

CHARACTERISTICS

ASSESSMENT

- Metal anchor that works by expansion once installed with controlled torque.
- For high loads.
- Male thread.
- Assessed for structural applications in non-cracked concrete.
- Easy installation.
- Assembled with built-in antispins in the collar ensuring a spin-free installation.
- Installation through the fixture.
- For static and quasi-static loads.
- Versions in zinc plated and stainless steel A2.
- Variety of lengths and sizes, flexible installation.
- Available in INDEXcal



APPLICATIONS

- Structural applications in non-structural concrete.
- For fixing signposts, shelves, panels, gates, railings, street furniture, fence posts.
- Urban furniture, cinema, theatre and stadium seats.

DRILL HOLE CONDITION



SIZE RANGE

M6-M20

BASE MATERIAL



APPLICATION EXAMPLES



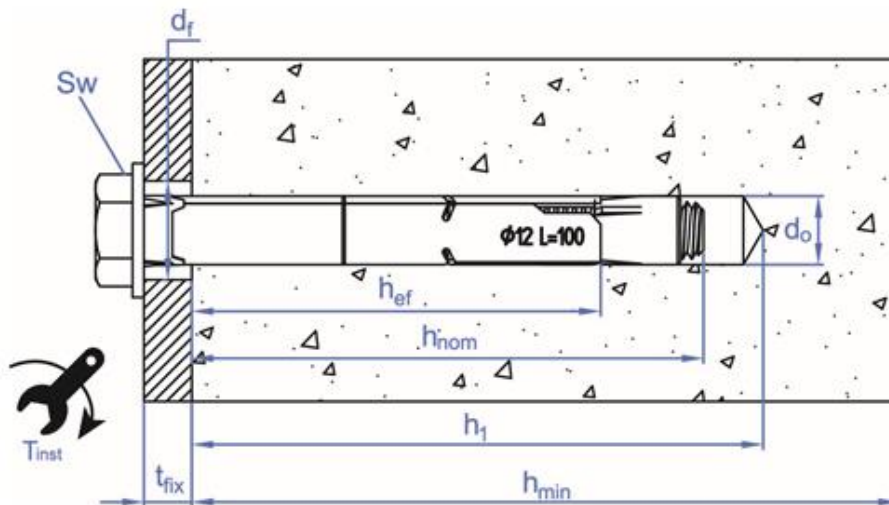
1.RANGE

ITEM	CODE	ETA	SIZE	PHOTO	COMPONENT	MATERIAL	COATING
1	CH-TO	✓	M6 to M20		Screw	DIN 933, class 6.8	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
2	CH-8.8	✓	M6 to M16		Screw	DIN 933, class 8.8	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
3	CH-8.8 E	--	M6 to M8		Screw	DIN 933, class 8.8	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
4	CH-A2	✓	M6 to M16		Screw	DIN 933, A2-70 (AISI 304)	
					Washer	SS A2(AISI 304)	
					Sleeve	SS A2-70 (AISI 304)	
					Antispin	Polyoxymethylene (POM)	
					Cone	SS A2-70 (AISI 304)	
5	CH-PL	✓	M6 to M10		Screw	DIN 7991, class 10.9	
					Sleeve	Carbon steel	
					Antispin	Polioximetileno (POM)	
					Cone	Carbon steel	
6	CH-PI	✓	M6 to M10		Screw	DIN 7991, A2-70 (AISI 304)	
					Sleeve	SS A2-70 (AISI 304)	
					Antispin	Polyoxymethylene (POM)	
					Cone	SS A2-70 (AISI 304)	
7	CH-INB	✓	M6 to M8		Screw	Inviolable, class 5.6	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
8	CH-INN	✓	M6 to M8		Screw	Inviolable, class 5.6	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
9	CH-GA	--	M6 to M10		Hook	Carbon steel	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
10	CH-AR	--	M6 to M10		Nut	DIN 934 Class 6	
					Eye Hook	Carbon steel	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
11	CH-GF	--	M6 to M10		Nut	DIN 934 Class 6	
					Forged Hook	Carbon steel	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	

ITEM	CODE	ETA	SIZE	PHOTO	COMPONENT	MATERIAL	COATING
12	CH-AF	--	M6 to M10		Forged Eye Hook	Carbon steel	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
					Nut	DIN 934 Class 6	
13	CH-GF A2	--	M6 to M10		Forged Hook	SS A2-70 (AISI 304)	
					Washer	SS A2-70 (AISI 304)	
					Sleeve	SS A2-70 (AISI 304)	
					Antispin	Polyoxymethylene (POM)	
					Cone	SS A2-70 (AISI 304)	
					Nut	SS A2-70 (AISI 304)	
14	CH-AF A2	--	M6 to M10		Forged Eye Hook	SS A2-70 (AISI 304)	
					Washer	SS A2-70 (AISI 304)	
					Sleeve	SS A2-70 (AISI 304)	
					Antispin	Polyoxymethylene (POM)	
					Cone	SS A2-70 (AISI 304)	
					Nut	SS A2-70 (AISI 304)	
15	CH-ES	✓	M6 to M10		Axle	Carbon steel	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
					Nut	DIN 934 Class 6	
16	CH-GE	--	M8 to M10		Hook	Class 5.6 C4D EN 10016-2	
					Washer	Carbon steel	
					Sleeve	Carbon steel	
					Antispin	Polyoxymethylene (POM)	
					Cone	Carbon steel	
					Nut	DIN 934 Class 6	

2. INSTALLATION DATA

2.1 INSTALLATION DRAWING



2.2. INSTALLATION PARAMETERS

Product	Code	Size	Assessed	Drill bit diameter	Fixture clearance hole diameter	Installation torque	Total anchor length	Minimum thickness of concrete	Depth of drilled hole	Installation depth	Effective depth	Fixture thickness	Minimum allowable spacing	Minimum allowable edge distance
[--]	[--]	[--]	ETA	d ₀	d _f	T _{inst}	L	h _{min}	h ₁	h _{nom}	h _{ef}	t _{fix}	S _{min}	C _{min}
				[mm]	[mm]	[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
CH-TO	ACHT08C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHT08L	M6 x 60 Ø8	✓				60					20		
	ACHT09C	M6 x 45 Ø9	[--]	9	10	10	45	100	45	39	30	5	41	41
	ACHT09L	M6 x 60 Ø9	[--]				60					20		
	ACHT10C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHT10L	M8 x 80 Ø10	✓				80					27		
	ACHT11C	M8 x 60 Ø11	[--]	11	13	20	60	100	60	51	40	5	54	54
	ACHT11L	M8 x 80 Ø11	[--]				80					27		
	ACHT12C	M10 x 70 Ø12	✓	12	14	35	70	100	75	65	48	5	65	65
	ACHT12L	M10 x 100 Ø12	✓				100					32		
	ACHT14C	M10 x 70 Ø14	[--]	14	16	35	70	100	75	65	48	5	65	65
	ACHT14L	M10 x 100 Ø14	[--]				100					32		
	ACHT16C	M12 x 80 Ø16	✓	16	18	50	80	110	80	70	55	5	74	74
	ACHT16L	M12 x 110 Ø16	✓				110					37		
ACHT20C	M16 x 110 Ø20	✓	20	22	140	110	145	105	92	72	15	97	97	
ACHT25C	M20 x 130 Ø25	[--]	25	27	240	130	160	130			80	25	240	120
CH-8.8	ACHT8808C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHT8808L	M6 x 60 Ø8	✓				60					20		
	ACHT8810C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHT8810L	M8 x 80 Ø10	✓				80					27		
	ACHT8812C	M10 x 70 Ø12	✓	12	14	35	70	100	75	65	48	5	65	65
	ACHT8812L	M10 x 100 Ø12	✓				100					32		
	ACHT8816C	M12 x 80 Ø16	✓	16	18	50	80	110	80	70	55	5	74	74
	ACHT8816L	M12 x 110 Ø16	✓				110					37		
ACHT8820C	M16 x 110 Ø20	✓	20	22	140	110	145	105	92	72	15	97	97	
CH-8.8 E	ACHT8808E	M6 x 40 Ø8	[--]	8	9	10	40	100	40	32	25	5	41	41
	ACHT8810E	M8 x 40 Ø10	[--]	10	12	20	40	100	45	37	25	5	54	54

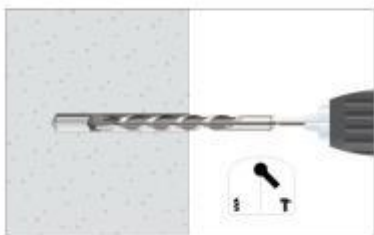
Product	Code	Size	Assessed	Drill bit diameter	Fixture clearance hole diameter	Installation torque	Total anchor length	Minimum thickness of concrete	Depth of drilled hole	Installation depth	Effective depth	Fixture thickness	Minimum allowable spacing	Minimum allowable edge distance
[--]	[--]	[--]	ETA	d ₀	d _f	T _{inst}	L	h _{min}	h ₁	h _{nom}	h _{ef}	t _{fix}	S _{min}	C _{min}
CH-A2	ACHTA208C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHTA208L	M6 x 60 Ø8	✓				60					20		
	ACHTA209C	M6 x 45 Ø9	[--]	9	10		45					5		
	ACHTA209L	M6 x 60 Ø9	[--]				60					20		
	ACHTA210C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHTA210L	M8 x 80 Ø10	✓				80					27		
	ACHTA211C	M8 x 60 Ø11	[--]	11	13		60					5		
	ACHTA211L	M8 x 80 Ø11	[--]				80					27		
	ACHTA212C	M10 x 70 Ø12	✓	12	14	35	70	100	75	65	48	5	65	65
	ACHTA212L	M10 x 100 Ø12	✓				100					32		
	ACHTA214C	M10 x 70 Ø14	[--]	14	16		70					5		
	ACHTA214L	M10 x 100 Ø14	[--]				100					32		
	ACHTA216C	M12 x 80 Ø16	✓	16	18	50	80	110	80	70	55	5	74	74
	ACHTA216L	M12 x 110 Ø16	✓				110					37		
ACHTA220C	M16 x 110 Ø20	✓	20	22	140	110	145	105	92	72	15	97	97	
CH-PL	ACHTPL08C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHTPL08L	M6 x 60 Ø8	✓				60					20		
	ACHTPL10C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHTPL10L	M8 x 80 Ø10	✓				80					27		
	ACHTPL12C	M10 x 70 Ø12	✓	12	14	35	70	100	75	65	48	5	65	65
	ACHTPL12L	M10 x 100 Ø12	✓				100					32		
CH-PI	ACHTPI08C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHTPI08L	M6 x 60 Ø8	✓				60					20		
	ACHTPI10C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHTPI10L	M8 x 80 Ø10	✓				80					27		
	ACHTPI12C	M10 x 70 Ø12	✓	12	14	35	70	100	75	65	48	5	65	65
	ACHTPI12L	M10 x 100 Ø12	✓				100					32		
CH-INB	ACHINB08C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHINB08L	M6 x 60 Ø8	✓				60					20		
	ACHINB10C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHINB10L	M8 x 80 Ø10	✓				80					27		

Product	Code	Size	Assessed	Drill bit diameter	Fixture clearance hole diameter	Installation torque	Total anchor length	Minimum thickness of concrete	Depth of drilled hole	Installation depth	Effective depth	Fixture thickness	Minimum allowable spacing	Minimum allowable edge distance
[--]	[--]	[--]	ETA	d ₀	d _f	T _{inst}	L	h _{min}	h ₁	h _{nom}	h _{ef}	t _{fix}	S _{min}	C _{min}
CH-INN	ACHINN08C	M6 x 45 Ø8	✓	8	9	10	45	100	45	39	30	5	41	41
	ACHINN08L	M6 x 60 Ø8	✓				60					20		
	ACHINN10C	M8 x 60 Ø10	✓	10	12	20	60	100	60	51	40	5	54	54
	ACHINN10L	M8 x 80 Ø10	✓				80					27		
CH-GA	ACHG08C	M6 x 45 Ø8	[--]	8	9	10	45	100	50	44	35	--	41	41
	ACHG09C	M6 x 45 Ø9	[--]	9	10		45					--		
	ACHG10C	M8 x 60 Ø10	[--]	10	12	20	60	100	65	56	45	--	54	54
	ACHG11C	M8 x 60 Ø11	[--]	11	13		60					--		
	ACHG12C	M10 x 70 Ø12	[--]	12	14	35	70	100	80	70	53	--	65	65
	ACHG14C	M10 x 70 Ø14	[--]	14	16		70					--		
	ACHG16C	M12 x 80 Ø16	[--]	16	18	50	80	110	85	75	60	--	74	74
CH-AR	ACHA08C	M6 x 45 Ø8	[--]	8	9	10	45	100	50	44	35	--	41	41
	ACHA09C	M6 x 45 Ø9	[--]	9	10		45					--		
	ACHA10C	M8 x 60 Ø10	[--]	10	12	20	60	100	65	56	45	--	54	54
	ACHA11C	M8 x 60 Ø11	[--]	11	13		60					--		
	ACHA12C	M10 x 70 Ø12	[--]	12	14	35	70	100	80	70	53	--	65	65
	ACHA14C	M10 x 70 Ø14	[--]	14	16		70					--		
ACHA16C	M12 x 80 Ø16	[--]	16	18	50	80	110	85	75	60	--	74	74	
CH-GF	ACHGFO08C	M6 x 45 Ø8	[--]	8	9	10	45	100	50	44	35	--	41	41
	ACHGFO10C	M8 x 60 Ø10	[--]	10	12	20	60	100	65	56	45	--	54	54
	ACHGFO12C	M10 x 70 Ø12	[--]	12	14	35	70	100	80	70	53	--	65	65
CH-AF	ACHAFO08C	M6 x 45 Ø8	[--]	8	9	10	45	100	50	44	35	--	41	41
	ACHAFO10C	M8 x 60 Ø10	[--]	10	12	20	60	100	65	56	45	--	54	54
	ACHAFO12C	M10 x 70 Ø12	[--]	12	14	35	70	100	80	70	53	--	65	65
CH-GF A2	ACHGA208C	M6 x 45 Ø8	[--]	8	9	10	45	100	50	44	35	--	41	41
	ACHGA210C	M8 x 60 Ø10	[--]	10	12	20	60	100	65	56	45	--	54	54
	ACHGA212C	M10 x 70 Ø12	[--]	12	14	35	70	100	80	70	53	--	65	65
CH-AF A2	ACHAA208C	M6 x 45 Ø8	[--]	8	9	10	45	100	50	44	35	--	41	41
	ACHAA210C	M8 x 60 Ø10	[--]	10	12	20	60	100	65	56	45	--	54	54
	ACHAA212C	M10 x 70 Ø12	[--]	12	14	35	70	100	80	70	53	--	65	65

Product	Code	Size	Assessed	Drill bit diameter	Fixture clearance hole diameter	Installation torque	Total anchor length	Minimum thickness of concrete	Depth of drilled hole	Installation depth	Effective depth	Fixture thickness	Minimum allowable spacing	Minimum allowable edge distance
[--]	[--]	[--]	ETA	d ₀	d _f	T _{inst}	L	h _{min}	h ₁	h _{nom}	h _{ef}	t _{fix}	S _{min}	C _{min}
CH-ES	ACHE08C	M6 x 45 Ø8	[--]	8	9	10	45	100	45	39	30	5	41	41
	ACHE09C	M6 x 45 Ø9	[--]	9	10		45					5		
	ACHE10C	M8 x 60 Ø10	[--]	10	12	20	60	100	60	51	40	5	54	54
	ACHE10L	M8 x 80 Ø10	[--]				80					27		
	ACHE11C	M8 x 60 Ø11	[--]	60	5									
	ACHE11L	M8 x 80 Ø11	[--]	11	13	80	27							
	ACHE12C	M10 x 70 Ø12	[--]	12	14	35	70	100	75	65	48	5	65	65
	ACHE12L	M10 x 100 Ø12	[--]				100					32		
	ACHE14C	M10 x 70 Ø14	[--]	14	16		70					5		
ACHE14L	M10 x 100 Ø14	[--]	100			32								
CH-GE	ACHGE10	M8 x 115 Ø10	[--]	10	12	20	115	100	60	51	40	--	41	41
	ACHGE12	M10 x 135 Ø12	[--]	12	14	35	135	100	75	65	48	--	54	54

3. INSTALLATION PROCEDURE

3.1. INSTALLATION IN CONCRETE



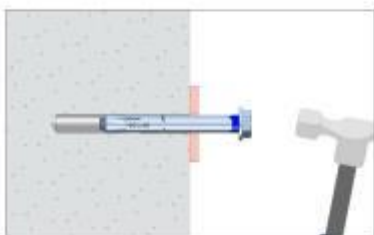
1. DRILL

Check that the concrete is compact and porosity insignificant.
To be used in dry, wet and flooded holes.
Both drilling and hammering modes can be turned on in the drilling machine.
Hole diameter and length specified in previous tables.



2. BLOW AND CLEAN

Clean the hole from dust and concrete remains.
Use blow pump and brush.



3. INSTALL

Insert the anchor until the head is at the same level of the fixture surface.
Use a hammer in case of need.
Installation must be performed through the fixture.



4. APPLY THE TORQUE

Apply the nominal torque specified in previous tables.
Use torque wrench in order to ensure correct installation.

4. RESISTANCES

Resistances in concrete C20/25 for an isolated anchor without edge distance or spacing effect are indicated in the tables below:

4.1 CHARACTERISTIC RESISTANCE [kN]

Product	Code	Size	Assessed	Tension	Shear
				N _{Rk}	V _{Rk}
CH-TO	ACHT08C	M6 x 45 Ø8	✓	5,50	<u>6,03</u>
	ACHT08L	M6 x 60 Ø8	✓		
	ACHT09C	M6 x 45 Ø9	[-]		
	ACHT09L	M6 x 60 Ø9	[-]		
	ACHT10C	M8 x 60 Ø10	✓	10,00	12,45
	ACHT10L	M8 x 80 Ø10	✓		
	ACHT11C	M8 x 60 Ø11	[-]		
	ACHT11L	M8 x 80 Ø11	[-]		
	ACHT12C	M10 x 70 Ø12	✓	16,36	16,36
	ACHT12L	M10 x 100 Ø12	✓		
	ACHT14C	M10 x 70 Ø14	[-]		
	ACHT14L	M10 x 100 Ø14	[-]		
	ACHT16C	M12 x 80 Ø16	✓	20,07	20,07
	ACHT16L	M12 x 110 Ø16	✓		
ACHT20C	M16 x 110 Ø20	✓	30,05	<u>47,10</u>	
ACHT25C	M20 x 130 Ø25	[-]	35,20	70,40	
CH-8.8	ACHT8808C	M6 x 45 Ø8	✓	5,50	8,08
	ACHT8808L	M6 x 60 Ø8	✓		
	ACHT8810C	M8 x 60 Ø10	✓		
	ACHT8810L	M8 x 80 Ø10	✓	10,00	12,45
	ACHT8812C	M10 x 70 Ø12	✓		
	ACHT8812L	M10 x 100 Ø12	✓		
	ACHT8816C	M12 x 80 Ø16	✓	20,07	20,07
	ACHT8816L	M12 x 110 Ø16	✓		
	ACHT8820C	M16 x 110 Ø20	✓	30,05	60,11
CH-8.8 E	ACHT8808E	M6 x 40 Ø8	[-]	5,33	6,15
	ACHT8810E	M8 x 40 Ø10	[-]	6,15	6,15
CH-A2	ACHTA208C	M6 x 45 Ø8	✓	8,08	<u>7,04</u>
	ACHTA208L	M6 x 60 Ø8	✓		
	ACHTA209C	M6 x 45 Ø9	[-]		
	ACHTA209L	M6 x 60 Ø9	[-]		
	ACHTA210C	M8 x 60 Ø10	✓	9,50	<u>12,81</u>
	ACHTA210L	M8 x 80 Ø10	✓		
	ACHTA211C	M8 x 60 Ø11	[-]		
	ACHTA211L	M8 x 80 Ø11	[-]		
	ACHTA212C	M10 x 70 Ø12	✓	14,00	16,36
	ACHTA212L	M10 x 100 Ø12	✓		
	ACHTA214C	M10 x 70 Ø14	[-]		
	ACHTA214L	M10 x 100 Ø14	[-]		
	ACHTA216C	M12 x 80 Ø16	✓	16,00	20,07
	ACHTA216L	M12 x 110 Ø16	✓		
ACHTA220C	M16 x 110 Ø20	✓	20,00	<u>54,95</u>	
CH-PL	ACHTPL08C	M6 x 45 Ø8	✓	5,50	8,08
	ACHTPL08L	M6 x 60 Ø8	✓		
	ACHTPL10C	M8 x 60 Ø10	✓	10,00	12,45
	ACHTPL10L	M8 x 80 Ø10	✓		
	ACHTPL12C	M10 x 70 Ø12	✓	16,36	16,36
	ACHTPL12L	M10 x 100 Ø12	✓		

Product	Code	Size	Assessed	Tension	Shear
				N _{Rk}	V _{Rk}
CH-PI	ACHTP108C	M6 x 45 Ø8	✓	8,08	<u>7,04</u>
	ACHTP108L	M6 x 60 Ø8	✓		
	ACHTP110C	M8 x 60 Ø10	✓	9,50	<u>12,81</u>
	ACHTP110L	M8 x 80 Ø10	✓		
	ACHTP112C	M10 x 70 Ø12	✓	14,00	16,36
	ACHTP112L	M10 x 100 Ø12	✓		
CH-INB	ACHINB08C	M6 x 45 Ø8	✓	5,50	<u>5,03</u>
	ACHINB08L	M6 x 60 Ø8	✓		
	ACHINB10C	M8 x 60 Ø10	✓	10,00	<u>9,15</u>
	ACHINB10L	M8 x 80 Ø10	✓		
CH-INN	ACHINN08C	M6 x 45 Ø8	✓	5,50	<u>5,03</u>
	ACHINN08L	M6 x 60 Ø8	✓		
	ACHINN10C	M8 x 60 Ø10	✓	10,00	<u>9,15</u>
	ACHINN10L	M8 x 80 Ø10	✓		
CH-GA	ACHG08C	M6 x 45 Ø8	[-]	<u>1,50</u>	--
	ACHG09C	M6 x 45 Ø9	[-]		
	ACHG10C	M8 x 60 Ø10	[-]	<u>3,00</u>	--
	ACHG11C	M8 x 60 Ø11	[-]		
	ACHG12C	M10 x 70 Ø12	[-]	<u>5,00</u>	--
	ACHG14C	M10 x 70 Ø14	[-]		
	ACHG16C	M12 x 80 Ø16	[-]	<u>6,00</u>	--
CH-AR	ACHA08C	M6 x 45 Ø8	[-]	<u>1,50</u>	--
	ACHA09C	M6 x 45 Ø9	[-]		
	ACHA10C	M8 x 60 Ø10	[-]	<u>3,00</u>	--
	ACHA11C	M8 x 60 Ø11	[-]		
	ACHA12C	M10 x 70 Ø12	[-]	<u>5,00</u>	--
	ACHA14C	M10 x 70 Ø14	[-]		
CH-GF	ACHGFO08C	M6 x 45 Ø8	[-]	<u>1,64</u>	--
	ACHGFO10C	M8 x 60 Ø10	[-]	<u>3,19</u>	--
	ACHGFO12C	M10 x 70 Ø12	[-]	<u>5,00</u>	--
CH-AF	ACHAFO08C	M6 x 45 Ø8	[-]	<u>4,21</u>	--
	ACHAFO10C	M8 x 60 Ø10	[-]	10,00	--
	ACHAFO12C	M10 x 70 Ø12	[-]	16,36	--
CH-GF A2	ACHGA208C	M6 x 45 Ø8	[-]	<u>1,74</u>	--
	ACHGA210C	M8 x 60 Ø10	[-]	<u>1,74</u>	--
	ACHGA212C	M10 x 70 Ø12	[-]	<u>3,19</u>	--
CH-AF A2	ACHAA208C	M6 x 45 Ø8	[-]	<u>4,21</u>	--
	ACHAA210C	M8 x 60 Ø10	[-]	9,50	--
	ACHAA212C	M10 x 70 Ø12	[-]	14,00	--
CH-ES	ACHE08C	M6 x 45 Ø8	✓	5,50	<u>3,62</u>
	ACHE09C	M6 x 45 Ø9	[-]		
	ACHE10C	M8 x 60 Ø10	✓	10,00	<u>6,59</u>
	ACHE10L	M8 x 80 Ø10	✓		
	ACHE11C	M8 x 60 Ø11	[-]		
	ACHE11L	M8 x 80 Ø11	[-]	16,36	<u>10,44</u>
	ACHE12C	M10 x 70 Ø12	✓		
	ACHE12L	M10 x 100 Ø12	✓		
	ACHE14C	M10 x 70 Ø14	[-]		
CH-GE	ACHE14L	M10 x 100 Ø14	[-]	<u>3,00</u>	--
	ACHGE10	M8 x 115 Ø10	[-]		
	ACHGE12	M10 x 135 Ø12	[-]	<u>5,00</u>	--

1 kN ≈ 100 kg

Values underlined and in italics indicate steel failure; **bold** values indicate concrete failure and the rest indicate pull-out failure.

4.2 DESIGN RESISTANCES [kN]					
Product	Code	Size	Assessed	Tension	Shear
				N _{Rk}	V _{Rk}
CH-TO	ACHT08C	M6 x 45 Ø8	✓	3,67	<u>4,82</u>
	ACHT08L	M6 x 60 Ø8	✓		
	ACHT09C	M6 x 45 Ø9	[-]		
	ACHT09L	M6 x 60 Ø9	[-]		
	ACHT10C	M8 x 60 Ø10	✓	6,67	8,30
	ACHT10L	M8 x 80 Ø10	✓		
	ACHT11C	M8 x 60 Ø11	[-]		
	ACHT11L	M8 x 80 Ø11	[-]	9,09	10,91
	ACHT12C	M10 x 70 Ø12	✓		
	ACHT12L	M10 x 100 Ø12	✓		
	ACHT14C	M10 x 70 Ø14	[-]		
	ACHT14L	M10 x 100 Ø14	[-]	11,15	13,38
	ACHT16C	M12 x 80 Ø16	✓		
	ACHT16L	M12 x 110 Ø16	✓		
ACHT20C	M16 x 110 Ø20	✓	20,04	<u>37,68</u>	
ACHT25C	M20 x 130 Ø25	[-]	19,56	46,93	
CH-8.8	ACHT8808C	M6 x 45 Ø8	✓	3,67	5,39
	ACHT8808L	M6 x 60 Ø8	✓		
	ACHT8810C	M8 x 60 Ø10	✓	6,67	8,30
	ACHT8810L	M8 x 80 Ø10	✓		
	ACHT8812C	M10 x 70 Ø12	✓	9,09	10,91
	ACHT8812L	M10 x 100 Ø12	✓		
	ACHT8816C	M12 x 80 Ø16	✓		
ACHT8816L	M12 x 110 Ø16	✓	11,15	13,38	
ACHT8820C	M16 x 110 Ø20	✓	20,04	40,07	
CH-8.8 E	ACHT8808E	M6 x 40 Ø8	[-]	2,96	4,10
	ACHT8810E	M8 x 40 Ø10	[-]	3,42	4,10
CH-A2	ACHTA208C	M6 x 45 Ø8	✓	5,39	<u>4,52</u>
	ACHTA208L	M6 x 60 Ø8	✓		
	ACHTA209C	M6 x 45 Ø9	[-]		
	ACHTA209L	M6 x 60 Ø9	[-]		
	ACHTA210C	M8 x 60 Ø10	✓	5,28	<u>8,24</u>
	ACHTA210L	M8 x 80 Ø10	✓		
	ACHTA211C	M8 x 60 Ø11	[-]		
	ACHTA211L	M8 x 80 Ø11	[-]	7,78	10,91
	ACHTA212C	M10 x 70 Ø12	✓		
	ACHTA212L	M10 x 100 Ø12	✓		
	ACHTA214C	M10 x 70 Ø14	[-]		
	ACHTA214L	M10 x 100 Ø14	[-]	8,89	13,38
	ACHTA216C	M12 x 80 Ø16	✓		
ACHTA216L	M12 x 110 Ø16	✓			
ACHTA220C	M16 x 110 Ø20	✓	13,33	<u>35,33</u>	
CH-PL	ACHTPL08C	M6 x 45 Ø8	✓	3,67	5,39
	ACHTPL08L	M6 x 60 Ø8	✓		
	ACHTPL10C	M8 x 60 Ø10	✓	6,67	8,30
	ACHTPL10L	M8 x 80 Ø10	✓		
	ACHTPL12C	M10 x 70 Ø12	✓	9,09	10,91
	ACHTPL12L	M10 x 100 Ø12	✓		

Product	Code	Size	Assessed	Tension	Shear
				N _{Rk}	V _{Rk}
CH-PI	ACHTPI08C	M6 x 45 Ø8	✓	5,39	<u><i>4,52</i></u>
	ACHTPI08L	M6 x 60 Ø8	✓		
	ACHTPI10C	M8 x 60 Ø10	✓	5,28	<u><i>8,24</i></u>
	ACHTPI10L	M8 x 80 Ø10	✓		
	ACHTPI12C	M10 x 70 Ø12	✓	7,78	10,91
	ACHTPI12L	M10 x 100 Ø12	✓		
CH-INB	ACHINB08C	M6 x 45 Ø8	✓	3,67	<u><i>3,01</i></u>
	ACHINB08L	M6 x 60 Ø8	✓		
	ACHINB10C	M8 x 60 Ø10	✓	6,67	<u><i>5,48</i></u>
	ACHINB10L	M8 x 80 Ø10	✓		
CH-INN	ACHINN08C	M6 x 45 Ø8	✓	3,67	<u><i>3,01</i></u>
	ACHINN08L	M6 x 60 Ø8	✓		
	ACHINN10C	M8 x 60 Ø10	✓	6,67	<u><i>5,48</i></u>
	ACHINN10L	M8 x 80 Ø10	✓		
CH-GA	ACHG08C	M6 x 45 Ø8	[-]	<u><i>1,00</i></u>	--
	ACHG09C	M6 x 45 Ø9	[-]		
	ACHG10C	M8 x 60 Ø10	[-]	<u><i>2,00</i></u>	--
	ACHG11C	M8 x 60 Ø11	[-]		
	ACHG12C	M10 x 70 Ø12	[-]	<u><i>3,33</i></u>	--
	ACHG14C	M10 x 70 Ø14	[-]		
	ACHG16C	M12 x 80 Ø16	[-]	<u><i>4,00</i></u>	--
CH-AR	ACHA08C	M6 x 45 Ø8	[-]	<u><i>1,00</i></u>	--
	ACHA09C	M6 x 45 Ø9	[-]		
	ACHA10C	M8 x 60 Ø10	[-]	<u><i>2,00</i></u>	--
	ACHA11C	M8 x 60 Ø11	[-]		
	ACHA12C	M10 x 70 Ø12	[-]	<u><i>3,33</i></u>	--
	ACHA14C	M10 x 70 Ø14	[-]		
ACHA16C	M12 x 80 Ø16	[-]	<u><i>4,00</i></u>	--	
CH-GF	ACHGFO08C	M6 x 45 Ø8	[-]	<u><i>1,09</i></u>	--
	ACHGFO10C	M8 x 60 Ø10	[-]	<u><i>2,13</i></u>	--
	ACHGFO12C	M10 x 70 Ø12	[-]	<u><i>3,33</i></u>	--
CH-AF	ACHAFO08C	M6 x 45 Ø8	[-]	<u><i>2,81</i></u>	--
	ACHAFO10C	M8 x 60 Ø10	[-]	6,67	--
	ACHAFO12C	M10 x 70 Ø12	[-]	9,09	--
CH-GF A2	ACHGA208C	M6 x 45 Ø8	[-]	<u><i>1,16</i></u>	--
	ACHGA210C	M8 x 60 Ø10	[-]	<u><i>1,16</i></u>	--
	ACHGA212C	M10 x 70 Ø12	[-]	<u><i>2,13</i></u>	--
CH-AF A2	ACHAA208C	M6 x 45 Ø8	[-]	<u><i>2,25</i></u>	--
	ACHAA210C	M8 x 60 Ø10	[-]	5,28	--
	ACHAA212C	M10 x 70 Ø12	[-]	7,78	--
CH-ES	ACHE08C	M6 x 45 Ø8	✓	3,67	<u><i>2,89</i></u>
	ACHE09C	M6 x 45 Ø9	[-]		
	ACHE10C	M8 x 60 Ø10	✓	6,67	<u><i>5,27</i></u>
	ACHE10L	M8 x 80 Ø10	✓		
	ACHE11C	M8 x 60 Ø11	[-]		
	ACHE11L	M8 x 80 Ø11	[-]		
	ACHE12C	M10 x 70 Ø12	✓	9,09	<u><i>8,35</i></u>
	ACHE12L	M10 x 100 Ø12	✓		
ACHE14C	M10 x 70 Ø14	[-]			
ACHE14L	M10 x 100 Ø14	[-]			
CH-GE	ACHGE10	M8 x 115 Ø10	[-]	<u><i>2,00</i></u>	--
	ACHGE12	M10 x 135 Ø12	[-]	<u><i>3,30</i></u>	--

1 KN ≈ 100 kg

Values underlined and in italics indicate steel failure; **bold** values indicate concrete failure and the rest indicate pull-out failure.

4.3 MAXIMUM RECOMMENDED LOADS [kN]					
Product	Code	Size	Assessed	Tension	Shear
				N _{Rk}	V _{Rk}
CH-TO	ACHT08C	M6 x 45 Ø8	✓	2,62	<u>3,45</u>
	ACHT08L	M6 x 60 Ø8	✓		
	ACHT09C	M6 x 45 Ø9	[-]		
	ACHT09L	M6 x 60 Ø9	[-]		
	ACHT10C	M8 x 60 Ø10	✓	4,76	5,93
	ACHT10L	M8 x 80 Ø10	✓		
	ACHT11C	M8 x 60 Ø11	[-]		
	ACHT11L	M8 x 80 Ø11	[-]	6,49	7,79
	ACHT12C	M10 x 70 Ø12	✓		
	ACHT12L	M10 x 100 Ø12	✓		
	ACHT14C	M10 x 70 Ø14	[-]		
	ACHT14L	M10 x 100 Ø14	[-]	7,96	9,56
	ACHT16C	M12 x 80 Ø16	✓		
	ACHT16L	M12 x 110 Ø16	✓		
ACHT20C	M16 x 110 Ø20	✓	14,31	<u>26,91</u>	
ACHT25C	M20 x 130 Ø25	[-]	13,97	33,52	
CH-8.8	ACHT8808C	M6 x 45 Ø8	✓	2,62	3,85
	ACHT8808L	M6 x 60 Ø8	✓		
	ACHT8810C	M8 x 60 Ø10	✓	4,76	5,93
	ACHT8810L	M8 x 80 Ø10	✓		
	ACHT8812C	M10 x 70 Ø12	✓	6,49	7,79
	ACHT8812L	M10 x 100 Ø12	✓		
	ACHT8816C	M12 x 80 Ø16	✓	7,96	9,56
	ACHT8816L	M12 x 110 Ø16	✓		
ACHT8820C	M16 x 110 Ø20	✓	14,31	28,62	
CH-8.8 E	ACHT8808E	M6 x 40 Ø8	[-]	2,11	2,93
	ACHT8810E	M8 x 40 Ø10	[-]	2,44	2,93
CH-A2	ACHTA208C	M6 x 45 Ø8	✓	3,85	<u>3,23</u>
	ACHTA208L	M6 x 60 Ø8	✓		
	ACHTA209C	M6 x 45 Ø9	[-]		
	ACHTA209L	M6 x 60 Ø9	[-]		
	ACHTA210C	M8 x 60 Ø10	✓	3,77	<u>5,88</u>
	ACHTA210L	M8 x 80 Ø10	✓		
	ACHTA211C	M8 x 60 Ø11	[-]		
	ACHTA211L	M8 x 80 Ø11	[-]	5,56	7,79
	ACHTA212C	M10 x 70 Ø12	✓		
	ACHTA212L	M10 x 100 Ø12	✓		
	ACHTA214C	M10 x 70 Ø14	[-]		
	ACHTA214L	M10 x 100 Ø14	[-]	6,35	9,56
	ACHTA216C	M12 x 80 Ø16	✓		
	ACHTA216L	M12 x 110 Ø16	✓		
ACHTA220C	M16 x 110 Ø20	✓	9,52	<u>25,23</u>	
CH-PL	ACHTPL08C	M6 x 45 Ø8	✓	2,62	3,85
	ACHTPL08L	M6 x 60 Ø8	✓		
	ACHTPL10C	M8 x 60 Ø10	✓	4,76	5,93
	ACHTPL10L	M8 x 80 Ø10	✓		
	ACHTPL12C	M10 x 70 Ø12	✓	6,49	7,79
	ACHTPL12L	M10 x 100 Ø12	✓		

Product	Code	Size	Assessed	Tension	Shear
				N _{Rk}	V _{Rk}
CH-PI	ACHTPI08C	M6 x 45 Ø8	✓	3,85	<u>3,23</u>
	ACHTPI08L	M6 x 60 Ø8	✓		
	ACHTPI10C	M8 x 60 Ø10	✓	3,77	<u>5,88</u>
	ACHTPI10L	M8 x 80 Ø10	✓		
	ACHTPI12C	M10 x 70 Ø12	✓		
	ACHTPI12L	M10 x 100 Ø12	✓		
CH-INB	ACHINB08C	M6 x 45 Ø8	✓	2,62	<u>2,15</u>
	ACHINB08L	M6 x 60 Ø8	✓		
	ACHINB10C	M8 x 60 Ø10	✓	4,76	<u>3,91</u>
	ACHINB10L	M8 x 80 Ø10	✓		
CH-INN	ACHINN08C	M6 x 45 Ø8	✓	2,62	<u>2,15</u>
	ACHINN08L	M6 x 60 Ø8	✓		
	ACHINN10C	M8 x 60 Ø10	✓	4,76	<u>3,91</u>
	ACHINN10L	M8 x 80 Ø10	✓		
CH-GA	ACHG08C	M6 x 45 Ø8	[-]	<u>0,71</u>	--
	ACHG09C	M6 x 45 Ø9	[-]		
	ACHG10C	M8 x 60 Ø10	[-]	<u>1,43</u>	--
	ACHG11C	M8 x 60 Ø11	[-]		
	ACHG12C	M10 x 70 Ø12	[-]		
	ACHG14C	M10 x 70 Ø14	[-]		
	ACHG16C	M12 x 80 Ø16	[-]	<u>2,38</u>	--
CH-AR	ACHA08C	M6 x 45 Ø8	[-]	<u>0,71</u>	--
	ACHA09C	M6 x 45 Ø9	[-]		
	ACHA10C	M8 x 60 Ø10	[-]	<u>1,43</u>	--
	ACHA11C	M8 x 60 Ø11	[-]		
	ACHA12C	M10 x 70 Ø12	[-]		
	ACHA14C	M10 x 70 Ø14	[-]		
ACHA16C	M12 x 80 Ø16	[-]	<u>2,38</u>	--	
CH-GF	ACHGFO08C	M6 x 45 Ø8	[-]	<u>0,78</u>	--
	ACHGFO10C	M8 x 60 Ø10	[-]	<u>1,52</u>	--
	ACHGFO12C	M10 x 70 Ø12	[-]	<u>2,38</u>	--
CH-AF	ACHAFO08C	M6 x 45 Ø8	[-]	<u>2,00</u>	--
	ACHAFO10C	M8 x 60 Ø10	[-]	4,76	--
	ACHAFO12C	M10 x 70 Ø12	[-]	6,49	--
CH-GF A2	ACHGA208C	M6 x 45 Ø8	[-]	<u>0,83</u>	--
	ACHGA210C	M8 x 60 Ø10	[-]	<u>0,83</u>	--
	ACHGA212C	M10 x 70 Ø12	[-]	<u>1,52</u>	--
CH-AF A2	ACHAA208C	M6 x 45 Ø8	[-]	<u>1,61</u>	--
	ACHAA210C	M8 x 60 Ø10	[-]	3,77	--
	ACHAA212C	M10 x 70 Ø12	[-]	5,56	--
CH-ES	ACHE08C	M6 x 45 Ø8	✓	2,62	<u>2,07</u>
	ACHE09C	M6 x 45 Ø9	[-]		
	ACHE10C	M8 x 60 Ø10	✓		
	ACHE10L	M8 x 80 Ø10	✓	4,76	<u>3,76</u>
	ACHE11C	M8 x 60 Ø11	[-]		
	ACHE11L	M8 x 80 Ø11	[-]		
	ACHE12C	M10 x 70 Ø12	✓		
	ACHE12L	M10 x 100 Ø12	✓	6,49	<u>5,97</u>
	ACHE14C	M10 x 70 Ø14	[-]		
ACHE14L	M10 x 100 Ø14	[-]			
CH-GE	ACHGE10	M8 x 115 Ø10	[-]	<u>1,40</u>	--
	ACHGE12	M10 x 135 Ø12	[-]	<u>2,30</u>	--

1 KN ≈ 100 kg

Values underlined and in italics indicate steel failure; **bold** values indicate concrete failure and the rest indicate pull-out failure.

**COEFFICIENTS FOR TENSION LOADS
IN PULL-OUT FAILURE IN HIGH-RESISTANCE CONCRETE TYPES**

CONCRETE FACTOR	C30/37	C40/50	C50/60
Ψ_c (Non cracked)	1,22	1,41	1,55

5. OFFICIAL DOCUMENTATION

The following documents are available through our Sales Department or on our official website: www.indexfix.com

- European Technical Assessment ETA 18/for installation in non-cracked concrete according to EAD 330232-00-0601, option 7, from M6 of M20.
- Declaration of performance DoP MTH.
- Available for the anchor design software INDEXcal.