



# Hilti HUS 6 SCREW ANCHOR



**Technical Datasheet**


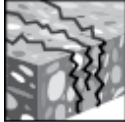
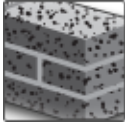

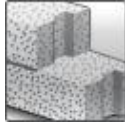

**Update: Jan-23**



# HUS 6 / HUS-S 6 Screw anchor

## Everyday standard screw anchor

Anchor version		Benefits
	HUS 6 (6)	<ul style="list-style-type: none"> <li>- Quick and easy setting</li> <li>- Low expansion forces in base materials</li> </ul>
	HUS-S 6 (6)	<ul style="list-style-type: none"> <li>- Through fastening</li> <li>- Removable</li> </ul>

Base material					Load conditions
					
Concrete (non-cracked)	Concrete (cracked)	Solid brick	Hollow brick	Autoclaved aerated concrete	Fire resistance

Installation conditions	
	
Small edge distance and spacing	Redundant fastening

### Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
Assessment report (fire)	IBMB / MPA Braunschweig	2100/759/17 / 2018-02-16

## 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
- Concrete as specified in the table
- Minimum base material thickness
- Applied loads to individual bricks/blocks without compression may not exceed 1,0 kN
- Applied loads to individual bricks/blocks with compression may not exceed 1,4 kN
- Data applies only to bricks/blocks, there is no test data available for loads in mortar joints. Hilti recommends at least 50% load reduction or on site testing, if the location of the anchor in relation to the joint can not be specified because of wall plaster or insulation.
- Plaster, gravelling, lining or levelling courses are regarded as non-bearing and may not be taken into account for calculation of embedment depth

### Note:

When tightening the screw anchor in soft base materials and in hollow brick, care must be taken not to apply too much torque. If the screw anchor is over-tightened the fastening point is unusable for the HUS 6.

### Anchorage depth

Anchor size		HUS 6		
Nominal embedment depth	$h_{nom}$ [mm]	34	44	64

### Recommended loads <sup>a)</sup> for all load directions

Anchor size		HUS 6			
Base material	Edge distance				
<b>Non-cracked concrete</b> ≥ C20/25	c ≥ 30 mm	$N_{Rec}$	1,0	-	-
		$V_{Rec}$ [kN]	0,5	-	-
	c ≥ 60 mm	$N_{Rec}$	1,0	-	-
		$V_{Rec}$	1,6	-	-
<b>Cracked concrete <sup>b)</sup></b> ≥ C20/25	c ≥ 100 mm	$N_{Rec}$ [kN]	-	0,5	-
		$V_{Rec}$	-	0,5	-
<b>Solid clay brick Mz <sup>c)</sup></b> size: 240x175x113 strength: $f_{c,test} \geq 12$ [N/mm <sup>2</sup> ] density: 1800 [kg/m <sup>3</sup> ]	c ≥ 30 mm	$N_{Rec}$ [kN]	-	0,2	-
		$V_{Rec}$	-	0,3	-
	c ≥ 60 mm	$N_{Rec}$	-	0,2	-
		$V_{Rec}$	-	0,4	-
<b>Solid lime block KS <sup>c)</sup></b> size: 240x175x113 strength: $f_{c,test} \geq 12$ [N/mm <sup>2</sup> ] density: 2000 [kg/m <sup>3</sup> ]	c ≥ 30 mm	$N_{Rec}$ [kN]	-	1,0	-
		$V_{Rec}$	-	0,4	-
	c ≥ 60 mm	$N_{Rec}$	-	1,0	-
		$V_{Rec}$	-	1,1	-
<b>Hollow brick Hlz</b> strength: $f_{c,test} \geq 12$ [N/mm <sup>2</sup> ] density: 800 [kg/m <sup>3</sup> ]	c ≥ 30 mm	$N_{Rec}$ [kN]	-	-	0,1
		$V_{Rec}$	-	-	0,2
	c ≥ 60 mm	$N_{Rec}$	-	-	0,1
		$V_{Rec}$	-	-	0,4
<b>Autoclaved aerated concrete PB2 / PB4 <sup>d)</sup></b> strength: 2 [N/mm <sup>2</sup> ] density: 200 [kg/m <sup>3</sup> ]	c ≥ 30 mm	$N_{Rec}$ [kN]	-	-	0,2
		$V_{Rec}$	-	-	0,1
	c ≥ 60 mm	$N_{Rec}$	-	-	0,2
		$V_{Rec}$	-	-	0,3
<b>Autoclaved aerated concrete PB6</b> strength: 6 [N/mm <sup>2</sup> ] density: 600 [kg/m <sup>3</sup> ]	c ≥ 30 mm	$N_{Rec}$ [kN]	-	-	0,2
		$V_{Rec}$	-	-	0,2
	c ≥ 60 mm	$N_{Rec}$	-	-	0,2
		$V_{Rec}$	-	-	0,6

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.

b) Redundant fastening. See following table for requirements

c) Holes must be drilled using rotary action only (no hammering action)

d) No anchor hole drilling required in PB2 / PB4 aerated concrete

The definition of redundant fastening according to Member States is given in the EN 1992-4 and CEN/TR 17079. In Absence of a definition by a Member States the following default values may be taken.

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design load of action $N_{Sd}$ per fixing point <sup>a)</sup>
3	1	2 kN
4	1	3 kN

## Materials

### Mechanical properties

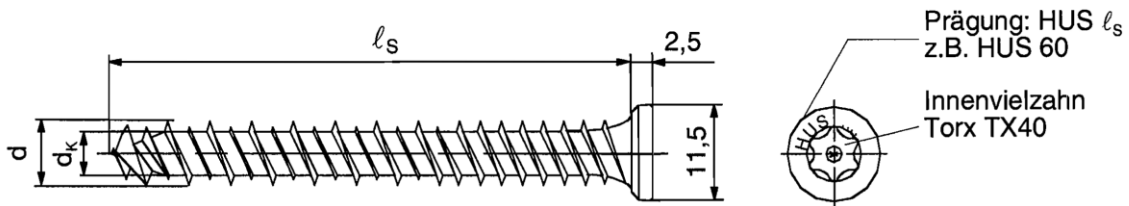
Anchor size	HUS 6 / HUS-S 6	
Nominal tensile strength	$f_{uk}$ [N/mm <sup>2</sup> ]	1000
Yield strength	$f_{yk}$ [N/mm <sup>2</sup> ]	900
Stressed cross-section	$A_s$ [mm <sup>2</sup> ]	5,2
Moment of resistance	$W$ [mm <sup>3</sup> ]	13,8
Design bending resistance	$M^0_{Rk,s}$ [Nm]	11

### Material quality

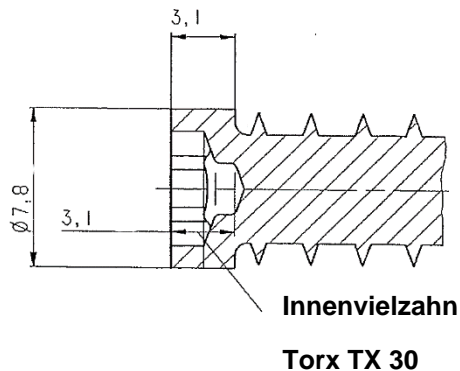
Part	Material
Screw anchor	Carbon steel, galvanized $\geq 5 \mu\text{m}$

### Anchor dimensions

Anchor size	HUS 6		HUS-S 6
Nominal length of screw	$l_s$ [mm]	35 - 220	100 - 220
Core diameter	$d_k$ [mm]	5,3	5,3
Shaft diameter	$d$ [mm]	7,5	7,5



### Head configuration HUS-S

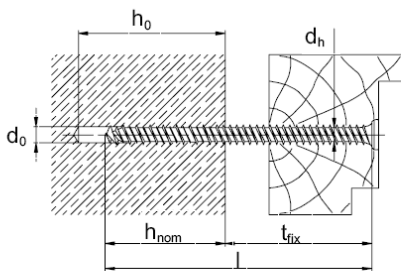


## Setting information

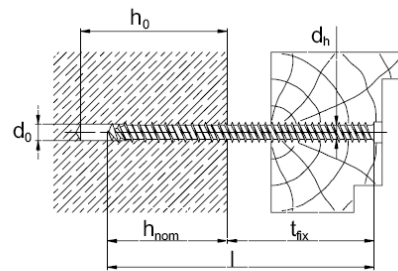
### Setting details

Anchor size		6				
Anchor type		HUS				
Base material		Concrete C20/25	Solid brick /Mz 20	Hollow Brick Hlz 0.8/12	PB2 / PB4 <sup>c)</sup>	PB6 <sup>c)</sup>
Nominal embedment depth	$h_{nom}$ [mm]	34	44	64	64	64
Nominal diameter of drill bit	$d_0$ [mm]	6	6	6	-	6
Cutting diameter of drill bit	$d_{cut}$ [mm]	6,4	6,4	6,4	-	6,4
Minimum depth of drill hole	$h_1 \geq$ [mm]	50	54 <sup>b)</sup>	64 <sup>a)</sup>	-b)	70
Diameter of clearance hole in the fixture to clamp a fixture	$d_f \leq$ [mm]	8,5				
Diameter of clearance hole in the fixture for stand-off applications	$d_f \leq$ [mm]	6,2				
Max. fastening thickness	$t_{fix}$ [mm]	$l_s - h_{nom}$				
Max. installation torque	$T_{inst}$ [mm]	10	4	2	2	2

- a) Holes must be drilled using rotary action only (no hammering action)  
b) No anchor hole drilling required in PB2/PB4 gas aerated concrete  
c) Aerated concrete



HUS



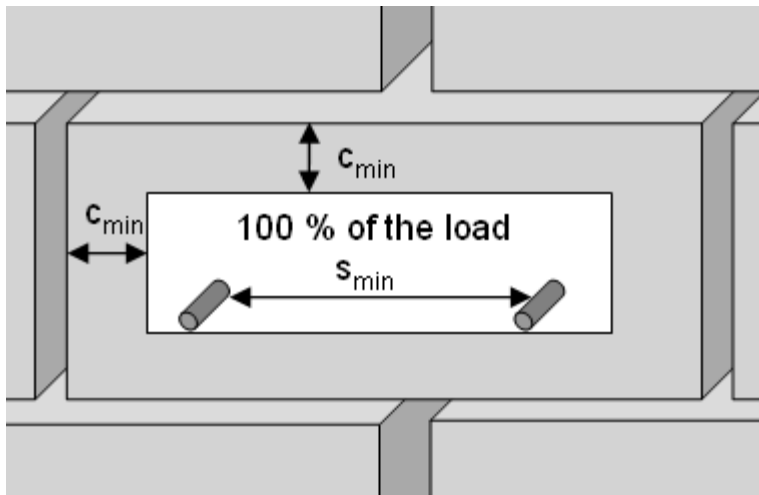
HUS-S

### Installation equipment

Anchor size	HUS 6	HUS-S 6
Rotary hammer	TE 6 / TE 7	
Drill bit	TE-C3X 6/17	
Recommended setting tool	SID / SIW 121, SID / SIW 144, TKI 2500	
Accessories	S-B TXI 40 bit	S-B TXI 30 bit

**Permissible anchor location in brick and block walls:**

- Distance to free edge free edge to solid masonry (HLz and autoclaved aerated gas concrete) units  $\geq 170$  mm
- Distance to free edge free edge to solid masonry (Mz and KS) units  $\geq 200$  mm
- The minimum distance to horizontal and vertical mortar joint ( $c_{min}$ ) is stated in the recommended load table.
- Data applies only to bricks/blocks, there is no test data available for loads in mortar joints. Hilti recommends at least a 50% load reduction or on site testing, if the location of the anchor in relation to the joint (see drawing) can not be specified because of wall plaster or insulation.
- Minimum anchor spacing ( $s_{min}$ ) in one brick/block is  $\geq 2 \cdot c_{min}$



**Setting instructions**

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

Setting instruction for HUS		
1. Drill hole with drill bit	2. Clean the hole	3. Install the anchor with an electric screw driver
Setting instruction for HUS-S		
1. Drill hole with drill bit	2. Clean the hole	3. Install the anchor with an electric screwdriver.