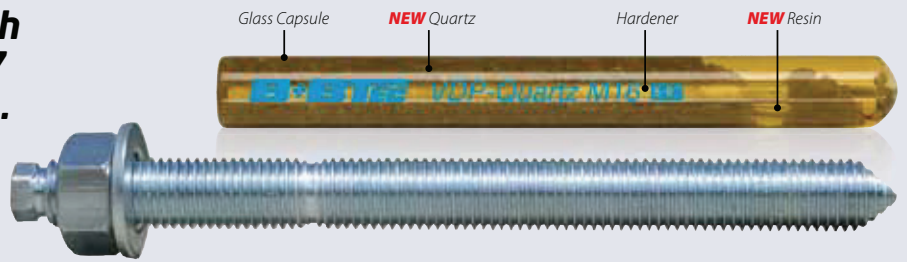




## Glass Capsule Anchor with ETA Assessment Option 7 for Non-Cracked Concrete. AS 5216 Compliant

### Anchor Components



### Glass Capsule Anchor VDP-Quartz M8 - M30

- Glass capsule containing Quartz Aggregate, Hardener and Resin.
- Components are mixed by driving in Anchor Rod.

### Suitable Anchor Rods M8 - M30

- Steel 5.8 and 8.8 Zinc Plated and Hot Dip Galvanized
- Stainless Steel A4-70 and A4-80
- High Corrosion Resistant Steel 1.4529

## Use Conditions

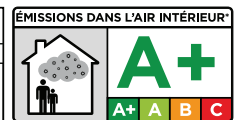
- Installation in Non-Cracked Concrete C20/25 to C50/60 according to EN 206-1:2000-12 and AS 5216
- For Static and quasi static loading
- In Dry or Wet Holes
- Min. Installation Temperature: Mortar +5°C, Concrete -5°C.
- Structures subject to dry internal and permanent damp internal conditions.
- Structures subject to external atmospheric exposure.
- Overhead Installation allowed.

## Typical Applications

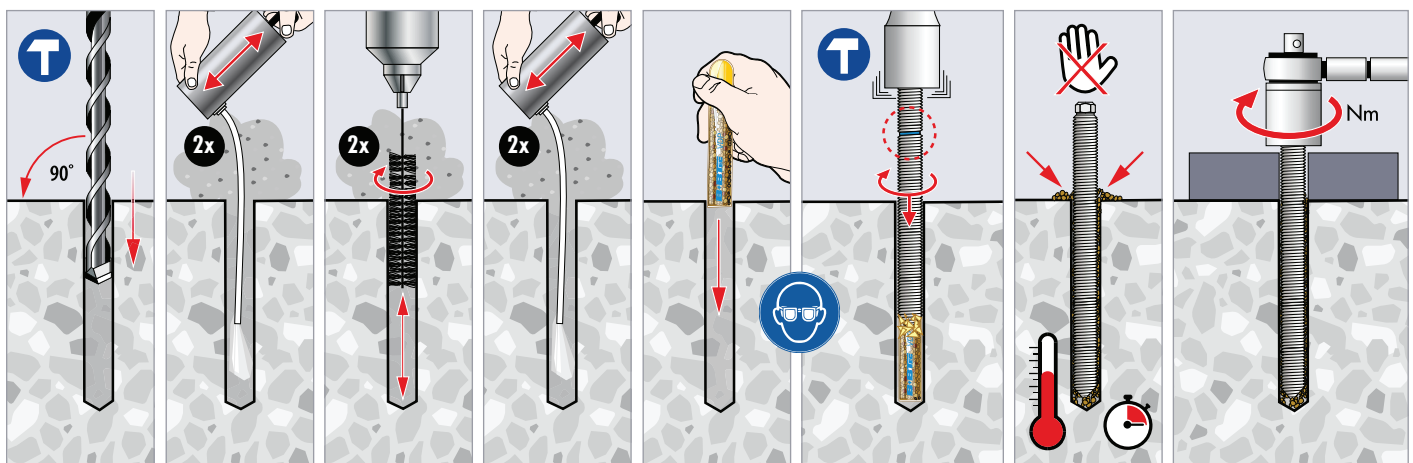
- Infrastructure Construction (Roads, Viaducts, Sound Barriers, Crash Barriers, Harbours, High Rise Construction, Steel Construction)
- Production Facilities (Installation of Cranes, Robots, Conveyer Lines etc.)

## Approvals & Test Reports

<b>B+Btec</b> Munterij 8, NL 4762AH, Zevenbergen	
14	
1109	
B-1109-CPR-0088	
ETA-14/0296	
ETAG 001-5 Option 7	
M8 - M30	
European Technical Assessment	
Option 7 for non cracked concrete	
DoP: 1109-CPR-0088	



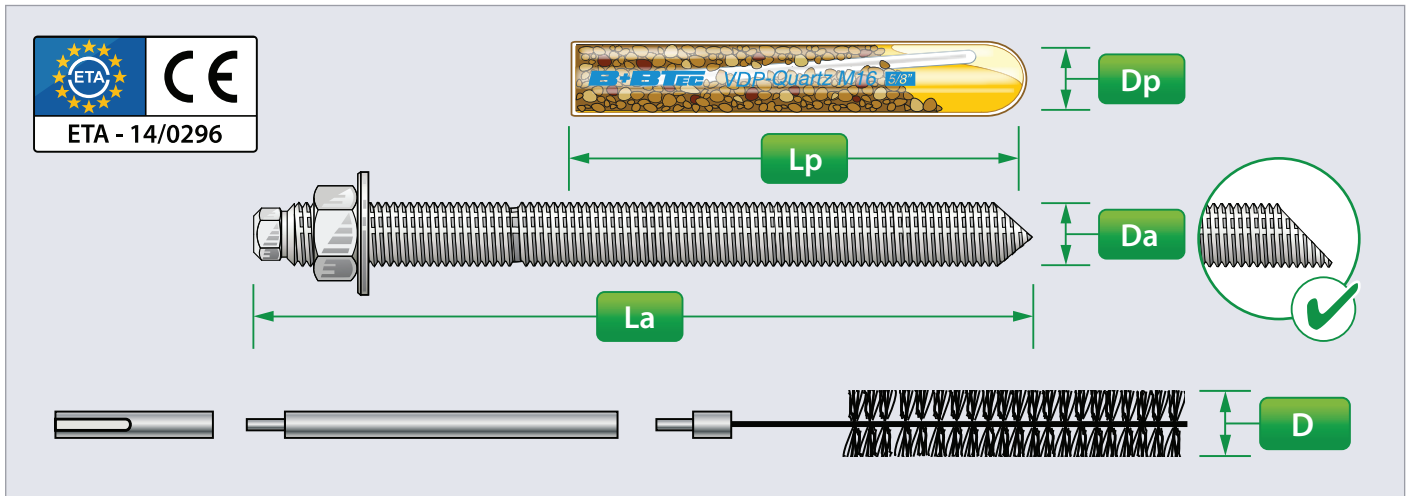
## Installation Procedures



## Curing Times

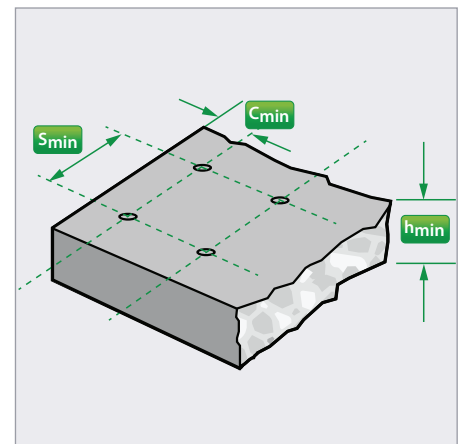
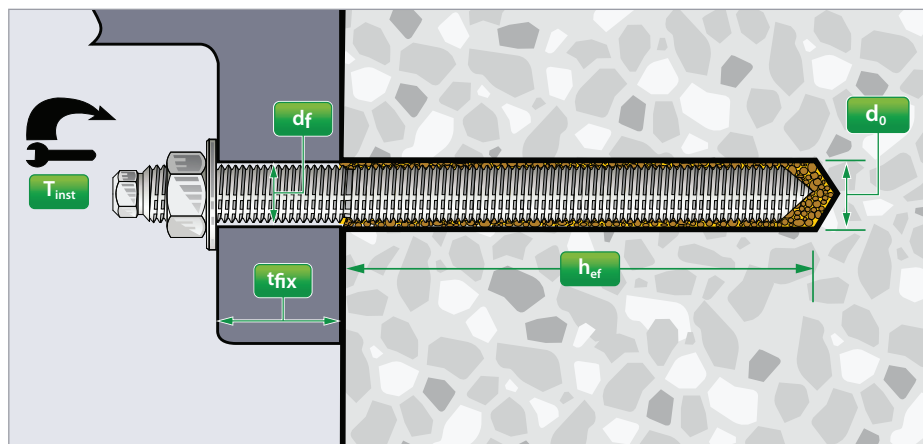
Temperature <sup>3)</sup>	°C	-5	+5	+20	+30
Curing Time Dry Holes		5 h	1 h	20 min	10 min
Curing Time Wet Holes		10 h	2 h	40 min	20 min

1) Concrete Temperature



## Product Dimensions

Anchor Size	$D_a$		M8	M10	M12	M14	M16	M20	M22	M24	M30
Rod Length	$L_a$	[mm]	110	130	160	170	190	260	280	300	360
Capsule Type	<b>VDP-Q</b>	--	M8	M10	M12	M14	M16	M20	M22	M24	M30
Capsule Diameter	$D_p$	[mm]	9	11	13	15	17	17	22	22	25
Capsule Length	$L_p$	[mm]	80	80	95	95	95	160	160	175	230
Capsule Volume	$V_p$	[cc]	4,4	5,7	9,4	12,8	16,5	29,5	43,6	52,6	98,2
Required Volume per cm Embedment Depth	$V_s$	[cc/cm]	0,44	0,59	0,75	0,94	1,09	1,52	1,70	2,01	2,77
Brush Diameter	$D$	[mm]	11	13	16	18	20	24	26	28	34
Min. Brush Diameter	$D_{min}$	[mm]	10,5	11,5	14,5	16,5	18,5	18,5	24,5	26,5	32,5



## Installation Dimensions

Anchor Size	$D_a$		M8	M10	M12	M14	M16	M20	M22	M24	M30
Hole Diameter	$d_o$	[mm]	10	12	14	16	18	22	24	26	32
Embedment Depth	$h_o = h_{ef}$	[mm]	80	90	110	120	125	170	190	210	280
Diameter Fixture Hole	$d_f$	[mm]	9	12	14	16	18	22	24	26	33
Fixture Thickness	$t_{fix} \leq$	[mm]	15	23	30	39	41	62	69	56	52
Recommended Torque	$T_{inst}$	[Nm]	10	20	40	60	80	120	135	180	300



## Member Thickness, Edge Distance & Spacing

Anchor Size	D <sub>a</sub>		M8	M10	M12	M14	M16	M20	M22	M24	M30
Min. Member Thickness	<b>h<sub>min</sub></b>	[mm]	110	120	140	150	160	220	240	260	340
Min. Edge Distance	<b>c<sub>min</sub></b>	[mm]	40	45	55	60	65	85	95	105	140
Min. Spacing	<b>s<sub>min</sub></b>	[mm]	40	45	55	60	65	85	95	105	140

## Performance Data<sup>1)</sup> for Hammer/Air Drilled Holes in Non-Cracked Concrete

### Characteristic Resistance

Anchor Size	D <sub>a</sub>		M8	M10	M12	M14	M16	M20	M22	M24	M30
Steel 5.8	Tensile	<b>N<sub>Rk</sub></b> [kN]	18,0	28,3	41,5	52,8	62,8	101,5	124,8	150,4	237,5
	Shear <sup>2)</sup>	<b>V<sub>Rk</sub></b> [kN]	9,0	14,0	21,0	29,0	39,0	61,0	76,0	88,0	140,0
Steel 8.8	Tensile	<b>N<sub>Rk</sub></b> [kN]	20,1	28,3	41,5	52,8	62,8	101,5	124,8	150,4	237,5
	Shear <sup>2)</sup>	<b>V<sub>Rk</sub></b> [kN]	15,0	23,0	34,0	46,0	63,0	98,0	121,0	141,0	224,0
A4-70	Tensile	<b>N<sub>Rk</sub></b> [kN]	20,1	28,3	41,5	52,8	62,8	101,5	124,8	150,4	237,5
	Shear <sup>2)</sup>	<b>V<sub>Rk</sub></b> [kN]	13,0	20,0	30,0	40,0	55,0	86,0	106,0	124,0	196,0
A4-80	Tensile	<b>N<sub>Rk</sub></b> [kN]	20,1	28,3	41,5	52,8	62,8	101,5	124,8	150,4	237,5
	Shear <sup>2)</sup>	<b>V<sub>Rk</sub></b> [kN]	15,0	23,0	34,0	46,0	63,0	98,0	121,0	141,0	224,0

### Design Resistance

Anchor Size	D <sub>a</sub>		M8	M10	M12	M14	M16	M20	M22	M24	M30
Steel 5.8	Tensile	<b>N<sub>Rd</sub></b> [kN]	12,0	18,8	27,6	35,2	41,9	67,6	83,2	100,3	131,4
	Shear <sup>2)</sup>	<b>V<sub>Rd</sub></b> [kN]	7,2	11,2	16,8	23,2	31,2	48,8	60,8	70,4	112,0
Steel 8.8	Tensile	<b>N<sub>Rd</sub></b> [kN]	13,4	18,8	27,6	35,2	41,9	67,6	83,2	100,3	131,4
	Shear <sup>2)</sup>	<b>V<sub>Rd</sub></b> [kN]	12,0	18,4	27,2	36,8	50,4	78,4	96,8	112,8	179,2
A4-70	Tensile	<b>N<sub>Rd</sub></b> [kN]	13,4	18,8	27,6	35,2	41,9	67,6	83,2	100,3	131,4
	Shear <sup>2)</sup>	<b>V<sub>Rd</sub></b> [kN]	8,3	12,8	19,2	25,6	35,3	55,1	67,9	79,5	125,6
A4-80	Tensile	<b>N<sub>Rd</sub></b> [kN]	13,4	18,8	27,6	35,2	41,9	67,6	83,2	100,3	131,4
	Shear <sup>2)</sup>	<b>V<sub>Rd</sub></b> [kN]	11,3	17,3	25,6	34,6	47,4	73,7	91,0	106,0	168,4

### Recommended Loads<sup>3)</sup>

Anchor Size	D <sub>a</sub>		M8	M10	M12	M14	M16	M20	M22	M24	M30
Steel 5.8	Tensile	<b>N<sub>rec</sub></b> [kN]	8,6	13,5	19,7	25,1	29,9	48,3	59,4	71,6	93,9
	Shear <sup>2)</sup>	<b>V<sub>rec</sub></b> [kN]	5,1	8,0	12,0	16,6	22,3	34,9	43,4	50,3	80,0
Steel 8.8	Tensile	<b>N<sub>rec</sub></b> [kN]	9,6	13,5	19,7	25,1	29,9	48,3	59,4	71,6	93,9
	Shear <sup>2)</sup>	<b>V<sub>rec</sub></b> [kN]	8,6	13,1	19,4	26,3	36,0	56,0	69,1	80,6	128,0
A4-70	Tensile	<b>N<sub>rec</sub></b> [kN]	9,6	13,5	19,7	25,1	29,9	48,3	59,4	71,6	93,9
	Shear <sup>2)</sup>	<b>V<sub>rec</sub></b> [kN]	6,0	9,2	13,7	18,3	25,2	39,4	48,5	56,8	89,7
A4-80	Tensile	<b>N<sub>rec</sub></b> [kN]	9,6	13,5	19,7	25,1	29,9	48,3	59,4	71,6	93,9
	Shear <sup>2)</sup>	<b>V<sub>rec</sub></b> [kN]	8,1	12,4	18,3	24,7	33,8	52,6	65,0	75,7	120,3

1) All Loads in kN for a Single anchor in Dry/Wet, Non-Cracked Concrete C20/25 without edge or spacing influences. Temperature Range 50°C/80°C for long/short term. Increasing factors for concrete ψ: C30/37: 1,14 C40/50: 1,26 C50/60: 1,34 2) Steel strength in kN without bending moment. 3) Incl. Safety factor γ<sub>G</sub> = 1,4

Steel Failure



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