Heli-Brick

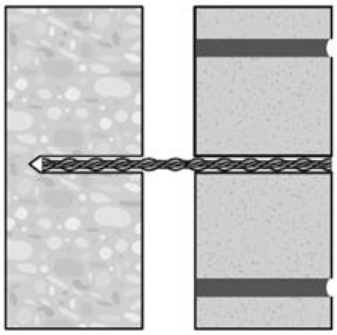
Product Technical Datasheet

Update: July 25

Heli-Brick

Stainless-steel Heli-Brick and setting tools for masonry façade and masonry walls strengthening.

Heli-Brick System		Benefits
	Heli-Brick 10	- Faster and easier to install with dedicated setting tools
	Setting Tool	- On-site testing service (OST) available – pullout tests are mandatory to derive resistance values
	Setting Tube	- Low aesthetic impact – Heli-Brick can be hidden within the mortar joint
	Connector	



Base Material A Base Material B

Figure 1

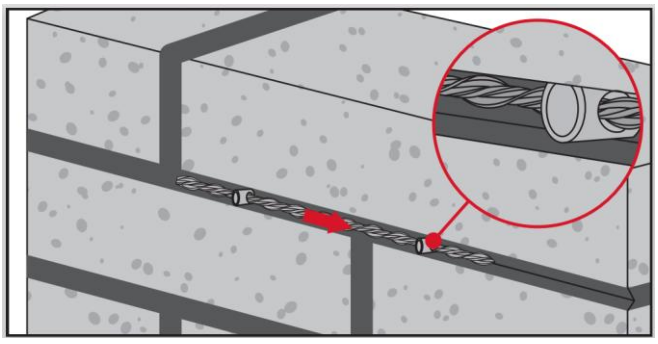
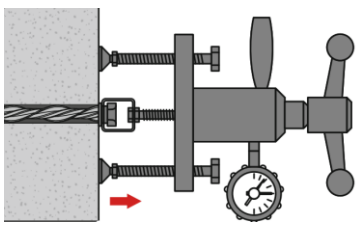


Figure 2



OST

Application

The Heli-Brick mechanical anchor system consists of stainless-steel Heli-Brick rods, connectors, and setting tools. This system can be used in two masonry façade strengthening applications:

1.Strengthening of the connection between masonry façades and inner walls: Once the holes have been drilled through Base Material B and into Base Material A, the dedicated setting tool is used to drive the Heli-Brick into the two base materials (Figure 1). The load transfer from material B to material A with Heli-brick was not tested and technical data of this document are not to be used and do not apply to this application case. and OST is mandatory to verify pullout loads.
Hilti is not liable and professional engineers have to be consulted for the design.

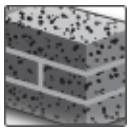
2.Strengthening of horizontal joints in masonry facades and inner walls: In the wall that needs strengthening (Base Material B) the mortar in horizontal joint is removed to allow the positioning of the horizontal rod. In the joint perpendicular to the wall face, holes are prepared in Base Material B and Base Material A as prescribed per the operating instructions. The dedicated setting tool is then used to drive the Heli-Brick into the two base materials (Figure 1), and connectors are attached to the exposed ends of the installed Heli-Brick. Finally, additional Heli-Brick rods are woven through the holes of the connectors (Figure 2). This creates a net that keeps the façade in plane.

Aesthetic Impact: For both applications the Heli-Brick can be covered with mortar to mitigate the aesthetic impact.

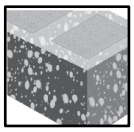
OST: The load transfer mechanism and the performance have to be derived with on site testing. OST is mandatory to derive resistance values in both base materials in the actual installation conditions. Contact Hilti for a related offer for OST.

Base material

Concrete (uncracked)

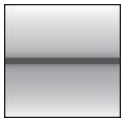


Solid cement unit



Grout filled hollow brick

Load conditions



Static/ quasi-static

Installation conditions

Hammer drilled holes

Other information

Hilti Technical data

On-Site Testing

Instructions for use

The instructions for use can be viewed using the link in the instructions for use table or the QR code/link in the Hilti webpage table.

Instructions for use

Type	IFU
Heli-Brick	**IFU Heli-Brick**

Link to Hilti Webpage

Heli-Brick

Fastener article number and material properties

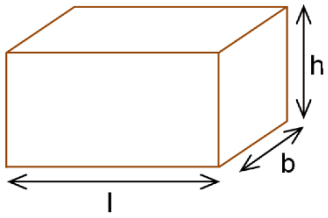
List of Heli-Brick System/Material

Denomination	Length	Article number
Heli-Brick 304 - 10x250 Heli-Brick 304 - 10x300 Heli-Brick 304 - 10x350	250 mm 300 mm 350 mm	2365084 2365085 2365086
Heli-Brick 304 - 6 (10m)	10 m	2369737
Connector 10	N.A.	2365087
Setting Tool TE-C 10 (SDS Plus)		2365088
Setting Tube 150		2365089

Material properties

			Heli-Brick 10
Material			Stainless steel, 304
Nominal tensile strength	f_{uk}	[N/mm²]	1240,0
Yield strength	f_{yk}	[N/mm²]	1038,7
Stressed cross-section	A_s	[mm²]	12,9
Elongation	A	[%]	5,7

Brick types and properties



Brick code	Brick name	Image	Minimum brick size l / b / h [mm]	Mean compressive strength $f_{b,mean}$ [N/mm²]	Minimum dry density ρ [kg/dm³]
GB/T 21144-2007	Solid cement brick type: MU15,Class B,GB/T 21144-2007		l: ≥ 190 b: ≥ 90 h: ≥ 45	15,3	-
GB/T 13544-2011	Grout filled hollow clay brick type MU10, GB/T 13544-2011 Strength of the grout: f_b: ≥ 13Mpa		l: ≥ 240 b: ≥ 115 h: ≥ 90	14,1	1,96

Static and quasi-static loading based on Hilti technical data .

All data in this section applies to:
- Correct setting (see Instructions for use (IFU))
- For a single Heli-brick
- Installation direction: horizontal
- Installation in bricks: no installation in joints
- Base material condition: dry
- Hammer drilled holes
- Drill hole cleaning: not required
- No edge distance and spacing influence
- Minimum base material thickness (see setting instruction)
- Technical data refer to Heli-brick installed in Base Material A (inner walls).

Note : Below technical data do not provide an indication for the load to be transferred between Base Material B (masonry façades) to Base Material A (inner walls).

Recommended load

Anchor size				**Heli-Brick 10**
Uncracked				
Concrete C20/25	Tension	N_{rec}	[kN]	1,0

Recommended load

Masonry type				**Heli-Brick 10**
Solid cement brick type:	Tension	N_{rec}	[kN]	0,4
Grout filled hollow clay brick type:	Tension	N_{rec}	[kN]	0,6

Setting information

Setting details

Heli-Brick installation parameters in concrete		
Setting depth	h_{nom} [mm]	50 to 100
Minimum base material thickness	h_{min} [mm]	150
Minimum edge distance	c_{min} [mm]	150
Minimum spacing (single fastener)	s_{min} [mm]	300
Heli-Brick installation parameters in masonry		
Setting depth	h_{nom} [mm]	50 to 90
Solid cement brick Minimum base material thickness	h_{min} [mm]	90
Grout filled hollow clay brick Minimum base material thickness	h_{min} [mm]	115
Minimum edge distance	c_{min} [mm]	150
Minimum spacing (single fastener)	s_{min} [mm]	300