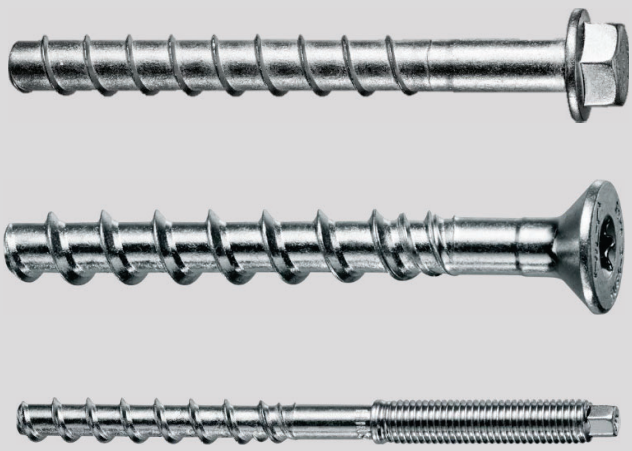
PRODUCT TECHNICAL DATASHEET

HUS4 Screw anchor

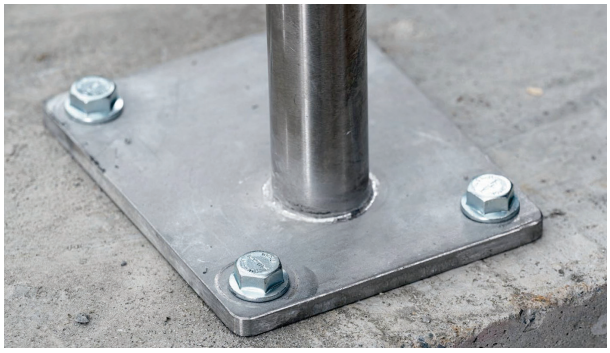
Hollow core slabs
Steel-to-concrete

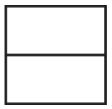


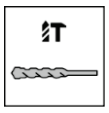
HUS4 Screw anchor for use in Hollow core slabs

High performance screw anchor for single point fastening

Anchor version		Benefits
	HUS4-H(F) (8-10)	- Hexagonal head (H) with an integrated washer for a neat appearance of through-fastened baseplates - Countersunk head (C) to fasten flush to a baseplate for improved aesthetics and trip safety - External metric thread (A) for pre-installation or to fasten stand-off baseplates - Multilayer coating for corrosion protection (HF, T-HF, AF)
	HUS4 T-H(F) (8-10)	
	HUS4-C (8-10)	
	HUS4 TC (8-10)	
	HUS4-A(F) (10)	



Base material	Load conditions
 Hollow core slabs	 Static / quasi-static  Fire resistance

Drilling, cleaning, setting	Other information
 Hammer drilled holes	 Hilti Technical data

Linked Approvals/Certificates and Instructions for use

Approvals/certificates

Certificates no	Application / loading condition	Authority / Laboratory	Date of issue
GS 6.1/21-041-3	Fire assessment for prestressed HCS	MFPA, Leipzig	29-06-2022

Hilti Technical Data

Assessment no	Application / loading condition	Date		Remarks
		Issue	Valid	
ARA 21-012	Static	Mar-2025	Mar-2030	Permanent and temporary fastening

Basic loading data in pre-stressed Hollow core slab (HCS) for permanent fastening based on Hilti Technical data: Installationon the top and on the bottom of the slab (generic position).

All data in this section applies to

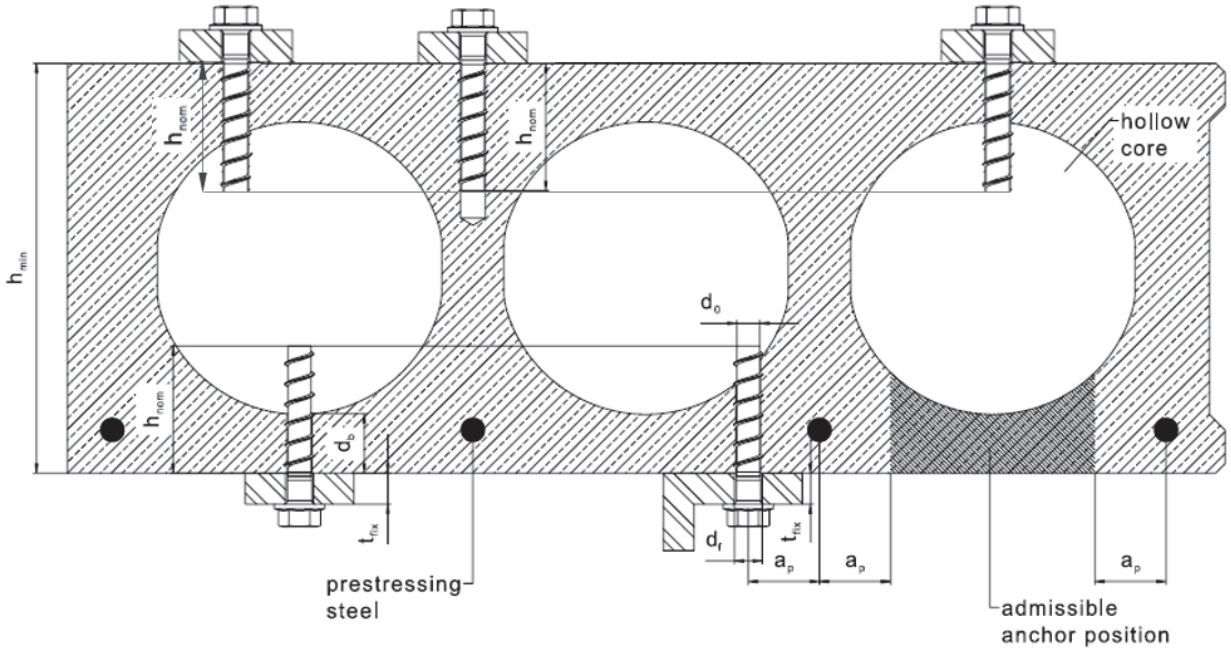
- Correct anchor setting (see Instructions for use (IFU))
- For a single anchor
- No edge distance and spacing influence
- Ratio core width / web thickness ≤ 5,3
- Concrete from C30/37 to C45/55,uncracked
- Recommended loads: With overall partial safety factor for action γ = 1,4.

Design resistance

Anchor type	HUS4-		H,HF,C,T,TH,TC					H,HF,C,T,TH,TC,A,AF				
Anchor size			8					10				
Concrete strength			C30/37			C45/55		C30/37			C45/55	
Nominal embedmenth depth	h_{nom}	[mm]	d_b+10									
Drilling depth	d_0	[mm]	≥ h_{nom} + 10									
Bottom flange thickness	d_{bmin}	[mm]	30	35	40	35	40	30	35	40	35	40
Tension	N_{Rd}	[kN]	1,3	3,2	3,9	4,0	4,8	1,3	3,2	3,9	4,0	4,8
Shear	V_{Rd}	[kN]	1,3	6,2	7,6	7,6	9,3	1,3	6,8	8,3	8,3	10,1

Recommended loads

Anchor type	HUS4-		H,HF,C,T,TH,TC					H,HF,C,T,TH,TC,A,AF				
Anchor size			8					10				
Concrete strength			C30/37			C45/55		C30/37			C45/55	
Nominal embedmenth depth	h_{nom}	[mm]	d_b+10									
Drilling depth	d_0	[mm]	≥ h_{nom} + 10									
Bottom flange thickness	d_{bmin}	[mm]	30	35	40	35	40	30	35	40	35	40
Tension	N_{rec}	[kN]	0,95	2,3	2,8	2,9	3,4	0,95	2,3	2,8	2,9	3,4
Shear	V_{rec}	[kN]	0,95	4,4	5,4	5,4	6,6	0,95	4,9	5,9	5,9	7,2



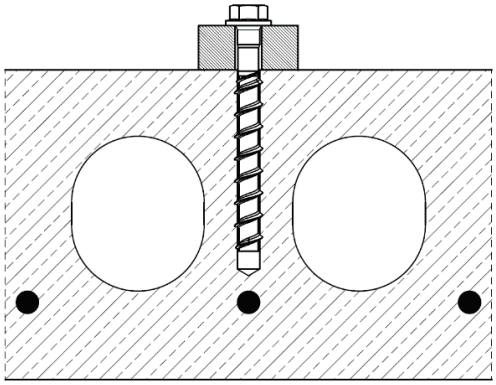
Basic loading data in pre-stressed Hollow core slab (HCS) for permanent fastening based on Hilti Technical data: Installation on the web centerline position only

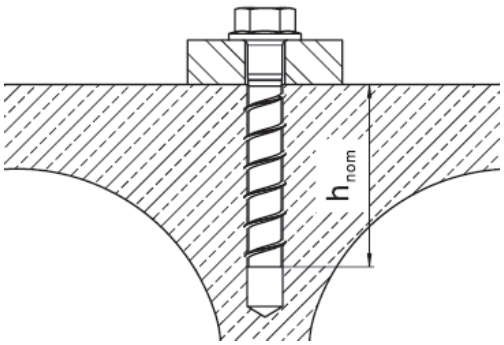
All data in this section applies to

- Correct setting (see Instructions for use (IFU))
- for single anchor
- No edge distance and spacing influence
- Ratio core width / web thickness w/e ≤ 5,3
- Concrete C30/37 to C50/60, uncracked
- Recommended loads: With overall partial safety factor for action γ = 1,4.

Installation position for fastening in HCS:

- Top position of the slab is allowed.
- Anchor to be installed within position of ± 10 mm of the thickest section of the solid part.





Design resistance: Concrete C30/37

Anchor type		HUS4-	A, AF, C, H, HF,T,TH,TC			H			A, AF, H, HF		
Anchor size			10			12			14		
Nominal embedment depth	h_{nom}	[mm]	55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]	h_{nom} + 10 mm								
Tension	N_{Rd}	[kN]	9,6	14,7	15,8	11,2	16,0	20,1	12,1	17,7	25,1
Shear	V_{Rd}	[kN]	10,0	16,7	17,6	15,5	18,8	22,2	17,0	20,9	24,7

Recommended load: Concrete C30/37

Anchor type		HUS4-	A, AF, C, H, HF, T,TH,TC			H			A, AF, H, HF		
Anchor size			10			12			14		
Nominal embedment depth	h_{nom}	[mm]	55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]	h_{nom} + 10 mm								
Tension	N_{rec}	[kN]	6,8	10,5	11,3	8,0	11,4	14,3	8,7	12,6	17,9
Shear	V_{rec}	[kN]	7,2	12,0	12,6	11,1	13,5	15,9	12,1	15,0	17,6

Design resistance: Concrete C45/55

Anhor type		HUS4-	A, AF, C, H, HF T,TH,TC			H			A, AF, H, HF		
Anchor size			**10**			**12**			**14**		
Nominal embedment depth	h_{nom}	[mm]	55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]	h_{nom} + 10 mm								
Tension	N_{Rd}	[kN]	11,7	18,1	19,3	13,8	19,6	24,6	14,9	21,7	30,7
Shear	V_{Rd}	[kN]	12,3	16,7	17,6	15,5	18,8	22,2	17,3	20,9	24,7

Recommended load: Concrete C45/55

Anchor type		HUS4-	A, AF, C, H, HF T,TH,TC			H			A, AF, H, HF		
Anchor size			**10**			**12**			**14**		
Nominal embedment depth	h_{nom}	[mm]	55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]	h_{nom} + 10 mm								
Tension	N_{rec}	[kN]	8,4	12,9	13,8	9,8	14,0	17,6	10,6	15,5	21,9
Shear	V_{rec}	[kN]	8,8	12,0	12,6	11,1	13,5	15,9	12,3	15,0	17,6

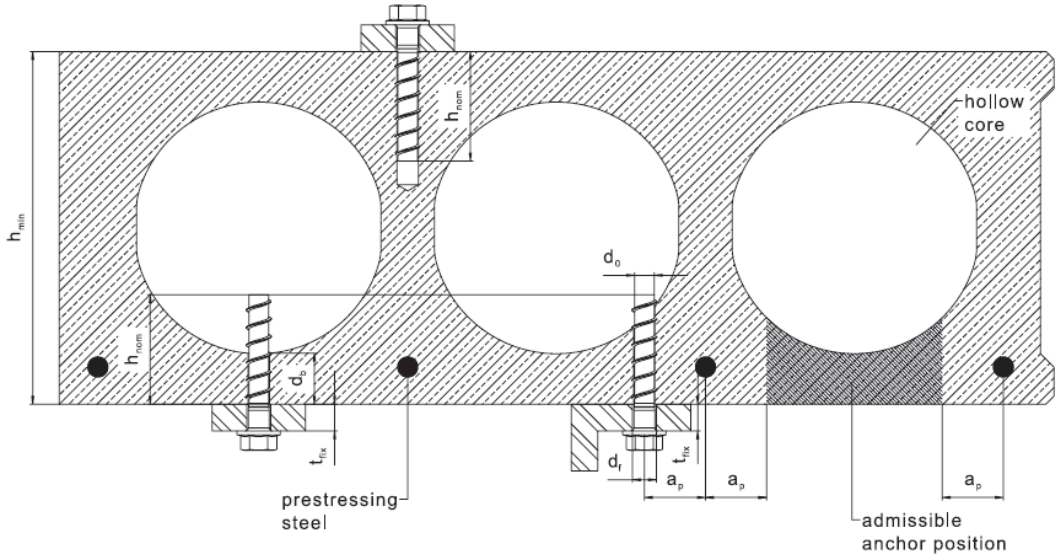
Fire resistance and design in pre-stressed Hollow core slab (HCS) for permanent fastening based on Hilti Technical data.

All data in this section applies to

- Correct anchor setting (see Instructions for use (IFU))
- Recommended drilling machine: TE2 A22, recommended setting machine: SIW 6AT-A
- No edge distance and spacing influence
- For a single anchor
- Ratio core width / web thickness ≤ 5,3
- Concrete from C30/37
- Partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1{,}0$ (in absence of other national regulations)

Design resistance

Anchor size	**HUS4-H**		**8**	**10**	**8**	**10**
Concrete strength			**C30/37**			
Nominal embedmenth depth	h_{nom}	[mm]	d_b+10			
Hollow core slab height	h_{min}	[mm]	265		380	
Bottom flange thickness	d_{bmin}	[mm]	35		40	
Fire exposure R30	$F_{Rd,fi}$	[kN]	0,26	0,60	0,76	0,80
Fire exposure R60	$F_{Rd,fi}$	[kN]	0,26	0,60	0,76	0,80
Fire exposure R90	$F_{Rd,fi}$	[kN]	0,26	0,60	0,76	0,80
Fire exposure R120	$F_{Rd,fi}$	[kN]	0,26	0,60	0,61	0,80



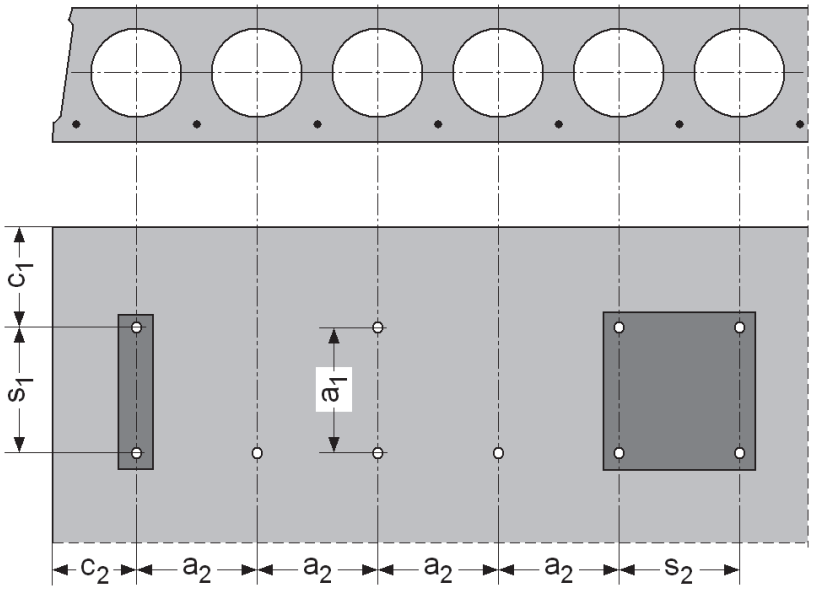
Setting information

Instllation on the top and on the bottom of the slab (generic position).

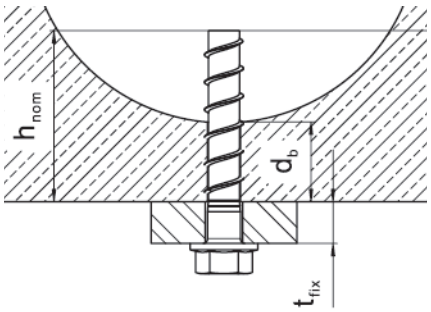
Type			H,HF,C,T,TH,TC	H,HF,C,T,TH,TC
Anchor size	**HUS4**		**8**	**10**
Minimum and characteristic spacing	$s_{min} = s_{cr}$	[mm]	4 * d_b	
Minimum and characteristic edge distance	$c_{min} = c_{cr}$	[mm]	4 * d_b	
Minimum group distance	a_{min}	[mm]	4 * d_b	

Instalation on the web centerline position only

Type			A, AF, C, H, HF T, TH, TC	H	A, AF, H, HF
Anchor size	**HUS4**		**10**	**12**	**14**
Minimum and characteristic spacing	$s_{min} = s_{cr}$	[mm]	3 h_{ef}		
Minimum and characteristic edge distance	c_{min}	[mm]	2,0 h_{ef}		
Minimum group distance	a_{min}	[mm]	3 h_{ef}		



Anchor Type	Size	Length	d_b=30 [mm]		d_b=35 [mm]		d_b=40 [mm]		d_b=50 [mm]	
	[mm]	[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]
HUS4-H(F)	8	45	5	10	5	5	-	-	-	-
		55	15	20	15	15	-	-	-	-
		65	5	30	5	25	5	20	5	10
		75	10	40	10	35	10	30	10	20
		85	20	50	20	45	20	40	20	30
		100	35	65	35	60	35	55	35	45
		120	55	85	55	80	55	75	55	65
		150	85	115	85	110	85	105	85	95
HUS4-H(F)	10	60	5	20	5	15	5	10	-	-
		70	15	30	15	25	15	20	-	-
		80	5	40	5	35	5	30	5	20
		90	10	50	10	45	10	40	10	30
		100	20	60	20	55	20	50	20	40
		110	30	70	30	65	30	60	30	50
		130	50	90	50	85	50	80	50	70
		150	70	110	70	105	70	100	70	90



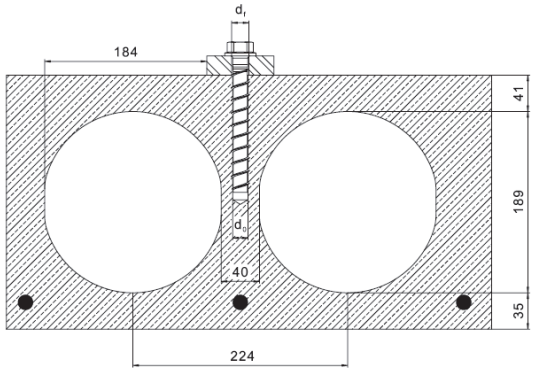
Basic data loading in pre-stressed hollow core slabs (HCS) for temporary fastening, with the option for reusability of the screw.

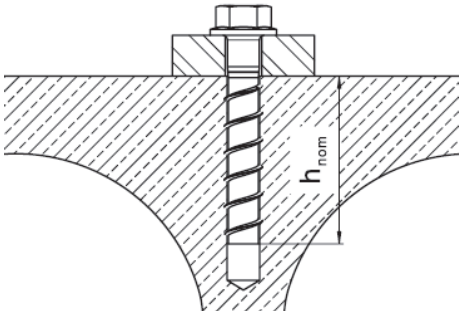
All data in this section applies to

- Correct setting (see Instructions for use (IFU))
- for single anchor
- Verification of wear of the screw with HUS HRG check gauge is needed
- No edge distance and spacing influence
- Ratio core width / web thickness w/e ≤ 5,3
- Concrete C30/37 to C50/60, uncracked
- Recommended loads: With overall partial safety factor for action γ = 1,4.

Installation position for temporary fastening in HCS:

- Top position of the slab is allowed.
- Anchor to be installed within position of ± 10 mm of the thickest section of the solid part.





Design resistance: Concrete C30/37

Anchor type		HUS4-		A, AF, C, H, HF T,TH,TC			H			A, AF, H, HF		
Anchor size				10			12			14		
Nominal embedment depth	h_{nom}	[mm]		55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]		h_{nom} + 10 mm								
Tension	N_{Rd}	[kN]		9,6	14,7	15,8	11,2	16,0	20,1	12,1	17,7	25,1
Shear	V_{Rd}	[kN]		10,0	16,7	17,6	15,5	18,8	22,2	17,0	20,9	24,7

Recommended load: Concrete C30/37

Anchor type		HUS4-		A, AF, C, H, HF T,TH,TC			H			A, AF, H, HF		
Anchor size				10			12			14		
Nominal embedment depth	h_{nom}	[mm]		55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]		h_{nom} + 10 mm								
Tension	N_{rec}	[kN]		6,8	10,5	11,3	8,0	11,4	14,3	8,7	12,6	17,9
Shear	V_{rec}	[kN]		7,2	12,0	12,6	11,1	13,5	15,9	12,1	15,0	17,6

Design resistance: Concrete C45/55

Anchor type		HUS4-		A, AF, C, H, HF T,TH,TC			H			A, AF, H, HF		
Anchor size				10			12			14		
Nominal embedment depth	h_{nom}	[mm]		55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]		h_{nom} + 10 mm								
Tension	N_{Rd}	[kN]		11,7	18,1	19,3	13,8	19,6	24,6	14,9	21,7	30,7
Shear	V_{Rd}	[kN]		12,3	16,7	17,6	15,5	18,8	22,2	17,3	20,9	24,7

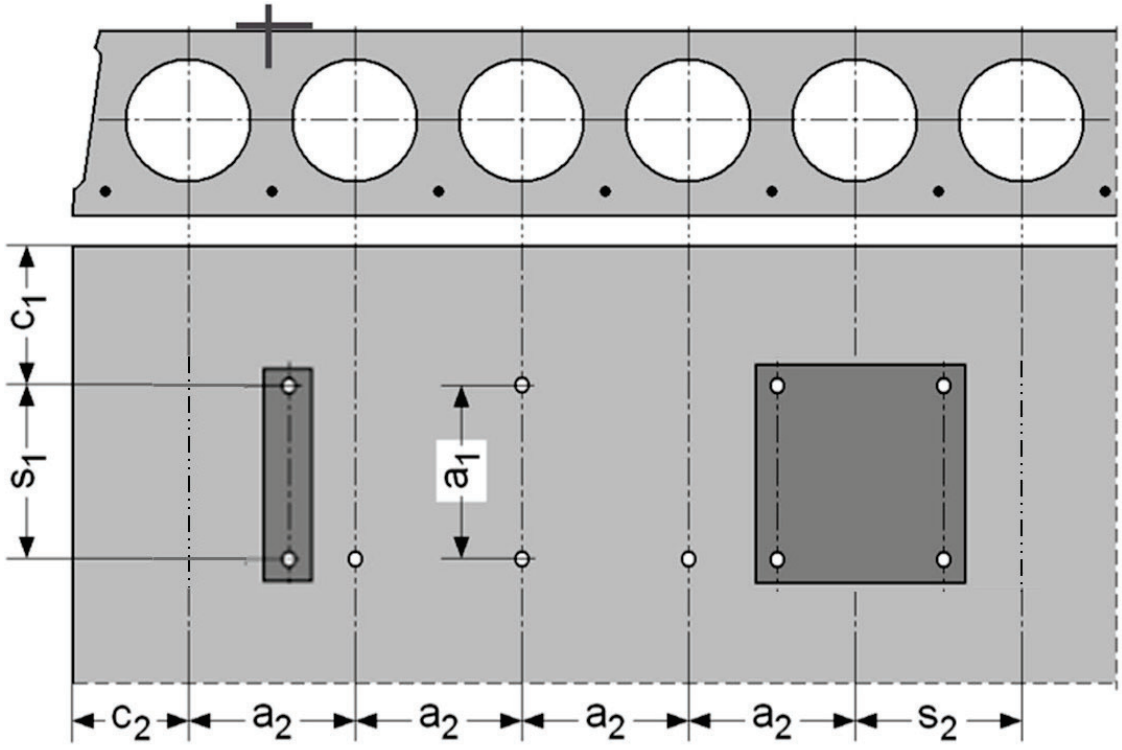
Recommended load: Concrete C45/55

Anchor type	HUS4-		A, AF, C, H, HF T,TH,TC			H			A, AF, H, HF		
Anchor size			**10**			**12**			**14**		
Nominal embedment depth	h_{nom}	[mm]	55	75	85	60	80	100	65	85	115
Drill hole depth	h_{1min}	[mm]	h_{nom} + 10 mm								
Tension	N_{rec}	[kN]	8,4	12,9	13,8	9,8	14,0	17,6	10,6	15,5	21,9
Shear	V_{rec}	[kN]	8,8	12,0	12,6	11,1	13,5	15,9	12,3	15,0	17,6

Anchor spacing and edge distance

Anchor type	HUS4-		A, AF, C, H, HF T,TH,TC	H	A, AF, H, HF
Anchor size			**10**	**12**	**14**
Minimum spacing	s_{min}	[mm]	40	50	60
Minimum edge distance	c_{min}	[mm]	40	50	60
Characteristic distances					
Spacing	s_{cr}	[mm]	3 h_{ef}		
Edge distance	c_{cr}	[mm]	1,5 h_{ef}		

for single anchor



Drilling and Installation equipment

For detailed setting information on installation ,see instructions for use given with the product.

Rotary Hammers (Corded and Cordless)		TE 2 - TE 30
Other tools		Impact wrench- SIW (use recommended socket/driver bit)
		Hammer drill bit TE-CX ,TE-C
		Blow out pump
		Check gauge