

# Hilti HIT-RE 10 mortar

Economical epoxy mortar for concrete

## Injection mortar system



Hilti HIT-RE 10  
580 ml hard  
cartridge

HIT-V  
(M8-M30)

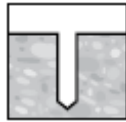
## Benefits

- Suitable for non-cracked concrete C20/25 to C50/60
- Suitable for dry and water saturated concrete
- Suitable for overhead fastenings

## Base material



Concrete  
(non-cracked)

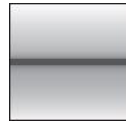


Dry concrete



Wet concrete

## Load conditions

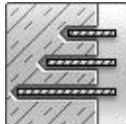


Static/  
quasi-static

## 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,  $f_{ck,cube} = 25 \text{ N/mm}^2$
- 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
<b>Temperature range I (20/43°C)</b>							
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
<b>Temperature range I (20/43°C) - continued</b>							
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
<b>Temperature range I (20/43°C) - continued</b>							
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
<b>Temperature range II (43/55°C)</b>							
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
<b>Temperature range II (43/55°C) - continued</b>							
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
<b>Temperature range II (43/55°C) - continued</b>							
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 $t_{cure}$ <sup>a)</sup>
$5^{\circ}\text{C} \leq T_{BM} \leq 10^{\circ}\text{C}$	5 h	72 h
$10^{\circ}\text{C} < T_{BM} \leq 15^{\circ}\text{C}$	2,5 h	48 h
$15^{\circ}\text{C} < T_{BM} \leq 20^{\circ}\text{C}$	2 h	36 h
$20^{\circ}\text{C} < T_{BM} \leq 30^{\circ}\text{C}$	60 min	24 h
$30^{\circ}\text{C} < T_{BM} \leq 40^{\circ}\text{C}$	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 ( $h_{ef} \leq 10 \cdot d$ )				-			
	Compressed air gun <sup>b)</sup> Set of cleaning brushes <sup>c)</sup> , 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  $20 \cdot \phi$  (for  $\phi > 12$  mm)

c) Automatic brushing with round brush for all drill holes deeper than 250 mm (for M8 to M12) or deeper than  $20 \cdot \phi$  (for  $\phi > 12$  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]	$h_{ef} + 30 \text{ mm} \geq 100 \text{ mm}$			$h_{ef} + 2d_0$				
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

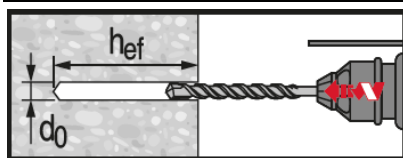
### Setting instructions

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

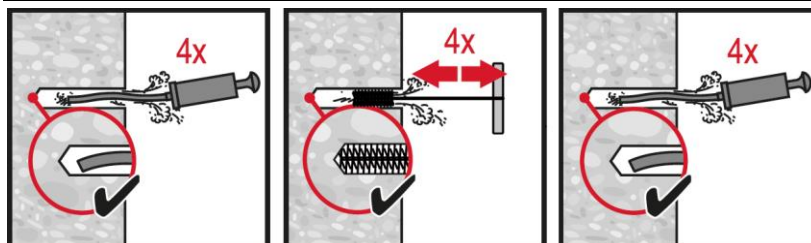


#### Safety regulations.

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.

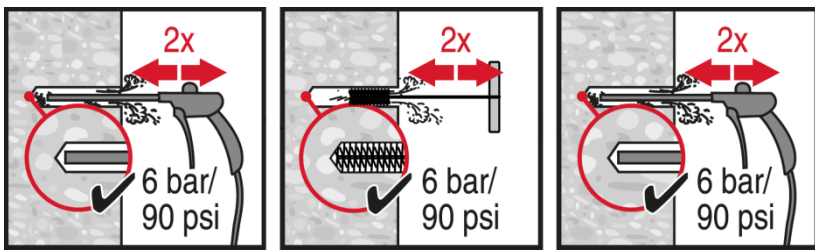


Hammer drilled hole

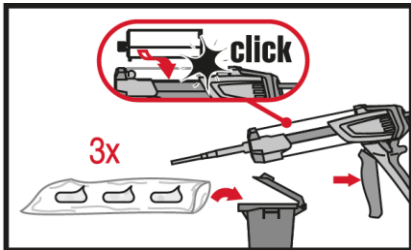
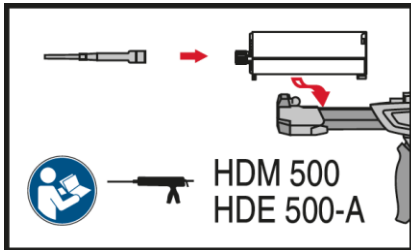


#### Manual cleaning (MC)

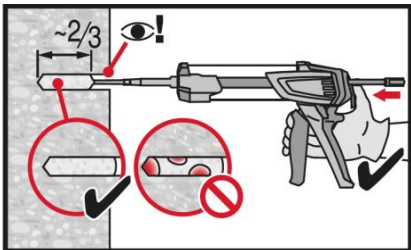
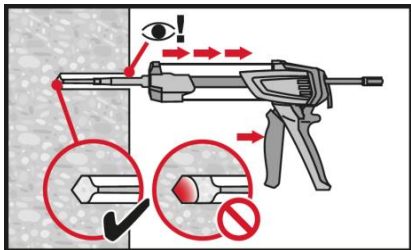
for drill diameters  $d_0 \leq 20$  mm and drill hole depth  $h_0 \leq 10 \cdot d$ .



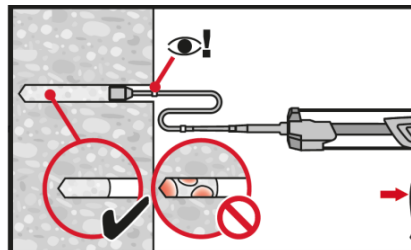
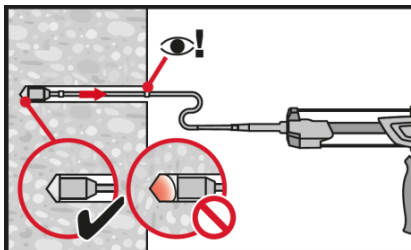
**Compressed air cleaning (CAC)**  
for all drill hole diameters  $d_0$  and drill hole depths  $h_0 \leq 20 \cdot d$ .



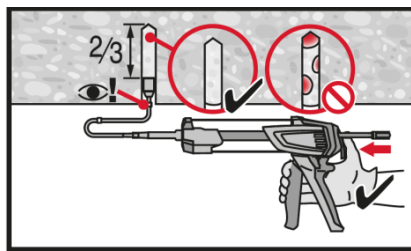
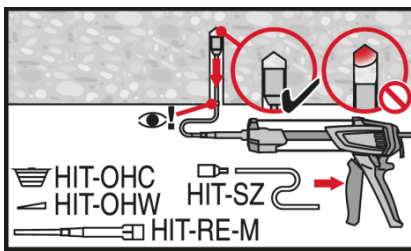
**Injection system preparation.**



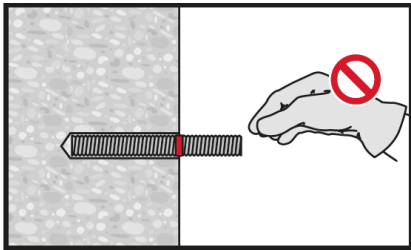
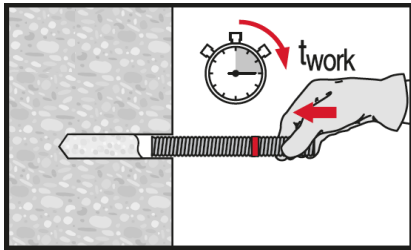
**Injection method for drill hole depth**  
 $h_{ef} \leq 250 \text{ mm}$ .



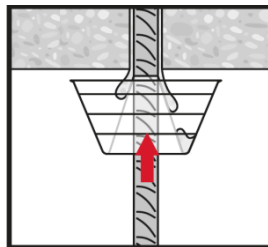
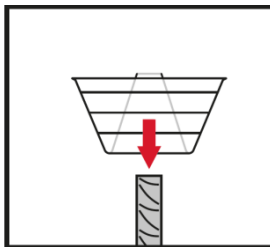
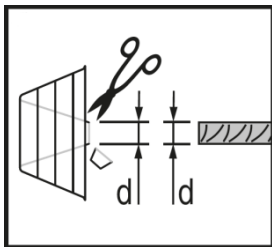
**Injection method for drill hole depth**  
 $h_{ef} > 250 \text{ mm}$ .



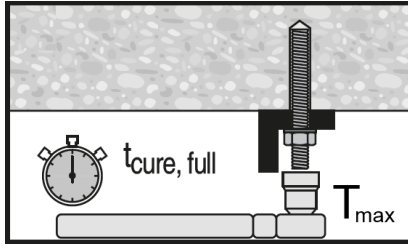
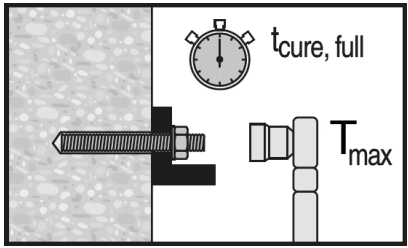
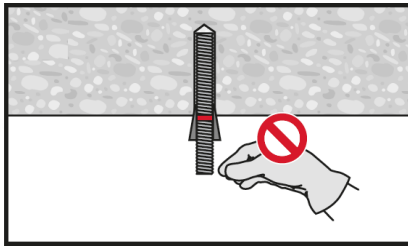
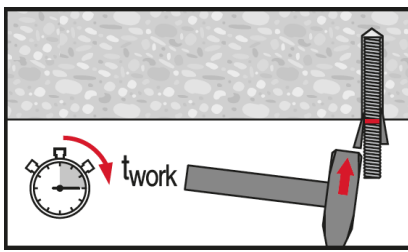
**Injection method for overhead application.**



**Setting element, observe working time**  
“ $t_{work}$ ”.



**Setting element for overhead applications, observe working time**  
“ $t_{work}$ ”.



**Apply** full load only after curing time “ $t_{\text{cure}}$ ”, applied installation torque shall not exceed the values  $T_{\text{max}}$ .

