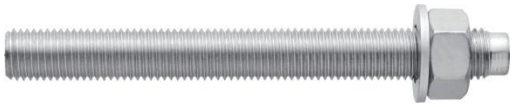
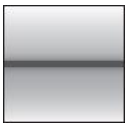
Hilti HIT-RE 10 mortar

Economical epoxy mortar for concrete

Injection mortar system		Benefits
	Hilti HIT-RE 10 580 ml hard cartridge	- Suitable for non-cracked concrete C20/25 to C50/60 - Suitable for dry and water saturated concrete - Suitable for overhead fastenings
	HIT-V (M8-M30)	

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

Installation conditions	
	
Hammer drilling	Variable embedment depth

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

All data in this section applies to

- Correct setting (see setting instruction)
- Base material thickness, as specified in the tables
- No edge distance and spacing influence
- *Steel* failure
- Embedment depth, as specified in the tables
- One anchor material, as specified in the tables
- Non-cracked concrete C 20/25, $f_{ck,cube}$ = 25 N/mm²
- Temperate range I and II, as specified in the tables

Recommended loads for tension loading

Threaded rod HIT-V 5.8			M8	M10	M12	M16	M20
Temperature range I (20/43°C)							
Embedment depth	$h_{ef,min}$	[mm]	60	60	70	80	90
Base material thickness	h	[mm]	100	100	100	116	138
Tensile load	N_{rec}	[kN]	5,1	6,4	9,0	12,3	14,7
Embedment depth	$h_{ef,10d}$	[mm]	80	100	120	160	200
Base material thickness	h	[mm]	110	130	150	196	248
Tensile load	N_{rec}	[kN]	6,8	10,7	15,4	27,4	42,7
Embedment depth	$h_{ef,15d}$	[mm]	120	150	180	240	300
Base material thickness	h	[mm]	150	180	210	276	348
Tensile load	N_{rec}	[kN]	*8,7*	*13,8*	*20,1*	*37,4*	*58,3*
Temperature range II (43/55°C)							
Embedment depth	$h_{ef,min}$	[mm]	60	60	70	80	90
Base material thickness	h	[mm]	100	100	100	116	138
Tensile load	N_{rec}	[kN]	3,6	4,5	6,3	9,6	13,5
Embedment depth	$h_{ef,10d}$	[mm]	80	100	120	160	200
Base material thickness	h	[mm]	110	130	150	196	248
Tensile load	N_{rec}	[kN]	4,8	7,5	10,8	19,1	29,9
Embedment depth	$h_{ef,15d}$	[mm]	120	150	180	240	300
Base material thickness	h	[mm]	150	180	210	276	348
Tensile load	N_{rec}	[kN]	7,2	11,2	16,2	28,7	44,9

Recommended loads for shear loading

Threaded rod HIT-V 5.8			M8	M10	M12	M16	M20
Shear load	V_{rec}	[kN]	5,1	8,6	12,0	22,3	34,9

Setting information

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

Service temperature range
Hilti HIT-RE 10 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 +43 °C	+20 °C	+43 °C
Temperature range II	-40 °C to +55 °C	+43 °C	+55 °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.

Working time and curing time:

Temperature of the base material T_{BM}	Maximum working time t_{work}	Minimum curing time t_{cure} a)
5˚C ≤ T_{BM} ≤ 10˚C	5 h	72 h
10˚C < T_{BM} ≤ 15˚C	2,5 h	48 h
15˚C < T_{BM} ≤ 20˚C	2 h	36 h
20˚C < T_{BM} ≤ 30˚C	60 min	24 h
30˚C < T_{BM} ≤ 40˚C	30 min	12 h

a) The curing time data are valid for dry anchorage base only. For water saturated anchorage bases the curing times must be doubled.

Installation equipment

Anchor size	M8	M10	M12	M16	M20	M24	M27	M30
Rotary hammer	TE2(-A) – TE30(-A)				TE40 – TE80			
Other tools	Blow out pump (h_{ef} ≤ 10·d)				-			
	Compressed air gun[b)] Set of cleaning brushes[c)], dispenser, piston plug							

b) Compressed air gun with extension hose for all drill holes deeper than 250 mm (for M8 to M12) or deeper than 20·ϕ (for ϕ > 12 mm)

c) Automatic brushing with round brush for all drill holes deeper than 250 mm (for M8 to M12) or deeper than 20·ϕ (for ϕ > 12 mm)

Setting details

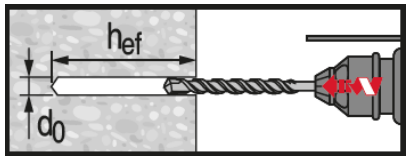
Anchor size			M8	M10	M12	M16	M20	M24	M27	M30
Nominal diameter of drill bit	d_0	[mm]	10	12	14	18	24	28	30	35
Maximum diameter of clearance hole in the fixture	d_f	[mm]	9	12	14	18	22	26	30	33
Minimum base material thickness	h_{min}	[mm]	h_{ef} + 30 mm ≥ 100 mm			h_{ef} + 2d_0				
Effective anchorage depth	$h_{ef,min}$	[mm]	60	60	70	80	90	96	108	120
(= drill hole depth h_{ef} = h_0	$h_{ef,max}$	[mm]	160	200	240	320	400	480	500	500
Minimum spacing	s_{min}	[mm]	40	50	60	75	90	115	120	140
Minimum edge distance	c_{min}	[mm]	40	45	45	50	55	60	75	80
Torque moment	T_{max}	[Nm]	10	20	40	80	150	200	270	300

Setting instructions

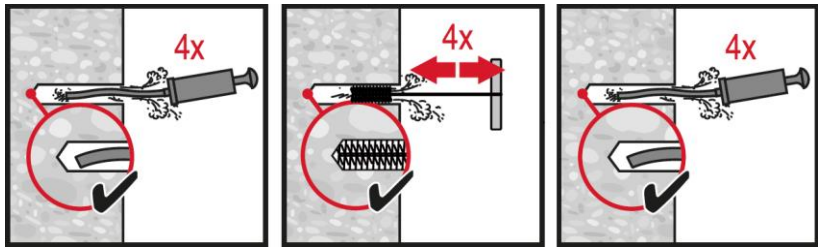
***For detailed information on installation see instruction for use given with the package of the product.**

Safety regulations.

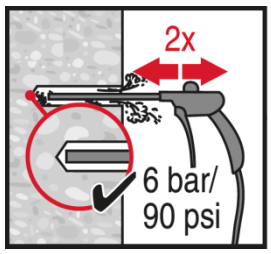
Review the Material Safety Data Sheet (MSDS) before use for proper and safe handling! Wear well-fitting protective goggles and protective gloves when working with Hilti HIT-RE 10.

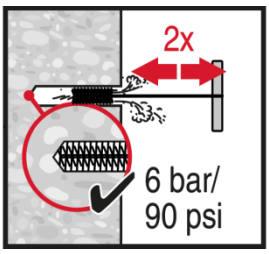


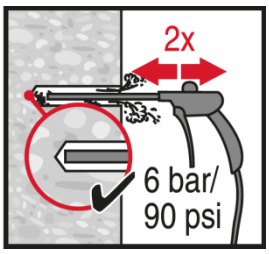
Hammer drilled hole



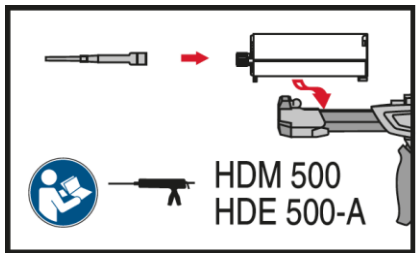
Manual cleaning (MC)
for drill diameters d_0 ≤ 20 mm and drill hole depth h_0 ≤ 10·d.

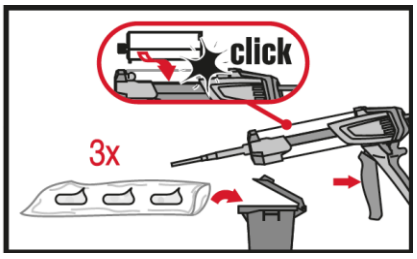




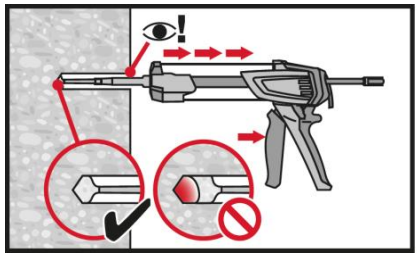
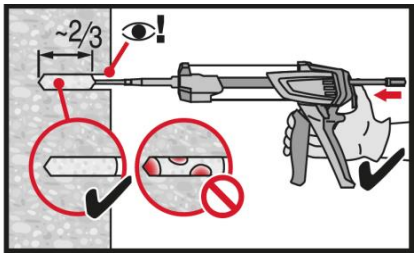


Compressed air cleaning (CAC)
for all drill hole diameters d_0 and drill hole depths $h_0 \leq 20 \cdot d$.

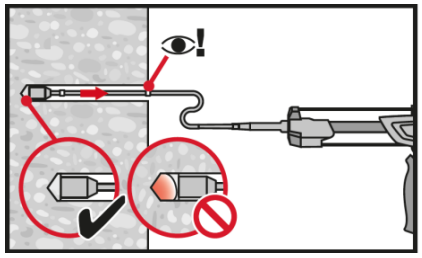
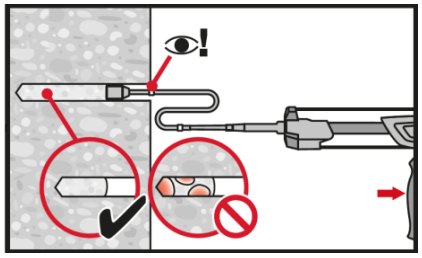




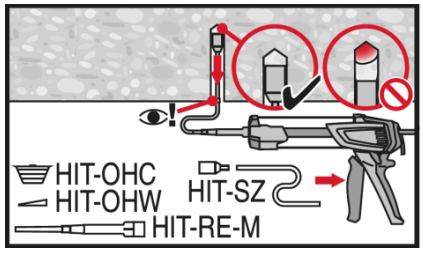
Injection system preparation.

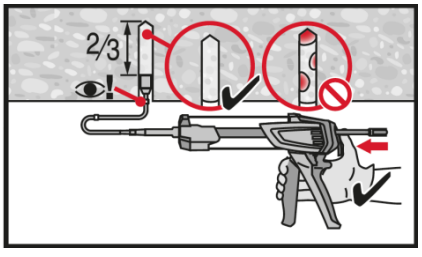



Injection method for drill hole depth $h_{ef} \leq 250$ mm.

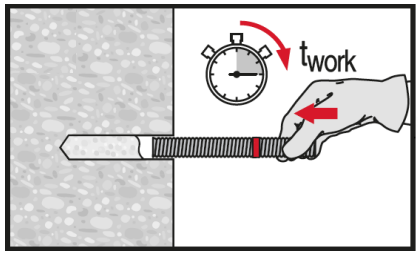



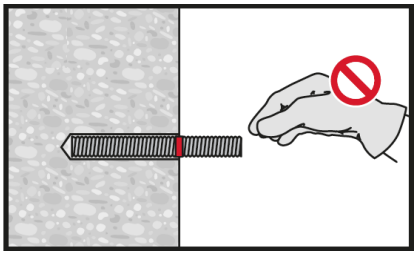
Injection method for drill hole depth $h_{ef} > 250$ mm.



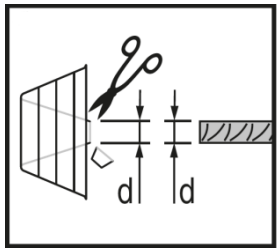


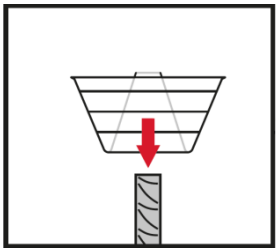
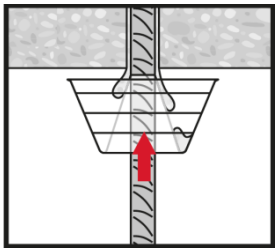
Injection method for overhead application.



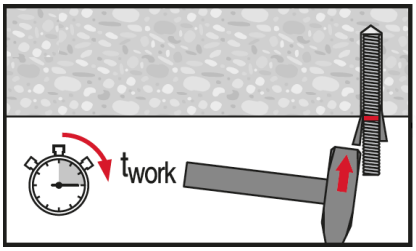


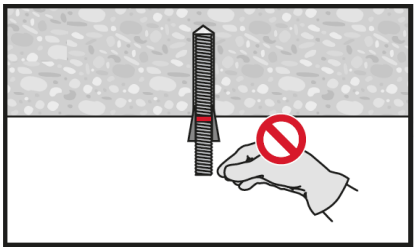
Setting element, observe working time "t_{work}".

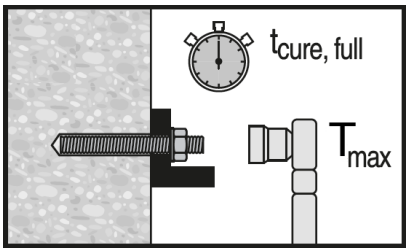


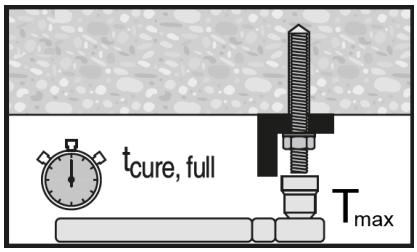



Setting element for overhead applications, observe working time "t_{work}".









Apply full load only after curing time "t_{cure}", applied installation torque shall not exceed the values T_{max}.