
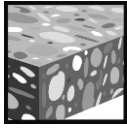
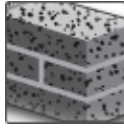


HFV Frame anchor

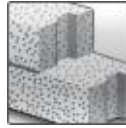
Anchor version	Benefits
 <p>HFV 8 HFV 10</p>	<ul style="list-style-type: none"> - Pre-assembled - Suitable for concrete and solid brick - Countersunk head configuration



Concrete
(non-cracked)



Solid brick



Autoclaved
aerated concrete

Basic loading data according Hilti technical data assessment

All data in this section applies to

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Non-cracked concrete C16/20 – C50/60
- Minimum base material thickness
- Steel failure
- Shear without lever arm
- Screwing-in setting
- Anchors in redundant fastening

Mean ultimate resistance

Anchor size			HFV 8	HFV 10
Nominal embedment depth	h_{nom}	[mm]	60	60
Concrete C16/20 – C50/60	N_{Rum}	[kN]	1,3	2,0
	V_{Rum}	[kN]	2,9	4,4

Characteristic resistance

Anchor size			HFV 8	HFV 10
Nominal embedment depth	h_{nom}	[mm]	60	60
Concrete C16/20 – C50/60	N_{Rk}	[kN]	1,0	1,5
	V_{Rk}	[kN]	2,8	4,2

Design resistance

Anchor size			HFV 8	HFV 10
Nominal embedment depth	h_{nom}	[mm]	60	60
Concrete C16/20 – C50/60	N_{Rd}	[kN]	0,55	0,8
	V_{Rd}	[kN]	2,2	3,3

Recommended loads ^{a)}

Anchor size			HFV 8	HFV 10
Nominal embedment depth	h_{nom}	[mm]	60	60
Concrete C16/20 – C50/60	N_{rec}	[kN]	0,4	0,6
	V_{rec}	[kN]	1,6	2,4

^{a)} With overall partial safety factor for action $\gamma = 1,4$. The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

Service temperature range

Hilti HFV frame anchors may be applied in the temperature range given below.

Temperature range	Base material temperature	Maximum long term base material temperature	Maximum short term base material temperature
Temperature range	-10 °C to +50 °C	+50 °C	+50 °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.

Materials and dimensions



Mechanical properties of the anchor

Anchor size			HFV 8	HFV 10
Nominal tensile strength f_{uk}		[N/mm ²]	400	400
Yield strength f_{yk}		[N/mm ²]	320	320
Stressed cross-section A_s	tension	[mm ²]	13,9	20,8
	shear	[mm ²]	13,9	20,8
Moment of resistance W		[mm ³]	7,3	13,4
Char. bending resistance $M^0_{Rk,s}$		[Nm]	3,5	6,4

Material quality of the anchor

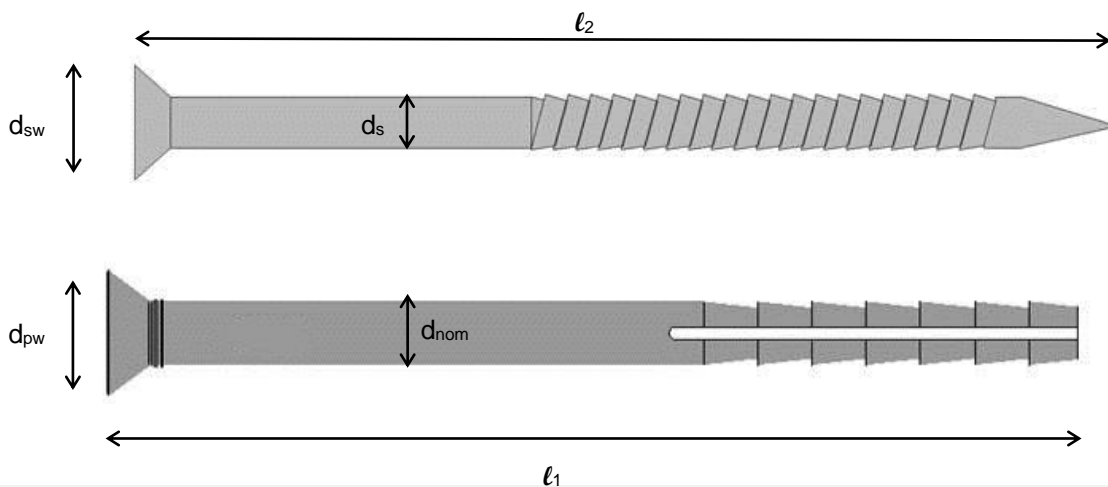
Part	Material
Sleeve	Polyamide, colour black
Screw	Carbon steel, galvanised to min. 5 µm

Masonry base materials

Brick type	
Indian solid clay brick	
Autoclaved Aerated Concrete AAC	

Anchor dimensions

Anchor size			HFV 8	HFV 10
Minimum thickness of fixture	$t_{\text{fix,min}}$	[mm]	0	0
Maximum thickness of fixture	$t_{\text{fix,max}}$	[mm]	75	75
Diameter of the sleeve	d_{nom}	[mm]	8	10
Minimum length of the sleeve	$\ell_{1,\text{min}}$	[mm]	80	80
Maximum length of the sleeve	$\ell_{1,\text{max}}$	[mm]	135	135
Diameter of plastic collar	d_{pw}	[mm]	11,3	13,6
Diameter of the screw	d_{s}	[mm]	4,2	5,15
Minimum length of the screw	$\ell_{2,\text{min}}$	[mm]	85	83
Maximum length of the screw	$\ell_{2,\text{max}}$	[mm]	140	138
Head diameter of countersunk screw	d_{sw}	[mm]	10	12



Settings

Setting details

Anchor size			HFV 8	HFV 10
Drill hole diameter	d_o	[mm]	8	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8,45	10,45
Depth of drilled hole to deepest point	$h_1 \geq$	[mm]	70	70
Overall plastic anchor embedment depth in base material	$h_{nom} \geq$	[mm]	60	60
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	9	11
Installation temperature		[°C]	-10 to +50	

Setting instructions

d_0 [mm]	L [mm]	h_{ef} [mm]	T_{fx} [mm]
8	80	60	20
8	100	60	40
8	120	60	60
8	135	60	75
10	80	60	20
10	100	60	40
10	120	60	60
10	135	60	75

Setting parameters

Anchor size				HFV 8	HFV 10
Nominal embedment depth		h_{nom}	[mm]	60	60
Minimum base material thickness	$\geq C16/20$	h_{min}	[mm]	120	
	Masonry	h_{min}	[mm]	105	
	AAC	h_{min}	[mm]	225	
Minimum spacing	$\geq C16/20$	s_{min}	[mm]	50	
		for $c \geq$	[mm]	100	
	Masonry	a_{min}	[mm]	250	
		s_{min1}	[mm]	250	
		s_{min2}	[mm]	250	
	AAC	a_{min}	[mm]	250	
s_{min1}		[mm]	100		
s_{min2}		[mm]	200		
Minimum edge distance	$\geq C16/20$	c_{min}	[mm]	50	
		for $s \geq$	[mm]	150	
	Masonry	c_{min}	[mm]	125	
	AAC	c_{min}	[mm]	50	

a: minimum spacing between single anchors and anchor groups.

s_1 : minimum spacing between anchors in a anchor group perpendicular to the edge.

s_2 : minimum spacing between anchors in a anchor group parallel to the edge.

