

HSA stud anchor

Anchor version	Benefits
 HSA Carbon steel with DIN 125 washer	■ small edge distance and spacing ■ three different embedment depth for each anchor size ■ approved for diamond drilled holes ■ simple and quick machine setting with torque bar for torque control
 HSA-R Stainless steel A4	
 HSA-R2 Stainless steel A2 with DIN 125 washer	
 HSA-BW Carbon steel with DIN 9021 washer	



Concrete



Small edge distance & spacing



Fire resistance



Corrosion resistance



Diamond drilled holes



European Technical Approval



CE conformity



PROFIS anchor design software

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
- Steel failure
- Minimum base material thickness
- Non cracked concrete C 20/25 $f_{ck,cube} = 25 \text{ N/mm}^2$

For details see Simplified design method

Recommended loads

Anchor size	M6			M8			M10		
Effective anchorage depth h_{ef} [mm]	30	40	60	30	40	70	40	50	80
Tensile N_{rec} ^{a)}									
HAS, HAS-R [Nm]	3.7	4.5	5.4	4.9	7.7	9.6	7.7	10.7	15
Shear V_{rec} ^{a)}									
HAS [Nm]	3.7	3.7	3.7	3.9	6.1	6.1	10.8	10.8	10.8
HAS-R [Nm]	4.0	4.1	4.1	3.9	7.0	7.0	12.9	12.9	12.9

Anchor size	M12			M16			M20		
Effective anchorage depth h_{ef} [mm]	50	65	100	65	80	120	75	100	115
Tensile N_{rec} ^{a)}									
HAS, HAS-R [Nm]	10.7	15.9	20.9	15.9	21.7	30.0	19.7	30.4	37.3
Shear V_{rec} ^{a)}									
HAS [Nm]	16.9	16.9	16.9	29.1	29.1	29.1	31.2	49.0	49.0
HAS-R [Nm]	16.7	16.7	16.7	32.3	32.3	32.3	31.2	52.5	52.5

a) With overall partial safety factor for action $\gamma_F = 1.4$. The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical approval ^{a)}	DIBt, Berlin	ETA-11/0374 / 2012-07-19
Fire test report	IBMB, Brunswick	3215/229/12 / 2012-08-09

a) All data given in this section according ETA-11/0374, issue 2012-07-19.

Setting details

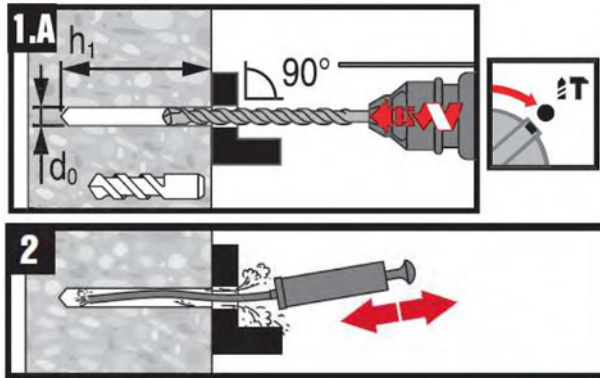
Anchor size	M6			M8			M10		
Nominal anchorage depth h_{nom} [mm]	37	47	67	39	49	79	50	60	90
Minimum base material thickness h_{min} [mm]	100	100	120	100	100	120	100	120	160
Minimum spacing s_{min} [mm]	35	35	35	35	35	35	50	50	50
Minimum edge distance c_{min} [mm]	35	35	35	40	35	35	50	40	40
Nominal diameter of drill bit d_o [mm]	6			8			10		
Cutting diameter of drill bit $d_{cut} \leq$ [mm]	6.4			8.45			10.45		
Depth of drill hole $h_1 \geq$ [mm]	42	52	72	44	54	84	55	65	95
Diameter of clearance hole in the fixture $d_f \leq$ [mm]	7			9			12		
Torque moment T_{inat} [Nm]	5			15			25		
Width across SW [mm]	10			13			17		

Anchor size	M12			M16			M20		
Nominal anchorage depth h_{nom} [mm]	64	79	114	77	92	132	90	115	130
Minimum base material thickness h_{min} [mm]	100	140	180	140	160	180	160	220	220
Minimum spacing s_{min} [mm]	70	70	70	90	90	90	195	175	175
Minimum edge distance c_{min} [mm]	70	65	55	80	75	70	130	120	120
Nominal diameter of drill bit d_o [mm]	12			16			20		
Cutting diameter of drill bit $d_{cut} \leq$ [mm]	12.5			16.5			20.55		
Depth of drill hole $h_1 \geq$ [mm]	72	87	122	85	100	140	98	123	138
Diameter of clearance hole in the fixture $d_f \leq$ [mm]	14			18			22		
Torque moment T_{inat} [Nm]	50			80			200		
Width across SW [mm]	19			24			30		

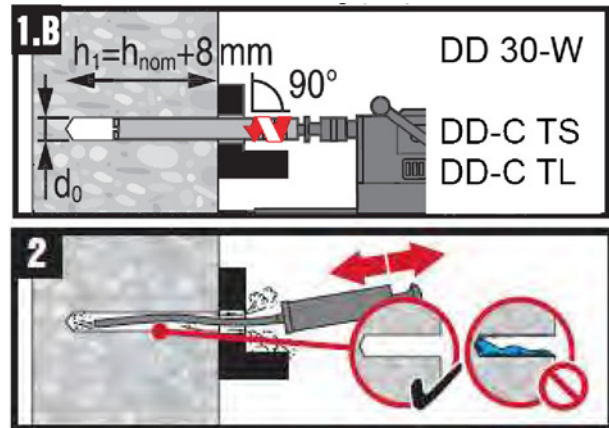
Setting instructions

Drill and clean borehole

Standard drilling method
M6 – M20: Hammer drilling (HD)

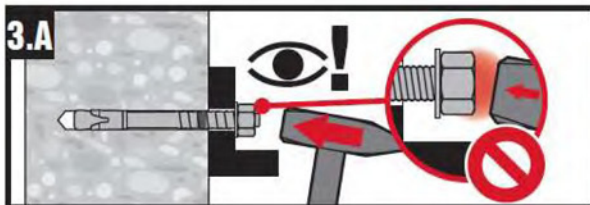


Alternative drilling method
M12 – M20: Diamond drilling (DD)

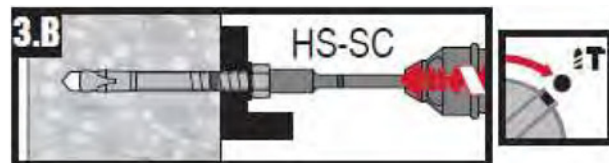


Install anchor with hammer or machine setting tool

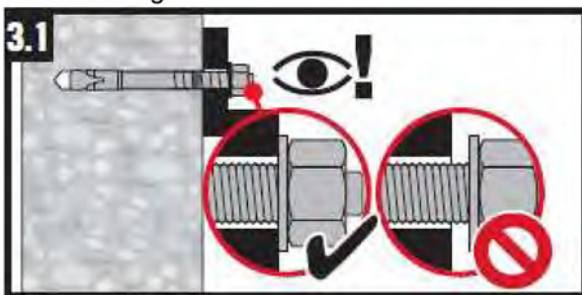
Standard setting method
M6 – M20: Hammer setting



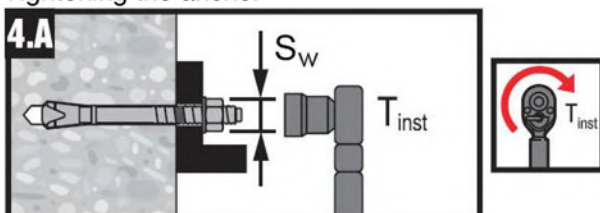
Alternative setting method
M8 – M16: Machine setting



Check setting



Tightening the anchor



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

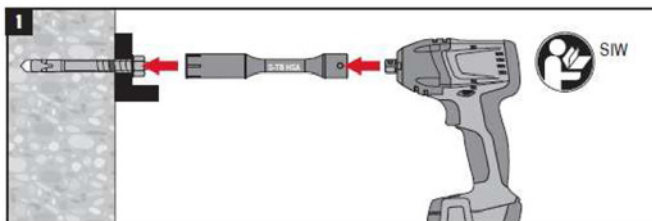
Machine tightening of the anchor for standard installation torque

Type			HSA, HSA-BW, HSA-R2, HSA-R																	
Anchor size			M6			M8			M10			M12			M16			M20		
Setting position			①	②	③	①	②	③	①	②	③	①	②	③	①	②	③	①	②	③
Nominal anchorage depth	h_{nom}	[mm]	37	47	67	39	49	79	50	60	90	64	79	114	77	92	132	90	115	130
Standard installation torque	T_{inat}	[Nm]	-			15			25			50			80			-		
Setting tool			-			S-TB HSA M8			S-TB HSA M10			S-TB HSA M12			S-TB HSA M16			-		
Impact screw driver						Hilti SIW 14-A Hilti SIW 22-A									Hilti SIW 22T-A					
Speed						1			1			3			- ¹⁾					
						3			3											
Width across						t_{sety}			4			4			4					
[sec.]																				

Setting instruction for HSA, HSA-BW, HSA-R2 and HSA-R M8 – M16

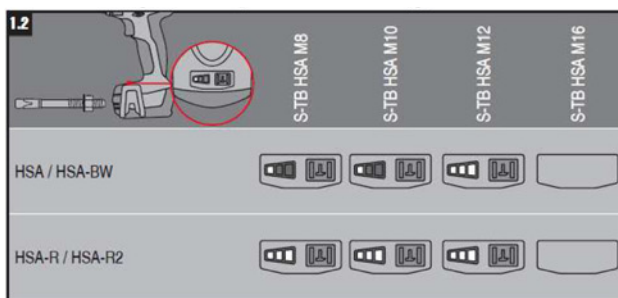
Tightening the anchor - alternatively with impact screw driver and special socket

Selecting the impact screw driver, battery and special socket



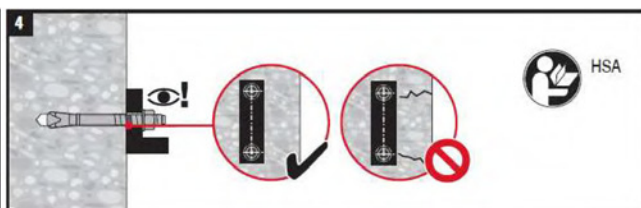
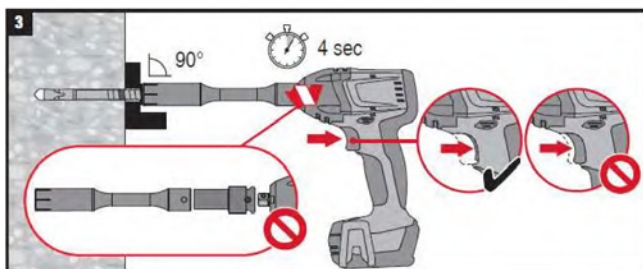
			S-TB HSA M8	S-TB HSA M10	S-TB HSA M12	S-TB HSA M16
SIW 14-A	14V	1.6Ah / 3.3Ah	✓	✓	✓	-
SIW 22-A	22V	1.6Ah / 2.6Ah / 3.3Ah	✓	✓	✓	-
SIW 22T-A	22V	2.6Ah / 3.3Ah	-	-	-	✓

Selecting the speed setting and state of charge of the battery



	≤ 5°	5° ... 10°	≥ 10°
HSA / HSA-BW	-	-	-
HSA-R / HSA-R2	-	-	✓

Tighten the anchor and check the installation



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

HSA technical data

item	description	anchor length [mm]	thread length [mm]	drill bit [mm]	inst. torque [Nm]	drill depth 1 [mm]	drill depth 2 [mm]	drill depth 3 [mm]	min. concrete thickn. 1 [mm]	min. concrete thickn. 2 [mm]	min. concrete thickn. 3 [mm]
2036084	HSA M6 5/-	50		6	5	42	52	72	100	100	120
2036085	HSA M6 20/10/-	65		6	5	42	52	72	100	100	120
2036086	HSA M6 40/30/10	85		6	5	42	52	72	100	100	120
2036087	HSA M6 55/45/25	100		6	5	42	52	72	100	100	120
2004122	HSA M8 5/-	55	23	8	15	44	54	84	100	100	120
2004123	HSA M8 20/10/-	70	38	8	15	44	54	84	100	100	120
2004124	HSA M8 35/25/-	85	53	8	15	44	54	84	100	100	120
2004125	HSA M8 55/45/15	105	73	8	15	44	54	84	100	100	120
2004126	HSA M8 80/70/40	130	98	8	15	44	54	84	100	100	120
2004127	HSA M10 5/-	68	26	10	25	55	65	95	100	120	160
2004128	HSA M10 20/10/-	83	41	10	25	55	65	95	100	120	160
2004129	HSA M10 35/25/-	98	56	10	25	55	65	95	100	120	160
2004150	HSA M10 50/40/10	113	71	10	25	55	65	95	100	120	160
2004151	HSA M10 70/60/30	133	91	10	25	55	65	95	100	120	160
2004152	HSA M10 90/80/50	153		10	25	55	65	95	100	120	160
2004153	HSA M10 105/95/65	168		10	25	55	65	95	100	120	160
2004154	HSA M12 5/-	85	32	12	50	72	87	122	100	140	180
2004155	HSA M12 20/5/-	100	47	12	50	72	87	122	100	140	180
2004156	HSA M12 35/20/-	115	62	12	50	72	87	122	100	140	180
2004157	HSA M12 65/50/15	145	92	12	50	72	87	122	100	140	180
2004158	HSA M12 95/80/45	175	122	12	50	72	87	122	100	140	180
2004159	HSA M12 125/110/75	205	152	12	50	72	87	122	100	140	180
2004160	HSA M12 145/130/95	225	172	12	50	72	87	122	100	140	180
2004161	HSA M16 5/-	102	34	16	80	85	100	140	140	160	180
2004162	HSA M16 20/5/-	117	49	16	80	85	100	140	140	160	180
2004163	HSA M16 40/25/-	137	69	16	80	85	100	140	140	160	180
2004164	HSA M16 85/70/30	182	114	16	80	85	100	140	140	160	180
2004165	HSA M16 135/120/80	232	164	16	80	85	100	140	140	160	180
2036088	HSA M20 10/-	125		20	200	98	123	138	160	210	210
2036089	HSA M20 55/30/-	170		20	200	98	123	138	160	210	210
2004223	HSA M8 5/- BW	55	23	8	15	44	54	84	100	100	120
2004224	HSA M8 20/10/- BW	70	38	8	15	44	54	84	100	100	120
2004225	HSA M10 5/- BW	68	26	10	25	55	65	95	100	120	160
2004226	HSA M10 20/10/- BW	83	41	10	25	55	65	95	100	120	160
2004227	HSA M12 5/- BW	85	32	12	50	72	87	122	100	140	180
2004228	HSA M12 20/5/- BW	100	47	12	50	72	87	122	100	140	180
2004229	HSA M16 5/- BW	102	34	16	80	85	100	140	140	160	180
2004230	HSA M16 20/5/- BW	117	49	16	80	85	100	140	140	160	180
2004231	HSA M16 40/25/- BW	137	69	16	80	85	100	140	140	160	180
2036310	HSA-F M6 5/-	50		6	5	42	52	72			
2036311	HSA-F M6 20/10/-	65		6	5	42	52	72			
2004113	HSA-F M8 5/-	55	23	8	15	44	54	84	100	100	120
2004114	HSA-F M8 20/10/-	70	38	8	15	44	54	84	100	100	120
2004115	HSA-F M8 35/25/-	85	53	8	15	44	54	84	100	100	120
2004116	HSA-F M8 55/45/15	105	73	8	15	44	54	84	100	100	120
2004117	HSA-F M8 80/70/40	130	98	8	15	44	54	84	100	100	120
2004118	HSA-F M10 5/-	68	26	10	25	55	65	95	100	120	160
2004119	HSA-F M10 20/10/-	83	41	10	25	55	65	95	100	120	160
2004170	HSA-F M10 35/25/-	98	56	10	25	55	65	95	100	120	160
2004171	HSA-F M10 50/40/10	113	71	10	25	55	65	95	100	120	160
2004172	HSA-F M12 5/-	85	32	12	50	72	87	122	100	140	180
2004173	HSA-F M12 20/5/-	100	47	12	50	72	87	122	100	140	180
2004174	HSA-F M12 35/20/-	115	62	12	50	72	87	122	100	140	180
2004175	HSA-F M12 65/50/15	145	92	12	50	72	87	122	100	140	180
2004176	HSA-F M12 145/130/95	175	122	12	50	72	87	122	100	140	180
2004177	HSA-F M16 5/-	102	34	16	80	85	100	140	140	160	180
2004178	HSA-F M16 40/25/-	137	69	16	80	85	100	140	140	160	180
2004179	HSA-F M16 85/70/30	182	114	16	80	85	100	140	140	160	180
2036312	HSA-F M20 10/-	125		20	200	98	123	138	160	210	210
2036313	HSA-F M20 55/30/-	170		20	200	98	123	138	160	210	210
2036314	HSA-R M6 5/-	50		6	5	42	52	72	100	100	120
2036315	HSA-R M6 20/10/-	65		6	5	42	52	72	100	100	120
2036316	HSA-R M6 40/30/10	85		6	5	42	52	72	100	100	120
2004197	HSA-R M8 5/-	55	23	8	15	44	54	84	100	100	120
2004198	HSA-R M8 20/10/-	70	38	8	15	44	54	84	100	100	120
2004199	HSA-R M8 35/25/-	85	53	8	15	44	54	84	100	100	120
2004200	HSA-R M8 55/45/15	105	73	8	15	44	54	84	100	100	120
2004201	HSA-R M10 5/-	68	26	10	25	55	65	95	100	120	160
2004202	HSA-R M10 20/10/-	83	41	10	25	55	65	95	100	120	160
2004203	HSA-R M10 35/25/-	98	56	10	25	55	65	95	100	120	160
2004204	HSA-R M10 50/40/10	113	71	10	25	55	65	95	100	120	160
2004205	HSA-R M10 70/60/30	133	91	10	25	55	65	95	100	120	160
2004206	HSA-R M10 90/80/50	153	111	10	25	55	65	95	100	120	160
2004207	HSA-R M12 5/-	85	32	12	50	72	87	122	100	140	180
2004208	HSA-R M12 20/5/-	100	47	12	50	72	87	122	100	140	180
2004209	HSA-R M12 35/20/-	115	62	12	50	72	87	122	100	140	180
2004210	HSA-R M12 65/50/15	145	92	12	50	72	87	122	100	140	180
2004211	HSA-R M12 95/80/45	175	122	12	50	72	87	122	100	140	180
2004212	HSA-R M12 125/110/75	205	152	12	50	72	87	122	100	140	180
2004213	HSA-R M12 145/130/95	225	172	12	50	72	87	122	100	140	180
2004214	HSA-R M16 5/-	102	34	16	80	85	100	140	140	160	180
2004215	HSA-R M16 20/5/-	117	49	16	80	85	100	140	140	160	180
2004216	HSA-R M16 40/25/-	137	69	16	80	85	100	140	140	160	180
2004217	HSA-R M16 85/70/30	182	114	16	80	85	100	140	140	160	180
2036317	HSA-R M20 10/-	125		20	200	98	123	138	160	210	210
2036318	HSA-R M20 55/30/-	170		20	200	98	123	138	160	210	210