HIT-HY 100
INJECTION MORTAR

Technical Datasheet

Update: Jan-23

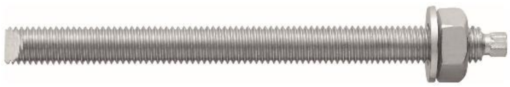
HIT-HY 100 injection mortar

Anchor design (EN 1992-4) / Rods and Sleeves / Concrete

Injection mortar system		Benefits

Hilti HIT-HY 100
330 ml foil pack

(also available as 500 ml foil pack)



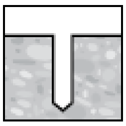
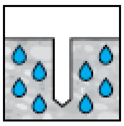
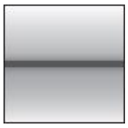
Anchor rods:
HAS-U
HAS-U HDG
HAS-U A4
HAS-U HCR
(M8-M30)

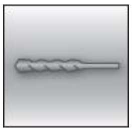
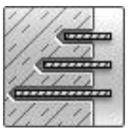
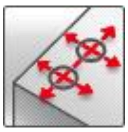
Internally threaded sleeve:
HIS-N
HIS-RN sleeves
(M8-M20)

a) Applications only with HAS-U anchor rods

Benefits

- Suitable for cracked [a] and non-cracked concrete C 20/25 to C 50/60
- High corrosion [a] / corrosion resistant
- Suitable for dry and water saturated concrete
- Small edge distance and anchor spacing possible
- In service temperature rangeup to 80°C short term / 50°C long term

Base material				Load conditions
				
Concrete (non-cracked)	Concrete (cracked) [a]	Dry concrete	Wet concrete	Static/ quasi-static

Installation conditions			Other informations			
						
Hammer drilling	Variable embedment depth	Small edge distance and spacing	European Technical Assessment	CE conformity	Corrosion resistance	High corrosion resistance

a) Applications only for HAS-U rods.

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical assessment [a]	CSTB, Marne-la-Vallèe	ETA-14/0009 / 2019-09-06

a) All data given in this section according to ETA-14/0009 issue 2019-09-06.

Static and quasi-static loading (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
- Embedment depth, as specified in the table
- Anchor material, as specified in the tables
- Concrete C 20/25, $f_{ck,cube}$ = 25 N/mm²
- In-service temperature range I
  (min. base material temperature -40ºC, max. long/short term base material temperature: +24ºC/+40ºC)

Embedment depth [a] and base material thickness

Anchor size			M8	M10	M12	M16	M20	M24	M27	M30
HAS-U										
Embedment depth	h_{ef}	[mm]	80	90	110	125	170	210	240	270
Base material thickness	h	[mm]	110	120	140	165	220	270	300	340
HIS-N										
Embedment depth	h_{ef}	[mm]	90	110	125	170	205	-	-	-
Base material thickness	h	[mm]	120	150	170	230	270	-	-	-

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

Characteristic resistance

Anchor size				M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete											
Tension	HAS-U 5.8	N_{Rk}	[kN]	18,3	29,0	42,2	68,8	109,0	149,7	182,9	216,2
	HAS-U 8.8			28,1	39,6	56,8	68,8	109,0	149,7	182,9	216,2
	HAS-U A4			25,6	39,6	56,8	68,8	109,0	149,7	182,9	216,2
	HAS-U HCR			28,1	39,6	56,8	68,8	109,0	149,7	182,9	216,2
	HIS-N 8.8			25,0	46,0	67,0	95,0	115,0	-	-	-
Shear	HAS-U 5.8	V_{Rk}	[kN]	9,2	14,5	21,1	39,3	61,3	88,3	114,8	140,3
	HAS-U 8.8			14,6	23,2	33,7	62,8	98,0	141,2	183,6	224,4
	HAS-U A4			12,8	20,3	29,5	55,0	85,8	123,6	114,8	140,3
	HAS-U HCR			14,6	23,2	33,7	62,8	98,0	123,6	160,7	196,4
	HIS-N 8.8			13,0	23,0	34,0	59,0	58,0	-	-	-
Cracked concrete											
Tension	HAS-U 5.8	N_{Rk}	[kN]	-	15,5	22,8	34,5	-	-	-	-
	HAS-U 8.8			-	15,5	22,8	34,5	-	-	-	-
	HAS-U A4			-	15,5	22,8	34,5	-	-	-	-
	HAS-U HCR			-	15,5	22,8	34,5	-	-	-	-
Shear	HAS-U 5.8	V_{Rk}	[kN]	-	14,5	21,1	39,3	-	-	-	-
	HAS-U 8.8			-	23,2	33,7	62,8	-	-	-	-
	HAS-U A4			-	20,3	29,5	55,0	-	-	-	-
	HAS-U HCR			-	23,2	33,7	62,8	-	-	-	-

Design resistance

Anchor size				M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete											
Tension	HAS-U 5.8	N_{Rd}	[kN]	12,2	19,3	28,1	38,2	60,6	83,2	101,6	120,1
	HAS-U 8.8			15,6	22,0	31,5	38,2	60,6	83,2	101,6	120,1
	HAS-U A4			13,7	21,7	31,5	38,2	60,6	83,2	80,2	98,1
	HAS-U HCR			15,6	22,0	31,5	38,2	60,6	83,2	101,6	120,1
	HIS-N 8.8			16,7	27,8	38,2	52,8	63,9	-	-	-
Shear	HAS-U 5.8	V_{Rd}	[kN]	7,3	11,6	16,9	31,4	49,0	70,6	91,8	112,2
	HAS-U 8.8			11,7	18,6	27,0	50,2	78,4	113,0	146,9	179,5
	HAS-U A4			8,2	13,0	18,9	35,2	55,0	79,2	48,2	58,9
	HAS-U HCR			11,7	18,6	27,0	50,2	78,4	70,6	91,8	112,2
	HIS-N 8.8			10,4	18,4	27,2	50,4	46,4	-	-	-
Cracked concrete											
Tension	HAS-U 5.8	N_{Rd}	[kN]	-	8,6	12,7	19,2	-	-	-	-
	HAS-U 8.8			-	8,6	12,7	19,2	-	-	-	-
	HAS-U A4			-	8,6	12,7	19,2	-	-	-	-
	HAS-U HCR			-	8,6	12,7	19,2	-	-	-	-
Shear	HAS-U 5.8	V_{Rd}	[kN]	-	11,6	16,9	31,4	-	-	-	-
	HAS-U 8.8			-	18,6	27,0	46,1	-	-	-	-
	HAS-U A4			-	13,0	18,9	35,2	-	-	-	-
	HAS-U HCR			-	18,6	27,0	46,1	-	-	-	-

Recommended loads [a)]

Anchor size				M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete											
Tension	HAS-U 5.8	N_{Rec}	[kN]	8,7	13,8	20,1	27,3	43,3	59,4	72,6	85,8
	HAS-U 8.8			11,2	15,7	22,5	27,3	43,3	59,4	72,6	85,8
	HAS-U A4			9,8	15,5	22,5	27,3	43,3	59,4	57,3	70,1
	HAS-U HCR			11,2	15,7	22,5	27,3	43,3	59,4	72,6	85,8
	HIS-N 8.8			11,9	19,8	27,3	37,7	45,6	-	-	-
Shear	HAS-U 5.8	V_{Rec}	[kN]	5,2	8,3	12,0	22,4	35,0	50,4	65,6	80,1
	HAS-U 8.8			8,4	13,3	19,3	35,9	56,0	80,7	104,9	128,2
	HAS-U A4			5,9	9,3	13,5	25,2	39,3	56,6	34,4	42,1
	HAS-U HCR			8,4	13,3	19,3	35,9	56,0	50,4	65,6	80,1
	HIS-N 8.8			7,4	13,1	19,4	36,0	33,1	-	-	-
Cracked concrete											
Tension	HAS-U 5.8	N_{Rec}	[kN]	-	6,2	9,0	13,7	-	-	-	-
	HAS-U 8.8			-	6,2	9,0	13,7	-	-	-	-
	HAS-U A4			-	6,2	9,0	13,7	-	-	-	-
	HAS-U HCR			-	6,2	9,0	13,7	-	-	-	-
Shear	HAS-U 5.8	V_{Rec}	[kN]	-	8,3	12,0	22,4	-	-	-	-
	HAS-U 8.8			-	13,3	19,3	32,9	-	-	-	-
	HAS-U A4			-	9,3	13,5	25,2	-	-	-	-
	HAS-U HCR			-	13,3	19,3	32,9	-	-	-	-

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

Materials

Mechanical properties for HAS-U

Anchor size				M8	M10	M12	M16	M20	M24	M27	M30
Nominal tensile strength	HAS-U 5.8	f_{uk}	[N/mm²]	500	500	500	500	500	500	500	500
	HAS-U 8.8			800	800	800	800	800	800	800	800
	HAS-U A4			700	700	700	700	700	700	500	500
	HAS-U HCR			800	800	800	800	800	700	700	700
Yield strength	HAS-U 5.8	f_{yk}	[N/mm²]	400	400	400	400	400	400	400	400
	HAS-U 8.8			640	640	640	640	640	640	640	640
	HAS-U A4			450	450	450	450	450	450	210	210
	HAS-U HCR			640	640	640	640	640	400	400	400
Stressed cross-section	HAS-U	A_s	[mm²]	36,6	58,0	84,3	157	245	353	459	561
Moment of resistance	HAS-U	W	[mm³]	31,2	62,3	109	277	541	935	1387	1874

Material quality for HAS-U

Part	Material
Zinc coated steel	
Threaded rod, HAS-U 5.8 (HDG)	Strength class 5.8; Elongation at fracture A5 > 8% ductile Electroplated zinc coated ≥ 5µm; (HDG) hot dip galvanized ≥ 45 µm
Threaded rod, HAS-U 8.8 (HDG)	Strength class 8.8; Elongation at fracture A5 > 12% ductile Electroplated zinc coated ≥ 5µm; (HDG) hot dip galvanized ≥ 45 µm
Washer	Electroplated zinc coated ≥ 5 µm, hot dip galvanized ≥ 45 µm
Nut	Strength class of nut adapted to strength class of threaded rod. Electroplated zinc coated ≥ 5µm, hot dip galvanized ≥ 45 µm
Stainless Steel	
Threaded rod, HAS-U A4	Strength class 70 for ≤ M24 and strength class 50 for > M24 Elongation at fracture A5 > 8% ductile Stainless steel 1.4401; 1.4404; 1.4578; 1.4571; 1.4439; 1.4362
Washer	Stainless steel 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362 EN 10088-1:2014
Nut	Stainless steel 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362 EN 10088-1:2014
High corrosion resistant steel	
Threaded rod, HAS-U HCR	Strength class 80 for ≤ M20 and class 70 for > M20, Elongation at fracture A5 > 8% ductile High corrosion resistance steel 1.4529; 1.4565;
Washer	High corrosion resistant steel 1.4529, 1.4565 EN 10088-1:2014
Nut	High corrosion resistant steel 1.4529, 1.4565 EN 10088-1:2014

Mechanical properties for HIS-N

Anchor size				M8	M10	M12	M16	M20
Nominal tensile strength	HIS-N	f_{uk}	[N/mm²]	490	490	460	460	460
	Screw 8.8			800	800	800	800	800
	HIS-RN			700	700	700	700	700
	Screw A4 - 70			700	700	700	700	700
Yield strength	HIS-N	f_{yk}	[N/mm²]	410	410	375	375	375
	Screw 8.8			640	640	640	640	640
	HIS-RN			350	350	350	350	350
	Screw A4 - 70			450	450	450	450	450
Stressed cross-section	HIS-(R)N	A_s	[mm²]	51,5	108,0	169,1	256,1	237,6
	Screw			36,6	58	84,3	157	245
Moment of resistance	HIS-(R)N	W	[mm³]	145	430	840	1595	1543
	Screw			31,2	62,3	109	277	541

Material quality for HIS-N

Part		Material
HIS-N	Internal threaded sleeve	C-steel 1.0718; Steel galvanized ≥ 5 µm
	Screw 8.8	Strength class 8.8, A5 > 8 % Ductile; Steel galvanized ≥ 5 µm
HIS-RN	Internal threaded sleeve	Stainless steel 1.4401,1.4571
	Screw 70	Strength class 70, A5 > 8 % Ductile Stainless steel 1.4401; 1.4404, 1.4578; 1.4571; 1.4439; 1.4362

Setting information

Installation temperature range:
-10°C to +40°C

In service temperature range
Hilti HIT-HY 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 + 80 °C	+ 50 °C	+ 80 °C

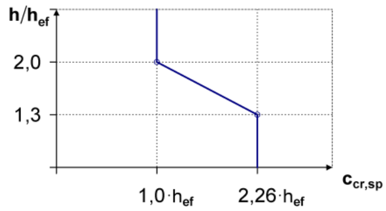
Maximum short term base material temperature
Short term elevated base material temperatures are those that occur over brief intervals, e.g. as a result of diurnal cycling.
Maximum long term base material temperature
Long term elevated base material temperatures are roughly constant over significant periods of time.

Working time and curing time [a)]

Temperature of the base material	Maximum working time	Minimum curing time
T_{BM}	t_{work}	t_{cure} [a)]
-10 °C < T_{BM} ≤ -5 °C [b)]	180 min	12 h
-5 °C < T_{BM} ≤ 0 °C	40 min	4 h
0 °C < T_{BM} ≤ 5 °C	20 min	2 h
5°C < T_{BM} ≤ 20 °C	8 min	1 h
20 °C < T_{BM} ≤ 30 °C	5 min	30 min
30 °C < T_{BM} ≤ 40 °C	2 min	30 min

a) The curing time data are valid for dry base material only. In wet base material the curing times must be doubled.
b) The foil pack temperature must be between 20ºC and 25ºC.

Setting details for HAS-U

Anchor size			M8	M10	M12	M16	M20	M24	M27	M30
Nominal diameter of element	d	[mm]	8	10	12	16	20	24	27	30
Nominal diameter of drill bit	d_0	[mm]	10	12	14	18	22	28	30	35
Maximum diameter of clearance hole in the fixture	df	[mm]	9	12	14	18	22	26	30	33
Effective anchorage depth (= drill hole depth) a)	$h_{ef,min} = h_0$	[mm]	60	60	70	80	90	100	110	120
	$h_{ef,max} = h_0$	[mm]	160	200	240	320	400	480	540	600
Minimum base material thickness b)	h_{min}	[mm]	$h_{ef} + 30 \geq 100$ mm			$h_{ef} + 2\ d_0$				
Maximum torque moment c)	T_{max}	[Nm]	10	20	40	80	150	200	270	300
Minimum spacing	s_{min}	[mm]	40	50	60	80	100	120	135	150
Minimum edge distance	c_{min}	[mm]	40	50	60	80	100	120	135	150
Critical spacing for splitting failure	$s_{cr,sp}$	[mm]	$2\ c_{cr,sp}$							
Critical edge distance for splitting failure	$c_{cr,sp}$	[mm]	**$1{,}0 \cdot h_{ef}$** for $h / h_{ef} \geq 2{,}0$							
			$4{,}6\ h_{ef} - 1{,}8\ h$ for $2{,}0 > h / h_{ef} > 1{,}3$							
			$2{,}26\ h_{ef}$ for $h / h_{ef} \leq 1{,}3$							
Critical spacing for concrete cone failure	$s_{cr,N}$	[mm]	$2\ c_{cr,N}$							
Critical edge distance for concrete cone failure d)	$c_{cr,N}$	[mm]	$1{,}5\ h_{ef}$							

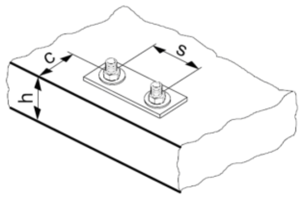
For spacing (edge distance) smaller than critical spacing (critical edge distance) the design loads have to be reduced.

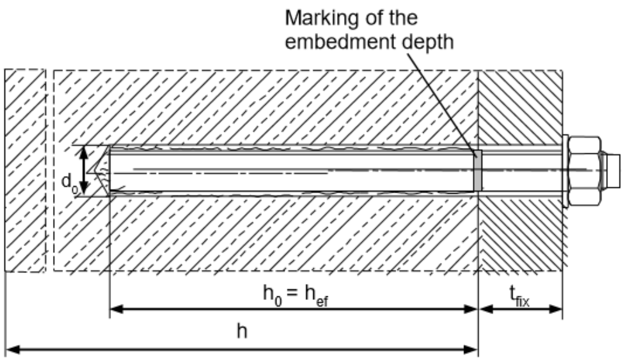
a) $h_{ef,min} \leq h_{ef} \leq h_{ef,max}$ (h_{ef}: embedment depth)

b) h: base material thickness ($h \geq h_{min}$)

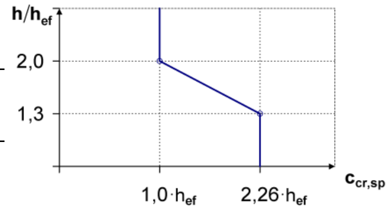
c) Maximum recommended torque moment to avoid splitting failure during installation with minimun spacing and/or edge distance.

d) The critical edge distance for concrete cone failure depends on the embedment depth h_{ef} and the design bond resistance. The simplified formula given in this table is on the save side.





Setting details for HIS-N

Anchor size			M8	M10	M12	M16	M20
Nominal diameter of element	d	[mm]	12,5	16,5	20,5	25,4	27,6
Nominal diameter of drill bit	d_0	[mm]	14	18	22	28	32
Effective anchorage depth (= drill hole depth) a)	$h_{ef} = h_0$	[mm]	90	110	125	170	205
Minimum base material thickness b)	h_{min}	[mm]	120	150	170	230	270
Maximum diameter of clearance hole in the fixture	d_f	[mm]	9	12	14	18	22
Thread engagement length min-max	h_s	[mm]	8-20	10-25	12-30	16-40	20-50
Torque moment c)	T_{max}	[Nm]	10	20	40	80	150
Minimum spacing	s_{min}	[mm]	40	45	55	65	90
Minimum edge distance	c_{min}	[mm]	40	45	55	65	90
Critical spacing for splitting failure	$s_{cr,sp}$	[mm]	$2\ c_{cr,sp}$				
Critical edge distance for splitting failure	$c_{cr,sp}$	[mm]	**$1{,}0 \cdot h_{ef}$** for $h / h_{ef} \geq 2{,}0$ **$4{,}6\ h_{ef} - 1{,}8\ h$** for $2{,}0 > h / h_{ef} > 1{,}3$ **$2{,}26\ h_{ef}$** for $h / h_{ef} \leq 1{,}3$				
Critical spacing for concrete cone failure	$s_{cr,N}$	[mm]	$2\ c_{cr,N}$				
Critical edge distance for concrete cone failure d)	$c_{cr,N}$	[mm]	$1{,}5\ h_{ef}$				

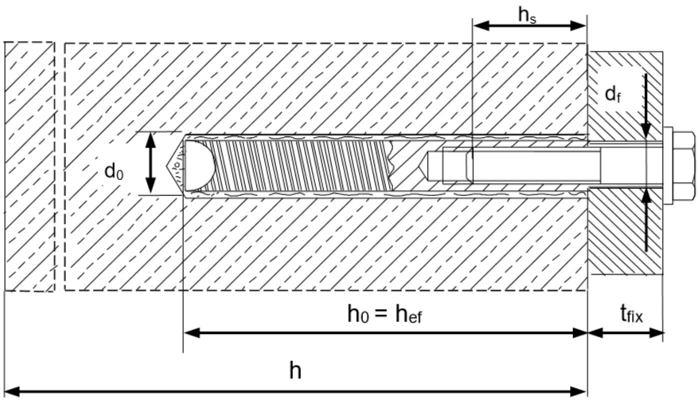
For spacing (edge distance) smaller than critical spacing (critical edge distance) the design loads have to be reduced.

a) $h_{ef,min} \leq h_{ef} \leq h_{ef,max}$ (h_{ef}: embedment depth)

b) h: base material thickness ($h \geq h_{min}$)

c) Maximum recommended torque moment to avoid splitting failure during installation with minimun spacing and/or edge distance.

d) The critical edge distance for concrete cone failure depends on the embedment depth h_{ef} and the design bond resistance. The simplified formula given in this table is on the save side.



Installation equipment

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30
Rotary hammer	HAS-U	TE 2 – TE 30				TE 40 – TE 80			
	HIS-N	TE 2 – TE 30		TE 40 – TE 80			-		
Other tools		Blow out pump ($h_{ef} \leq 10 \cdot d$), Compressed air gun, Set of cleaning brushes, dispenser, piston plug							

Drilling and cleaning parameters

HAS-U	HIS-N	Drill bit and round brush diameters [mm]		Installation
		Hammer drill	Brush HIT-RB	Piston plug HIT-SZ
				
M8	**-**	10	10	-
M10	**-**	12	12	12
M12	**M8**	14	14	14
M16	**M10**	18	18	18
-	**M12**	22	22	22
M20	**-**	24	24	24
M24	**M16**	28	28	28
M27	**-**	30	30	30
-	**M20**	32	32	32
M30	**-**	35	35	35

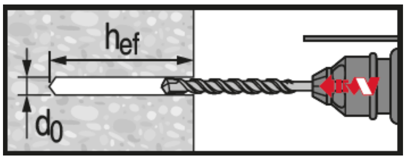
Setting instructions

***For detailed information on installation see instruction for use given with the package of the product.**

Safety regulations.

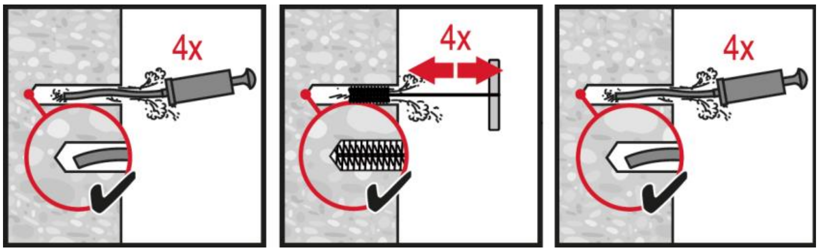
Review the Material Safety Data Sheet (MSDS) before use for proper and safe handling! Wear well-fitting protective goggles and protective gloves when working with Hilti HIT-HY 100.

Drilling

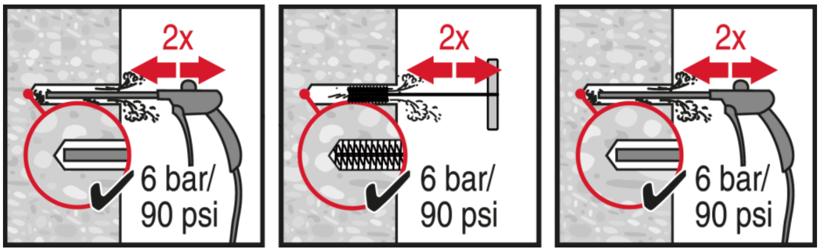


Hammer drilled hole (HD)

Cleaning

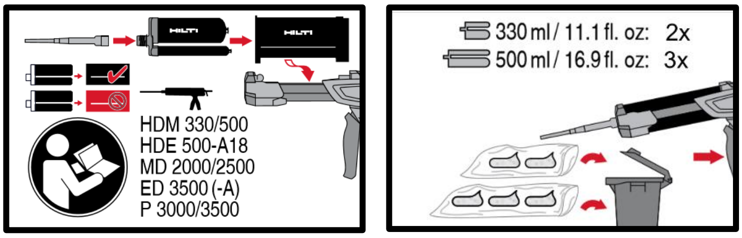


Manual cleaning (MC)
for drill diameters $d_0 \le 18$ mm and drill hole depth $h_0 \le 10 \cdot d$.

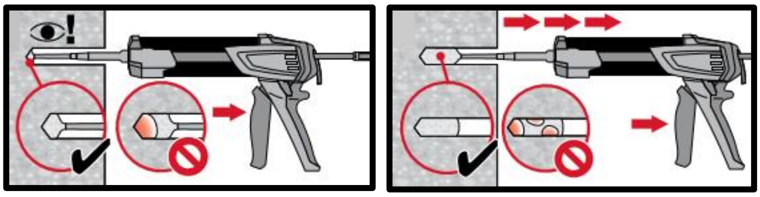


Compressed air cleaning (CAC)
for all drill hole diameters d_0 and drill hole depths h_0.

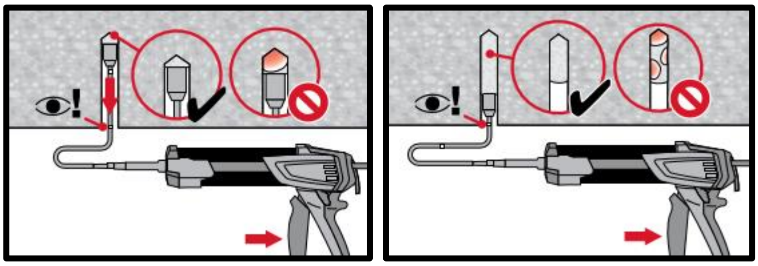
Injection system



Injection system preparation.

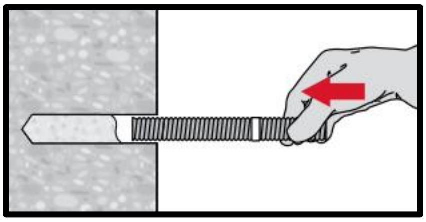
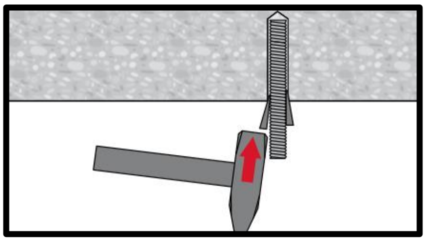
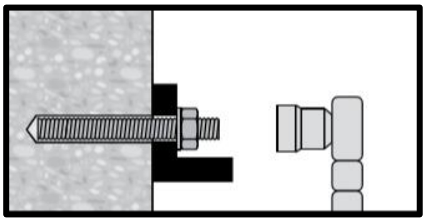


Injection method for drill hole depth $h_{ef} \le 250$ mm.



Injection method for overhead application and/or installation with embedment depth $h_{ef} > 250$ mm.

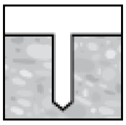
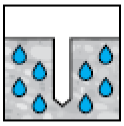
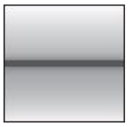
Setting the element

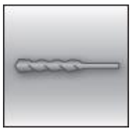
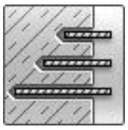
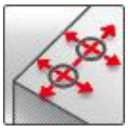
	**Setting element**, observe working time "t_{work}",
	**Setting element** for overhead applications, observe working time "t_{work}",
	**Loading the anchor**: After required curing time t_{cure} the anchor can be loaded.

HIT-HY 100 injection mortar

Anchor design (EN 1992-4) / Rebar elements / Concrete

Injection mortar system		Benefits
	Hilti HIT-HY 100 330 ml foil pack (also available as 500 ml foil pack)	- Suitable for cracked and non-cracked concrete C 20/25 to C 50/60 - Suitable for dry and water saturated concrete - Small edge distance and anchor spacing possible
	Rebar B500 B (ϕ8-ϕ25)	- In service temperature rangeup to 80°C short term / 50°C long term

Base material				Load conditions
				
Concrete (non-cracked)	Concrete (cracked)	Dry concrete	Wet concrete	Static/ quasi-static

Installation conditions			Other informations	
				
Hammer drilling	Variable embedment depth	Small edge distance and spacing	European Technical Assessment	CE conformity

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical assessment a)	CSTB, Marne-la-Vallèe	ETA-14/0009 / 2019-09-06

a) All data given in this section according to ETA-14/0009 issue 2019-09-06.

Static and quasi-static loading (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
- Embedment depth as specified in the table
- Anchor material as specified in the table
- Concrete C 20/25, $f_{ck,cube}$ = 25 N/mm²
- In-service temperate range I
  (min. base material temperature -40°C, max. long term/short term base material temperature: +24°C/40°C)

Embedment depth [a] and base material thickness

Anchor size			ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Embedment depth	h_{ef}	[mm]	80	90	110	125	145	170	210
Base material thickness	h	[mm]	110	120	140	165	185	220	274

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

Characteristic resistance

Anchor size				ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Non-cracked concrete										
Tensile	Rebar B500B	N_{Rk}	[kN]	19,1	26,9	39,4	52,2	69,2	101,5	149,7
Shear	Rebar B500B	V_{Rk}	[kN]	14,0	22,0	31,0	42,0	55,0	86,0	135,0
Cracked concrete										
Tensile	Rebar B500B	N_{Rk}	[kN]	-	15,6	22,8	30,2	40,1	-	-
Shear	Rebar B500B	V_{Rk}	[kN]	-	22,0	31,0	42,0	55,0	-	-

Deisng resistance

Anchor size				ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Non-cracked concrete										
Tensile	Rebar B500B	N_{Rd}	[kN]	10,6	14,9	21,9	29,0	38,5	56,4	83,2
Shear	Rebar B500B	V_{Rd}	[kN]	9,3	14,7	20,7	28,0	36,7	57,3	90,0
Cracked concrete										
Tensile	Rebar B500B	N_{Rd}	[kN]	-	8,6	12,7	16,8	22,3	-	-
Shear	Rebar B500B	V_{Rd}	[kN]	-	14,7	20,7	28,0	36,7	-	-

Recommended loads[a]

Anchor size				ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Non-cracked concrete										
Tensile	Rebar B500B	N_{Rec}	[kN]	7,6	10,7	15,6	20,7	27,5	40,3	59,4
Shear	Rebar B500B	V_{Rec}	[kN]	6,7	10,5	14,8	20,0	26,2	41,0	64,3
Cracked concrete										
Tensile	Rebar B500B	N_{Rec}	[kN]	-	6,2	9,1	12,0	15,9	-	-
Shear	Rebar B500B	V_{Rec}	[kN]	-	10,5	14,8	20,0	26,2	-	-

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

Materials

Mechanical properties

Anchor size			ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Nominal tensile strength	f_{uk}	[N/mm²]	550	550	550	550	550	550	550
Yield strength	f_{yk}	[N/mm²]	500	500	500	500	500	500	500
Stressed cross-section	A_s	[mm²]	50,3	78,5	113,1	153,9	201,1	314,2	490,9
Moment of resistance	W	[mm³]	50,3	98,2	169,6	269,4	402,1	785,4	1534

Material quality

Part	Material
Rebar B500 B	EN 1992-1-1:2004 and AC:2010, Annex C Bars and de-coiled rods Class B or C with f_{yk} and k according to NDP or NCL of EN 1992-1-1/NA:2013

Setting information

Installation temperature range:
-10°C to +40°C

In service temperature range
Hilti HIT-HY 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 + 80 °C	+ 50 °C	+ 80 °C

Maximum 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.

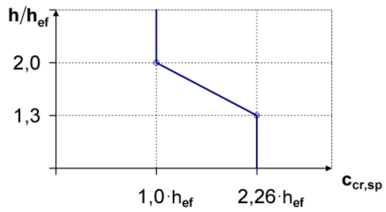
Maximum long term base material temperature
Long term elevated base material temperatures are roughly constant over significant periods of time.

Working time and curing time [a)]

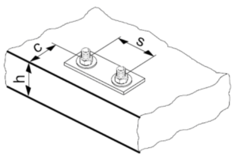
Temperature of the base material	Maximum working time	Minimum curing time
T_{BM}	t_{work}	t_{cure} [a)]
-10 °C < T_{BM} ≤ -5 °C [b)]	180 min	12 h
-5 °C < T_{BM} ≤ 0 °C	40 min	4 h
0 °C < T_{BM} ≤ 5 °C	20 min	2 h
5°C < T_{BM} ≤ 20 °C	8 min	1 h
20 °C < T_{BM} ≤ 30 °C	5 min	30 min
30 °C < T_{BM} ≤ 40 °C	2 min	30 min

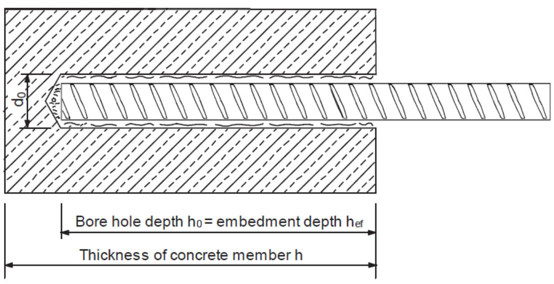
a) The curing time data are valid for dry base material only. In wet base material the curing times must be doubled.
b) The foil pack temperature must be between 20ºC and 25ºC.

Setting details

Anchor size			ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Nominal diameter of element	d	[mm]	8	10	12	14	16	20	25
Nominal diameter of drill bit a)	d_0	[mm]	10 (12)	12 (14)	14 (16)	18	20	25	30 (32)
Effective anchorage depth (= drill hole depth)	$h_{ef,min} = h_0$	[mm]	60	60	70	80	80	90	100
	$h_{ef,max} = h_0$	[mm]	160	200	240	280	320	400	500
Minimum base material thickness b)	h_{min}	[mm]	h_{ef} + 30 mm ≥ 100 mm		$h_{ef} + 2\ d_0$				
Minimum spacing	s_{min}	[mm]	40	50	60	70	80	100	125
Minimum edge distance	c_{min}	[mm]	40	50	60	70	80	100	125
Critical spacing for splitting failure	$s_{cr,sp}$	[mm]	$2\ c_{cr,sp}$						
Critical edge distance for splitting failure	$c_{cr,sp}$	[mm]	**$1{,}0 \cdot h_{ef}$** for $h / h_{ef} \geq 2{,}0$						
			$4{,}6\ h_{ef} - 1{,}8\ h$ for $2{,}0 > h / h_{ef} > 1{,}3$						
			$2{,}26\ h_{ef}$ for $h / h_{ef} \leq 1{,}3$						
Critical spacing for concrete cone failure	$s_{cr,N}$	[mm]	$2\ c_{cr,N}$						
Critical edge distance for concrete cone failure c)	$c_{cr,N}$	[mm]	$1{,}5\ h_{ef}$						

a) Both given values for drill bit diameter can be used
b) h: base material thickness ($h \geq h_{min}$), h_{ef}: embedment depth
c) The critical edge distance for concrete cone failure depends on the embedment depth h_{ef} and the design bond resistance. The simplified formula given in this table is on the save side. For spacing (edge distance) smaller than critical spacing (critical edge distance) the design loads have to be reduced.





Installation equipment

Anchor size	ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ25
Rotary hammer	TE 2 – TE 30					TE 40 – TE 70	
Other tools	Blow out pump ($h_{ef} \leq 10 \cdot d$), compressed air gun, set of cleaning brushes, dispenser						

Drilling and cleaning parameters

Rebar	Drilling and cleaning		Installation
	Hammer drilling (HD)	Brush HIT-RB	Piston plug HIT-SZ
	d_0 [mm]	size [mm]	size [mm]
			
ϕ8	10 / 12 [a)]	10 / 12 [a)]	- / 12
ϕ10	12 / 14 [a)]	12 / 14 [a)]	12 / 14 [a)]
ϕ12	14 / 16 [a)]	14 / 16 [a)]	14 / 16 [a)]
ϕ14	18	18	18
ϕ16	20	20	20
ϕ20	25	25	25
ϕ25	32	32	32

a) Each of the two given values can be used

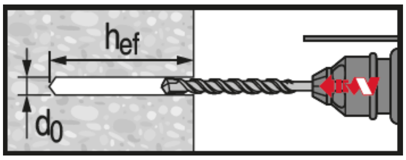
Setting instructions

***For detailed information on installation see instruction for use given with the package of the product.**

Safety regulations.

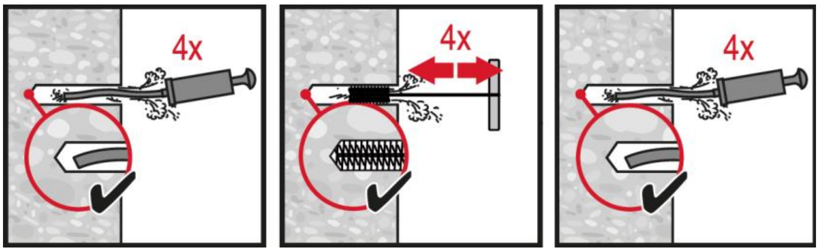
Review the Material Safety Data Sheet (MSDS) before use for proper and safe handling! Wear well-fitting protective goggles and protective gloves when working with Hilti HIT-HY 100.

Drilling

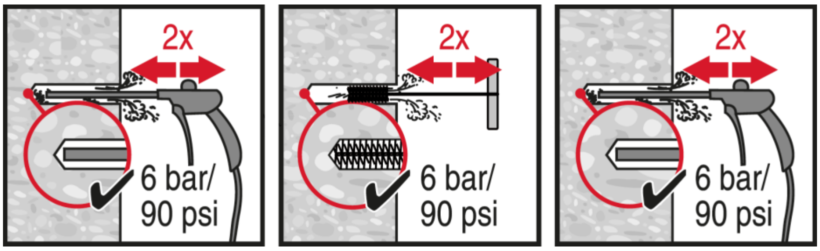


Hammer drilled hole (HD)

Cleaning

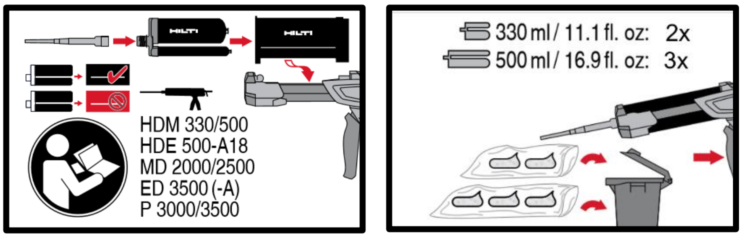


Manual cleaning (MC)
for drill diameters $d_0 \leq 18$ mm and drill hole depth $h_0 \leq 10 \cdot d$.

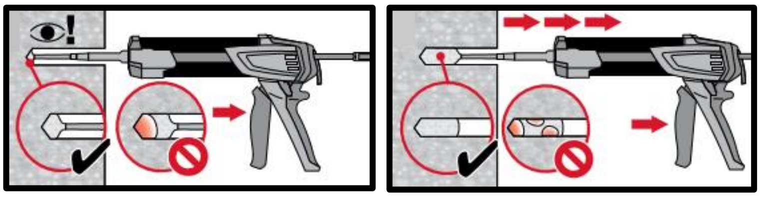


Compressed air cleaning (CAC)
for all drill hole diameters d_0 and drill hole depths h_0.

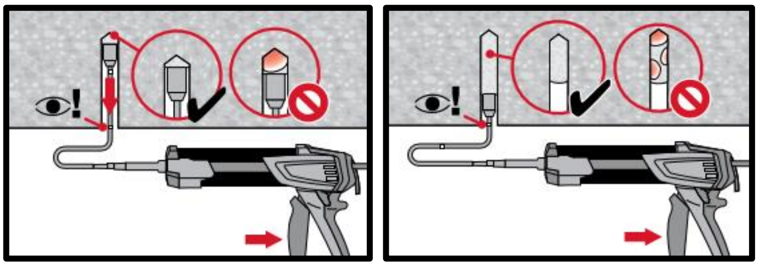
Injection system



Injection system preparation.

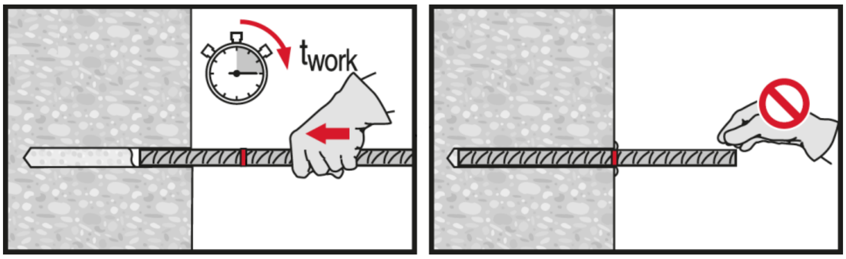


Injection method for drill hole depth $h_{ef} \leq 250$ mm.

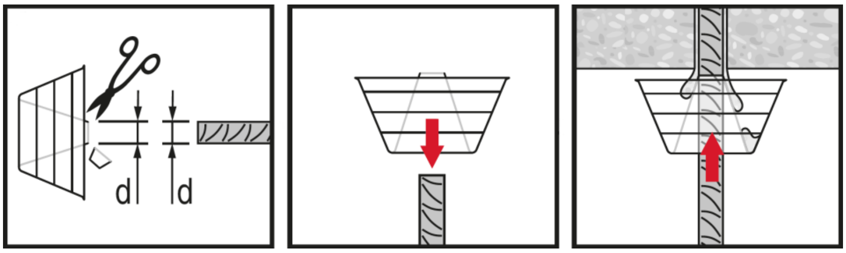


Injection method for overhead application and/or installation with embedment depth $h_{ef} > 250$ mm.

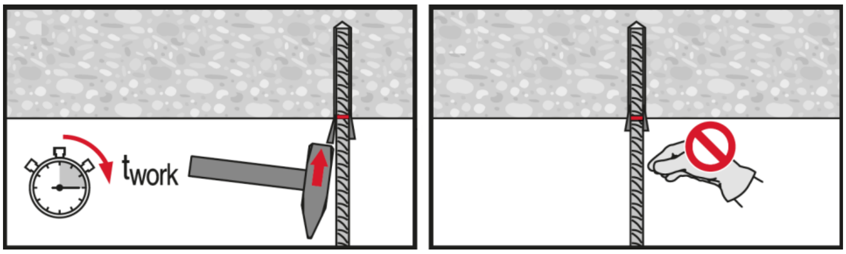
Setting the element



Setting element, observe working time "t_{work}".



Setting element for overhead applications, observe working time "t_{work}".



Loading the anchor: After required curing time t_{cure} the anchor can be loaded.

HIT-HY 100 injection mortar

Rebar design (EN 1992-1) / Rebar elements / Concrete

Injection mortar system

Hilti HIT-HY 100

500 ml foil pack (also available as 330 ml foil pack)

Rebar (ϕ8-ϕ25)

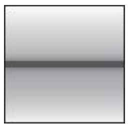
Benefits

- Suitable for concrete C 12/15 to C 50/60
- High loading capacity and fast cure
- Suitable for dry and water saturated concrete
- For rebar diameters up to 25 mm
- Non corrosive to rebar elements
- Suitable for applications down to -10 °C.
- Suitable for embedment depth up to 700 mm depending on the rebar diameter

Base material

Concrete (non-cracked)

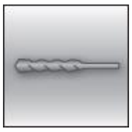
Load conditions



Static/ quasi-static

Fire resistance

Installation conditions



Hammer drilled holes

Other information

European Technical Assessment

CE conformity

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical Approval a)	DIBt, Berlin	ETA-14/0001 / 2014-02-12
German national approval	DIBt, Berlin	I 26.1-1.21.8-22/14

a) All data given in this section according to ETA-14/0001, issue 2014-02-12.

Static and quasi-static loading

Design bond strength in N/mm² according to ETA 11/0492 for good bond conditions for hammer drilling and compressed air drilling.

Rebar (mm)	Concrete class								
	C12/15	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
8 – 24	1,6	2,0	2,3	2,7	3,0	3,4	3,4	3,4	3,7
25	1,6	2,0	2,3	2,7	3,0	3,4	3,7	3,7	3,7

For all other bond conditions, multiply the value by 0.7.

Anchorage length

The minimum anchorage length $\ell_{b,min}$ and the minimum lap length $\ell_{0,min}$ according to EN 1992-1-1:2004+AC:2010 ($\ell_{b,min}$ acc. to Eq. 8.6 and Eq. 8.7 and $\ell_{0,min}$ acc. to Eq. 8.11) shall be multiplied by a factor according to Table below.

Concrete class	Drilling method	Factor
C12/15 to C50/60	Hammer and compressed air drilling	1,5

Example of pre-calculated values for rebar yield strength fyk = 500 N/mm², concrete C25/30 and good bond conditions.

Rebar	Anchorage length l_{bd}	Design value N_{Rd}	Mortar volume a) b)	Anchorage length l_{bd}	Design value N_{Rd}	Mortar volume a) b)
[mm]	[mm]	[kN]	[ml]	[mm]	[kN]	[ml]
	All α = 1			One of the α = 0.7		
8	150	10,2	11	150	14,5	11
	210	14,3	16	180	17,4	14
	260	17,6	20	200	19,4	15
	322	**21,9**	24	**226**	**21,9**	17
10	181	15,4	16	181	21,9	16
	260	22,1	24	210	25,4	19
	330	28,0	30	250	30,3	23
	403	**34,2**	36	**281**	**34,1**	25
12	218	22,2	23	218	31,7	23
	310	31,6	33	260	37,8	27
	390	39,7	41	300	43,6	32
	483	**49,2**	51	**338**	**49,1**	36
14	254	30,2	31	254	43,1	31
	360	42,8	43	300	50,9	36
	460	54,6	55	350	59,4	42
	564	**67,0**	68	**394**	**66,8**	48
16	290	39,4	39	290	56,2	39
	410	55,6	56	340	65,9	46
	530	71,9	72	400	77,6	54
	644	**87,4**	87	**451**	**87,4**	61
18	326	49,8	49	326	71,1	49
	380	58,0	57	380	82,9	57
	440	67,2	66	440	96,0	66
	500	**76,3**	75	**500**	**109,1**	75
20	363	61,6	77	363	88,0	77
	410	69,6	87	410	99,4	87
	450	76,3	95	450	109,1	95
	500	**84,8**	106	**500**	**121,2**	106

a) Mortar volume according to the equation: $1{,}2 \cdot (d_0^2 - d_s^2) \cdot \pi \cdot l_{bd/0}/4$
b) Value of mortar volume corresponds with maximum nominal diameter of drill bit (see table “Installation equipment”).

Example of pre-calculated values for rebar yield strength fyk = 500 N/mm², concrete C25/30 and good bond conditions.

Rebar	Anchorage length l_{bd}	Design value N_{Rd}	Mortar volume	Anchorage length l_{bd}	Design value N_{Rd}	Mortar volume
[mm]	[mm]	[kN]	[ml]	[mm]	[kN]	[ml]
	All α = 1			One of the α = 0.7		
22	399	74,5	113	399	106,4	113
	430	80,2	122	430	114,6	122
	470	87,7	133	470	125,3	133
	500	**93,3**	141	**500**	**133,3**	141
24	435	88,6	184	435	126,5	184
	460	93,6	194	460	133,8	194
	480	97,7	203	480	139,6	203
	500	**101,8**	211	**500**	**145,4**	211
25	453	96,1	170	453	137,2	170
	470	99,7	177	470	142,4	177
	480	101,8	181	480	145,4	181
	500	**106,0**	188	**500**	**151,5**	188

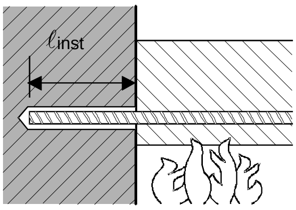
* Values corresponding to the minimum anchorage length. The maximum permissible load is valid for "good bond conditions" as described in EN 1992-1-1. For all other conditions multiply by the value by 0,7.

a) Mortar volume according to the equation: $1{,}2\cdot(d_0^2-d_s^2)\cdot\pi\cdot l_{bd/0}/4$

b) Value of mortar volume corresponds with maximum nominal diameter of drill bit (see table "Installation equipment").

Fire loading: according to DIBt Z-21.8-2024

a) Fire situation “anchorage”



Maximum force in rebar in conjunction with HIT-HY 100 as a function of embedment depth for the fire resistance classes R30 to R180 (yield strength f_{yk} = 500 N/mm²) according to EC2.

<table>
<tr><th>Bar ∅</th><th rowspan="2">Max. $F_{s,T}$
[kN]</th><th>l_{inst}</th><th colspan="5">Fire resistance of bar in [kN]</th></tr>
<tr><th>[mm]</th><th>[mm]</th><th>R30</th><th>R60</th><th>R90</th><th>R120</th><th>R180</th></tr>
<tr><td rowspan="7">8</td><td rowspan="7">16,19</td><td>80</td><td>3,0</td><td>0,7</td><td>0,2</td><td>0,0</td><td>0,0</td></tr>
<tr><td>120</td><td>7,0</td><td>2,2</td><td>1,3</td><td>0,7</td><td>0,2</td></tr>
<tr><td>170</td><td rowspan="5">16,2</td><td>10,2</td><td>9,2</td><td>4,0</td><td>1,7</td></tr>
<tr><td>210</td><td rowspan="4">16,2</td><td rowspan="4">16,2</td><td>11,0</td><td>7,5</td></tr>
<tr><td>230</td><td>14,5</td><td>10,9</td></tr>
<tr><td>250</td><td rowspan="2">16,2</td><td>14,5</td></tr>
<tr><td>300</td><td>16,2</td></tr>
<tr><td rowspan="7">10</td><td rowspan="7">25,29</td><td>100</td><td>6,1</td><td>2,0</td><td>1,0</td><td>0,4</td><td>0,0</td></tr>
<tr><td>150</td><td>19,3</td><td>9,3</td><td>7,1</td><td>2,2</td><td>1,0</td></tr>
<tr><td>190</td><td rowspan="5">25,3</td><td>18,0</td><td>15,9</td><td>9,3</td><td>4,9</td></tr>
<tr><td>230</td><td rowspan="4">25,3</td><td>24,7</td><td>18,1</td><td>13,7</td></tr>
<tr><td>260</td><td rowspan="3">25,3</td><td>24,7</td><td>20,3</td></tr>
<tr><td>280</td><td rowspan="2">25,3</td><td>24,7</td></tr>
<tr><td>320</td><td>25,3</td></tr>
<tr><td rowspan="7">12</td><td rowspan="7">36,42</td><td>120</td><td>15,3</td><td>6,0</td><td>1,9</td><td>1,1</td><td>0,3</td></tr>
<tr><td>180</td><td>31,0</td><td>19,0</td><td>17,8</td><td>8,5</td><td>7,0</td></tr>
<tr><td>220</td><td rowspan="5">36,4</td><td>29,6</td><td>27,0</td><td>19,1</td><td>13,8</td></tr>
<tr><td>260</td><td rowspan="4">36,4</td><td rowspan="4">36,4</td><td>29,7</td><td>24,4</td></tr>
<tr><td>280</td><td>35,0</td><td>29,6</td></tr>
<tr><td>300</td><td rowspan="2">36,4</td><td>34,9</td></tr>
<tr><td>340</td><td>36,4</td></tr>
<tr><td rowspan="7">14</td><td rowspan="7">49,58</td><td>140</td><td>24,0</td><td>9,9</td><td>6,9</td><td>2,6</td><td>1,0</td></tr>
<tr><td>210</td><td>45,0</td><td>31,4</td><td>28,5</td><td>25,7</td><td>13,0</td></tr>
<tr><td>240</td><td rowspan="5">49,6</td><td>40,6</td><td>37,7</td><td>32,8</td><td>22,3</td></tr>
<tr><td>280</td><td rowspan="4">49,6</td><td rowspan="4">49,6</td><td>40,7</td><td>34,6</td></tr>
<tr><td>300</td><td>44,7</td><td>40,7</td></tr>
<tr><td>330</td><td rowspan="2">49,6</td><td>48,1</td></tr>
<tr><td>360</td><td>49,6</td></tr>
<tr><td rowspan="7">16</td><td rowspan="7">64,75</td><td>160</td><td>34,5</td><td>18,4</td><td>14,9</td><td>4,4</td><td>2,3</td></tr>
<tr><td>240</td><td>62,6</td><td>46,4</td><td>43,0</td><td>37,7</td><td>25,5</td></tr>
<tr><td>260</td><td>64,8</td><td>53,5</td><td>50,0</td><td>44,7</td><td>32,5</td></tr>
<tr><td>300</td><td></td><td>64,8</td><td>57,0</td><td>51,7</td><td>49,6</td></tr>
<tr><td>330</td><td></td><td></td><td>64,8</td><td>61,3</td><td>57,2</td></tr>
<tr><td>360</td><td></td><td></td><td></td><td>64,8</td><td>62,7</td></tr>
<tr><td>400</td><td></td><td></td><td></td><td></td><td>64,8</td></tr>
<tr><td rowspan="7">20</td><td rowspan="7">101,18</td><td>200</td><td>60,7</td><td>40,0</td><td>36,3</td><td>29,3</td><td>14,3</td></tr>
<tr><td>250</td><td>78,3</td><td>62,5</td><td>58,3</td><td>51,3</td><td>36,3</td></tr>
<tr><td>310</td><td>101,2</td><td>88,9</td><td>84,6</td><td>77,6</td><td>62,6</td></tr>
<tr><td>350</td><td></td><td>101,2</td><td>101,2</td><td>94,2</td><td>80,2</td></tr>
<tr><td>370</td><td></td><td></td><td></td><td>101,2</td><td>83,5</td></tr>
<tr><td>390</td><td></td><td></td><td></td><td></td><td>97,8</td></tr>
<tr><td>430</td><td></td><td></td><td></td><td></td><td>101,2</td></tr>
<tr><td>25</td><td>158,09</td><td>250</td><td>97,9</td><td>78,1</td><td>72,6</td><td>64,7</td><td>45,3</td></tr>
</table>

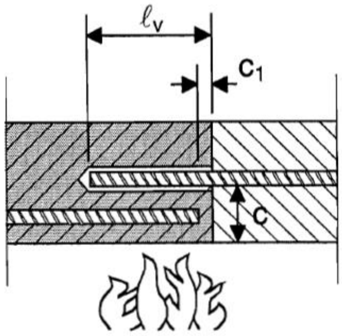
Bar ∅	Max. $F_{s,T}$	l_{inst}	Fire resistance of bar in [kN]				
[mm]	[kN]	[mm]	R30	R60	R90	R120	R180
		280	126,5	94,6	89,4	81,2	61,8
		370	158,1	144,0	127,9	119,7	111,2
		410		158,1	150,0	141,8	123,2
		430			158,1	150,0	144,2
		450				158,1	155,2
		500					158,1
32	158,09	250	97,9	78,1	72,6	64,7	45,3
		280	126,5	94,6	89,4	81,2	61,8
		370	158,1	144,0	127,9	119,7	111,2
		410		158,1	150,0	141,8	123,2
		430			158,1	150,0	144,2
		450				158,1	155,2
		500					158,1

b) Fire situation "parallel"

Max. bond stress, τ_c, depending on actual clear concrete cover for classifying the fire resistance.

It must be verified that the actual force in the bar during a fire, $F_{s,T}$, can be taken up by the bar connection of the selected length, ℓ_{inst}. Note: Cold design for ULS is mandatory.

$F_{s,T} \leq (\ell_{inst} - c_f) \cdot \phi \cdot \pi \cdot \tau_c$ where: $(\ell_{inst} - c_f) \geq \ell_s$;



ℓ_s = lap length

ϕ = nominal diameter of bar

$\ell_{inst} - c_f$ = selected overlap joint length; this must be at least ℓ_s,
but may not be assumed to be more than 80 ϕ

τ_c = bond stress when exposed to fire

Critical temperature-dependent bond stress, τ_c, concerning "overlap joint" for Hilti HIT-HY 100 injection adhesive in relation to fire resistance class and required minimum concrete coverage c.

<table>
<tr><th>Clear concrete cover c</th><th colspan="5">Max. bond stress, τ_c [N/mm²]</th></tr>
<tr><th>[mm]</th><th>R30</th><th>R60</th><th>R90</th><th>R120</th><th>R180</th></tr>
<tr><td>30</td><td>0,6</td><td>0,3</td><td rowspan="2">0</td><td rowspan="5">0</td><td rowspan="9">0</td></tr>
<tr><td>35</td><td>0,7</td><td>0,3</td></tr>
<tr><td>40</td><td>0,9</td><td>0,4</td><td>0,2</td></tr>
<tr><td>45</td><td>1,0</td><td>0,4</td><td>0,2</td></tr>
<tr><td>50</td><td>1,2</td><td>0,5</td><td>0,3</td></tr>
<tr><td>55</td><td>1,5</td><td>0,6</td><td>0,3</td><td>0,2</td></tr>
<tr><td>60</td><td>1,8</td><td>0,8</td><td>0,4</td><td>0,3</td></tr>
<tr><td>65</td><td rowspan="16">2,2</td><td>0,9</td><td>0,5</td><td>0,3</td></tr>
<tr><td>70</td><td>1,0</td><td>0,5</td><td>0,3</td></tr>
<tr><td>75</td><td>1,2</td><td>0,6</td><td>0,4</td><td>0,2</td></tr>
<tr><td>80</td><td>1,5</td><td>0,7</td><td>0,5</td><td>0,3</td></tr>
<tr><td>85</td><td>1,7</td><td>0,8</td><td>0,5</td><td>0,3</td></tr>
<tr><td>90</td><td>2,0</td><td>1,0</td><td>0,6</td><td>0,3</td></tr>
<tr><td>95</td><td rowspan="10">2,2</td><td>1,1</td><td>0,7</td><td>0,4</td></tr>
<tr><td>100</td><td>1,3</td><td>0,8</td><td>0,4</td></tr>
<tr><td>105</td><td>1,5</td><td>0,9</td><td>0,5</td></tr>
<tr><td>110</td><td>1,7</td><td>1,1</td><td>0,5</td></tr>
<tr><td>115</td><td>2,0</td><td>1,2</td><td>0,6</td></tr>
<tr><td>120</td><td rowspan="5">2,2</td><td>1,4</td><td>0,6</td></tr>
<tr><td>125</td><td>1,6</td><td>0,7</td></tr>
<tr><td>130</td><td>1,9</td><td>0,8</td></tr>
<tr><td>135</td><td rowspan="2">2,1</td><td>0,9</td></tr>
<tr><td>200</td><td>2,3</td></tr>
</table>

Materials

Material quality

Part	Material
Rebar EN 1992-1-1	Bars and de-coiled rods class B or C with f_{yk} and k according to NDP or NCL of EN 1992-1-1 $f_{uk} = f_{tk} = k \cdot f_{yk}$

Fitness for use

Some creep tests have been conducted in accordance with ETAG guideline 001 part 5 and TR 023 in the following conditions : in dry environnement at 50 °C during 90 days.
These tests show an excellent behaviour of the post-installed connection made with HIT-HY 100: low displacements with long term stability, failure load after exposure above reference load.

Resistance to chemical substances

Chemical substance	Comment	Resistance
Sulphuric acid	23°C	+
Under sea water	23°C	+
Under water	23°C	+
Alkaline medium	pH = 13,2, 23°C	+

+ resistant
o resistant in short term (max. 48h) contact
- not resistant

Setting information

Installation temperature range:
-10°C to +40°C

Service temperature range
Hilti HIT-HY 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 +80 °C	+50 °C	+80 °C

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

Curing and working time

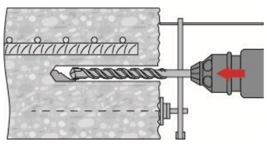
Temperature of the base material	Working time	Curing time
T_{BM}	t_{work}	t_{cure}
-10 °C < T_{BM} < -6 °C	180 min	12 h
-5 °C < T_{BM} < -1 °C	40 min	4 h
0 °C < T_{BM} < +4 °C	20 min	2 h
+5 °C < T_{BM} < +9 °C	8 min	1 h
+10 °C < T_{BM} < +14 °C	7 min	50 min
+15 °C < T_{BM} < +19 °C	6 min	40 min
+20 °C < T_{BM} < +24 °C	5 min	30 min
+25 °C < T_{BM} < +29 °C	3 min	30 min
+30 °C < T_{BM} ≤ +40 °C	2 min	30 min

Installation equipment

Rebar [mm]	ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ18	ϕ20	ϕ22	ϕ24	ϕ25
Rotary hammer	TE 2 – TE 40					TE 40 – TE 70				
Other tools	Blow out pump (h_{ef} ≤ 10·d), compressed air gun, set of cleaning brushes									

Minimum concrete cover c_{min} of the post-installed rebar

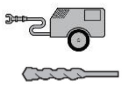
Drilling method	Rebar size [mm]	Minimum concrete cover c_{min} [mm]	
		Without drilling aid	With drilling aid
Hammer drilling (HD)	ϕ < 25	$30 + 0{,}06 \cdot l_v \geq 2 \cdot \phi$	$30 + 0{,}02 \cdot l_v \geq 2 \cdot \phi$
	25	$40 + 0{,}06 \cdot l_v \geq 2 \cdot \phi$	$40 + 0{,}02 \cdot l_v \geq 2 \cdot \phi$
Compressed air drilling (CA)	ϕ < 25	$50 + 0{,}08 \cdot l_v$	$50 + 0{,}02 \cdot l_v$
	25	$60 + 0{,}08 \cdot l_v$	$60 + 0{,}02 \cdot l_v$



Dispensers and corresponding maximum embedment depth $\ell_{v,max}$

Rebar	Dispenser
	HDM 330, HDM 500, HDE 500
	$\ell_{v,max}$ [mm]
ϕ8 - ϕ16	700
ϕ18 - ϕ25	500

Parameters of cleaning and setting tools

Rebar [mm]	Drilling and cleaning			Installation
	Hammer drill (HD)	Compressed air drill (CA)	Brush HIT-RB	Piston plug HIT-SZ
	d_0 [mm]		size [mm]	
				
ϕ8	12 / 10 a)	-	12 / 10 a)	12 / - a)
ϕ10	14 / 12 a)	-	14 / 12 a)	14 / 12 a)
ϕ12	16 / 14 a)	-	16 / 14 a)	16 / 14 a)
	-	17	18	18
ϕ14	18	17	18	18
ϕ16	20	-	20	20
	-	20	22	22
ϕ18	22	22	22	22
ϕ20	25	-	25	25
	-	26	28	28
ϕ22	28	28	28	28
ϕ24	32	32	32	32
ϕ25	32	32	32	32

a) Both given values for drill bit diameter can be used

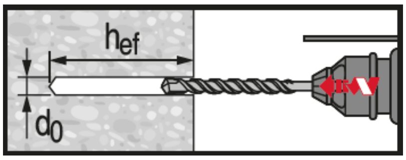
Setting instructions

***For detailed information on installation see instruction for use given with the package of the product.**

Safety regulations.

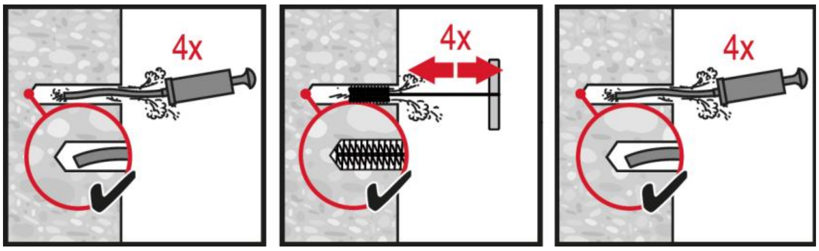
Review the Material Safety Data Sheet (MSDS) before use for proper and safe handling! Wear well-fitting protective goggles and protective gloves when working with Hilti HIT-HY 100.

Drilling

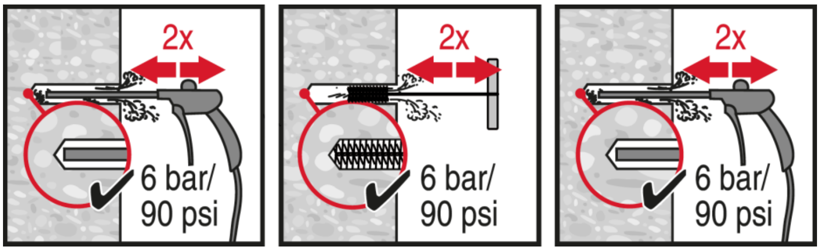


Hammer drilled hole (HD)

Cleaning

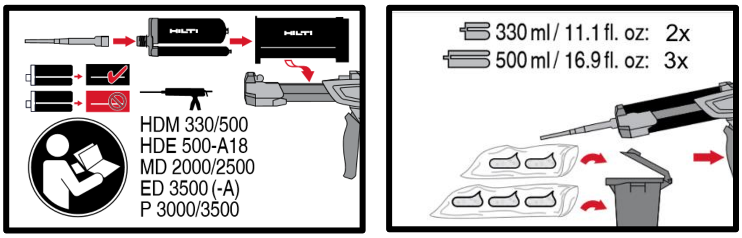


Manual cleaning (MC)
for drill diameters $d_0 \leq 18$ mm and drill hole depth $h_0 \leq 10 \cdot d$.

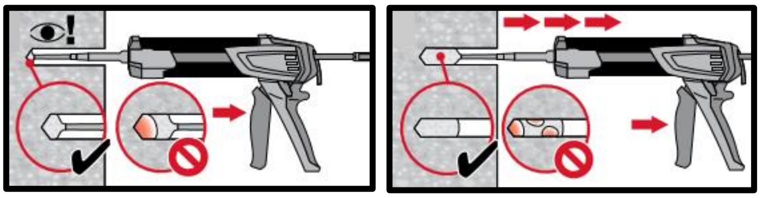


Compressed air cleaning (CAC)
for all drill hole diameters d_0 and drill hole depths h_0.

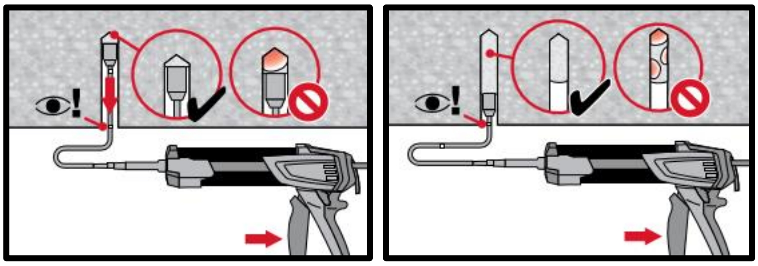
Injection system



Injection system preparation.

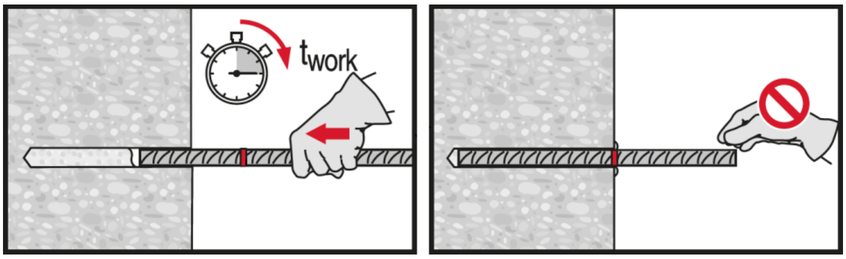


Injection method for drill hole depth $h_{ef} \leq 250$ mm.

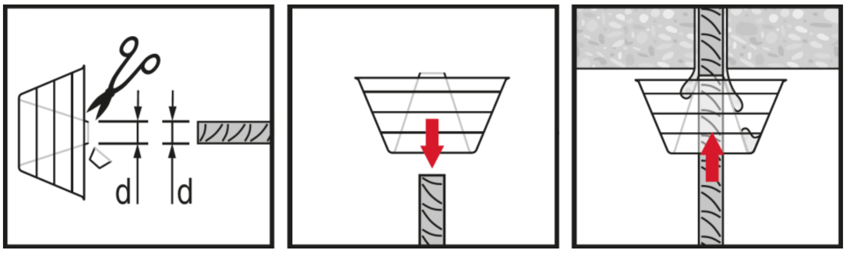


Injection method for overhead application and/or installation with embedment depth $h_{ef} > 250$ mm.

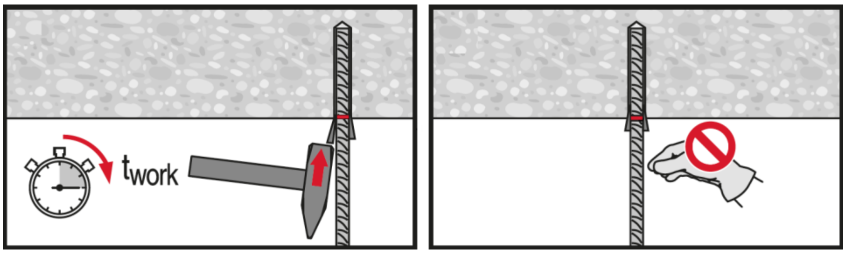
Setting the element



Setting element, observe working time "t_{work}".



Setting element for overhead applications, observe working time "t_{work}".



Loading the anchor: After required curing time t_{cure} the anchor can be loaded.