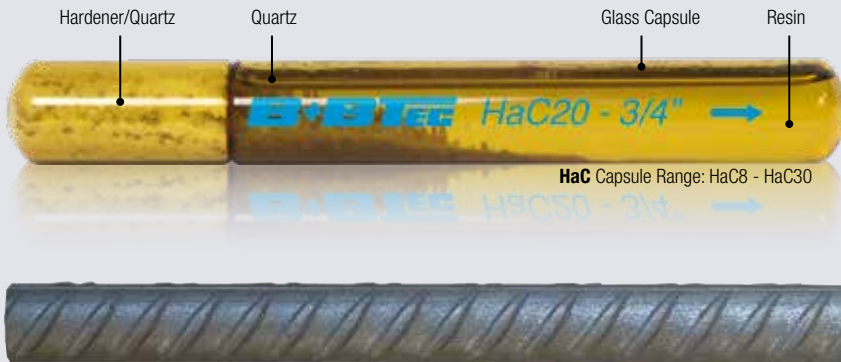


# Hammer Capsules

## Glass Capsule Anchor for Rebar Doweling in Non-Cracked Concrete



HaC Capsule Range: HaC8 - HaC30



### Use Conditions

- Installation in Non-Cracked Concrete C20/25 to C50/60 according to EN 206-1:2000-12
- 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.

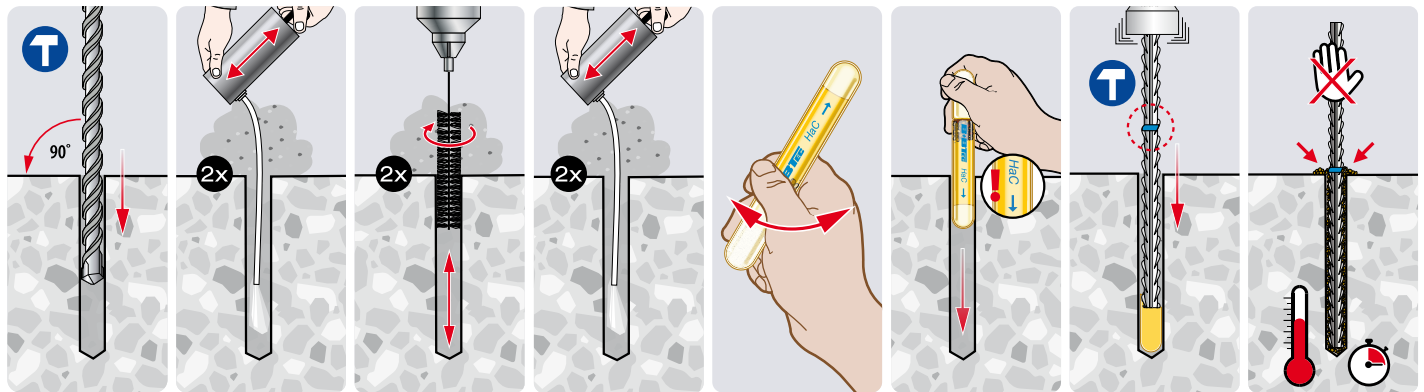
### Typical Applications

- Rebar Doweling

### Approvals & Test Reports



### Installation Procedures

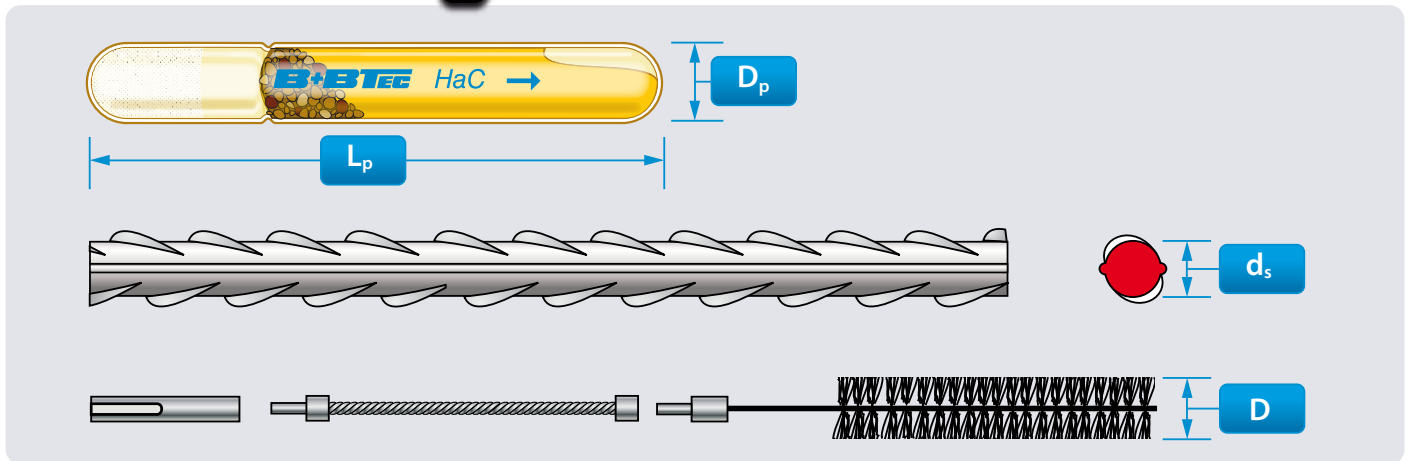


### Curing Times

Temperature <sup>1)</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

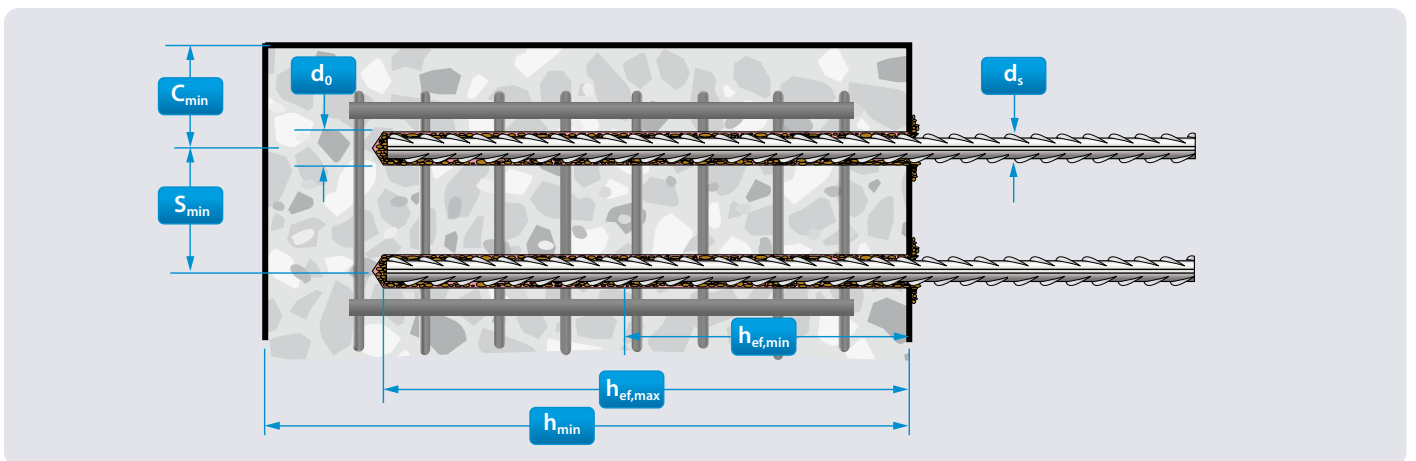
1) Concrete Temperature

# Hammer Capsules



## Product Dimensions

Rebar Size	Ds		8	10	12	14	16	20	25	32
Capsule Type	HaC	--	8	10	12	16	16	20	24	30
Capsule Diameter	Dp	[mm]	9	11	13	17	17	22	24	33
Capsule Length	Lp	[mm]	80	90	110	125	125	175	210	265
Capsule Volume	Vp	[mm]	4,0	6,4	11,0	22,0	22,0	52,0	75,0	190,0
Required Volume per cm Embedment Depth	Vs	[cc/cm]	0,28	0,54	0,64	1,00	1,13	1,77	2,16	4,46
Brush Diameter	D	[mm]	11	14	16	20	22	28	35	45
Min. Brush Diameter	Dmin	[mm]	10,5	13,5	15,5	18,5	20,5	25,5	30,5	38,5



## Installation Dimensions

Rebar Size	Ds		8	10	12	14	16	20	25	32
Hole Diameter	do	[mm]	10	13	15	18	20	25	30	38
Min. Embedment Depth	hef,min	[mm]	80	100	120	140	160	200	250	320
Min. Element Thickness	hmin	[mm]	110	130	150	180	200	250	310	400
Max. Embedment Depth	hef,max	[mm]	320	400	480	560	640	800	1000	1280
Min. Element Thickness	hmin	[Nm]	350	430	510	600	680	850	1060	1360

## Edge Distance & Spacing

Rebar Size	D <sub>s</sub>		8	10	12	14	16	20	25	32
Min. Edge Distance	<b>C<sub>min</sub></b>	[mm]	40	50	60	70	80	100	125	160
Min. Spacing	<b>S<sub>min</sub></b>	[mm]	40	50	60	70	80	100	125	160

## Performance Data<sup>1)</sup>

### Design Resistance

Steel Failure

Rebar Size	D <sub>s</sub>		8	10	12	14	16	20	25	32
Tensile Single Embedment	<b>N<sub>RK</sub></b>	[kN]	8,4	13,6	18,8	26,4	33,5	52,4	78,5	114,7
Tensile Double Embedment	<b>N<sub>RK</sub></b>	[kN]	16,8	27,2	37,7	52,8	67,0	104,7	163,6	234,6
Shear <sup>2)</sup> Single Embedment	<b>V<sub>RK</sub></b>	[kN]	9,1	14,3	20,5	28,0	36,5	57,1	89,2	146,1
Shear <sup>2)</sup> Double Embedment	<b>V<sub>RK</sub></b>	[kN]	9,1	14,3	20,5	28,0	36,5	57,1	89,2	146,1

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

Rebar Size	D <sub>s</sub>		8	10	12	14	16	20	25	32
Tensile Single Embedment	<b>N<sub>RK</sub></b>	[kN]	6,0	9,7	13,5	18,8	23,9	37,4	56,1	81,9
Tensile Double Embedment	<b>N<sub>RK</sub></b>	[kN]	12,0	19,4	26,9	37,7	47,9	74,8	116,9	167,6
Shear <sup>2)</sup> Single Embedment	<b>V<sub>RK</sub></b>	[kN]	6,5	10,2	14,7	20,0	26,1	40,8	63,7	104,4
Shear <sup>2)</sup> Double Embedment	<b>V<sub>RK</sub></b>	[kN]	6,5	10,2	14,7	20,0	26,1	40,8	63,7	104,4

1) All Loads in kN for a Single Dowel Bst500 B in Dry/Wet, Non-Cracked Concrete C20/25 without edge or spacing influences. Temperature Range 50°C/80°C for long/short term.

2) Steel strength in kN without bending moment. 3) Incl. Safety factor  $\gamma_G = 1,4$

# Free Anchor Design Software for Structural Safety!



## B+BTEC DesignFiX® Anchor Design made Easy!

### Input Freedom & 3D User Interface

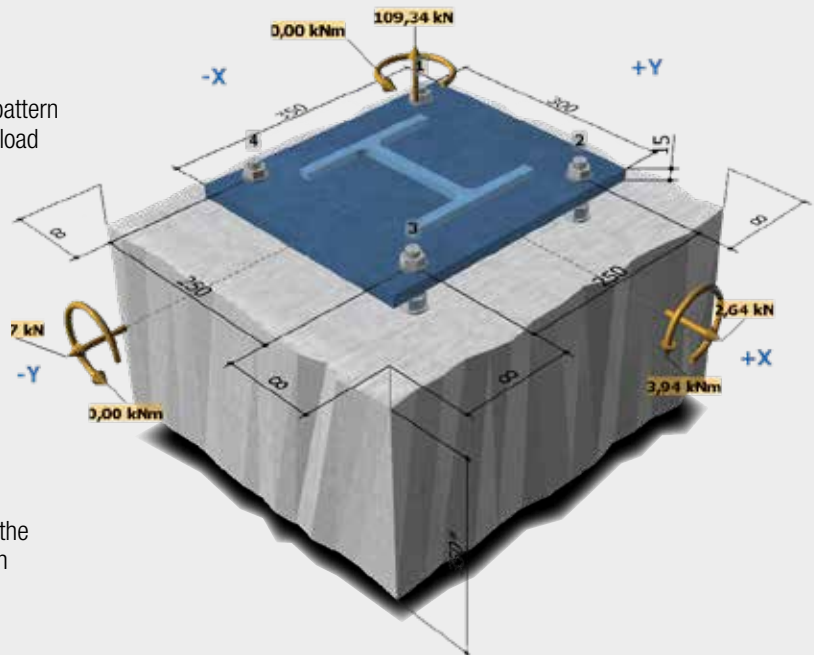
B+BTEC DesignFiX® offers complete freedom to select an anchor pattern and base plate configuration, as well as the position and direction of load combinations. Changes are made directly into the 3D user interface.

### Anchor Type Comparison

B+BTEC DesignFiX® displays the usability of the various anchor types (according to European directive ETAG 001 and EN 1992-4), including the values for static loads and under seismic influence. This allows you to compare the calculation results of the different anchor types in a single easy to read panel.

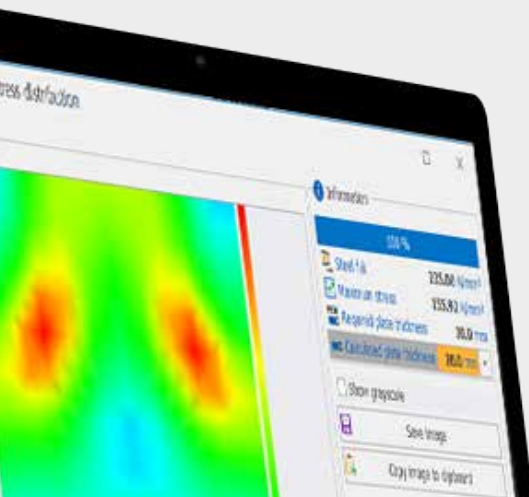
### Calculation Effective Anchorage Depth

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.



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