Deutsches Institut für Bautechnik

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body for construction products

Member of EOTA
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Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-10/0005 of 15 September 2025

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Hilti Concrete screw HUS3, HUS4 and HUS
Product family to which the construction product belongs	Fasteners for use in concrete for redundant non-structural systems
Manufacturer	Hilti Aktiengesellschaft Feldkircherstrasse 100 9494 SCHAAN FÜRSTENTUM LIECHTENSTEIN
Manufacturing plant	Hilti Plants
This European Technical Assessment contains	20 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330747-00-0601, Edition 06/2018
This version replaces	ETA-10/0005 issued on 5 February 2024

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Specific Part

1 Technical description of the product

The Hilti Concrete screw HUS3, HUS4 and HUS is an anchor made of galvanised steel (HUS3 -H, -C, -A, -P, -PS, -PL, -I(F), -I(F) Flex, -IQ) or made of stainless steel (HUS-HR/CR, HUS4-HR/CR) of size 6. The anchor is screwed into a predrilled cylindrical drill hole. The special thread of the anchor cuts an internal thread into the member while setting. The anchorage is characterised by mechanical interlock in the special thread.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C3

3.2 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance for static and quasi-static loads for simplified design method B	See Annex B2, Annex C1 and C2
Durability	See Annex B1

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with European Assessment Document EAD No. 330747-00-0601, the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

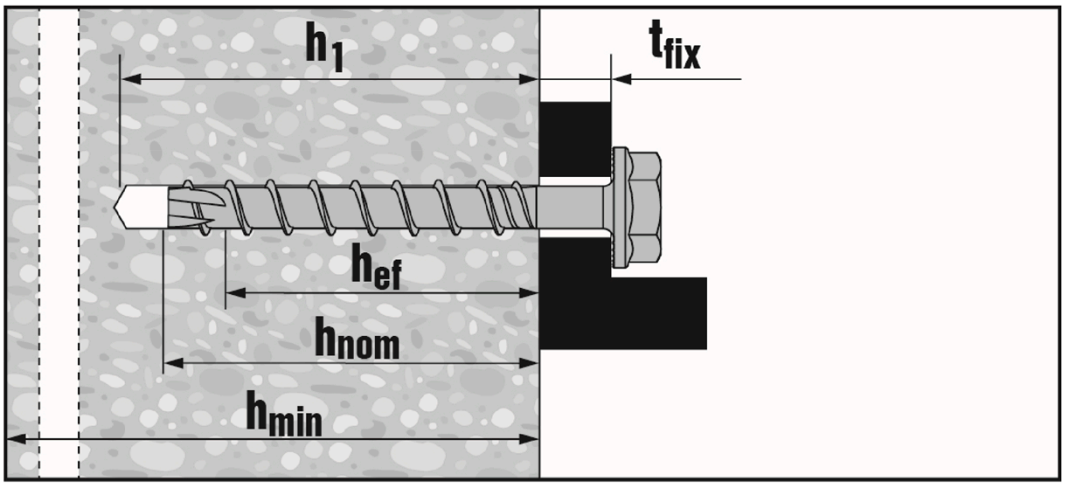
Issued in Berlin on 15 September 2025 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

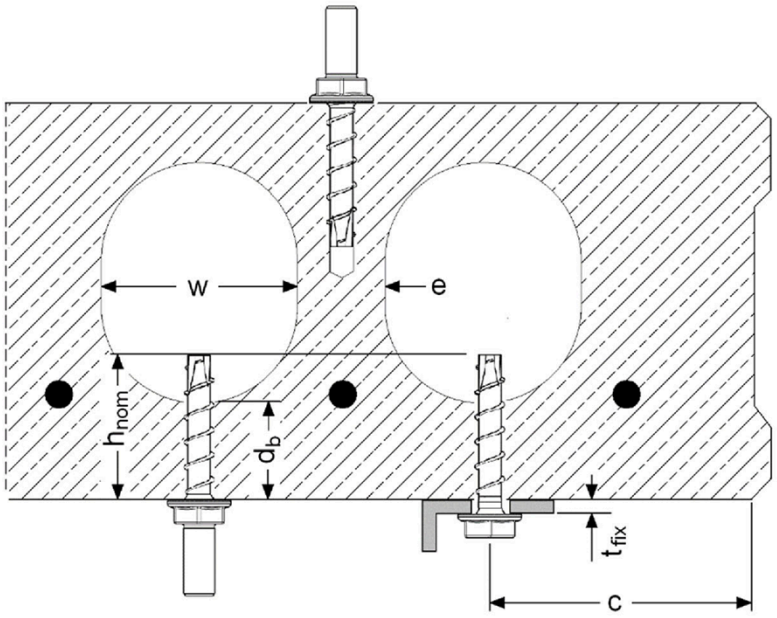
beglaubigt:
Tempel

Deutsches Institut für Bautechnik DIBt

Product and installed condition



Product and installed condition in precast pre-stressed hollow core slabs



Hilti Concrete screw HUS3, HUS4 and HUS	**Annex A1**
Product description Installed condition	

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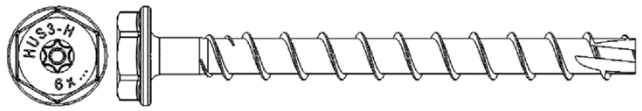
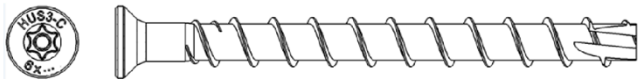
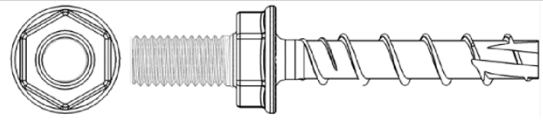
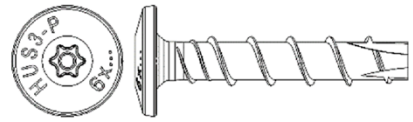
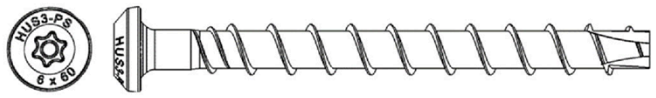
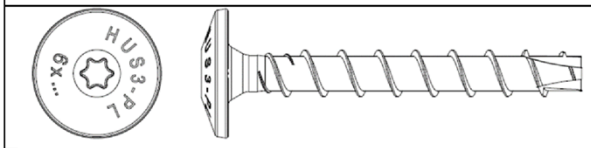
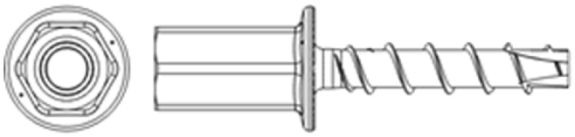
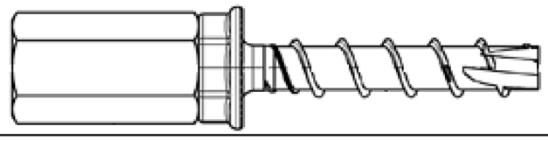
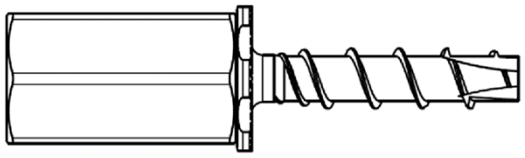
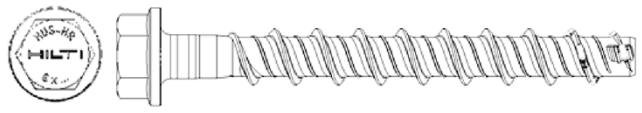
Table A1: Screw types

	1) Hilti HUS3-H, size 6, hexagonal head configuration, galvanized;
	2) Hilti HUS3-C, sizes 6, countersunk head configuration, galvanized;
	3) Hilti HUS3-A, size 6, external thread M8/16 and M10/21, galvanized;
	4) Hilti HUS3-P, size 6, pan head configuration, galvanized;
	5) Hilti HUS3-PS, size 6, pan head (small) configuration, galvanized;
	6) Hilti HUS3-PL, size 6, pan head (large) configuration, galvanized;
	7) Hilti HUS3-I, size 6, galvanized and Hilti HUS3-IF, size 6, multilayer coating, internal thread M8 and M10
	8) Hilti HUS3-I Flex, size 6, galvanaized and Hilti HUS3-IF Flex, size 6, multilayer coating, with external thread: - M8/16 preassembled with coupler M6 or M8, - M10/21 preassembled with coupler M10 or M12;
	9) Hilti HUS3-IQ, size 6, galvanized, with external thread - galvanized coupler with internal thread and spring
	10) Hilti HUS4-HR, HUS-HR, size 6, hexagonal head configuration, stainless steel (A4 grade);
	11) Hilti HUS4-CR, HUS-CR, size 6, countersunk head configuration, stainless steel (A4 grade).

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex A2**
Product description Screw types	

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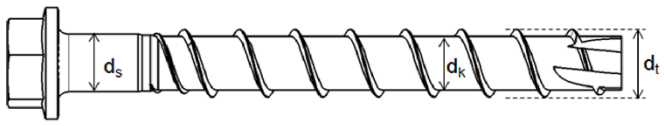
Table A2: Materials

Part	Designation	Material	
Concrete screw HUS3 (all types in Table A1)	Size 6 all lengths	$f_{yk} \geq 745$ N/mm², $f_{uk} \geq 930$ N/mm²	Carbon steel, galvanized (≥ 5 µm) and multilayer coating (F) Rupture elongation $A_5 \leq 8\%$
	Spring (only for HUS3-IQ)	Wire material: $f_{uk} \geq 1750$ N/mm²	Stainless steel
Concrete screw HUS4-HR and HUS4-CR, HUS-HR and HUS-CR	Size 6 all lengths	$f_{yk} \geq 900$ N/mm², $f_{uk} \geq 1050$ N/mm²	Stainless steel (A4 grade) 1.4401 or 1.4404 Rupture elongation $A_5 > 8\%$

Table A3: Fastener dimensions and marking

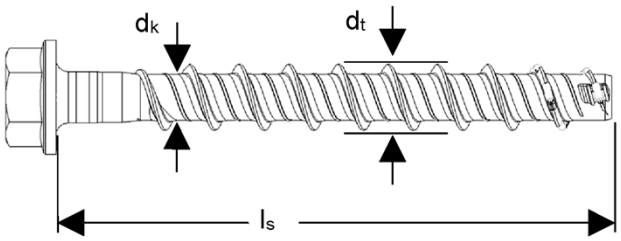
Type			**HUS-HR, CR, HUS4-HR, CR**	**HUS3-H, C, A, P, PS, PL, I(F), I(F) Flex, IQ**
Fastener size			**6**	
			h_{nom}	
Nominal embedment depth		[mm]	35	
Threaded outer diameter	d_t	[mm]	7,6	7,85
Core diameter	d_k	[mm]	5,4	5,85
Shaft diameter	d_s	[mm]	5,8	6,15
Stressed section	A_s	[mm²]	22,9	26,9



Hilti : Manufacturer
HUS3 : Hilti Universal Screw anchor 3rd generation

e.g. "H" : Hexagonal head
R : Corrosion resistance (stainless steel, grade A4)

6 : Nominal anchor diameter/ drill bit diameter



Head stamp:

e.g. Hilti HUS-HR 6 x …
or dots
or nominal internal diameter of coupler (e.g. "8") – for HUS3-IQ

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex A3**
Product description Materials and fastener dimensions and marking	

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Specifications of intended use

Anchorages subject to:

- Static and quasi-static loadings.
- Used only for redundant non-structural systems acc. to EN 1992-4:2018
- Fire exposure: only for concrete C20/25 to C50/60, not in pre-stressed hollow concrete slabs.

Base materials:

- Compacted reinforced or unreinforced normal weight concrete without fibres according to
- EN 206:2013.
- Strength classes C20/25 to C50/60 according to EN 206:2013.
- Non-cracked or cracked concrete.
- Precast, pre-stressed hollow concrete slabs with w/e ≤ 4,2 and strength classes C30/37 to C50/60.

Use conditions (Environmental conditions):

- Anchorages subject to dry internal conditions: all screw types.
- For all other conditions corresponding to corrosion resistance classes CRC according to EN 1993-1-4:2006 + A1:2015
  - Screw types made of stainless steel acc. to Annex A3 (HUS4-HR/CR; HUS-HR/CR): CRC III

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the fastener is indicated on the design drawings (e. g. position of the fastener relative to reinforcement or to supports, etc.).
- Anchorages are designed in accordance with:
  EN 1992-4:2018 Design method B and EOTA Technical Report TR 055, Edition February 2018.

Installation:

- Hammer drilling only.
- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- In case of aborted hole: new drilling at a minimum distance away of twice the depth of the aborted hole or smaller distance if the aborted hole is filled with high strength mortar and if under shear or oblique tension load it is not the direction of the load application.
- After installation further turning of the fastener must not be possible.
- The head of the fastener must be supported on the fixture and is not damaged.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B1**
Intended use Specifications	

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Table B1: Installation parameters

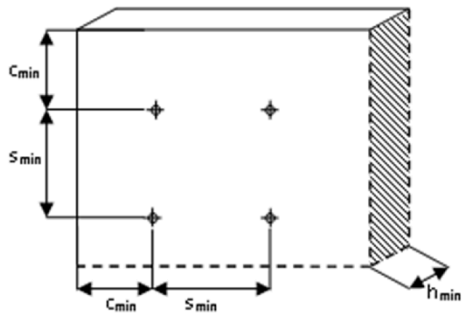
Type			**HUS4, HUS**		**HUS3**					
			HR	**CR**	**H**	**C**	**A**	**P, PS, PL**	**I(F), I(F) Flex**	**IQ**
Fastener size			**6**							
Nominal embedmenth depth	h_{nom}	[mm]	35							
Nominal drill hole diameter	d_0	[mm]	6							
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	6,40							
Clearance hole diameter	$d_f \leq$	[mm]	9							
Wrench size (H, A, I -type)	SW	[mm]	13	-	13	-	13	-	13	17
Countersunk head diameter	d_h	[mm]	-	11,0	-	11,5	-	-	-	-
Torx size	TX	[-]	-	T30	T30	T30	-	T30	-	-
Depth of drill hole in floor/ wall position	$h_1 \geq$	[mm]	45							
Depth of drill hole in ceiling position	$h_1 \geq$	[mm]	38							
Installation Torque	T_{inst}	[Nm]	- [1]	- [1]	18					
Setting tool [2] Strength class		≥ C20/25	Impact screw driver, e.g. Hilti SIW 14 A or Hilti SIW 22 A [2]							

[1] Hand setting in concrete base material not allowed (machine setting only).
[2] Hilti recommended electrical impact screw drivers are listed in the related MPII.

Table B2: Minimum thickness of concrete member, minimum edge distance and spacing

Type			**HUS4, HUS**		**HUS3**					
			HR	**CR**	**H**	**C**	**A**	**P, PS, PL**	**I(F), I(F) Flex**	**IQ**
Fastener size			**6**							
Nominal embedmenth depth	h_{nom}	[mm]	35							
Minumum thickness of concrete member	h_{min}	[mm]	80							
Minimum edge distance	c_{min}	[mm]	35 (80)[1]							
Minimum spacing	s_{min}	[mm]	35							

[1] see Annex C1, Tabelle C1.



Hilti Concrete screw HUS3, HUS4 and HUS

Annex B2

Intended use
Installation parameters.
Minimum concrete thickness and minimum edge distance and spacing

Deutsches Institut für Bautechnik DIBt

Table B3: Screw length and maximum thickness of fixture

Type	**HUS4, HUS**		**HUS3**								
	HR	**CR**	**H**	**C**	**A**	**P**	**PS**	**PL**	**I(F)**	**I(F) Flex**	**IQ**
Fastener size	**6**										
Nominal embedment depth [mm] / Length of screw [mm]	h_{nom} 35										
	Maximum thickness of fixture [mm] t_{fix}										
35	0	-	-	-	0	-	-	-	0	0	0
40	-	5	5	5	-	5	5	-	-	-	-
45	10	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	20	-	-	-	20	20	-
60	25	25	25	25	-	25	25	25	-	-	-
70	35	35	-	35	-	-	-	-	-	-	-
80	-	-	45	-	-	45	-	-	-	-	-
100	-	-	65	-	-	-	-	-	-	-	-
120	-	-	85	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	100	-
155	-	-	-	-	-	-	-	-	-	120	-
175	-	-	-	-	-	-	-	-	-	140	-
195	-	-	-	-	-	-	-	-	-	160	-

Hilti Concrete screw HUS3, HUS4 and HUS

Intended use
Screw length and thickness of the fixture

Annex B3

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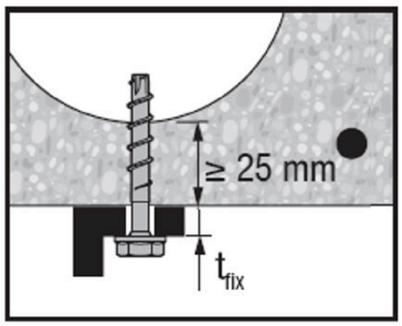
Table B4: Screw length and thickness of fixture used in precast pre-stressed hollow core slabs

Type	**HUS4, HUS**		**HUS3**								
	HR	**CR**	**H**	**C**	**A**	**P**	**PS**	**PL**	**I(F)**	**I(F) Flex**	**IQ**
Fastener size	**6**										
Thickness of fixture [mm] / Length of screw [mm]	thickness of fixture [mm] t_{fix}										
35	0	-	-	-	0	-	-	-	0	0	0
40	-	10	5	5	-	5	5	-	-	-	-
45	15	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	20	-	-	-	20	20	-
60	5-25	5-25	5-25	5-25	-	5-25	5-25	5-25	-	-	-
70	15-35	15-35	-	15-35	-	-	-	-	-	-	-
80	-	-	25-45	-	-	25-45	-	-	-	-	-
100	-	-	45-65	-	-	-	-	-	-	-	-
120	-	-	65-85	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	80-100	-
155	-	-	-	-	-	-	-	-	-	100-120	-
175	-	-	-	-	-	-	-	-	-	120-140	-
195	-	-	-	-	-	-	-	-	-	140-160	-

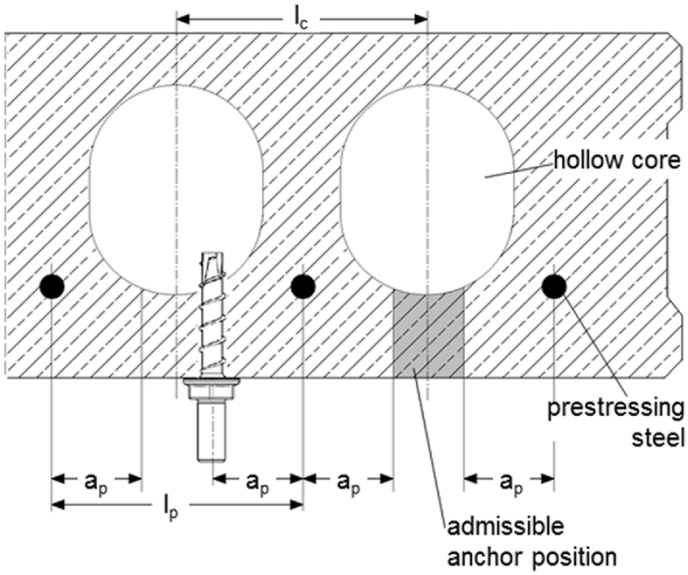


Hilti Concrete screw HUS3, HUS4 and HUS

Intended use
Screw length and thickness of the fixture used in precast pre-stressed hollow core slabs

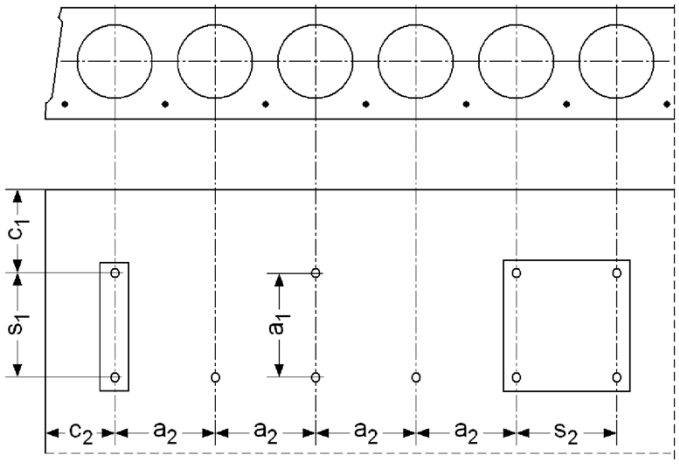
Annex B4

Admissible anchor positions in precast pre-stressed hollow core slabs



core distance	l_c	≥ 100 mm
prestressing steel distance	l_p	≥ 100 mm
distance between anchor position and prestressing steel	a_p	≥ 50 mm

Minimum spacing and edge distance of anchors and distance between anchor groups in precast pre-stressed hollow core slabs



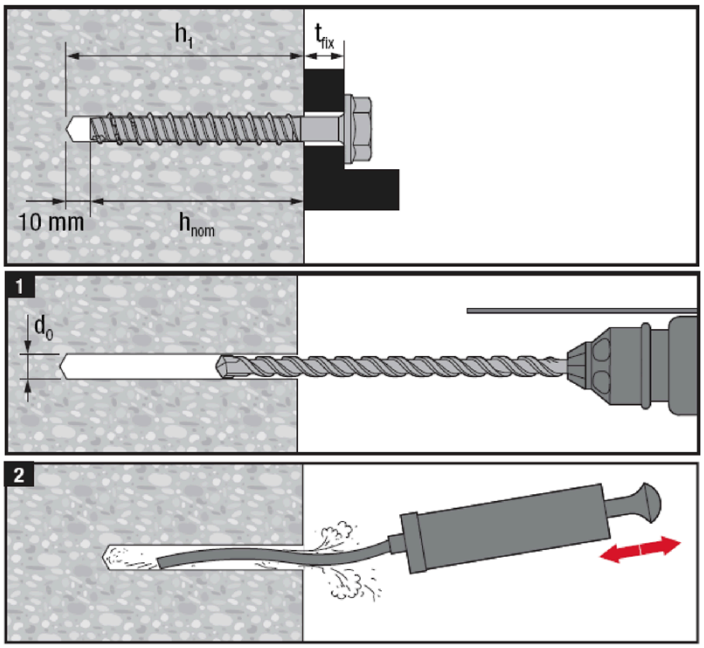
Minimum edge distance	c_{min}	≥ 100 mm
Minimum anchor spacing	s_{min}	≥ 100 mm
Minimum distance between anchor groups	a_{min}	≥ 100 mm

c_1, c_2 edge distance
s_1, s_2 anchor spacing
a_1, a_2 distances between anchor groups

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B5**
Intended use Admissible anchor positions, minimum spacing and edge distance of anchors and distance between anchor groups in precast pre-stressed hollow core slabs	

Deutsches Institut für Bautechnik DIBt

Installation instruction (HUS4-HR, CR; HUS-HR, CR)

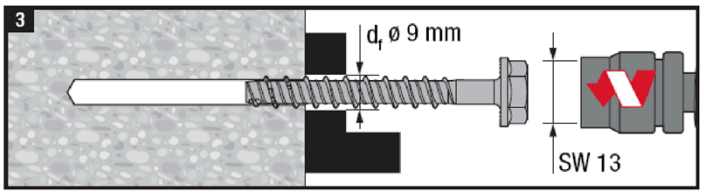


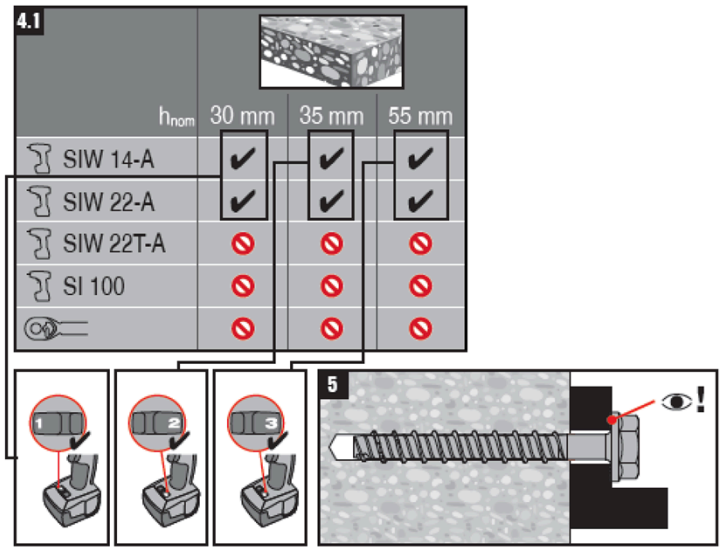
Hole cleaning is not required when 3x ventilation[1)] after drilling is executed and one of the following conditions is fulfilled:
- drilling is in the vertical upwards orientation; or
- drilling is in vertical downwards direction and the drilling depth is increased [2)] by additional $3*d_0$

[1)] Moving the drill bit in and out of the drill hole 3 times after the recommended drilling depth h_1 is achieved. This procedure shall be done with both revolution and hammer functions activated in the drill machine. For more details read the relevant Instruction of use.

[2)] It shall be ensured that the thickness of the concrete member h fulfills the following equation:
$h \geq h_1 + \Delta h$, where $\Delta h = \max(2*d_0; 30\ mm)$.
Δh is the minimum distance between the drilling end and the opposite end of the concrete member.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B6**
Intended use Installation instruction	





Hand setting of HUS4-HR, CR; HUS-HR, CR in concrete base material not allowed (machine setting only).

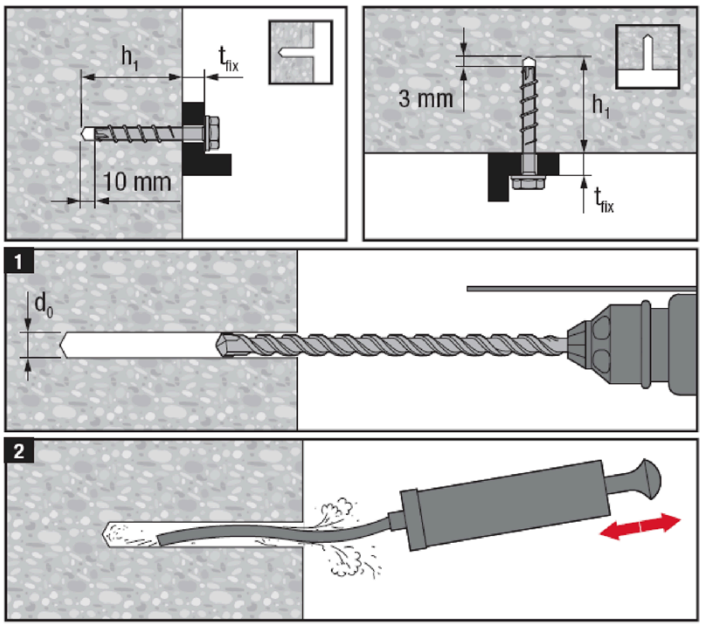
Hilti recommended electrical impact screw drivers are listed in the instruction for use included in the sales box.

Installation with other electrical impact screw drivers of equivalent force and performance is possible.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B7**
Intended use Installation instruction	

Deutsches Institut für Bautechnik DIBt

Installation instruction (HUS3-H, C, I(F), I(F) Flex, IQ A, P, PS, PL)

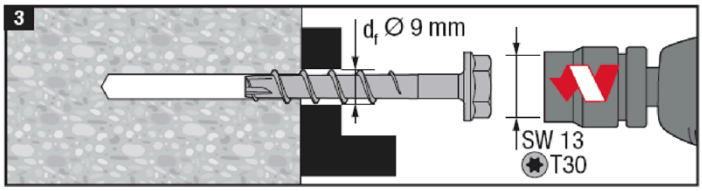


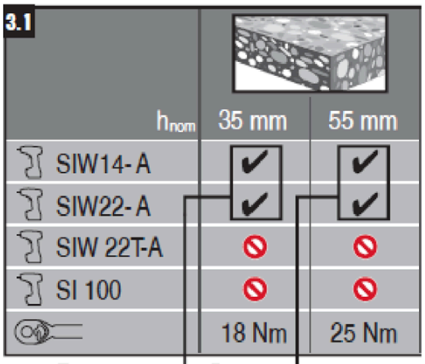
Hole cleaning is not required when 3x ventilation[1)] after drilling is executed and one of the following conditions is fulfilled:
- drilling is in the vertical upwards orientation; or
- drilling is in vertical downwards direction and the drilling depth is increased [2)] by additional $3*d_0$

[1)] Moving the drill bit in and out of the drill hole 3 times after the recommended drilling depth h_1 is achieved. This procedure shall be done with both revolution and hammer functions activated in the drill machine. For more details read the relevant Instruction of use.

[2)] It shall be ensured that the thickness of the concrete member h fulfills the following equation:
$h \geq h_1 + \Delta h$, where $\Delta h = \max(2*d_0; 30\ mm)$.
Δh is the minimum distance between the drilling end and the opposite end of the concrete member.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B8**
Intended use Installation instruction	





Hilti recommended electrical impact screw drivers are listed in the instruction for use included in the sales box.

Installation with other electrical impact screw drivers of equivalent force and performance is possible.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B9**
Intended use Installation instruction	

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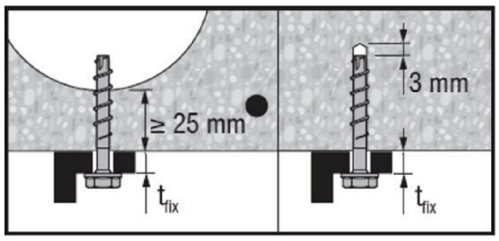
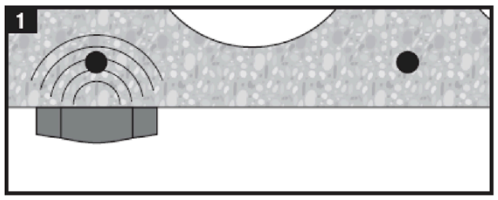
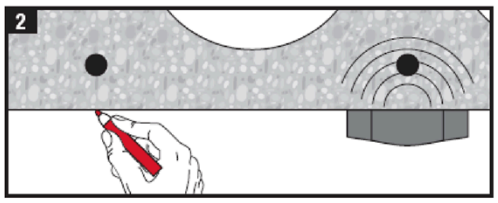
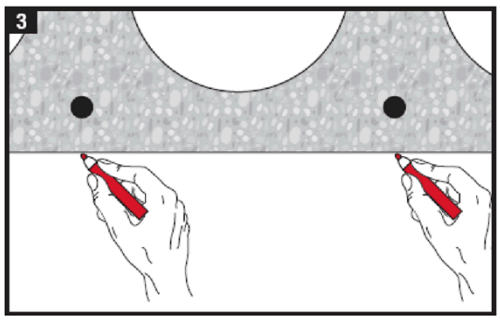
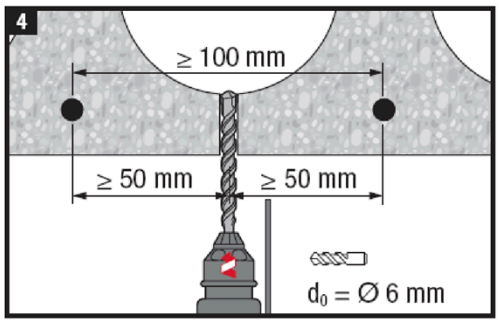
Installation instruction in precast pre-stressed hollow core slabs

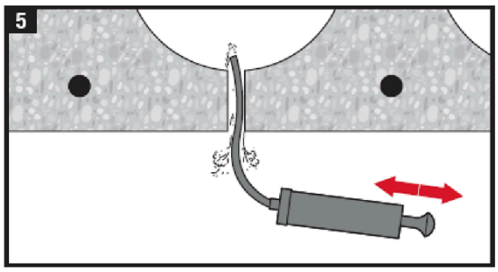


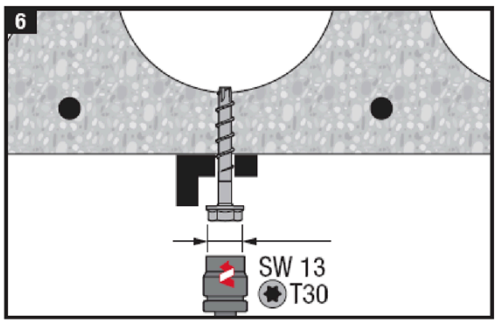


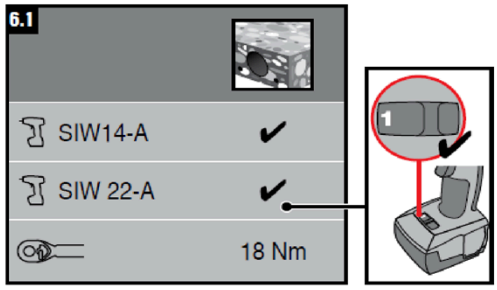


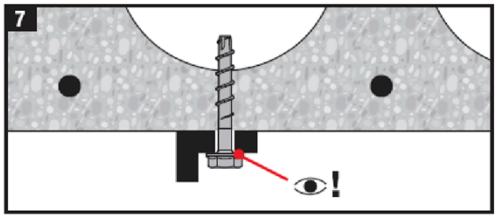












Installation with other electrical impact screw drivers of equivalent force and performance is possible.
Hilti recommended electrical impact screw drivers are listed in the instruction for use included in the sales box.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex B10**
Intended use Installation instruction in precast pre-stressed hollow core slabs	

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Table C1: Characteristic values of resistance in case of static and quasi-static loading

Type				**HUS4, HUS**		**HUS3**					
				HR, CR		**H**	**P, PS, PL**	**I(F), I(F) Flex**	**A**	**C**	**IQ**
Fastener size				**6x40, 6x45**	**6x60, 6x70**	**6 all lengths**					
Nominal embedment depth		$h_{nom} \geq$	[mm]	35							
All load directions											
Characteristic resistance in C20/25	c ≥ 35mm	F^0_{Rk}	[kN]	3		2					
	c ≥ 80 mm	F^0_{Rk}	[kN]	3,5	5	3					
Partial factor		γ_M	[-]	1,5							
Installation factor		γ_{inst}	[-]	1,4		1,0					
Increasing factors ψ_c of concrete for $F^0_{Rk} = F^0_{Rk\,(C20/25)} \cdot \psi_c$		C30/37		1,22							
		C40/50		1,41							
		C50/60		1,55							
Effective anchorage depth		h_{ef}	[mm]	27		25					
Characteristic edge distance		c_{cr}	[mm]	1,5 h_{ef}							
Characteristic spacing		s_{cr}	[mm]	3 h_{ef}							
Shear load with lever arm											
Characteristic bending resistance		$M^0_{Rk,s}$	[Nm]	19		22					
Partial factor		$\gamma_{Ms,V}$	[-]	1,5							

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex C1**
Performances Characteristic values for resistance under static and quasi-static action	

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Table C2: Characteristic values of resistance in case of static and quasi-static loading in precast pre-stressed hollow core slabs C30/37 to C50/60

Type			**HUS4-HR, CR; HUS-HR, CR**					**HUS3-H, P, PS, PL, I(F), I(F) Flex, A, C, IQ**		
Fastener size			**6x40, 6x45**		**6x60, 6x70**			**6 all lengths**		
All load directions										
Bottom flange thickness	d_b	[mm]	≥ 25	≥ 30	≥ 25	≥ 30	≥ 35	≥ 25	≥ 30	≥ 35
Characteristic resistance	F^0_{Rk}	[kN]	1	2	1	2	3	1	2	3
Partial factor	γ_M	[-]	1,5							
Installation factor	γ_{inst}	[-]	1,0							
Characteristic edge distance	c_{cr}	[mm]	100							
Characteristic spacing	s_{cr}	[mm]	200							

Note: the fixture thickness values according to Table B4 (Annex B4) shall be considered.

Hilti Concrete screw HUS3, HUS4 and HUS	**Annex C2**
Performances Characteristic values of resistance in case of static and quasi-static loading in precast pre-stressed hollow core slabs C30/37 to C50/60	

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Table C3: Characteristic values of resistance under fire exposure

Type				**HUS4, HUS**		**HUS3**					
				HR	**CR**	**H**	**P, PS, PL**	**I(F), I(F) Flex**	**A**	**C**	**IQ**
Fastener size				**6**							
Nominal embedment depth		$h_{nom} \geq$	[mm]	35							
All load directions											
Characteristic resistance	R30…R90	$F_{Rk,fi}$	[kN]	0,7	0,2	0,5					
	R120	$F_{Rk,fi}$	[kN]	0,5	0,1	0,4					
Edge distance	R30…R120	$c_{cr,fi}$	[mm]	54		50					
Anchor spacing	R30…R120	$s_{cr,fi}$	[mm]	108		100					

The fire resistance data is only valid for concrete C20/25 to C50/60 with a minimum slab thickness of 80 mm.
The data is not valid for precast pre-stressed hollow core slabs.
The edge distance of the anchor must be $c \geq 300$ mm and $\geq 2h_{ef}$ if the fire attack is from more than one side.
The anchorage depth shall be increased for wet concrete by at least 30 mm compared to the given value.