



Hilti HUS3 Screw Anchor

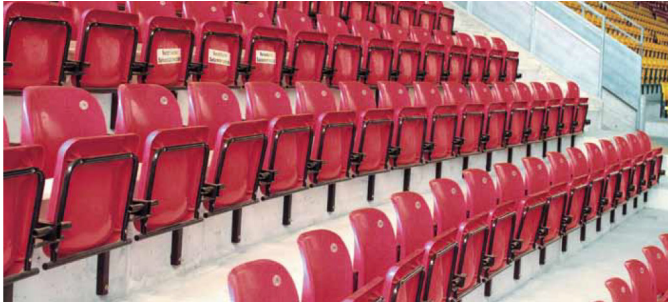
Submission Folder

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Screw anchor HUS3



BASE MATERIALS

- Concrete (aerated)
- Concrete (cracked)
- Concrete (hollow deck)
- Concrete (uncracked)
- Masonry (solid)

APPLICATIONS

- Railings and handrails
- Structural steel
- Formwork and bracing
- Temporary applications
- Base plate fastening in steel and metal applications

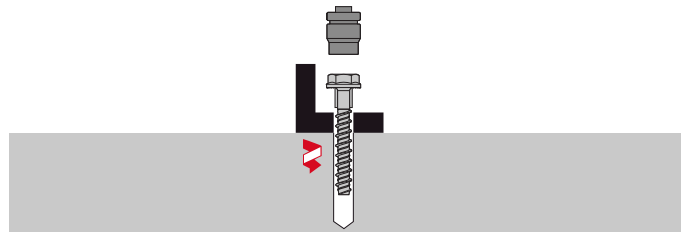
ADVANTAGES

- Higher productivity - less drilling and fewer operations than with conventional anchors
- Reduced edge and spacing distances
- Hex bolt head style for convenient installation using the SIW 22T-A impact wrench
- Adjustable screw
- For use in both cracked and uncracked concrete
- Reusable (applicable for HUS3-H/-C 8, 10 and HUS3-H 14)

Approvals

ETA, Seismic ETA-13/1038 for HUS3 screw anchor

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



These are abbreviated instructions which may vary according to the application.

Watch Video



Technical data

Material composition	Steel, zinc-plated (min. 5 µm)
Material, corrosion	Carbon steel
Suitable for cracked concrete with redundant fastenings	Yes

Recommended load (kN), non-cracked concrete at 25N/mm², safety factor(γ)=3

Model	Size	M6	M8	M10	M14 (HUS3-H only)
Standard embedment depth					
HUS3-H/C	Tensile Load, Nrec	3.0	4.0	6.7	9.1
	Shear Load, Vrec	4.2	6.3	10.0	18.2

Recommended load (kN), cracked concrete at 25N/mm², safety factor(γ)=3

Model	Size	M6	M8	M10	M14 (HUS3-H only)
Standard embedment depth					
HUS3-H/C	Tensile Load, Nrec	2)	3.0	5.4	6.5
	Shear Load, Vrec	4.2	6.3	9.3	13.0

Remarks:

- 1) All the data applies to no edge distance, spacing and other influences
- 2) For detail design method, please refer to Fastening Technology Manual
- 3) For redundant fastening only, please contact Hilti for technical assistance

HUS3-H (Hexagon head, galvanized min. 5um)



Order Now



Ordering designation	Anchor size	Drill bit diameter	Drilling Hole Depth at embed. 2	Fastening thickness at embed.2	Base plate clearance hole	Sales pack quantity	Item number
HUS3-H 6x40/5	6	6 mm	-	-	9 mm	100 pc	416735
HUS3-H 6x60/5/25	6	6 mm	65 mm	5 mm	9 mm	100 pc	416736 ¹⁾
HUS3-H 6x80/25/45	6	6 mm	65 mm	25 mm	9 mm	100 pc	416737 ¹⁾
HUS3-H 6x100/45/65	6	6 mm	65 mm	45 mm	9 mm	100 pc	416738 ¹⁾
HUS3-H 6x120/65/85	6	6 mm	65 mm	65 mm	9 mm	100 pc	416739 ¹⁾
HUS3-H 8x55 5/-/-	8	8 mm	-	-	12 mm	50 pc	2079794
HUS3-H 8x65 15/5/-	8	8 mm	70 mm	5 mm	12 mm	50 pc	2079795
HUS3-H 8x75 25/15/5	8	8 mm	70 mm	15 mm	12 mm	50 pc	2079796
HUS3-H 8x85 35/25/15	8	8 mm	70 mm	25 mm	12 mm	50 pc	2079797
HUS3-H 8x100 50/40/30	8	8 mm	70 mm	40 mm	12 mm	50 pc	2079798 ¹⁾
HUS3-H 8x120 70/60/50	8	8 mm	70 mm	60 mm	12 mm	50 pc	2079799 ¹⁾
HUS3-H 8x150 100/90/80	8	8 mm	70 mm	90 mm	12 mm	50 pc	2079910 ¹⁾
HUS3-H 10x60 5/-/-	10	10 mm	-	-	14 mm	50 pc	2079911 ¹⁾
HUS3-H 10x70 15/-/-	10	10 mm	-	-	14 mm	50 pc	2079912
HUS3-H 10x80 25/5/-	10	10 mm	85 mm	5 mm	14 mm	50 pc	2079913
HUS3-H 10x90 35/15/5	10	10 mm	85 mm	15 mm	14 mm	50 pc	2079914
HUS3-H 10x100 45/25/15	10	10 mm	85 mm	25 mm	14 mm	50 pc	2079915
HUS3-H 10x110 55/35/25	10	10 mm	85 mm	35 mm	14 mm	50 pc	2079916
HUS3-H 10x130 75/55/45	10	10 mm	85 mm	55 mm	14 mm	50 pc	2079917 ¹⁾
HUS3-H 10x150 95/75/65	10	10 mm	85 mm	75 mm	14 mm	50 pc	2079918
HUS3-H 14x75 10/-/-	14	14 mm	-	-	18 mm	16 pc	2079921 ¹⁾
HUS3-H 14x100 35/15/-	14	14 mm	95 mm	15 mm	18 mm	16 pc	2079922
HUS3-H 14x130 65/45/15	14	14 mm	95 mm	45 mm	18 mm	16 pc	2079923
HUS3-H 14x150 85/65/35	14	14 mm	95 mm	65 mm	18 mm	16 pc	2079924

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3-C (Countersunk torx head, galvanized min. 5um)



Order Now



Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 2	Fastening thickness at embed.2	Base plate clearance hole	Bit size	Sales pack quantity	Item number
HUS3-C 6x40 /5	6	6 mm	35 mm	5 mm	9 mm	T30	100 pc	2119774
HUS3-C 6x60 /5/25	6	6 mm	55 mm	5 mm	9 mm	T30	100 pc	2119775
HUS3-C 6x70 /15/35	6	6 mm	55 mm	15 mm	9 mm	T30	100 pc	2119776
HUS3-C 8x65 15/-/-	8	8 mm	-	-	12 mm	T45	50 pc	2079931
HUS3-C 8x75 25/15/-	8	8 mm	70 mm	15 mm	12 mm	T45	50 pc	2079932
HUS3-C 8x85 35/25/15	8	8 mm	70 mm	25 mm	12 mm	T45	50 pc	2079933
HUS3-C 10x70 15/-/-	10	10 mm	-	-	14 mm	T50	50 pc	2079934
HUS3-C 10x90 35/15/-	10	10 mm	85 mm	15 mm	14 mm	T50	50 pc	2079935
HUS3-C 10x100 45/25/15	10	10 mm	85 mm	25 mm	-	T50	50 pc	2079936 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3-I (Internally threaded, galvanized min. 5um)

Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 1	Fastening thickness at embed. 1	Sales pack quantity	Item number
HUS3-I 6x35 M8/M10	6	6 mm	45 mm	-	100 pc	416740 ¹⁾
HUS3-I 6x35 M8/M10 bucket	6	6 mm	45 mm	-	300 pc	428662 ¹⁾
HUS3-I 6x55 M8/M10	6	6 mm	65 mm	-	100 pc	423180

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3-A (Externally threaded, galvanized min. 5um)

Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 1	Fastening thickness at embed.1	Sales pack quantity	Item number
HUS3-A 6x35 M8 /16	6	6 mm	45 mm	-	100 pc	416741
HUS3-A 6x35 M10 /21	6	6 mm	45 mm	-	100 pc	416742
HUS3-A 6x55 M8 /16	6	6 mm	65 mm	-	100 pc	416743
HUS3-A 6x55 M10 /21	6	6 mm	65 mm	-	100 pc	416744

Please visit Hilti website for the latest item numbers and related products

HUS3-P (Pan head, galvanized min. 5um)

Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 1	Fastening thickness at embed.1	Base plate clearance hole	Sales pack quantity	Item number
HUS3-P 6x40 /5	6	6 mm	45 mm	5 mm	9 mm	100 pc	416745 ¹⁾
HUS3-P 6x60 /5/25	6	6 mm	65 mm	5 mm	9 mm	100 pc	416746 ¹⁾
HUS3-P 6x80 /25/45	6	6 mm	65 mm	25 mm	9 mm	100 pc	416747 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3 setting tools and accessories

Ordering designation	Corresponding anchor	Sales pack quantity	Item number
SIW 22T-A-3.3AH (21.6V, 2x 3.3Ah BATTERIES, 1x STANDARD CHARGER)	-	1 pc	3469136
IMPACT SOCKET SI-SA 1/2" - 7/16" HEX	-	1 pc	2094451
CHECK GAUGE HRG 8	HUS3-H/C 8	1 pc	2092003
CHECK GAUGE HRG 10	HUS3-H/C 10	1 pc	2090674
CHECK GAUGE HRG 14	HUS3-H 14	1 pc	2090675
DRIVER BIT S-SY TX45 35 HUS (5)	-	5 pc	2094673
DRIVER BIT S-SY TX50 35 HUS (5)	-	5 pc	2094675

Please visit Hilti website for the latest item numbers and related products

HUS3 Screw anchor






Ultimate performance screw anchor








Anchor technology & design






Heavy / medium duty metal anchors

Plastic / light duty / other metal anchors

Chemical anchors

Anchor version	Benefits
 <p>HUS3-H (6,8,10,14)</p>	<ul style="list-style-type: none"> - High productivity - less drilling and fewer operations compared to conventional anchors
 <p>HUS3-C (6,8,10,14)</p>	<ul style="list-style-type: none"> - ETA approval for cracked and non-cracked concrete
 <p>HUS3-A (6)</p>	<ul style="list-style-type: none"> - ETA approval for Seismic C1 and C2^{a)} - ETA approval for adjustability (unscrew-rescrew)
 <p>HUS3-P (6)</p>	<ul style="list-style-type: none"> - High loads - Small edge and spacing distance
 <p>HUS3-I (6)</p>	<ul style="list-style-type: none"> - abZ (DIBt) approval for reusability in fresh concrete ($f_{ck, cube} = 10/15/20 \text{ Nmm}^2$) for temporary applications - Three embedment depths for maximum design flexibility - Forged-on washer and hexagon head with no protruding thread - Through fastening

Base material	Load conditions
 <p>Uncracked concrete</p>	 <p>Static/ quasi-static</p>
 <p>Cracked concrete (Tension zone)</p>	 <p>Seismic ETA-C1, C2</p>
 <p>Solid brick</p>	 <p>Fire resistance</p>
 <p>Autoclaved aerated concrete</p>	

Installation conditions	Other information
 <p>Small edge distance and spacing</p>	 <p>European Technical Assessment</p>
	 <p>CE conformity</p>
	 <p>PROFIS Anchor design software</p>
	 <p>DIBt Approval Reusability</p>

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European Technical Assessment ^{b)}	DIBt, Berlin	ETA-13/1038 / 2016-12-08
Fire test report	DIBt, Berlin	ETA-13/1038 / 2016-12-08

a) Please contact your Hilti representative for seismic resistance data
 b) All data given in this section according ETA-13/1038 issue 2016-12-08.

Recommended general notes

* The below clauses based on Hilti product qualifications are for references only. Selection of clauses by the engineer shall be based on the specific application needs. Please contact Hilti's technical team for further details.

- Anchor shall be made of galvanised steel of sizes 6/8/10/14, which when screwed into a predrilled cylindrical drill hole cuts an internal thread into the member while setting, creating a mechanical interlock with the base material and the thread.
- The anchor must have European Technical Assessment (ETA); evaluating performance in cracked and un-cracked concrete and seismic conditions
- Anchor shall be installed as per the manufacturer's approved procedure and equipment
- Anchor shall have identification marks on the bolt head that can be used to verify the anchor type and length during inspection
- The recommended tension load of the anchor should not be not less than ___kN in cracked concrete with concrete strength at 25N/mm² (including overall global safety factor=3)
- Effective anchorage depth of the anchor should not exceed ___mm

For HUS3-H/-C 8, 10 and 14

- Anchor must be approved ofr adjustability as per the manufacturer's approved procedure and equipment

Basic loading data (for a single anchor)

All data in this section applies to:

- Static and quasi-static loading
- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Steel failure
- Minimum base material thickness
- Concrete C 20/25, f_{ck,cube}=25 N/mm². Concrete strength influence factor can be applied when concrete grade > C20/25, when steel failure does not govern.

Anchorage depth

Anchor size		6		8			10			14		
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Nominal embedment depth	h_{nom} [mm]	h_{nom1}		h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}
		55		50	60	70	55	75	85	65	85	115

Characteristic resistance

Anchor size		6		8			10			14		
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Non-cracked concrete												
Tension N_{Rk}	[kN]	9,0	7,5	9,0	12,0	16,0	12,0	20,0	27,8	17,5	27,3	44,4
Shear V_{Rk}	[kN]	12,5	12,5	12,8	19,0	22,0	13,5	30,0	34,0	35,0	54,5	62,0
Cracked concrete												
Tension N_{Rk}	[kN]	6,0	6,0	6,0	9,0	12,0	9,7	16,2	19,8	12,5	19,4	31,7
Shear V_{Rk}	[kN]	12,5	12,5	9,1	19,0	22,0	9,7	30,0	34,0	24,9	38,9	62,0

Design resistance^{a)}

Anchor size		6		8			10			14		
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Non-cracked concrete												
Tension N_{Rd}	[kN]	5,0	4,2	6,0	8,0	10,7	8,0	13,3	18,5	11,7	18,2	29,6
Shear V_{Rd}	[kN]	8,3	8,3	8,5	12,7	14,7	9,0	20,0	22,7	23,3	36,3	41,3
Cracked concrete												
Tension N_{Rd}	[kN]	3,3	3,3	4,0	6,0	8,0	6,4	10,8	13,2	8,3	13,0	21,1
Shear V_{Rd}	[kN]	8,3	8,3	6,1	12,7	14,7	6,4	20,0	22,7	16,6	25,9	41,3

a) Includes material partial factor according to ETA-13/1038 issue 2016-12-08

Recommended loads^{a)}

Anchor size		6		8			10			14		
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Non-cracked concrete												
Tension N_{Rec}	[kN]	3,0	2,5	3,0	4,0	5,3	4,0	6,7	9,3	5,8	9,1	14,8
Shear V_{Rec}	[kN]	4,2	4,2	4,3	6,3	7,3	4,5	10,0	11,3	11,7	18,2	20,7
Cracked concrete												
Tension N_{Rec}	[kN]	2,0	2,0	2,0	3,0	4,0	3,2	5,4	6,6	4,2	6,5	10,6
Shear V_{Rec}	[kN]	4,2	4,2	3,0	6,3	7,3	3,2	10,0	11,3	8,3	13,0	20,7

a) Includes global safety factor of 3.0

Materials
Mechanical properties

Anchor size		6		8		10		14	
Type	HUS3-	H,C,A,I,P		H,C		H,C		H	
Nominal tensile strength f_{uk}	[N/mm ²]	930		810		805		730	
Yield strength f_{yk}	[N/mm ²]	745		695		690		630	
Stressed cross-section A_s	[mm ²]	26,9		48,4		77,0		131,7	
Moment of resistance W	[mm ³]	19,6		47		95		213	
Design bending resistance $M_{Rd,s}^a$	[Nm]	21		46		92		187	

Material quality

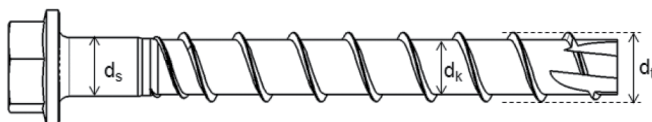
Type	Material
HUS3 - H,A,C,P,I	Carbon steel, galvanized

Type	Part		
HUS3-H	Hexagonal head		
HUS3-C	Countersunk head		
HUS3-A	External thread		
HUS3-P	Pan head		
HUS3-I	Internal thread		

Anchor dimensions ^{a)}

Anchor size		6	8	10	14
Type	HUS3-	H,C,A,I,P	H,C	H,C	H
Threaded outer diameter	d_t [mm]	7,85	10,30	12,40	16,85
Core diameter	d_k [mm]	5,85	7,85	9,90	12,95
Shaft diameter	d_s [mm]	6,15	8,45	10,55	13,80
Stressed section	A_s [mm ²]	26,9	48,4	77,0	131,7

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio



HUS3: Hilti Universal Screw 3rd generation

H: Hexagonal head

10: Screw diameter

45/25/15: Maximum thickness fixture $t_{fix1}/t_{fix2}/t_{fix3}$ related to the embedment depth $h_{nom1}/h_{nom2}/h_{nom3}$ (see Annex B3).

Screw length and thickness of fixture for HUS3-H/-C/-A/-I/-P^{a)}

Anchor size		6					
Nominal embedment depth [mm]		h _{nom1}					
		55					
Thickness of fixture		t _{fix1}	t _{fix2}	t _{fix1}	t _{fix2}	t _{fix1}	t _{fix2}
Length of screw [mm]	55	-	-	0	0	-	-
	60	5	5	-	-	5	5
	70	-	15	-	-	-	-
	80	25	-	-	-	25	-
	100	45	-	-	-	-	-
	120	65	-	-	-	-	-
	135	-	-	80	-	-	-
	155	-	-	100	-	-	-
	175	-	-	120	-	-	-
	195	-	-	140	-	-	-

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio

Screw length and thickness of fixture for HUS3-C^{a)}

Anchor size		8			10		
Nominal embedment depth [mm]		h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}
		50	60	70	55	75	85
Thickness of fixture		t _{fix1}	t _{fix2}	t _{fix3}	t _{fix2}	t _{fix1}	t _{fix3}
Length of screw [mm]	65	15	5	-	-	-	-
	70	-	-	-	15	-	-
	75	25	15	-	-	-	-
	85	35	25	15	-	-	-
	90	-	-	-	35	15	-
	100	-	-	-	45	25	15

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio

Screw length and thickness of fixture for HUS3-H^{a)}

Anchor size		8			10			14		
Nominal embedment depth [mm]		h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}
		50	60	70	55	75	85	65	85	115
Thickness of fixture		t _{fix1}	t _{fix2}	t _{fix3}	t _{fix1}	t _{fix2}	t _{fix3}	t _{fix1}	t _{fix2}	t _{fix3}
Length of screw [mm]	55	5	-	-	-	-	-	-	-	-
	60	-	-	-	5	-	-	-	-	-
	65	15	5	-	-	-	-	-	-	-
	70	-	-	-	15	-	-	-	-	-
	75	25	15	5	-	-	-	10	-	-
	80	-	-	-	25	5	-	-	-	-
	85	35	25	15	-	-	-	-	-	-
	90	-	-	-	35	15	5	-	-	-
	100	50	40	30	45	25	15	35	15	-
	110	-	-	-	55	35	25	-	-	-
	120	70	60	50	-	-	-	-	-	-
	130	-	-	-	75	55	45	65	45	15
	150	100	90	80	95	75	65	85	65	35

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio

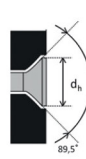
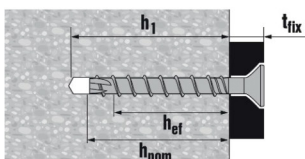
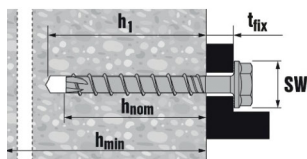
Setting information

Setting details

Anchor size			6				
Type	HUS3-		H	C	A	P	I
Nominal embedment depth	[mm]		h_{nom1}				
			55				
Nominal diameter of drill bit	d_0	[mm]	6				
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	6,4				
Clearance hole diameter	$d_f \leq$	[mm]	9				
Wrench size	SW	[mm]	13	-	13	-	13
Countersunk head diameter	d_h	[mm]	-	11,5	-		
Torx size	TX	[mm]	-	30	-	30	-
Depth of drill hole in floor/wall position	$h_1 \geq$	[mm]	65				
Depth of drill hole in ceiling position	$h_1 \geq$	[mm]	58				
Installation Torque	T_{inst}	[Nm]	25				

Setting details

Anchor size			8			10			14		
Type	HUS3-		H, C			H, C			H		
Nominal embedment depth	[mm]		h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}
			50	60	70	55	75	85	65	85	115
Nominal diameter of drill bit	d_0	[mm]	8			10			14		
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8,45			10,45			14,50		
Clearance hole diameter	$d_f \leq$	[mm]	12			14			18		
Wrench size	SW	[mm]	13			15			21		
Countersunk head diameter	d_h	[mm]	18			21			-		
Torx size	TX	[mm]	45			50			-		
Depth of drill hole in floor/wall position	$h_1 \geq$	[mm]	60	70	80	65	85	95	75	95	125
Depth of drill hole in ceiling position	$h_1 \geq$	[mm]	-	80	90	-	95	105	-		



Installation equipment

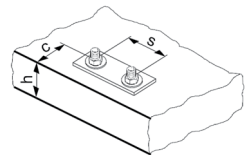
Anchor size		6	8	10	14
Type	HUS3-	H,C,A,I,P	H,C	H,C	H
Rotary hammer		TE 2 -TE 7	TE 2 – TE 30		
Drill bit for concrete, solid clay brick and solid sand-lime brick		CX 6	CX 8	CX 10	CX 14
Drill bit for aerated concrete		CX 5	CX 6	CX 8	-
Socket wrench insert		S-NSD 13 ½"	SI-S ½" 13S	SI-S ½" 15S	SI-S ½" 21S
Torx		TX30	S-SY TX45	S-SY TX50	-
Tube for temporary application ^{a)}		-	HRG 8	HRG 10	HRG 14
Setting tool for solid brick and aerated concrete		-	SFH 22 A		
Setting tool for hollow core slab		SIW 14 A SIW 22 A	SIW 22 A		

Setting details

Anchor size		6	8	10	14							
Type	HUS3-	H,C,A,I,P	H,C	H,C	H							
Nominal embedment depth	d_0	[mm]	55	50	60	70	55	75	85	65	85	115
Minimum base material thickness	$d_{cut} \leq$	[mm]	100	100	100	120	100	130	140	120	160	200
Minimum spacing	$d_f \leq$	[mm]	35	40	50	50	50	50	60	60	75	75
Minimum edge distance	SW	[mm]	35	50	50	50	50	50	60	60	75	75
Critical spacing for splitting failure	d_h	[mm]	126	120	140	170	130	180	220	170	200	280
Critical edge distance for splitting failure	TX	[mm]	63	60	70	85	65	90	110	85	100	140
Critical spacing for concrete cone failure	$h_1 \geq$	[mm]	3 h_{ef}									
Critical edge distance for concrete cone failure	$h_1 \geq$	[mm]	1,5 h_{ef}									

For spacing (edge distance) smaller than critical spacing (critical edge distance) the design loads have to be reduced (see system design resistance).

Critical spacing and critical edge distance for splitting failure apply only for non-cracked concrete. For cracked concrete only the critical spacing and critical edge distance for concrete cone failure are decisive.



Setting instructions

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

Setting instruction without adjustment	
1. Drilling 	2. Cleaning
3. Installing the anchor by impact screw driver 	4. Checking
Setting instruction with adjustment	
1. Drilling 	2. Cleaning
3. Inserting the anchor 	4. Anchor installed
5. Checking 	6. Adjusting the anchor by impact screw driver
7. Checking 	8. Adjusting the anchor by impact screw driver
9. Checking 	

The anchor can be adjusted max. two times.

The total allowed thickness of shims added during the adjustment process is 10 mm.

The final embedment depth after adjustment process must be larger or equal than h_{nom2} or h_{nom3} .

Basic loading data (for a single anchor) in solid masonry units




All data in this section applies to:

- Load values valid for holes drilled with TE rotary hammers in hammering mode
- Correct anchor setting (see instruction for use, setting details)
- The core/material ratio may not exceed 15 % of a bed joint area
- The brim area around holes must be at least 70mm
- Edge distances, spacing and other influences, see below
- All data given in this section according to Hilti Technical Data

Nominal embedment depth

Anchor size	6	8	10
Nominal embedment depth h_{nom} [mm]	55	60	75

Recommended loads for HUS3

Anchor size		Compressive strength class [N/mm ²]	6	8	10
			A, H, I, C, P	H, C	H, C
			F _{rec} Tensile and shear loads		
	Solid clay	≥ 8	0,6	-	-
	brick Mz	≥ 10	0,7	-	-
	12/2,0	≥ 12	0,8	1,1	1,4
	DIN 105 /	≥ 16	0,9	-	-
	EN 771-1	≥ 20	0,9	1,6	2,0
	Solid clay	≥ 8	0,8	-	-
	brick Mz	≥ 10	0,9	-	-
	12/2,0	≥ 12	1,0	1,3	1,4
	DIN 105 /	≥ 16	1,1	-	-
	EN 771-1	≥ 20	1,2	1,7	2,1
	Aerated concrete PPW 6-0,4 DIN 4165/ EN 771-4	≥ 6	0,4	0,7	0,9

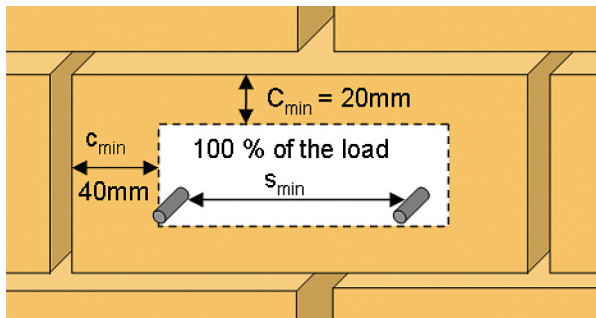
Permissible anchor location in brick and block walls

Edge distance and spacing influence

- The technical data for HUS3 anchors are reference loads for MZ 12, KS 12 and PPW 6. Due to the large variation of natural stone slid bricks, on site anchor testing is recommended to validate technical data
- The HUS3 anchor was installed and tested in center of solid bricks as shown. The HUS3 anchor was not tested in the mortar joint between solid bricks or in hollow bricks, however a load reduction is expected
- For brick walls where anchor position in brick can not be determined, 100 % anchor testing is recommended
- Distance to free edge free edge to solid masonry (Mz and KS) units ≥ 200mm
- Distance to free edge free edge to solid masonry (autoclaved aerated gas concrete) units ≥ 170mm
- The minimum distance to horizontal and vertical mortar joint (c_{min}) is started in drawing below
- Minimum anchor spacing (s_{min}) in one brick/block is ≥ 80 mm

Limits

- All data is for multiple use for non-structural applications
- Plaster, graveling, lining or levelling courses are regarded as non-bearing and may not be taken into account for the calculation of embedment depth
- The decisive resistance to tension loads is the lower value of N_{rec} (brick breakout, pull out) and $N_{max,pb}$ (pull out of one brick)



Basic loading data for single anchor in hollow core slab

Basic loading data

All data in this section applies to

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Ratio core width / web thickness $w/e \leq 4,2$
- Concrete C 30/37 to C 50/60

Nominal embedmenth depth

Anchor size			8	10
Type	HUS3		C, H	C, H
Bottom flange thickness	$d_b \geq$	[mm]	30	30
All load directions	F_{Rk}	[kN]	2,0	2,0

Design resistance

Anchor size			8	10
Type	HUS3		C, H	C, H
Bottom flange thickness	$d_b \geq$	[mm]	30	30
All load directions	F_{Rk}	[kN]	1,3	1,3

Nominal embedmenth depth

Anchor size			8	10
Type	HUS3		C, H	C, H
Bottom flange thickness	$d_b \geq$	[mm]	30	30
All load directions ^{a)}	F_{Rk}	[kN]	0,95	0,95

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.

Requirements for redundant fastening

The definition of redundant fastening according to Member States is given in the ETAG 001 Part six, Annex 1 & EAD 330747 c.1.2.1. In Absence of a definition by a Member State the following default values may be taken

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design load of action NSd per fixing point ^{a)}
3	1	2 kN
4	1	3 kN

- a) The value for maximum design load of actions per fastening point NSd is valid in general that means all fastening points are considered in the design of the redundant structural system. The value N_{Sd} may be increased if the failure of one (= most unfavourable) fixing point is taken into account in the design (serviceability and ultimate limit state) of the structural system e.g. suspended ceiling.

Setting

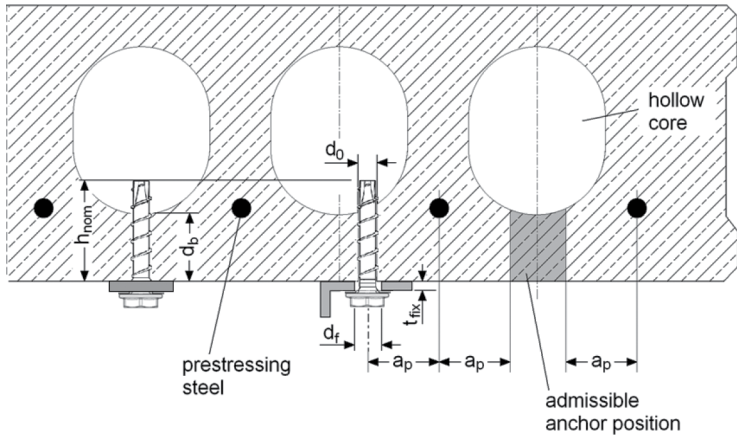
Anchor size	8	10
Type	C, H	C, H
Rotary hammer	Hilti TE 6 / TE 7	
drill bit	TE-CX 4	
Impact screw driver	SIW 22 A, 1 st or 2 nd gear	

Setting details

Anchor size		8	10
Type	HUS3	C, H	C, H
Nominal embedment depth	$h_{nom} \geq$ [mm]	40	45
Bottom flange thickness	$d_b \geq$ [mm]	30	30
Nominal diameter of drill bit	d_o [mm]	8	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	10,45
Nominal depth of drill hole a)	$h_1 \geq$ [mm]	40	40
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	12	14
Nominal effective anchorage depth	h_{ef} [mm]	30	30
Distance between anchor position and prestressing steel	$a_p \geq$ [mm]	50	50

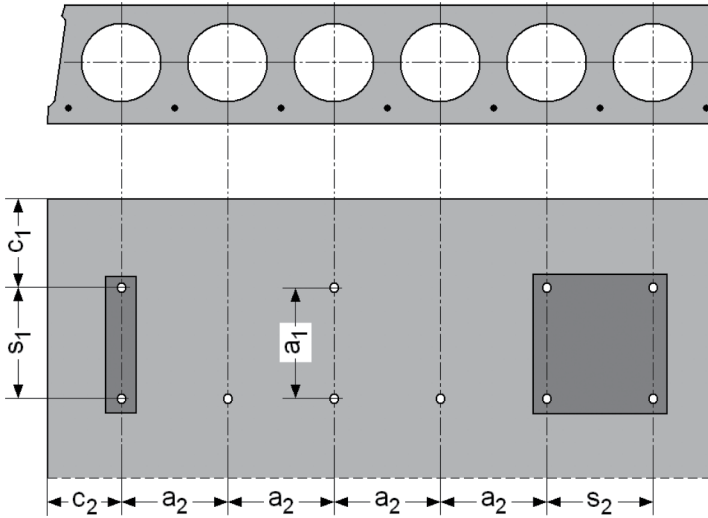
- a) Nominal depth of drill hole may be deeper than bottom flange thickness

Anchor Type	Size [mm]	Length [mm]	$d_b=30$ [mm]		$d_b=35$ [mm]		$d_b=40$ [mm]		$d_b=50$ [mm]	
			$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]	$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]	$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]	$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]
HUS3-H	8	55	5	15	5	10	5	5	5	5
		65	5	25	5	20	5	15	5	5
		75	5	35	5	30	5	25	5	15
		85	15	45	15	40	15	35	15	25
		100	30	60	30	55	30	50	30	40
		120	50	80	50	75	50	70	50	60
		150	80	110	80	105	80	100	80	90
HUS3-C	8	65	15	25	15	20	15	15	15	5
		75	15	35	15	30	15	25	15	15
		85	15	45	15	40	15	35	15	25
HUS3-H	10	60	5	15	5	10	5	5	5	5
		70	15	25	15	20	15	15	15	5
		80	5	35	5	30	5	25	5	15
		90	5	45	5	40	5	35	5	25
		100	15	55	15	50	15	45	15	35
		110	25	65	25	60	25	55	25	45
		130	45	85	45	80	45	75	45	65
		150	65	105	65	100	65	95	65	85
HUS3-C	10	70	15	25	15	20	15	15	15	10
		90	15	45	15	40	15	35	15	25
		100	15	55	15	50	15	45	15	35



Setting details

Anchor size		8	10
Type	HUS3	C, H	C, H
Minimum edge distance	$c_{min} \geq$ [mm]	100	
Minimum anchor spacing	$s_{min} \geq$ [mm]	100	
Minimum distance between anchor groups	$a_{min} \geq$ [mm]	100	



Setting instructions

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

Installation in hollow core slabs	
<p>1. Checking the anchor with tube Hilti HSB</p>	<p>2. Positioning pre-stressed steel</p>
<p>3. Marking pre-stressed steel position</p>	<p>4. Marking pre-stressed steel position</p>
<p>5. Drilling</p>	<p>6. Setting the anchor</p>
<p>7. Setting the anchor</p>	<p>8. Checking</p>

Anchor technology & design

Heavy / medium duty metal anchors

Plastic / light duty / other metal anchors

Chemical anchors

Attn. : To whom it may concern

Date : 17 June 2021
Ref. : 031/AM/BL/21

Subject : Country of Origin- Hilti HUS3 Screw Anchor

Dear Sir / Madam,

Enclosed please find the information of Hilti HUS3 Screw Anchor.

Brand Name : Hilti

Model Name : Hilti HUS3 Screw Anchor

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre,
223 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Country of Origin :
- Liechtenstein
- Taiwan (for anchor size of 6mm only)

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at hksales@hilti.com.

Yours faithfully,



Bill Lee
Product Portfolio Manager
Hilti (Hong Kong) Ltd.



Hilti HUS3 Screw Anchor Job Reference

Year	Project Name	Contractor	Project type
2019	TMCLK TUNNEL	DRAGAGES-BOUYGUES J.V.	10) Tunnel/Ven Build
2019	HKIA AIRPORT SKYCITY REGAL HOTEL	ALLIANCE CONTRACTING CO LTD	02) Hotel
2019	HKIA P583 T1 ANNEX BLDG & CP4 EXT	SAS INTERNATIONAL (HK) LIMITED	08) Civil Building
2019	SCL 1123 EXHIBITION STATION	MING TAI CONSTRUCTION ENGINEERING	11) Railway
2019	R6 TKO-LAM TIN TUNNEL NE/2015/01	LEIGHTON - CHINA STATE JOINT	10) Tunnel/Ven Build
2019	TMCLK C4 NORTH CONNECT TUNNEL BLDGS	KEE SEE ENGINEERING CO LTD	08) Civil Building
2019	HAVEN OF HOPE HOSPITAL EXT	JIN FENG ENGINEERING COMPANY LTD	05) Hospital
2019	HKIA P581 AIRPORT T1 EAST HALL EXT	ASIAN POWER ENGINEERING LIMITED	08) Civil Building
2019	EAST KOWLOON CULTURAL CENTRE	LEIGHTON CONTRACTORS (ASIA) LTD	07) ASD (excl. Hospital)
2019	SCL 1128 CAUSEWAY BAY TUNNEL	FULL KEY ENGINEERING CO LTD	11) Railway
2020	R6 TKO-LAM TIN TUNNEL NE/2015/01	LEIGHTON - CHINA STATE JOINT	10) Tunnel/Ven Build
2020	CHUN YAT ST & CHUN CHEONG ST AMC	GENUINE TREASURE ACCESS	03) Commercial
2020	LI TAK ST & KOK CHEUNG ST	SINGYES ENGINEERING (H.K.) CO LTD	04) Residential
2020	EAST KOWLOON CULTURAL CENTRE	LEIGHTON CONTRACTORS (ASIA) LTD	07) ASD (excl. Hospital)
2020	HKIA AIRPORT SKYCITY REGAL HOTEL	ALLIANCE CONTRACTING CO LTD	02) Hotel
2020	HKIA P583 T1 ANNEX BLDG & CP4 EXT	SAS INTERNATIONAL (HK) LIMITED	08) Civil Building
2020	HKIA SKYCITY COMPLEX BLDG A2&A3	GENUINE TREASURE ACCESS	03) Commercial
2020	NAM CHEONG STATION SHK RES	WAI CHING E&M ENGINEERING CO LTD	04) Residential
2020	1-3 SHEK KOK RD, TKO AREA 85	LUEN HOP METAL AND ALUMINIUM	04) Residential
2020	TMCLK C4 NORTH CONNECT TUNNEL BLDGS	KWOK CHEONG HONG ENGINEERING CO LTD	08) Civil Building



Hilti HUS3 Screw Anchor Job Reference

Year	Project Name	Contractor	Project type
2021	TAIKOO PLACE PH 2B	HOP HING CONSTRUCTION	03) Commercial
2021	CINGLEOT LOGISTICS CENTRE, AIRPORT - ALIBABA	ABLE CONTRACTORS LIMITED	03) Commercial
2021	KAI TAK AREA 1F SITE 2, NKIL 6556	HIN TAT ENGINEERING LIMITED	03) Commercial
2021	WEST KOWLOON - LYRIC THEATRE	GAMMON CONSTRUCTION LIMITED	07) ASD (excl. Hospital)
2021	CHUN YAT ST & CHUN CHEONG ST AMC	GENUINE TREASURE ACCESS	03) Commercial
2021	R6 TKO-LAM TIN TUNNEL NE/2015/01	LEIGHTON - CHINA STATE JOINT	10) Tunnel/Ven Build
2021	LI TAK ST & KOK CHEUNG ST	SINGYES ENGINEERING (H.K.) CO LTD	04) Residential
2021	M PLUS-WEST KLN	KWOK FUNG INTERIOR	07) ASD (excl. Hospital)
2021	HKIA SKYCITY COMPLEX BLDG A2&A3	COLMAT CONSTRUCTION AND	03) Commercial
2021	KAI TAK INLAND REVENUE TOWER	WO KIN ENGINEERING LIMITED	07) ASD (excl. Hospital)