

Hilti HIT-HY 110 with HIS-(R)N

Injection Mortar System	Benefits
 <p>Hilti-HY 110 available in 330ml and 500ml foil packs.</p>	<ul style="list-style-type: none"> ■ suitable for non-cracked concrete C 20/25 to C 50/60 ■ suitable for dry and water saturated concrete ■ small edge distance and anchor spacing possible ■ corrosion resistant ■ in service temperature range up to 120°C short term/72°C long term ■ manual cleaning for drill hole sizes ≤ 18 mm
 <p>Static mixer HIT M1</p>	
 <p>Internal threaded sleeve HIS-N HIS-RN</p>	



Concrete



Small edge distance & spacing



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 below
- Non cracked concrete $f_{c,cyl} = 32$ MPa
- 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 -10°C to $+40^{\circ}\text{C}$

Embedment depth and base material thickness for the basic loading data

Recommended loads

Anchor size	M8x90	M10x110	M12x125	M16x170	M20x205
Embedment depth h_{ef} [mm]	90	110	125	170	205
Base material thickness h [mm]	120	150	170	230	270

Recommended loads

HY 110 + HIS-N with grade 8.8 bolt

Anchor size	M8x90	M10x110	M12x125	M16x170	M20x205
Tensile N_{rec} HIS-N [kN]	12.5	20.4	30.6	48.9	53.0
Shear V_{rec} HIS-N [kN]	7.4	13.1	18.6	28.1	26.2

HY 110 + HIS-R N with 316 Stainless Bolt

Anchor size	M8x90	M10x110	M12x125	M16x170	M20x205
Tensile N_{rec} HIS-R N [kN]	9.9	15.7	22.5	42.0	49.4
Shear V_{rec} HIS-R N [kN]	5.9	9.2	13.7	25.2	29.6

Note: contact your local Hilti engineer for any 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.

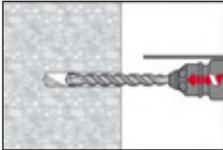
Setting details

Anchor size		M8x90	M10x110	M12x125	M16x170	M20x205
Nominal diameter of drill bit	d_o [mm]	14	18	22	28	32
Diameter of element	d [mm]	12,5	16,5	20,5	25,4	27,6
Effective anchorage and drill hole depth	h_{ef} [mm]	90	110	125	170	205
Minimum base material thickness	h_{min} [mm]	120	150	170	230	270
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 ^{a)}	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

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

Setting instructions

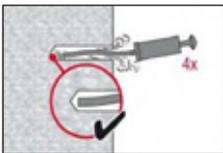
Bore hole drilling



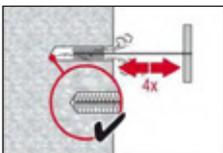
Drill Hole to the required embedment depth with a hammer drill set in rotation-hammer mode using an appropriately sized carbide drill bit.

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 $h_0 \leq 10d$

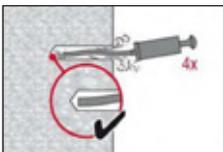


The Hilti manual pump may be used for blowing out bore holes up to diameters $d_0 \leq 18\text{ mm}$ and embedment depths up to $h_0 \leq 10d$ or $h_0 \leq 160\text{ mm}$. Blow out at least 4 times from the back of the bore hole until return air stream is free of noticeable dust



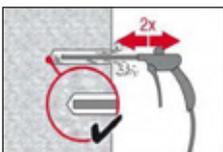
Brush 4 times with the specified brush size (brush $\varnothing \geq$ bore hole \varnothing) by inserting the steel brush Hilti HIT-RB to the back of the hole (if needed with extension) in a twisting motion and removing it.

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.

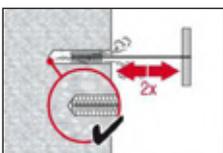


Blow out again with manual pump at least 4 times until return air stream is free of noticeable dust.

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 m³/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.

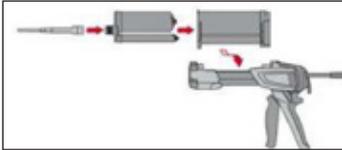
The brush must produce natural resistance as it enters the bore hole -- if not the brush is too small and must be replaced with the proper brush diameter.



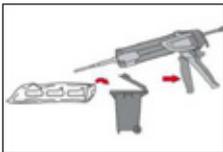
Blow again with compressed air 2 times until return air stream is free of noticeable dust.

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.

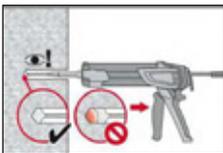
Discard quantities are:

2 strokes for 330 ml foil pack,

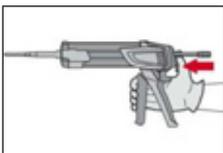
3 strokes for 500 ml foil pack,

45 ml for 1400 ml foil pack

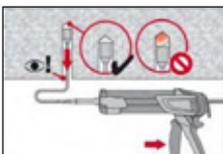
Inject adhesive from the back of the borehole without forming air voids



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.

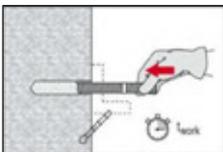


After injection is completed, depressurise the dispenser by pressing the release trigger. This will prevent further adhesive discharge from the mixer.



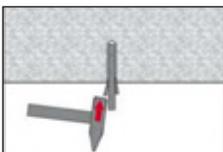
For overhead installation the injection is only possible with the aid of extensions and piston plugs. Assemble HIT-M1 mixer, extension(s) and appropriately sized piston plug HIT-SZ. Insert piston plug to back of the hole and inject adhesive. During injection the piston plug will be naturally extruded out of the bore hole by the adhesive pressure.

Setting the element

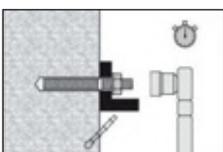


Before use, verify that the element is dry and free of oil and other contaminants.

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.