Hybrid GEN 2

B+BTec DesignFiX®

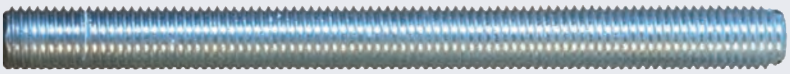
TR029

ETA - 19/0131

Hybrid Injection Adhesive ETA Option 1 Assessed for Cracked & Non-Cracked Concrete

Threaded Rods ASTA M8 - M30

- Steel 5.8 and 8.8 Zinc Plated and Hot Dip Galvanized
- Stainless Steel A4-50 and A4-70
- High Corrosion Resistant Steel 1.4529



Features

- NEW! ETA Assessed for the Installation in Flooded Holes
- NEW! No Cleaning required for Hollow Drilling
- NEW! Extended Seismic C2 Range: M12 - M24
- For Extreme Loads
- Fast Curing
- Styrene Free
- Low VOC: A+ Rating
- Fire Rated
- Leed Tested
- Potable Water Approved
- B+BTec DesignFix® support

Use Conditions

- Installation in Cracked & Non-Cracked Concrete C20/25 to C50/60
- For Anchor Rods M8-M30, Rebar Ø8-32 mm and Threaded Sleeves M6-M20
- Seismic Action C1: M8-M30, Ø8-32 mm
- Seismic Action C2: M12 - M24
- For Hammer/Air drilled Holes
- Installation in Dry and Wet Holes
- Installation in Flooded Holes
- Overhead Installation allowed.

Approvals & Test Reports

ETA - 19/0130

ETA - 19/0131

SEISMIC C1

SEISMIC C2

FIRE F120

A+ VOC

LEED

POTABLE WATER

Temperature Range

B+BTec BIS-HY GEN2 injection mortar may be applied in the temperature ranges given below. An elevated base material temperature leads to a reduction of the bond resistance.

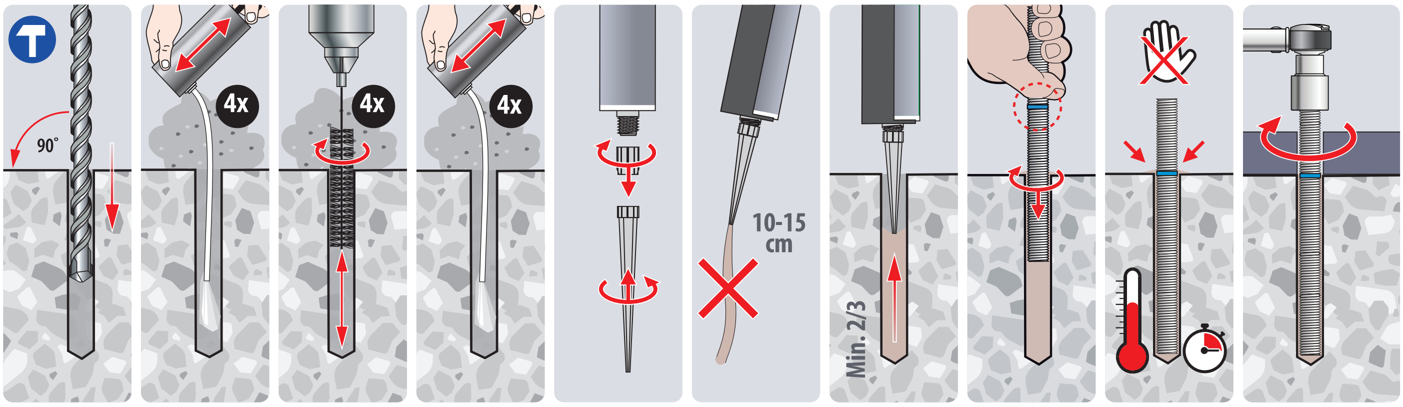
Max. long term base material temperature: Long term elevated base material temperatures are roughly constant over significant periods of time.

Max. short term base material temperature: Short term elevated base material temperatures are those that occur over brief intervals, e.g. as a result of diurnal cycling.

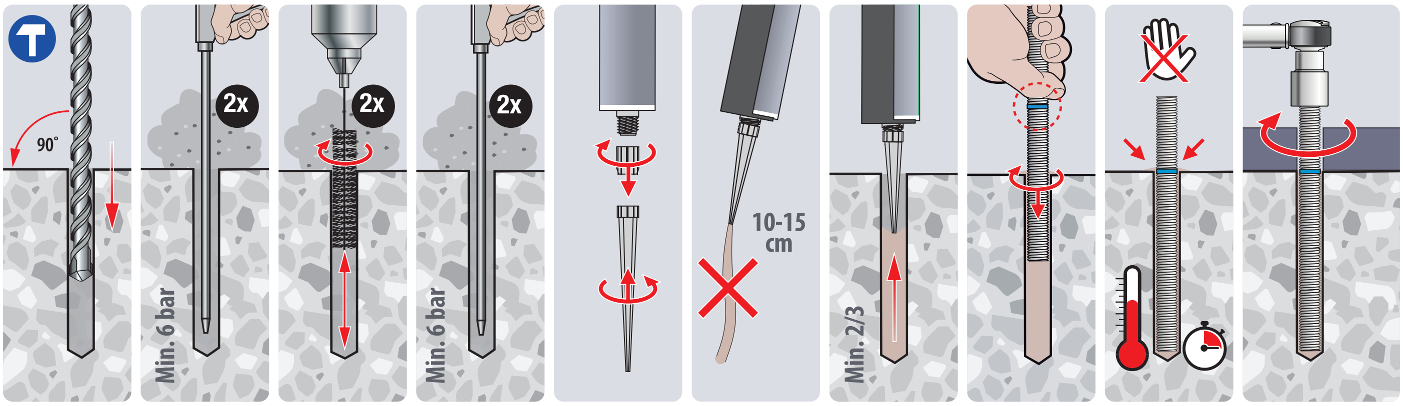
Temperature Range	Temperature Base Material	Max. Long Term Base Material Temperature	Max. Short Term Base Material Temperature
Temp. Range I	-40˚C to +80˚C	+ 50˚C	+80˚C
Temp. Range II	-40˚C to +120˚C	+72˚C	+120˚C
Temp. Range III	-40˚C to +160˚C	+100˚C	+160˚C

Installation Procedures (Hand Pump Cleaning)

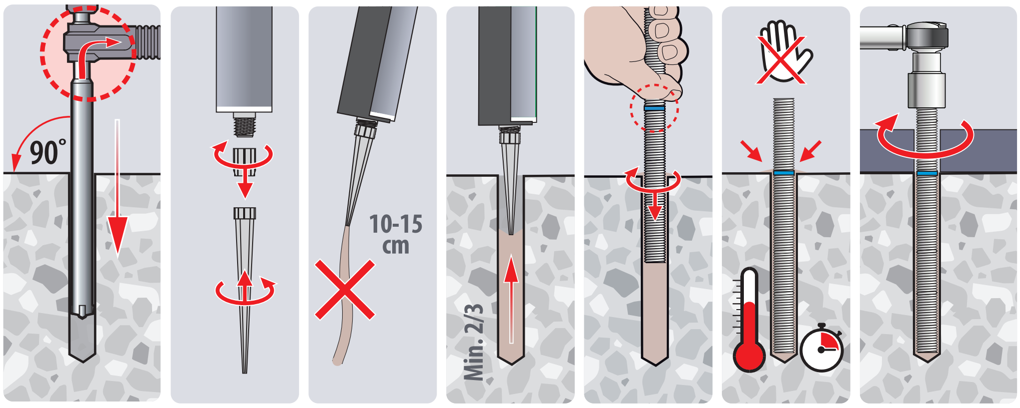
Hand Pump Cleaning for bore hole diameter $d_0 \leq 20$mm, bore hole depth $h_0 \leq 10d_{nom}$ and Non-Cracked Concrete only.



Installation Procedures (Compressed Air Cleaning)



Installation Procedures (Hollow Drilling)



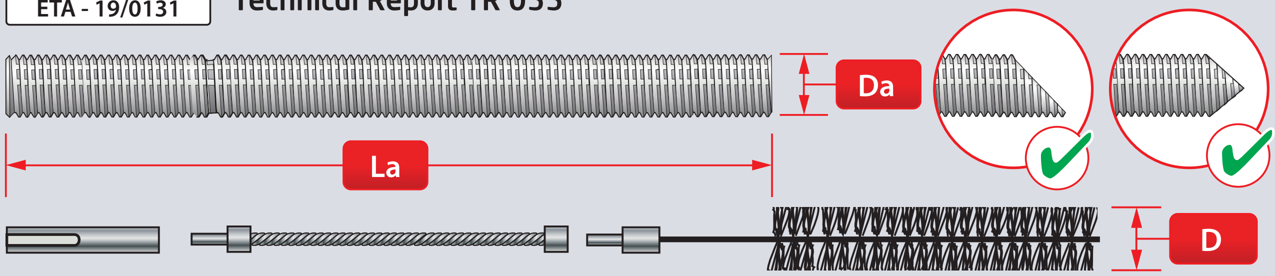
Curing Times[1)]

Temperature[2)]	°C	-5 to -1	0 to +4	+5 to +9	+10 to + 14	+15 to +19	+20 to +29	+30 to +40
Processing Time		50 min	25 min	15 min	10 min	6 min	3 min	2 min
Curing Time Dry Holes		5 h	3,5 h	2 h	1h	40 min	30 min	30 min
Curing Time Wet Holes		10 h	7 h	4 h	2h	80 min	60 min	60 min

1) Cartridge Temperature must be between +5°C and +40°C. 2) Concrete Temperature

ETA - 19/0131

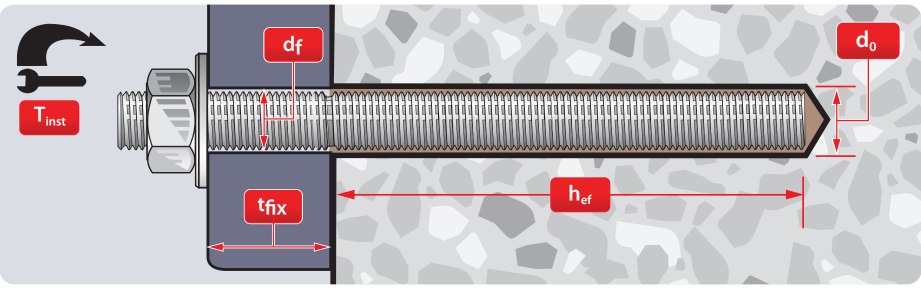
Specification Data for the use in Cracked & Uncracked Concrete and Hammer/Air Drilled Holes according to EN 1992-4:2018 and Technical Report TR 055

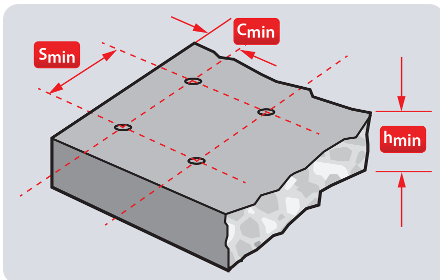


Installation Dimensions

Anchor Size	Da		M8	M10	M12	M16	M20	M24	M27	M30
Anchor Rod Length	L_a	[mm]	110	130	160	190	260	300	340	360
Min. Eff. Anchorage Depth	$h_{ef,min}$	[mm]	60	60	70	80	90	96	108	120
Max. Eff. Anchorage Depth	$h_{ef,max}$	[mm]	160	200	240	320	400	480	540	600
Anch. Depth for Calculation	$h_{ef,calc}$	[mm]	80	90	110	125	170	210	250	280
Hole Diameter	d_0	[mm]	10	12	14	18	22	28	30	35
Diameter Clearance Hole in the Fixture[1]										
- Prepositioned Installation	d_f	[mm]	9	12	14	18	22	26	30	33
- Push through installation	d_f	[mm]	12	14	16	20	24	30	33	40
Fixture Height	$t_{fix} \leq$	[mm]	20	30	35	45	70	65	70	50
Max. Torque Moment[2]	$T_{inst} \leq$	[Nm]	10	20	40	60	100	170	250	300
Required Volume per cm Embedment Depth	V_s	[ml/cm]	0,44	0,59	0,75	1,09	2,25	2,87	3,72	4,37

1) For application under seismic loading the diameter of clearance hole in the fixture shall be at maximum d + 1mm or alternatively the annular gap between fixture and anchor rod shall be filled force-fit with mortar. 2) Max. recommended torque moment to avoid splitting failure during installation with minimum spacing and edge distance





Member Thickness, Edge Distance & Spacing

Anchor Size	Da		M8	M10	M12	M16	M20	M24	M27	M30
Min. Member Thickness	h_{min}	[mm]	h_{ef} + 30 mm ≥100 mm			$h_{ef} + 2d_0$				
Min. Edge Distance	C_{min}	[mm]	35	40	45	50	60	65	75	80
Min. Spacing	S_{min}	[mm]	40	50	60	75	95	115	125	140

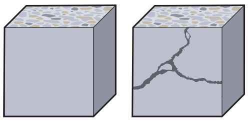
Steel Brush Dimensions

Anchor Size	Da		M8	M10	M12	M16	M20	M24	M27	M30
Brush Diameter	D	[mm]	11,5	13,5	15,5	20	24	30	31,8	37
Min. Brush Diameter	D_{min}	[mm]	10,5	12,5	14,5	18,5	22,5	28,5	30,5	35,5
Piston Plug	#	[-]	No piston plug required			18	22	28	30	35

Static and quasi-static resistance (for a single anchor)

All data in this section subject to:

- Correct setting (see setting instructions).
- No edge distance and spacing influence.
- Standard embedment depth ($h_{ef,calc}$), as specified in the 'Installation Dimensions' table.
- Concrete C20/25, $f_{ck,cube}$ = 25 N/mm².
- Temperature range I: (max. long/short term temperature +50°C/+80°C).
- Shear loads are calculated without the influence of a lever arm.
- Recommended loads are with overal partial safety factor for action γ_G = 1,4.
  The partial safety factors for action depend on the type of loading and shall be taken from national regulations.
- Increasing factors for concrete ψ_c: C25/30 = **1,02** C30/37 = **1,04** C35/45 = **1,07** C40/50 = **1,08** C45/55 = **1,09** C50/60 = **1,10**



Design Resistance Dry/Wet Holes (Compressed Air Cleaning)

Steel Decisive

Non-Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{Rd}	[kN]	12,0	19,3	28,0	47,1	74,6	102,5	133,1	157,7
	Shear	V_{Rd}	[kN]	7,2	12,0	16,8	31,2	48,8	70,4	92,0	112,0
Steel 8.8	Tensile	N_{Rd}	[kN]	19,3	28,7	38,8	47,1	74,6	102,5	133,1	157,7
	Shear	V_{Rd}	[kN]	12,0	18,4	27,2	50,4	78,4	112,8	147,2	179,2
A4-50	Tensile	N_{Rd}	[kN]	6,3	10,1	14,7	27,6	43,0	61,9	80,4	98,3
	Shear	V_{Rd}	[kN]	3,8	6,3	8,8	16,4	25,6	37,0	48,3	58,8
A4-70	Tensile	N_{Rd}	[kN]	13,9	21,9	31,6	47,1	74,6	102,5	-	-
	Shear	V_{Rd}	[kN]	8,3	12,8	19,2	35,3	55,1	79,5	-	-

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{Rd}	[kN]	9,4	14,1	22,1	33,5	53,2	73,0	94,9	112,4
	Shear	V_{Rd}	[kN]	7,2	12,0	16,8	31,2	48,8	70,4	92,0	112,0
Steel 8.8	Tensile	N_{Rd}	[kN]	9,4	14,1	22,1	33,5	53,2	73,0	94,9	112,4
	Shear	V_{Rd}	[kN]	12,0	18,4	27,2	50,4	78,4	112,8	147,2	179,2
A4-50	Tensile	N_{Rd}	[kN]	6,3	10,1	14,7	27,6	43,0	61,9	80,4	98,3
	Shear	V_{Rd}	[kN]	3,8	6,3	8,8	16,4	25,6	37,0	48,3	58,8
A4-70	Tensile	N_{Rd}	[kN]	9,4	14,1	22,1	33,5	53,2	73,0	-	-
	Shear	V_{Rd}	[kN]	8,3	12,8	19,2	35,3	55,1	79,5	-	-

Design Resistance Dry/Wet Holes (Hollow Drilling)

Steel Decisive

Non-Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{Rd}	[kN]	12,0	19,3	28,0	39,2	62,2	85,4	110,9	131,4
	Shear	V_{Rd}	[kN]	7,2	12,0	16,8	31,2	48,8	70,4	92,0	112,0
Steel 8.8	Tensile	N_{Rd}	[kN]	19,0	24,0	32,4	39,2	62,2	85,4	110,9	131,4
	Shear	V_{Rd}	[kN]	12,0	18,4	27,2	50,4	78,4	112,8	147,2	179,2
A4-50	Tensile	N_{Rd}	[kN]	6,3	10,1	14,7	27,6	43,0	61,9	80,4	98,3
	Shear	V_{Rd}	[kN]	3,8	6,3	8,8	16,4	25,6	37,0	48,3	58,8
A4-70	Tensile	N_{Rd}	[kN]	13,9	21,9	31,6	39,2	62,2	85,4	-	-
	Shear	V_{Rd}	[kN]	8,3	12,8	19,2	35,3	55,1	79,5	-	-

Design Resistance Dry/Wet Holes (Hollow Drilling, Cont'd)

Steel Decisive

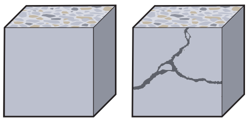
Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{Rd}	[kN]	7,8	11,8	18,4	28,0	44,3	60,9	79,1	93,7
	Shear	V_{Rd}	[kN]	7,2	12,0	16,8	31,2	48,8	70,4	92,0	112,0
Steel 8.8	Tensile	N_{Rd}	[kN]	7,8	11,8	18,4	28,0	44,3	60,9	79,1	93,7
	Shear	V_{Rd}	[kN]	12,0	18,4	27,2	50,4	78,4	112,8	147,2	179,2
A4-50	Tensile	N_{Rd}	[kN]	6,3	10,1	14,7	27,6	43,0	60,9	79,1	93,7
	Shear	V_{Rd}	[kN]	3,8	6,3	8,8	16,4	25,6	37,0	48,3	58,8
A4-70	Tensile	N_{Rd}	[kN]	7,8	11,8	18,4	28,0	44,3	60,9	-	-
	Shear	V_{Rd}	[kN]	8,3	12,8	19,2	35,3	55,1	79,5	-	-

Design Resistance Flooded Holes

Steel Decisive

Non-Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{Rd}	[kN]	12,0	19,3	27,7	33,6	53,3	73,2	95,1	112,7
	Shear	V_{Rd}	[kN]	7,2	12,0	16,8	31,2	48,8	70,4	92,0	112,0
Steel 8.8	Tensile	N_{Rd}	[kN]	16,3	20,5	27,7	33,6	53,3	73,2	95,1	112,7
	Shear	V_{Rd}	[kN]	12,0	18,4	27,2	50,4	78,4	112,8	147,2	179,2
A4-50	Tensile	N_{Rd}	[kN]	6,3	10,1	14,7	27,6	43,0	61,9	80,4	98,3
	Shear	V_{Rd}	[kN]	3,8	6,3	8,8	16,4	25,6	37,0	48,3	58,8
A4-70	Tensile	N_{Rd}	[kN]	13,9	20,5	27,7	33,6	53,3	73,2	-	-
	Shear	V_{Rd}	[kN]	8,3	12,8	19,2	35,3	55,1	79,5	-	-

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{Rd}	[kN]	6,7	10,1	15,8	24,0	38,0	52,2	67,8	80,3
	Shear	V_{Rd}	[kN]	7,2	12,0	16,8	31,2	48,8	70,4	92,0	112,0
Steel 8.8	Tensile	N_{Rd}	[kN]	6,7	10,1	15,8	24,0	38,0	52,2	67,8	80,3
	Shear	V_{Rd}	[kN]	12,0	18,4	27,2	50,4	78,4	112,8	147,2	179,2
A4-50	Tensile	N_{Rd}	[kN]	6,3	10,1	14,7	24,0	38,0	52,2	67,8	80,3
	Shear	V_{Rd}	[kN]	3,8	6,3	8,8	16,4	25,6	37,0	48,3	58,8
A4-70	Tensile	N_{Rd}	[kN]	6,7	10,1	15,8	24,0	38,0	52,2	-	-
	Shear	V_{Rd}	[kN]	8,3	12,8	19,2	35,3	55,1	79,5	-	-



Recommended Loads Dry/Wet Holes (Compressed Air Cleaning)

Non-Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{rec}	[kN]	8,6	13,8	20,0	33,6	53,3	73,2	95,1	112,7
	Shear	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9	50,3	65,7	80,0
Steel 8.8	Tensile	N_{rec}	[kN]	13,8	20,5	27,7	33,6	53,3	73,2	95,1	112,7
	Shear	V_{rec}	[kN]	8,6	13,1	19,4	36,0	56,0	80,6	105,1	128,0
A4-50	Tensile	N_{rec}	[kN]	4,5	7,2	10,5	19,7	30,7	44,2	57,4	70,2
	Shear	V_{rec}	[kN]	2,7	4,5	6,3	11,7	18,3	26,4	34,5	42,0
A4-70	Tensile	N_{rec}	[kN]	9,9	15,7	22,5	33,6	53,3	73,2	-	-
	Shear	V_{rec}	[kN]	6,0	9,2	13,7	25,2	39,4	56,8	-	-

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{rec}	[kN]	6,7	10,1	15,8	24,0	38,0	52,2	67,8	80,3
	Shear	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9	50,3	65,7	80,0
Steel 8.8	Tensile	N_{rec}	[kN]	6,7	10,1	15,8	24,0	38,0	52,2	67,8	80,3
	Shear	V_{rec}	[kN]	8,6	13,1	19,4	36,0	56,0	80,6	105,1	128,0
A4-50	Tensile	N_{rec}	[kN]	4,5	7,2	10,5	19,7	30,7	44,2	57,4	70,2
	Shear	V_{rec}	[kN]	2,7	4,5	6,3	11,7	18,3	26,4	34,5	42,0
A4-70	Tensile	N_{rec}	[kN]	6,7	10,1	15,8	24,0	38,0	52,2	-	-
	Shear	V_{rec}	[kN]	6,0	9,2	13,7	25,2	39,4	56,8	-	-

Recommended Loads Dry/Wet Holes (Hollow Drilling)

Non-Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{rec}	[kN]	8,6	13,8	20,0	28,0	44,4	61,0	79,2	93,9
	Shear	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9	50,3	65,7	80,0
Steel 8.8	Tensile	N_{rec}	[kN]	13,6	17,1	23,1	28,0	44,4	61,0	79,2	93,9
	Shear	V_{rec}	[kN]	8,6	13,1	19,4	36,0	56,0	80,6	105,1	128,0
A4-50	Tensile	N_{rec}	[kN]	4,5	7,2	10,5	19,7	30,7	44,2	57,4	70,2
	Shear	V_{rec}	[kN]	2,7	4,5	6,3	11,7	18,3	26,4	34,5	42,0
A4-70	Tensile	N_{rec}	[kN]	9,9	15,7	22,5	28,0	44,4	61,0	-	-
	Shear	V_{rec}	[kN]	6,0	9,2	13,7	25,2	39,4	56,8	-	-

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{rec}	[kN]	5,6	8,4	13,2	20,0	31,7	43,5	56,5	66,9
	Shear	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9	50,3	65,7	80,0
Steel 8.8	Tensile	N_{rec}	[kN]	5,6	8,4	13,2	20,0	31,7	43,5	56,5	66,9
	Shear	V_{rec}	[kN]	8,6	13,1	19,4	36,0	56,0	80,6	105,1	128,0
A4-50	Tensile	N_{rec}	[kN]	4,5	7,2	10,5	19,7	30,7	43,5	56,5	66,9
	Shear	V_{rec}	[kN]	2,7	4,5	6,3	11,7	18,3	26,4	34,5	42,0
A4-70	Tensile	N_{rec}	[kN]	5,6	8,4	13,2	20,0	31,7	43,5	-	-
	Shear	V_{rec}	[kN]	6,0	9,2	13,7	25,2	39,4	56,8	-	-

Recommended Loads Flooded Holes

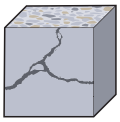
Non-Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{rec}	[kN]	8,6	13,8	19,8	24,0	38,1	52,3	67,9	80,5
	Shear	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9	50,3	65,7	80,0
Steel 8.8	Tensile	N_{rec}	[kN]	11,6	14,7	19,8	24,0	38,1	52,3	67,9	80,5
	Shear	V_{rec}	[kN]	8,6	13,1	19,4	36,0	56,0	80,6	105,1	128,0
A4-50	Tensile	N_{rec}	[kN]	4,5	7,2	10,5	19,7	30,7	44,2	57,4	70,2
	Shear	V_{rec}	[kN]	2,7	4,5	6,3	11,7	18,3	26,4	34,5	42,0
A4-70	Tensile	N_{rec}	[kN]	9,9	14,7	19,8	24,0	38,1	52,3	-	-
	Shear	V_{rec}	[kN]	6,0	9,2	13,7	25,2	39,4	56,8	-	-

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	N_{rec}	[kN]	4,8	7,2	11,3	17,1	27,1	37,3	48,4	57,4
	Shear	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9	50,3	65,7	80,0
Steel 8.8	Tensile	N_{rec}	[kN]	4,8	7,2	11,3	17,1	27,1	37,3	48,4	57,4
	Shear	V_{rec}	[kN]	8,6	13,1	19,4	36,0	56,0	80,6	105,1	128,0
A4-50	Tensile	N_{rec}	[kN]	4,5	7,2	10,5	17,1	27,1	37,3	48,4	57,4
	Shear	V_{rec}	[kN]	2,7	4,5	6,3	11,7	18,3	26,4	34,5	42,0
A4-70	Tensile	N_{rec}	[kN]	4,8	7,2	11,3	17,1	27,1	37,3	-	-
	Shear	V_{rec}	[kN]	6,0	9,2	13,7	25,2	39,4	56,8	-	-

Seismic resistance (for a single anchor)

All data in this section subject to:

- Correct setting (see setting instructions).
- No edge distance and spacing influence.
- Standard embedment depth ($h_{ef,calc}$), as specified in the 'Installation Dimensions' table.
- Concrece C20/25, $f_{ck,cube}$ = 25 N/mm².
- Temperature range I: (max. long/short term temperature +50°C/+80°C).
- Shear loads are calculated without the influence of a lever arm.
- α_{gap} = 1,0 (using special filling washer according ETA-19/0131 Annex A 3).
- Increasing factors for concrete ψ_c: C25/30 to C50/60 = **1,0**



Design Resistance Dry/Wet Holes in case of seismic performance category C1 (Compressed Air Cleaning)

Steel Decisive

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	$N_{Rd,eq,C1}$	[kN]	9,4	14,1	22,1	28,5	45,2	62,1	80,6	95,6
	Shear	$V_{Rd,eq,C1}$	[kN]	5,0	8,4	11,8	21,8	34,2	49,3	64,4	78,4
Steel 8.8	Tensile	$N_{Rd,eq,C1}$	[kN]	9,4	14,1	22,1	28,5	45,2	62,1	80,6	95,6
	Shear	$V_{Rd,eq,C1}$	[kN]	8,4	12,9	19,0	35,3	54,9	79,0	103,0	125,4
A4-50	Tensile	$N_{Rd,eq,C1}$	[kN]	6,3	10,1	14,7	27,6	43,0	61,9	80,4	95,6
	Shear	$V_{Rd,eq,C1}$	[kN]	2,6	4,4	6,2	11,5	17,9	25,9	33,8	41,2
A4-70	Tensile	$N_{Rd,eq,C1}$	[kN]	9,4	14,1	22,1	28,5	45,2	62,1	-	-
	Shear	$V_{Rd,eq,C1}$	[kN]	5,8	9,0	13,5	24,7	38,6	55,6	-	-

Design Resistance Dry/Wet Holes in case of seismic performance category C1 (Hollow Drilling)

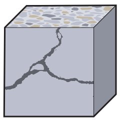
Steel Decisive

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	$N_{Rd,eq,C1}$	[kN]	7,8	11,8	18,4	23,8	37,7	51,7	67,2	79,7
	Shear	$V_{Rd,eq,C1}$	[kN]	5,0	8,4	11,8	21,8	34,2	49,3	64,4	78,4
Steel 8.8	Tensile	$N_{Rd,eq,C1}$	[kN]	7,8	11,8	18,4	23,8	37,7	51,7	67,2	79,7
	Shear	$V_{Rd,eq,C1}$	[kN]	8,4	12,9	19,0	35,3	54,9	79,0	103,0	125,4
A4-50	Tensile	$N_{Rd,eq,C1}$	[kN]	6,3	10,1	14,7	23,8	37,7	51,7	67,2	79,7
	Shear	$V_{Rd,eq,C1}$	[kN]	2,6	4,4	6,2	11,5	17,9	25,9	33,8	41,2
A4-70	Tensile	$N_{Rd,eq,C1}$	[kN]	7,8	11,8	18,4	23,8	37,7	51,7	-	-
	Shear	$V_{Rd,eq,C1}$	[kN]	5,8	9,0	13,5	24,7	38,6	55,6	-	-

Design Resistance Flooded Holes in case of seismic performance category C1

Steel Decisive

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 5.8	Tensile	$N_{Rd,eq,C1}$	[kN]	6,7	10,1	15,8	20,4	32,3	44,3	57,6	68,3
	Shear	$V_{Rd,eq,C1}$	[kN]	5,0	8,4	11,8	21,8	34,2	49,3	64,4	78,4
Steel 8.8	Tensile	$N_{Rd,eq,C1}$	[kN]	6,7	10,1	15,8	20,4	32,3	44,3	57,6	68,3
	Shear	$V_{Rd,eq,C1}$	[kN]	8,4	12,9	19,0	35,3	54,9	79,0	103,0	125,4
A4-50	Tensile	$N_{Rd,eq,C1}$	[kN]	6,3	10,1	14,7	20,4	32,3	44,3	57,6	68,3
	Shear	$V_{Rd,eq,C1}$	[kN]	2,6	4,4	6,2	11,5	17,9	25,9	33,8	41,2
A4-70	Tensile	$N_{Rd,eq,C1}$	[kN]	6,7	10,1	15,8	20,4	32,3	44,3	-	-
	Shear	$V_{Rd,eq,C1}$	[kN]	5,8	9,0	13,5	24,7	38,6	55,6	-	-



Design Resistance Dry/Wet Holes in case of seismic performance category C2 (Compressed Air Cleaning)

Steel Decisive

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 8.8	Tensile	$N_{Rd,eq,C2}$	[kN]	-	-	10,0	14,7	23,5	24,3	-	-
	Shear	$V_{Rd,eq,C2}$	[kN]	-	-	16,9	24,9	39,9	41,3	-	-
A4-70	Tensile	$N_{Rd,eq,C2}$	[kN]	-	-	10,0	14,7	23,5	24,3	-	-
	Shear	$V_{Rd,eq,C2}$	[kN]	-	-	13,5	24,7	38,6	41,3	-	-

Design Resistance Dry/Wet Holes in case of seismic performance category C2 (Hollow Drilling)

Steel Decisive

Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 8.8	Tensile	$N_{Rd,eq,C2}$	[kN]	-	-	8,3	12,2	19,6	20,2	-	-
	Shear	$V_{Rd,eq,C2}$	[kN]	-	-	16,9	24,9	39,9	41,3	-	-
A4-70	Tensile	$N_{Rd,eq,C2}$	[kN]	-	-	8,3	12,2	19,6	20,2	-	-
	Shear	$V_{Rd,eq,C2}$	[kN]	-	-	13,5	24,7	38,6	41,3	-	-

Design Resistance Flooded Holes in case of seismic performance category C2

Steel Decisive

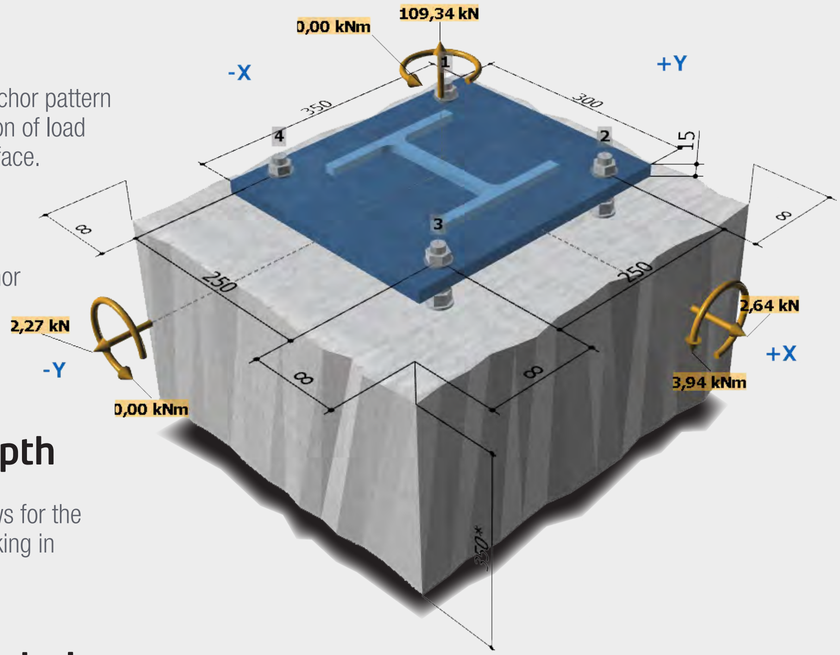
Cracked Concrete		Da		M8	M10	M12	M16	M20	M24	M27	M30
Steel 8.8	Tensile	$N_{Rd,eq,C2}$	[kN]	-	-	7,1	10,5	16,8	17,3	-	-
	Shear	$V_{Rd,eq,C2}$	[kN]	-	-	16,9	24,9	39,9	41,3	-	-
A4-70	Tensile	$N_{Rd,eq,C2}$	[kN]	-	-	7,1	10,5	16,8	17,3	-	-
	Shear	$V_{Rd,eq,C2}$	[kN]	-	-	13,5	24,7	38,6	41,3	-	-

Free Anchor Design Software for Structural Safety!

B+BTec DesignFiX® Anchor Design made Easy!

Input Freedom & 3D User Interface

B+BTEC DesignFiX® offers complete freedom to select an anchor pattern and base plate configuration, as well as the position and direction of load combinations. Changes are made directly into the 3D user interface.

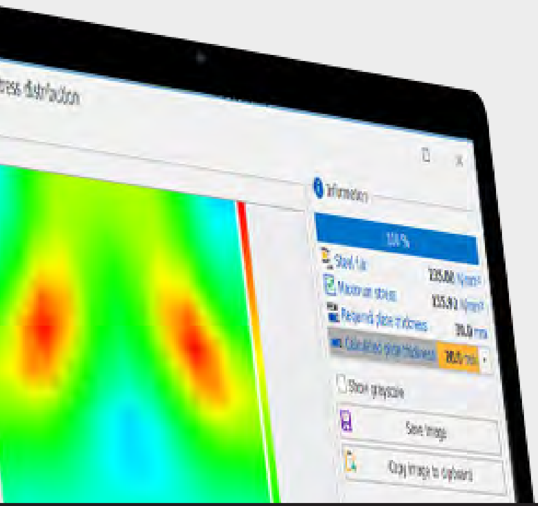


Anchor Type Comparison

B+BTEC DesignFiX® displays the usability of the various anchor types (according to ETAG-001, Annex A, TR029), including the values for each load type. This allows you to compare the calculation results of the different anchor types in a single easy to read panel.

Calculation Effective Anchorage Depth

When selecting an Injection Mortar **B+BTEC DesignFiX®** allows for the automatic calculation of the most effective anchorage depth, taking in consideration the minimal and maximum values of the ETA.



Calculation Base Plate Thickness

The integrated FEM-Calculation Method (Finite Element Method) in **B+BTEC DesignFiX®** allows you to calculate the base plate thickness based upon the stresses in the base plate in combination with the base plate configuration.

B+BTec DesignFiX®

Look for this logo on bbtectools.com for Anchor Compatibility

Get your Free Download Link on bbtectools.com

B+BTec

Munterij 8 • 4762 AH Zevenbergen • The Netherlands
T: +31 - 168 331 260 • E: info@bbtectools.com
bbtectools.com • bbtecshop.com