










Hilti HIT-RE 100 mortar with rebar (as anchor)

Injection mortar system	Benefits
 <p data-bbox="568 323 706 427">Hilti HIT-RE 100 330 ml, 500 ml and 1400 ml foil pack</p> <p data-bbox="568 486 669 507">Statik mixer</p> <p data-bbox="568 560 703 580">rebar BSt 500 S</p>	<ul style="list-style-type: none"> - suitable for non-cracked and cracked concrete C 20/25 to C 50/60 - high loading capacity - suitable for dry and water saturated concrete - large diameter applications - long working time at elevated temperatures - odourless epoxy - embedment depth range: from 60 ... 160 mm for Ø8 to 128 ... 640 mm for Ø32

<p>Base material</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Concrete (non-cracked)</p> </div> <div style="text-align: center;">  <p>Concrete (cracked)</p> </div> </div>	<p>Installation conditions</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Hammer drilled holes</p> </div> <div style="text-align: center;">  <p>Small edge distance and spacing</p> </div> <div style="text-align: center;">  <p>Variable embedment depth</p> </div> </div>
<p>Load conditions</p> <div style="text-align: center;">  <p>Static/quasi- static</p> </div>	<p>Other informations</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>European Technical Assessment</p> </div> <div style="text-align: center;">  <p>CE conformity</p> </div> </div>

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European Technical Assessment ⁽⁹⁾	DIBt, Berlin	ETA-15/0882 / 2016-04-22

Basic loading data (for a single anchor)

All data in this section applies to

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Steel failure
- Base material thickness, as specified in the table
- One typical embedment depth, as specified in the table
- One anchor material, as specified in the tables
- Concrete C 20/25, $f_{ck,cube} = 25 \text{ N/mm}^2$
- Temperature range I
(min. base material temperature -40°C , max. long term/short term base material temperature: $+24^\circ\text{C}/40^\circ\text{C}$)
- Installation temperature range $+5^\circ\text{C}$ to $+40^\circ\text{C}$

Embedment depth and base material thickness for the basic loading data

Anchor size	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Typical embedment depth [mm]	80	90	110	125	125	170	210	230	270	285	300
Base material thickness [mm]	110	120	140	161	165	220	274	294	340	359	380

a) The allowed range of embedment depth is shown in the setting details.

For hammer drilled holes:

Mean ultimate resistance

Anchor size	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Non cracked concrete											
Tensile $N_{R_{u,m}}$ BSt 500 S [kN]	29,4	45,2	65,1	87,6	93,7	148,6	204,0	233,9	297,4	322,6	348,4
Shear $V_{R_{u,m}}$ BSt 500 S [kN]	14,7	23,1	32,6	44,1	57,8	90,3	141,8	153,3	177,5	203,7	232,1
Cracked concrete											
Tensile $N_{R_{u,m}}$ BSt 500 S [kN]	-	26,3	38,5	47,4	54,2	85,1	131,4	137,2	173,4	196,1	220,2
Shear $V_{R_{u,m}}$ BSt 500 S [kN]	-	23,1	32,6	44,1	57,8	90,3	141,8	153,3	177,5	203,7	232,1

Characteristic resistance

Anchor size	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Non cracked concrete											
Tensile N_{R_k} BSt 500 S [kN]	28,0	39,6	58,1	66,0	70,6	111,9	153,7	176,2	224,0	243,0	262,4
Shear V_{R_k} BSt 500 S [kN]	14,0	22,0	31,0	42,0	55,0	86,0	135,0	146,0	169,0	194,0	221,0
Cracked concrete											
Tensile N_{R_k} BSt 500 S [kN]	-	19,8	29,0	35,7	40,8	64,1	99,0	103,3	130,6	147,7	165,9
Shear V_{R_k} BSt 500 S [kN]	-	22,0	31,0	42,0	55,0	86,0	135,0	146,0	169,0	194,0	221,0

Design resistance

Anchor size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Non cracked concrete													
Tensile N _{Rd}	BSt 500 S	[kN]	13,4	18,8	27,6	31,4	33,6	53,3	73,2	83,9	106,7	115,7	125,0
Shear V _{Rd}	BSt 500 S	[kN]	11,2	17,6	24,8	33,6	44,0	68,8	108,0	116,8	135,2	155,2	176,8
Cracked concrete													
Tensile N _{Rd}	BSt 500 S	[kN]	-	9,4	13,8	17,0	19,4	30,5	47,1	49,2	62,2	70,3	79,0
Shear V _{Rd}	BSt 500 S	[kN]	-	17,6	24,8	33,6	38,9	61,0	94,2	98,4	124,4	140,7	158,0

Recommended loads

Anchor size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Non cracked concrete													
Tensile N _{rec}	BSt 500 S	[kN]	9,6	13,5	19,7	22,4	24,0	38,1	52,3	59,9	76,2	82,6	89,3
Shear V _{rec}	BSt 500 S	[kN]	8,0	12,6	17,7	24,0	31,4	49,1	77,1	83,4	96,6	110,9	126,3
Cracked concrete													
Tensile N _{rec}	BSt 500 S	[kN]	-	6,7	9,9	12,2	13,9	21,8	33,7	35,1	44,4	50,2	56,4
Shear V _{rec}	BSt 500 S	[kN]	-	12,6	17,7	24,0	27,8	43,6	67,3	70,3	88,9	100,5	112,8

a) With overall partial safety factor for action $\gamma = 1,4$. The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

Service temperature range

Hilti HIT-RE 100 injection mortar may be applied in the temperature ranges given below. An elevated base material temperature may lead to a reduction of the design bond resistance.

Temperature range	Base material temperature	Maximum long term base material temperature	Maximum short term base material temperature
Temperature range I	-40 °C to +40 °C	+24 °C	+40 °C
Temperature range II	-40 °C to +58 °C	+35 °C	+58 °C
Temperature range III	-40 °C to +70 °C	+43 °C	+70 °C

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.

Max long term base material temperature

Long-term elevated base material temperatures are roughly constant over significant periods of time.

Materials

Anchor size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Nominal tensile strength f_{uk}	BSt 500 S	[N/mm ²]	550	550	550	550	550	550	550	550	550	550	550
Yield strength f_{yk}	BSt 500 S	[N/mm ²]	500	500	500	500	500	500	500	500	500	500	500
Stressed cross-section A_s	BSt 500 S	[mm ²]	50,3	78,5	113,1	153,9	201,1	314,2	490,9	531,0	615,8	707,0	804,2
Moment of resistance W	BSt 500 S	[mm ³]	50,3	98,2	169,6	269,4	402,1	785,4	1534	1726	2155	2651	3217

Material quality

Part	Material
rebar BSt 500 S	Geometry and mechanical properties according to DIN 488-2:1986 or E DIN 488-2:2006

Setting

Installation equipment

Anchor size	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø26	Ø28	Ø30	Ø32
Rotary hammer	TE 2 – TE 16						TE 40 – TE 70				
Other tools	compressed air gun or blow out pump, set of cleaning brushes, dispenser										