through-setting heavy duty anchors

Vorpa **VE.CE7 ZF**

Heavy duty anchor with European Technical Assesment for non cracked concrete

non cracked concrete

products group

VE.CE7 ZF

Approved for
- cracked and non-cracked concrete C20/25-C50/60
- anchorage under static, quasi/static actions M6-M20
- anchorage under fire exposure in standard TR 020 R30-R120

To fix
- parapets
- gates, stairs, profiles
- steel beams
- machine tools
- industrial systems
- heavy duty metal constructions
- static, quasi/static anchorages

ETA CE

EAD 330232-00-0601
for non cracked concrete

R30-R120

CALCULATION SOFTWARE

HOT DIPPED GALVANIZED

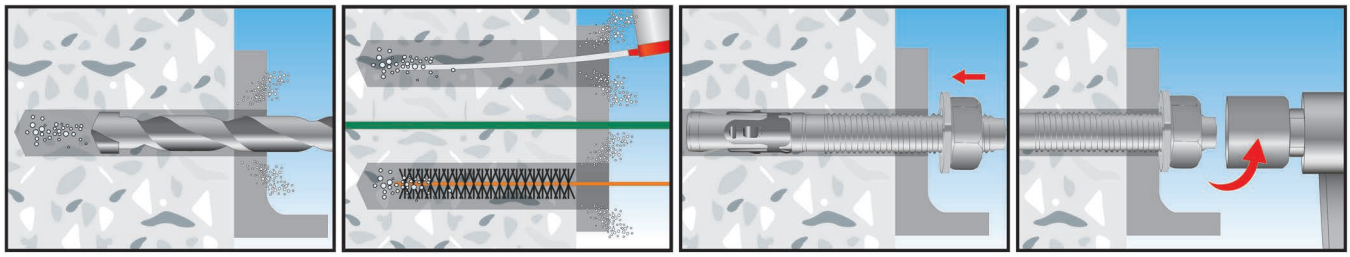
product information

Characteristics
- special wedge hot dipped galvanized anchor assembled with hex nut and washer with European Technical Assessment for non cracked concrete
- ideal corrosion protection
- fire tested in compliance with TR020. Fire resistance ratings R30–R120
- reduced hole diameter
- suitable for through-setting applications in concrete
- thread diameter and hole diameter are the same
- reinforced anchor's head to avoid damaging the thread during the installation

Installation
- through-setting anchor

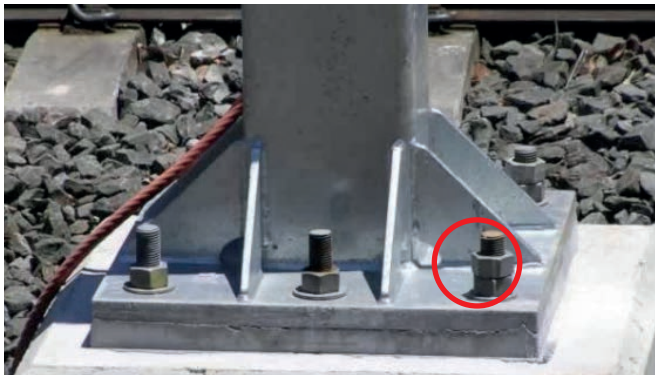
Suggestion for use
- choose the right size of the anchor according to the load
- always check load bearing capacity values in the table
- respect the installation data
- clean the hole before the installation

installation sequence



Clean the hole before the installation

Examples of applications



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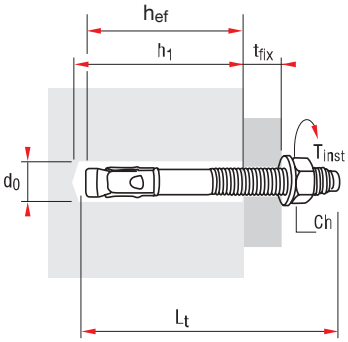
product code and technical data

VE.CE7 ZF

ZINCATURA A CALDO

Code	Description	L_t mm	d_o mm	h_1 mm	t_{fix} max mm	T_{inst} Nm	Ch
4604	VE.CE7 ZF 8/4-60	65	8	40	4	15	13
4605	VE.CE7 ZF 8/15-80	80	8	47	15	15	13
4601	VE.CE7 ZF 8/30-95	100	8	47	30	15	13
4610	VE.CE7 ZF 8/45-110	115	8	47	45	15	13
* **4607**	VE.CE7 ZF 10/5-60	60	10	40	5	25	17
44624	VE.CE7 ZF 10/15-90	90	10	56	15	25	17
4609	VE.CE7 ZF 10/45-120	120	10	56	45	25	17
44628	VE.CE7 ZF 10/70-145	145	10	56	70	25	17
4611	VE.CE7 ZF 12/15-110	110	12	67	15	50	19
4471	VE.CE7 ZF 12/30-125	125	12	67	30	50	19
44627	VE.CE7 ZF 12/50-145	145	12	67	50	50	19
4613	VE.CE7 ZF 12/85-180	180	12	67	85	50	19
4615	VE.CE7 ZF 16/10-130	130	16	84	10	100	24
4616	VE.CE7 ZF 16/20-150	150	16	84	20	100	24
4618	VE.CE7 ZF 20/5-150	150	20	99	5	160	30
4619	VE.CE7 ZF 20/35-180	180	20	99	35	160	36



h_1 = Min. hole depth
L_t = Anchor length
d_o = Hole diameter
T_{fix} = Fixture thickness
T_{inst} = Torque
Ch = Spanner
h_{ef} = Effective anchorage depth

* **Not covered by ETA**

VE.CE7 ZF

Installation data			M8		M10		M12		M16		M20	
Performance data												
Effective anchorage depth	h_{ef}	mm	44	-	48	-	65	-	82	-	100	-
Reduced anchorage depth	$h_{ef,red}$	mm	-	35[1)]	-	42	-	50	-	64	-	78
Drill hole diameter	d_o	mm	8	8	10	10	12	12	16	16	20	20
Drill hole diameter in the fixture	d_o	mm	9	9	12	12	14	14	18	18	22	22
Drill hole depth	h_1	mm	65	55	70	65	90	75	110	95	130	110
Torque moment	T_{inst}	Nm	15	15	30	30	50	50	100	100	200	200
Width across nut	SW	mm	13	13	17	17	19	19	24	24	30	30
Spacing and edge distance												
Effective anchorage depth	h_{ef}	mm	44	35[1)]	48	42	65	50	82	64	100	78
Characteristic spacing	$S_{cr,N}$	mm	132	105	144	126	195	150	246	192	300	234
Characteristic edge distance	$C_{cr,N}$	mm	66	52,5	72	63	97,5	75	123	96	150	117
Minimum spacing	S_{min}	mm	40	40	55	55	75	100	90	110	105	140
Minimum edge distance	C_{min}	mm	45	45	65	65	90	100	105	100	125	140
Minimum thickness of concrete slab	h_{min}	mm	100	80	100	100	130	100	170	130	200	160

2) Characteristic values - Effective anchorage depth (hef) C25/30			M8	M10	M12	M16	M20
Pull out failure	N	kN	18,7	23,6	34,5	51,4	70
Shear failure	V	kN	19,3	28,1	41,3	73	103,6

Recommended loads (hef) C25/30			M8	M10	M12	M16	M20
Pull out failure	N	kN	6,3	8,4	13,8	19,6	26,3
Shear failure	V	kN	6,3	8,8	14,3	23,6	37,1
Bending moment	M	Nm	13,1	25,7	44,6	99,9	195

1) Application limited to statically indeterminated systems.
2) M12-M16-M20 Test based on EAD 330232-00-0601: pull out failure is not decisive