

## Hilti HIT-HY 110 with HIT-V / HAS-E

Injection Mortar System	Benefits
 <p>Hilti-HY 110 available in 330ml and 500ml foil packs.</p>	<ul style="list-style-type: none"> <li>■ suitable for non-cracked concrete C 20/25 to C 50/60</li> <li>■ suitable for dry and water saturated concrete</li> <li>■ small edge distance and anchor spacing possible</li> <li>■ large diameter applications</li> <li>■ high corrosion resistant</li> <li>■ in service temperature range up to 120°C short term/72°C long term</li> <li>■ manual cleaning for drill hole sizes ≤ 18 mm and embedment depth hef ≤ 10d</li> <li>■ embedment depth range M8: 60 to 160 mm M30: 120 to 600 m</li> </ul>
 <p>Static mixer HIT M1</p>	
 <p>All HAS-E rods</p>	
 <p>All HIT-V rods</p>	



Concrete



Small edge distance & spacing



Variable embedment depth



Corrosion resistance



High corrosion resistance



European Technical Approval



CE conformity



Suitable for drilled holes



Suitable for dry holes



Suitable for water saturated holes



Low VOC meets Greenstar requirements

### 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
- Base material thickness, as specified in the table
- One typical embedment depth, as specified in the table below
- Non cracked concrete  $f_{c,cyl} = 32 \text{ MPa}$
- Temperature range I (min. base material temperature  $-40^\circ\text{C}$ , max. long term/short term base material temperature:  $+24^\circ\text{C}/40^\circ\text{C}$ )
- Installation temperature range  $-10^\circ\text{C}$  to  $+40^\circ\text{C}$

### Embedment depth and base material thickness for the basic loading data

#### Recommended loads

Anchor size	M8	M10	M12	M16	M20	M24
Typical embedment depth $h_{ef}$ [mm]	80	90	110	125	170	210
Base material thickness $h$ [mm]	110	120	140	165	220	270

### Recommended loads

#### Anchor HIT-V Grade 5.8

Anchor size	M8	M10	M12	M16	M20	M24
Tensile $N_{rec}$ [kN]	8.6	13.2	19.4	20.6	33.1	46.2
Shear $V_{rec}$ [kN]	5.1	8.6	12.0	22.3	34.9	50.3

**Note:** For varied embedment depths please contact your local Hilti engineer for further details.

## Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical approval a)	DIBt, Berlin	ETA-08/0341 / 2013-03-18

a) All data given in this section according ETA-08/0341 issue 2013-03-18.

## Working time, Curing time

Temperature of the base material $T_{BM}$	Working time $t_{get}$	Curing time $t_{cure}$
-5 °C to -1 °C	90 min	9 h
0 °C to 4 °C	45 min	4.5 h
5 °C to 9 °C	20 min	2 h
10 °C to 19 °C	6 min	90 min
20 °C to 29 °C	4 min	50 min
30 °C to 39 °C	2 min	40 min

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

## Setting details

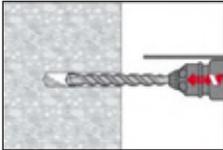
Anchor size		M8	M10	M12	M16	M20	M24	M30
Nominal diameter of drill bit	$d_0$ [mm]	10	12	14	18	24	28	35
Effective embedment and drill hole depth range <sup>a)</sup> <b>FOR HIT-V</b>	$h_{ef,min}$ [mm]	60	60	70	80	90	100	120
	$h_{ef,max}$ [mm]	160	200	240	320	400	480	600
Effective anchorage and drill hole depth <b>FOR HAS</b>	$h_{ef}$ [mm]	80	90	110	125	170	210	270
Minimum base material thickness	$h_{min}$ [mm]	$h_{ef} + 30 \text{ mm} \geq 100 \text{ mm}$			$h_{ef} + 2 d_0$			
Diameter of clearance hole in the fixture	$d_f$ [mm]	9	12	14	18	22	26	33
Torque moment <sup>b)</sup>	$T_{max}$ [Nm]	10	20	40	80	150	200	300
Minimum spacing	$s_{min}$ [mm]	40	50	60	80	100	120	150
Minimum edge distance	$c_{min}$ [mm]	40	50	60	80	100	120	150

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

b) This is the maximum recommended torque moment to avoid splitting during installation for anchors with minimum spacing and/or edge distance.

## Setting instructions

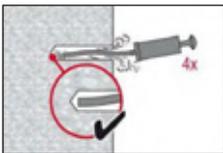
### Bore hole drilling



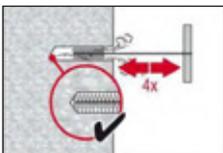
Drill Hole to the required embedment depth with a hammer drill set in rotation-hammer mode using an appropriately sized carbide drill bit.

### Bore hole cleaning Just before setting an anchor, the bore hole must be free of dust and debris.

#### a) Manual Cleaning (MC) for bore hole diameters $d_0 \leq 18\text{mm}$ and bore hole depth $h_0 \leq 10d$

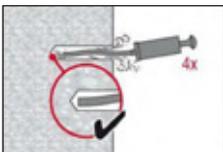


The Hilti manual pump may be used for blowing out bore holes up to diameters  $d_0 \leq 18\text{ mm}$  and embedment depths up to  $h_0 \leq 10d$  or  $h_0 \leq 160\text{ mm}$ . Blow out at least 4 times from the back of the bore hole until return air stream is free of noticeable dust



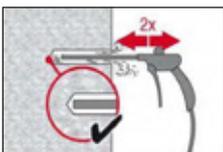
Brush 4 times with the specified brush size (brush  $\varnothing \geq$  bore hole  $\varnothing$ ) by inserting the steel brush Hilti HIT-RB to the back of the hole (if needed with extension) in a twisting motion and removing it.

The brush must produce natural resistance as it enters the bore hole -- if not the brush is too small and must be replaced with the proper brush diameter.

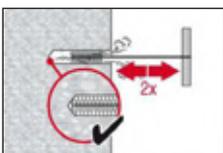


Blow out again with manual pump at least 4 times until return air stream is free of noticeable dust.

#### b) Compressed air cleaning (CAC) for all bore hole diameters $d_0$ and all bore hole depth $h_0$



Blow 2 times from the back of the hole (if needed with nozzle extension) over the hole length with oil-free compressed air (min. 6 bar at 6 m<sup>3</sup>/h) until return air stream is free of noticeable dust.



Brush 2 times with the specified brush size (brush  $\varnothing \geq$  bore hole  $\varnothing$ ) by inserting the steel brush Hilti HIT-RB to the back of the hole (if needed with extension) in a twisting motion and removing it.

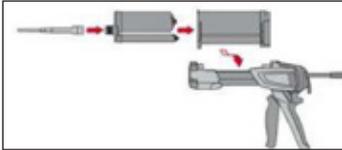
The brush must produce natural resistance as it enters the bore hole -- if not the brush is too small and must be replaced with the proper brush diameter.



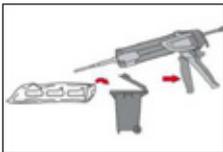
Blow again with compressed air 2 times until return air stream is free of noticeable dust.

### Setting instructions

#### Injection preparation



Tightly attach new Hilti mixing nozzle HIT-M1 to foil pack manifold (snug fit). Do not modify the mixing nozzle. Observe the instruction for use of the dispenser and the mortar. Check foil pack holder for proper function. Do not use damaged foil packs / holders. Insert foil pack into foil pack holder and put holder into HIT dispenser.



The foil pack opens automatically as dispensing is initiated. Discard initial adhesive. Depending on the size of the foil pack an initial amount of adhesive has to be discarded.

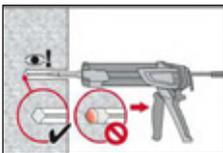
Discard quantities are:

2 strokes for 330 ml foil pack,

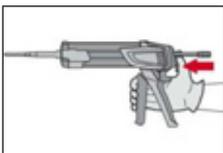
3 strokes for 500 ml foil pack,

45 ml for 1400 ml foil pack

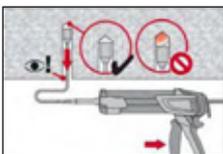
#### Inject adhesive from the back of the borehole without forming air voids



Inject the adhesive starting at the back of the hole, slowly withdrawing the mixer with each trigger pull. Fill holes approximately 2/3 full. It is required that the annular gap between the anchor and the concrete is completely filled with adhesive along the embedment length.

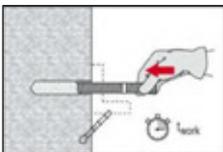


After injection is completed, depressurise the dispenser by pressing the release trigger. This will prevent further adhesive discharge from the mixer.

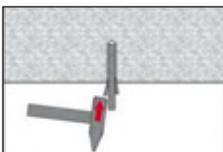


Overhead installation and/or installation with embedment depth  $h_{ef} > 250\text{mm}$ . For overhead installation the injection is only possible with the aid of extensions and piston plugs. Assemble HIT-M1 mixer, extension(s) and appropriately sized piston plug HIT-SZ. Insert piston plug to back of the hole and inject adhesive. During injection the piston plug will be naturally extruded out of the bore hole by the adhesive pressure.

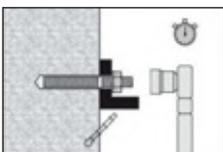
#### Setting the element



Before use, verify that the element is dry and free of oil and other contaminants. Mark and set element to the required embedment depth until working time  $t_{work}$  has elapsed



For overhead installation use piston plugs and fix embedded parts with e.g. wedges Hilti HIT-OHW



Loading the anchor:  
After required curing time  $t_{cure}$  the anchor can be loaded.  
The applied installation torque shall not exceed  $T_{max}$ .

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