

HPS-1 Impact anchor

Anchor version	Benefits
 HPS-1	- impact anchor for light frames, battens and profiles on solid base materials - impact and temperature resistant - high quality plastic



Concrete



Solid brick



Hollow brick

Autoclaved
aerated
concrete

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 as specified in the table
- Minimum base material thickness
- Loads shall be reduced if the temperature sustains above 40°C

Recommended loads ^{a)}

Anchor size HPS-1		4/0	5/0	5/5 – 5/15	6/0 – 6/25	6/30 – 6/40	8/0	8/10 – 8/40	8/60 – 8/100
Concrete ≥ C16/20	N _{Rd} [kN]	0,05	0,10	0,15	0,25	0,25	0,30	0,40	0,40
	V _{Rd} [kN]	0,15	0,30	0,35	0,55	0,35	0,50	0,90	0,50
Engineering brick, 12 hole, class B	N _{Rd} [kN]	0,05	0,10	0,15	0,25	0,25	0,30	0,40	0,40
	V _{Rd} [kN]	0,15	0,30	0,35	0,55	0,35	0,50	0,90	0,50
Perforated brick, 3 hole common	N _{Rd} [kN]	0,05	0,10	0,15	0,20	0,20	0,25	0,30	0,30
	V _{Rd} [kN]	0,15	0,30	0,35	0,55	0,35	0,50	0,90	0,55
Thermalite block, 7 N lightweight	N _{Rd} [kN]	-	-	0,08	0,15	0,15	0,20	0,25	0,25
	V _{Rd} [kN]	-	-	0,15	0,25	0,15	0,40	0,40	0,25
Thermalite block ½ N lightweight	N _{Rd} [kN]	-	-	0,05	0,08	0,08	-	0,12	0,12
	V _{Rd} [kN]	-	-	0,10	0,15	0,10	-	0,25	0,15
Autoclaved aerated concrete AAC 4, AAC 6	N _{Rd} [kN]	-	-	0,08	0,10	0,10	-	0,15	0,15
	V _{Rd} [kN]	-	-	0,10	0,12	0,10	-	0,30	0,20
Extruded brick, Boral 10	N _{Rd} [kN]	0,05	0,10	0,15	0,20	0,20	0,25	0,35	0,35
	V _{Rd} [kN]	0,15	0,25	0,30	0,40	0,25	0,50	0,90	0,55

a) With overall global safety factor $\gamma = 5$ to the characteristic loads and a partial safety factor of $\gamma = 1,4$ to the design values.

Service temperature range

Hilti HPS impact anchor 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	-40 °C to +80 °C	+50 °C	+80 °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

Material quality

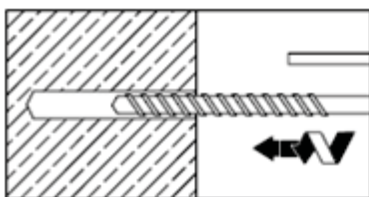
Part	Material
Plastic sleeve	Polyamide 6.6
Screw	Carbon steel, galvanised to 5 µm or Stainless steel, grade A2 or Stainless steel, grade A2, copper-plated

Setting

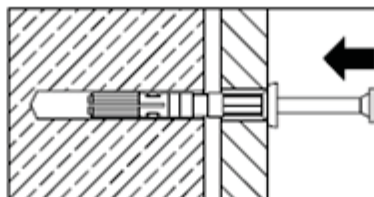
Installation equipment

Anchor size	HPS-1 4	HPS-1 5	HPS-1 6	HPS-1 8
Rotary hammer	TE2 – TE16			
Other tools	Screwdriver			

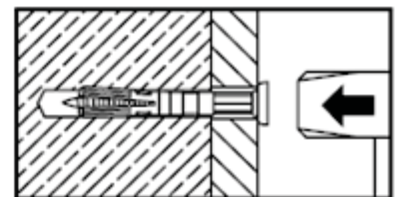
Setting instruction



Drill hole with drill bit

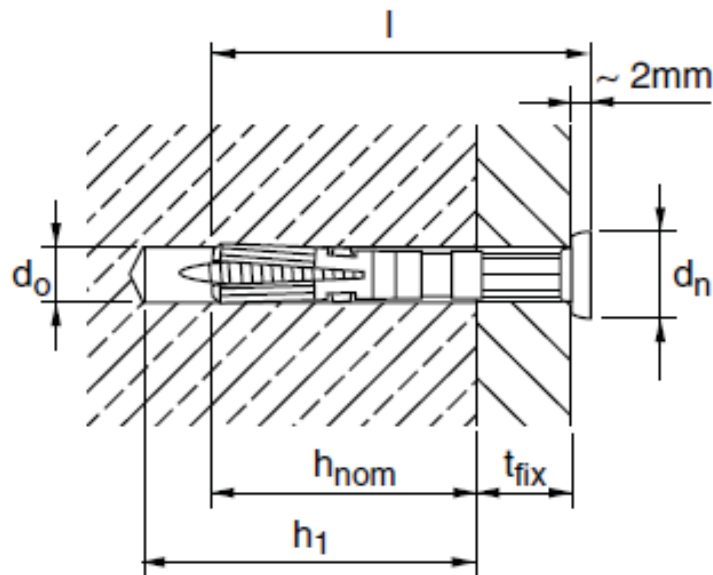


Install anchor.



Hammer in anchor.

Setting details: depth of drill hole h_1 and effective anchorage depth h_{ef}



Setting details HPS-1

Anchor size			HPS-1 4	HPS-1 5	HPS-1 6	HPS-1 8
Nominal diameter of drill bit	d_o	[mm]	4	5	6	8
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	4,35	5,35	6,4	8,45
Depth of drill hole	$h_1 \geq$	[mm]	25	30	40	50
Effective anchorage depth	h_{nom}	[mm]	20	20	25	30
Anchor length	l	[mm]	21,5	22 - 37	27 - 67	28,5 - 132,5
Max fixture thickness	t_{fix}	[mm]	2	15	40	100
Installation temperature		[°C]	-10 to +40			

Base material thickness, anchor spacing and edge distance

Anchor size			HPS-1 4/	HPS-1 5/	HPS-1 6/	HPS-1 8/
Spacing	s	[mm]	20	25	30	35
Edge distance	c	[mm]	20	25	30	35

