10	55	5	15	13
538	VHS B	10/25-70	70	M8x80	10	55	25	15	13
2538	VHS B	10/45-100	100	M8x102	10	55	45	15	13
52535	VHS B	10/60-130	130	M8x132	10	55	60	15	13
539	VHS B	12/5-60	60	M10x75	12	60	5	30	17
540	VHS B	12/25-80	80	M10x95	12	60	25	30	17
2540	VHS B	12/45-100	100	M10x110	12	60	45	30	17
2541	VHS B	12/65-120	120	M10x130	12	60	65	30	17
55561	VHS B	16/30-110	110	M12x110	16	85	30	65	19
55562	VHS B	16/50-130	130	M12x130	16	85	50	65	19
52536	VHS B	16/60-140	140	M12x140	16	85	60	65	19



VHS F
with 10.9 countersunk head screw

Code	Description		L_t mm	Screw $d \times L_v$ mm	d_o mm	h_1 mm	t_{fix} max mm	T_{inst} Nm	Ch
4525	VHS F	8/8-45	45	M6x50	8	50	8	10	4
4526	VHS F	8/28-65	65	M6x70	8	50	28	10	4
4537	VHS F	8/58-100	100	M6x100	8	50	58	10	4
4527	VHS F	10/10-50	50	M8x60	10	55	10	25	5
4528	VHS F	10/30-70	70	M8x80	10	55	30	25	5
4534	VHS F	10/50-100	100	M8x100	10	55	50	25	5
4529	VHS F	12/10-60	60	M10x65	12	60	10	40	6
4530	VHS F	12/30-80	80	M10x80	12	60	30	40	6
4535	VHS F	12/50-100	100	M10x100	12	60	50	40	6
5565	VHS F	16/15-90	90	M12x90	16	85	15	65	8
5566	VHS F	16/35-110	110	M12x110	16	85	35	65	8



VHS FI INOX A2
with A2 SS countersunk head screw



Code	Description		L_t mm	Screw $d \times L_v$ mm	d_o mm	h_1 mm	t_{fix} max mm	T_{inst} Nm	Ch
5530	VHS FI A2	8/8-45	45	M6x50	8	50	8	10	4
5531	VHS FI A2	8/28-65	65	M6x70	8	50	28	10	4
5537	VHS FI A2	8/58-100	100	M6x100	8	50	58	10	4
5532	VHS FI A2	10/10-50	50	M8x60	10	55	10	25	5
5533	VHS FI A2	10/30-70	70	M8x80	10	55	30	25	5
5529	VHS FI A2	10/50-100	100	M8x100	10	55	50	25	5
5534	VHS FI A2	12/10-60	60	M10x65	12	60	10	40	6
5535	VHS FI A2	12/30-80	80	M10x80	12	60	30	40	6
5536	VHS FI A2	12/50-100	100	M10x100	12	60	50	40	6

Vorpa VHS

Heavy duty anchor with European Technical Assessment for non cracked concrete



technical data VHS CE

			M6	M8	M10	M12
Anchor diameter	d	mm	8	10	12	16
Effective anchorage depth	h _{ef}	mm	31	35	40	60
Drill hole diameter	d ₀	mm	8	10	12	16
Drill hole depth	h ₁	mm	50	55	60	85
Hole diameter in the fixture	d _f	mm	9	11	13	17
Torque moment	T _{inst}	Nm	10	25	40	65
Critical axial spacing	S _{cr,N}	mm	93	105	120	180
Critical edge distance	C _{cr,N}	mm	46,5	52,5	60	90
Minimum axial spacing	S _{min}	mm	95	120	145	175
Minimum edge distance	C _{min}	mm	50	60	75	90
Minimum thickness member	h _{min}	mm	80	100	120	150

Characteristic values VHS C

Pull out failure	N _{rk,P} C20/25	KN	6	7,5	12	20
ψ _c C30/37			1	1	1	1
ψ _c C40/50			1	1	1	1
ψ _c C50/60			1	1	1	1
Shear failure	V _{Rk,S} C20/25	KN	7,5	12	20	30
Bending moment	M _{Rk,S}	Nm	12,2	30	59,8	104,8

Values where the reduction factor

Pull out failure	N _{rk,P}	KN	4	5	8	13
Shear failure	V _{Rk,S}	KN	6	9,6	16	24
Bending moment	M _{Rk,S}	Nm	9,7	24	47,8	83,8

Recommended loads VHS C

Pull out failure	N	KN	2,5	3,5	5,7	9,2
Shear failure	T	KN	4,2	6,8	11,4	17
Bending moment	M	Nm	6,5	17	34	59,5

VHS FI - VHS F - VHS OS - VHS B - VHS D

			M6	M8	M10	M12
Critical axial spacing	S _{cr}	mm	180	240	250	280
Critical edge distance	C _{cr}	mm	100	120	150	170
Minimum axial spacing	S _{min}	mm	95	120	145	175
Minimum edge distance	C _{min}	mm	50	60	75	90
Minimum structural thickness	h _{min}	mm	80	100	120	150

Permissible loads - applications in concrete C20/25

1 daN ≈ 1 kg

Screws cl. 10.9	daN	180	250	400	930
Screws A2	daN	140	220	380	700
Threaded stud cl. 5.8	daN	105	160	280	540
VHS OS	daN	35	75	100	

Permissible loads - applications in solid brick compression resistance 18/20 N/mm²

1 daN ≈ 1 kg

Screws 8.8	daN	100*	160*	280*	390*
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* Indicative values - For applications on solid bricks is not possible to show specific loading values because of the various materials properties. It is suggested to always make pull out tests before using the anchors. For any particular need please contact Vorpa technical department.

- Always respect the installation parameters
- In case of axial spacings or edge distances are inferior than the critical ones, it is recommended to reduce the application load
- The table shows the permissible loads for tension, shear and combined tension and shear loads

Vorpa VHS

Heavy duty anchor with European Technical Assessment for non cracked concrete



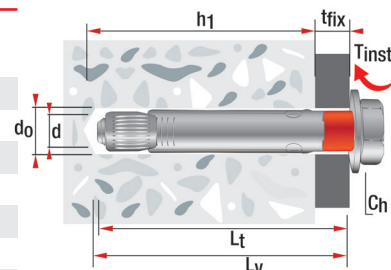
product code and technical data



VHS PF
with 8.8 hexagonal head screw

Code	Description		L_t mm	Screw d x L_v mm	d_o mm	h_1 mm	t_{fix} max mm	T_{inst} Nm	Ch
555	VHS PF	14/10-70	70	M10x70	14	65	10	40	17
1558	VHS PF	14/20-80	80	M10x80	14	65	20	40	17
564	VHS PF	14/40-100	100	M10x100	14	65	40	40	17
1567	VHS PF	14/60-120	120	M10x120	14	65	60	40	17
580	VHS PF	16/15-80	80	M12x80	16	70	15	75	19
1586	VHS PF	16/35-100	100	M12x100	16	70	35	75	19
587	VHS PF	16/55-120	120	M12x120	16	70	55	75	19
1592	VHS PF	16/75-140	140	M12x140	16	70	75	75	19
1593	VHS PF	16/95-160	160	M12x160	16	70	95	75	19

A2 Stainless Steel version on request



h_1 = Min. hole depth
 L_t = Anchor length
 L_v = Screw length
 d_o = Hole diameter
 d = Screw diameter
 t_{fix} = Fixture thickness
 T_{inst} = Torque
 Ch = Spanner
 L_b = Stud length
 L_o = Eyebolt length

Examples of applications



VHS PF

			VHS PF M10	VHS PF M12
Critical axial spacing	S_{cr}	mm	250	280
Critical edge distance	C_{cr}	mm	150	170
Minimum axial spacing	S_{min}	mm	145	175
Minimum edge distance	C_{min}	mm	75	90
Minimum structural thickness	h_{min}	mm	120	150

Permissible loads - applications in concrete C20/25

1 daN $\approx$ 1 kg

VHS PF	daN	600	850
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- Always respect the installation parameters
- In case of axial spacings or edge distances are inferior than the critical ones, it is recommended to reduce the application load
- The table shows the permissible loads for tension, shear and combined tension and shear loads