www.shehkai.com

世鎧精密股份有限公司

SHEH KAI PRECISION CO.,LTD.

No.1,Bengong 1st Rd.,Gangshan Dist.,
Kaohsiung City 82059,Taiwan.
TEL: 886-7-622-5669
FAX: 886-7-622-6002
E-mail: info@shehkai.com.tw
Http: //www.shehkai.com

ETA-15/0815 option1

ETA-16/0067 part 6

2026/04/28 (Metric)

世鎧精密股份有限公司

SHEH KAI PRECISION CO.,LTD.



Bi-Metal & Dual-Hardness

Concrete Screw Anchors

世鎧精密股份有限公司

SHEH KAI PRECISION CO.,LTD.

TAIWAN EXCELLENCE 2017

ETA-15/0815 option1
M8/M10/M12
ETA-16/0067 part 6/M6



Concrete Screw Anchors

- Normal Galvanized
- Mechanical Galvanized
- Stainless Steel (SS 304/SS 316) Bi-Metal
- Size / M6~ M16 (max. L 150mm)

Hammer Drill Bits

- Size / 3.2 ~ 20mm

Screw Anchor Rebars

- Gebrauchsmusters Nr.20 2017 103 588

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Company Profile

SHEH KAI PRECISION CO., LTD. was established in 1992 in Kaohsiung, Taiwan. Our main plant is located at the center of KangShan industrial park. Specialized in manufacturing premium stainless steel Bi-metal self-drilling screws, Bi-Meal self-tapping screws, and Bi-Metal concrete screws, and SDS plus hammer drill bits with material of tungsten carbide. As a global leader of manufacture of Bi-Metal fastener, in these twenty years, we have developed a superior and unique production process such as dissimilar metal welding and induction heat treatment which are suitable for producing premium Bi-Metal products that meet the highest end requirements world-wide. With dedicated supports from our own stainless steel wire drawing factory, the stainless steel raw materials of the fasteners can be easily planned and acquired for mass production.
As a forerunner of the bi-metal fastener industry, we constantly strive to provide our customers with unique innovative solutions, high quality products as well as professional service along.

SHEH KAI PRECISION CO.,LTD.



Contents

Sheh Kai complies with international quality standard

Sheh Kai complies with international environment standard

Concrete screw anchors are ETA/CE certified option1 for cracked and uncracked concrete

ETA/CE are issued by German DIBT

Concrete screw anchor passes seismic test in national lab

Concrete screw anchor is CTC certified

ETA Products Assessment and Quality Control

Sheh Kai is one of the best OEM/ODM of Bi-Metal fasteners with very good reputation world-wide. Our products quality has been well proved for a decade by our existing high end customers.
As per the European Construction Product Regulation set force in 2013, most of the Bi-Metal Fasteners are required to be sold with ETA Technical Assessment. To solve this issue, we not only have supported a numbers of our existing customers to acquire the ETA Approval for their own, but also have developed our own Bi-Metal concrete screws with ETA option 1 approval from DIBt. To be compliant with the customer's special requirements, we commit to devote ourselves in continuous improvement on expanding the range of premium products with our exclusive Bi-Metal production technology. We set Innovation, Profession, Efficiency and impeccable service as our long standing quality policies for the company. An intensive quality control practice has being emphasized for years to ensure that the highest standard is upheld.
As an ISO 9001:2015 and ISO 14001:2015 certified manufacturer, our devotion drives us to provide the best service to our customers for these high end products and processes.

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Http://www.shehkai.com
E-mail:info@shehkai.com.tw

Fastening into Concrete

The Sheh Kai SK concrete screws are self-cutting concrete screws. The screws consist either of zinc plated carbon steel (gvz) or of bimetal (A4) with a hardened tip of the screw made of carbon steel. Our screw anchors are designed to fasten fixtures to concrete with strengthen threads interlocked with undercut concrete. By its thread design, the lead threads of screw anchors well cut into the concrete member and provide high load anchoring. To fasten into the concrete, you select the proper drill bit, as depicted below, to create the correct diameter hole with enough depth. After dusts are cleaned out, install with an impact screw driver until the fasten object and the screw anchor are fixed together. Performances varied with different types of concrete, as depicted below. Performance for different version of our screw anchors will be presented in the following sections.

Intended use

Anchorages subject to:

- Static and quasi-static loads:

Base materials:

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000.
- Strength classes C20/25 to C50/60 according to EN 206-1:2000.
- Non-cracked or cracked concrete: all sizes.

Use conditions (Environmental conditions)

- Anchorages subject to dry internal conditions. All screw types.
- Anchorages subject to external atmospheric exposure (including industrial and marine environment).
- or exposure in permanently damp internal conditions. Screw types made of stainless steel with marking A4.

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 anchor is indicated on the design drawings (e. g. position of the anchor relative to reinforcement or to supports, etc.).
- Anchorages under static or quasi-static actions are designed for design method A in accordance with: FprEN 1992-4:2016 in addition with TR 055, Edition December 2016.



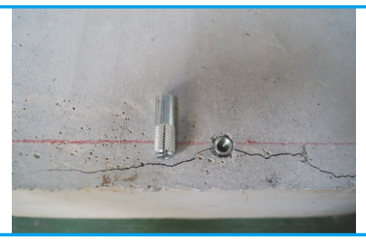
Self-Tapping Screw Anchor



Internal Threaded Screw Anchor



Expansion Anchor



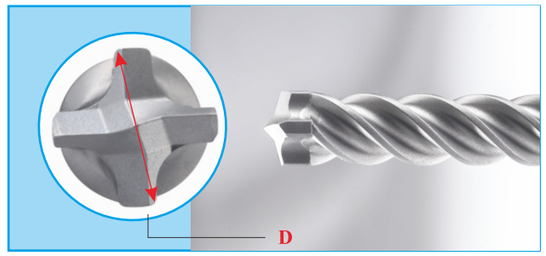
Drop-in Anchor

Drill Bits Information

Below are the drill bits used, with various type of concrete member, and the application of the screw anchor during testing.

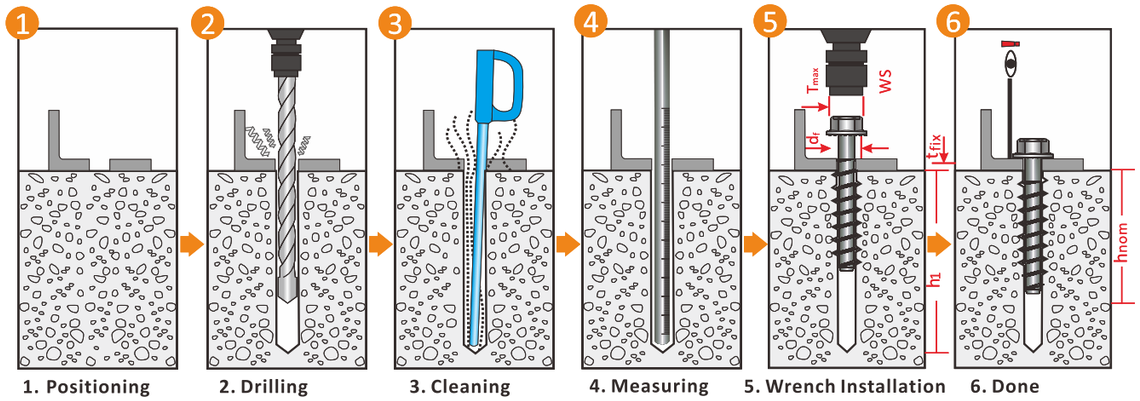
■ ANSI-B212.15

Anchor Size (mm)	Nominal Diameter of Drill Bit (mm)	Tolerance Range (mm)-(D)
M6	6.0	6.15-6.40
M8	8.0	8.20-8.45
M10	10.0	10.20-10.45
M12	12.0	12.20-12.50



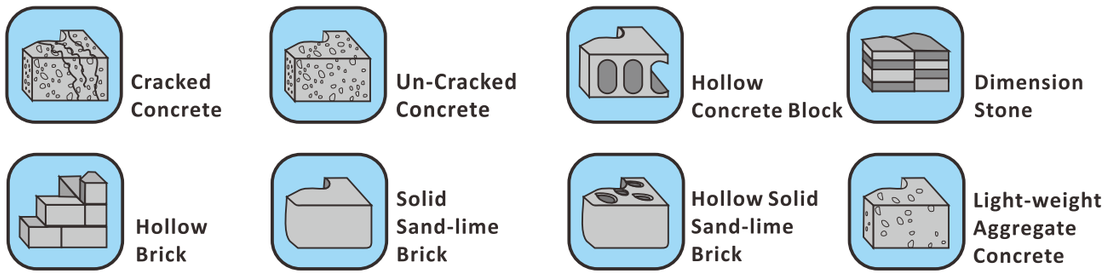
Installation Process

- Hammer drilling only: all sizes and all embedment depths.
- Anchor 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 anchor must not be possible.
- The head of the anchor must be supported on the fixture and is not damaged.



- 5. Wrench Installation-s=Screw in the anchor by hand or with impact screw driver. Torque moment Tmax. WS=Wrench Size
- 6. Done-Control of complete setting, full contact of screw head with fixture part.

Base Applied (for cracked and uncracked concrete)



Features and Benefits

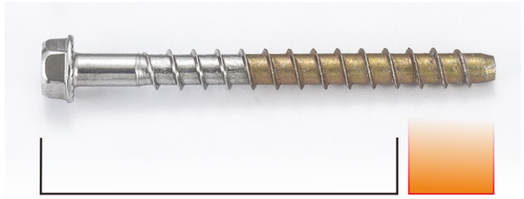
- ETA option 1 (DIBT) approval for cracked and un-cracked concrete, with superior installation performance.
- Fast installation and immediate loading minimizes downtime.
- Qualifies for seismic and wind loads in concrete, will not slip.
- No expansion forces transferred to the base material.
- Applicable closer to the edge than traditional expansion anchors.
- Removable and Adjustable.
- Performs reliable in cracked and non-cracked concrete.

Advantages of Bi-metal Concrete Screw Anchor

- Outdoor applications
- Long lifespan projects
- Hardness of frontal carbon alloy component allows for easy drilling and high quality anchoring during installation.
- Suitable for normal concrete, high strength concrete, and concrete over steel deck.
- Designed for consistent and reliable performance in cracked and non-cracked concrete.
- Superior corrosion resistance.

Unique Welding Technology

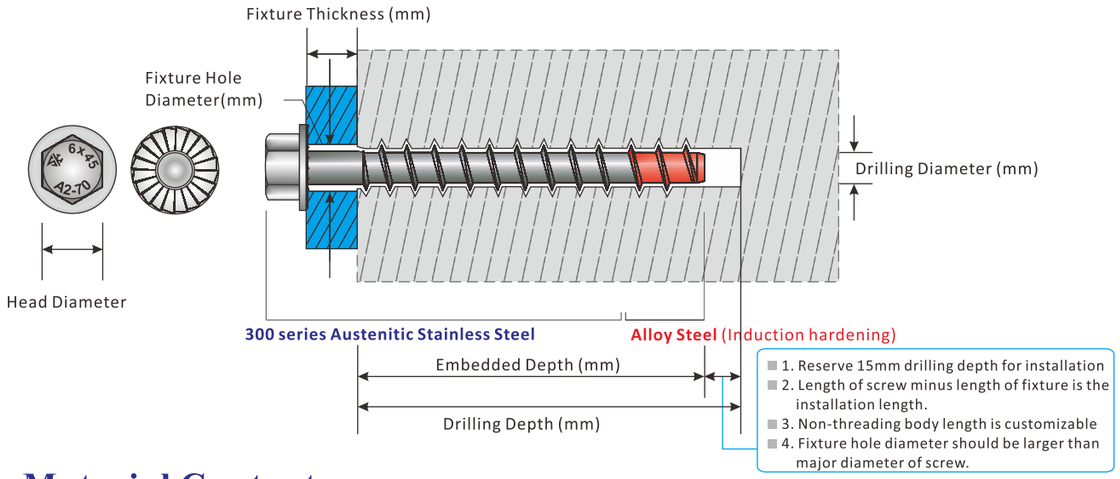
- **Fastening Part** - A4 or A2 Austenitic Stainless Steel Steel to Provide longlife application and reliable fastening unit.
- **Cutting Part** - Selective hardening to provide the better cut into the undercut of concrete.



Fastening Part
Austenitic Stainless Steel

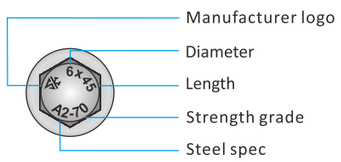
Cutting Part
Inductive Heating Tapper

Product Specifications & Selection for Application



- 1. Reserve 15mm drilling depth for installation
- 2. Length of screw minus length of fixture is the installation length.
- 3. Non-threading body length is customizable
- 4. Fixture hole diameter should be larger than major diameter of screw.

Material Content



Bi-metal screw anchor uses stainless steel that conforms to the EN-10263-5 standard

Steel type	Austenitic
Steel spec	**A2(304). A4(316)**
Strength level (min)	Tensile strength 50Kgf/mm² 500N /mm²

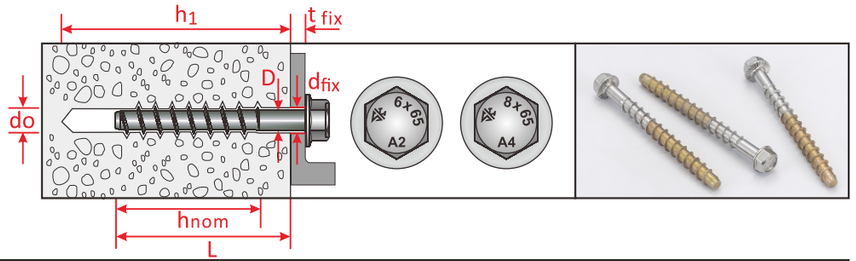
SK Concrete Anchor Installation Parameters

Bi-Metal (A4)

Anchor size / head types [1]			SK6			SK8				SK10				SK12
			H HF	CS	PH	H (A2/A4)	H HF	CS	PH	H HF	HB	CS	PH	H HF
Length of anchor	min L	[mm]	75	80	75	55	90	95	90	105	105	110	105	125
	max L	[mm]	140	140	140	150	150	150	150	150	150	150	150	150
Thread diameter	D	[mm]	7.5			9.9				12.5				14.3
Shaft diameter	d	[mm]	5.5			7.4				9.4				11.3
Thread pitch	p	[mm]	4.45			5.8				7.7				8.1
Nominal diameter of drill bit	d_0	[mm]	6			8				10				12
Nominal embedment depth	h_{nom}	[mm]	70			52	85			100				120
Min. hole depth in concrete	$h_1 \geq$	[mm]	80			62	95			110				130
Effective anchorage depth	h_{ef}	[mm]	43.1			22.2	51.9			58.7				75.6
Clearance hole	d_f	[mm]	9			11				13				15
Thickness of fixture	t_{fix}	[mm]	5-70	10-70	5-70	3-98	5-65	10-65	5-65	5-50	5-50	10-50	5-50	5-30
Installation torque	T_{inst}	[Nm]	2)	2)	2)	31	2)	2)	2)	2)	2)	2)	2)	2)
Wrench size (H,HF,HB types)	WS	[mm]	10	–	–	13	13	–	–	17	19	–	–	19
Torx size (CS,PH types)	TX	–	–	40		–	–	45		–	–	50		–
Max. torque moment, machine setting	$T_{max} \geq$	[Nm]	120	80	80	185	120	120	120	185	185	185	185	185
Minimum member thickness	h_{min}	[mm]	110			100	125			140				170
Minimum edge distance	C_{min}	[mm]	40			55	50			60				70
Minimum spacing	S_{min}	[mm]	40			55	50			60				70
Char.resis.tension(steel)	NRK,s	[kN]	18.1	12.2	12.2	33	33	22.3	22.3	53.7	53.7	36.2	36.2	78.1
Char.resis.pull-out(crack)	NRK,p,c	[kN]	5	3.5	2.5	2	4.5	4.5	4	7	7	7	7	12
Char.sesis.Pull-out(non-crack)	NRK,p,nc	[kN]					9	5.5	4	16	16	10	7	25
Char.sesis.shear(steel)	VRK,s	[kN]	9	6.1	6.1	13.2	16.5	11.2	11.2	28.6	28.6	18.1	18.1	39
Permissible tension(cracked)	Nzul	[kN]	2.4	1.7	1.2	0.95	2.1	2.1	1.9	3.3	3.3	3.3	3.3	5.7
Permissible shear(cracked)	Vzul	[kN]	4.3	2.9	2.9	6.3	7.8	5.3	5.3	13.6	13.6	8.6	8.6	18.6
Permissible tension(uncracked)	Nzul	[kN]	2.4	1.7	1.2	0.95	4.3	2.6	1.9	7.6	7.6	4.8	3.3	11.9
Permissible shear(uncracked)	Vzul	[kN]	4.3	2.9	2.9	6.3	7.8	5.3	5.3	13.6	13.6	8.6	8.6	18.6
Approval [3]			*			*	**			**				**

Note: [1] H,HF=Hexagon washer Head, CS=Countersunk Head, PH=Pan Head, HB=Hanger Bolt.
[2] The installation can only use impact screw driver.
[3] * =ETA-16/0067(multiple use); ** = ETA-15/0815(part3, option1).

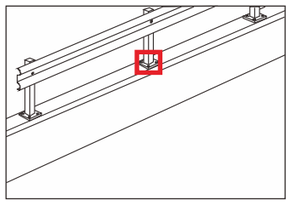
SK Bi-metal Concrete Anchor (Stainless Steel) Hex Washer Head

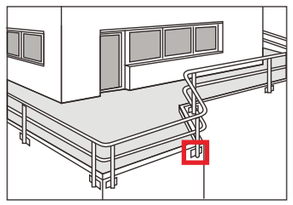


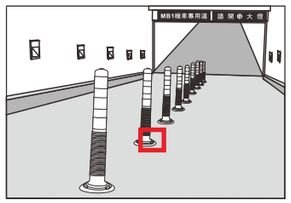
Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-H6 x 75 A4	6 (6.15-6.40)	70	5	9	SW-10	*
SK-H6 x 85 A4	6 (6.15-6.40)	70	15	9	SW-10	*
SK-H6 x 95 A4	6 (6.15-6.40)	70	25	9	SW-10	*
SK-H6 x 115 A4	6 (6.15-6.40)	70	45	9	SW-10	*
SK-H6 x 140 A4	6 (6.15-6.40)	70	70	9	SW-10	*
SK-H6 x 60/5 A4	6 (6.15-6.40)	55	5	9	SW-10	
SK-H6 x 70/15 A4	6 (6.15-6.40)	55	15	9	SW-10	
SK-H6 x 80/25 A4	6 (6.15-6.40)	55	25	9	SW-10	
SK-H8 x 90 A4	8 (8.20-8.45)	85	5	11	SW-13	**
SK-H8 x 100 A4	8 (8.20-8.45)	85	15	11	SW-13	**
SK-H8 x 110 A4	8 (8.20-8.45)	85	25	11	SW-13	**
SK-H8 x 120 A4	8 (8.20-8.45)	85	35	11	SW-13	**
SK-H8 x 130 A4	8 (8.20-8.45)	85	45	11	SW-13	**
SK-H8 x 150 A4	8 (8.20-8.45)	85	65	11	SW-13	**
SK-H8 x 70/5 A4	8 (8.20-8.45)	65	5	11	SW-13	
SK-H8 x 80/15 A4	8 (8.20-8.45)	65	15	11	SW-13	
SK-H8 x 90/25 A4	8 (8.20-8.45)	65	25	11	SW-13	
SK-H8 x 100/35 A4	8 (8.20-8.45)	65	35	11	SW-13	
SK-H8 x 55 A4	8 (8.20-8.45)	52	3	11	SW-13	*
SK-H8 x 57 A4	8 (8.20-8.45)	52	5	11	SW-13	*
SK-H8 x 67 A4	8 (8.20-8.45)	52	15	11	SW-13	*
SK-H8 x 77 A4	8 (8.20-8.45)	52	25	11	SW-13	*
SK-H8 x 87 A4	8 (8.20-8.45)	52	35	11	SW-13	*
SK-H8 x 55 A2	8 (8.20-8.45)	52	3	11	SW-13	*
SK-H8 x 57 A2	8 (8.20-8.45)	52	5	11	SW-13	*
SK-H8 x 67 A2	8 (8.20-8.45)	52	15	11	SW-13	*
SK-H8 x 77 A2	8 (8.20-8.45)	52	25	11	SW-13	*
SK-H8 x 87 A2	8 (8.20-8.45)	52	35	11	SW-13	*

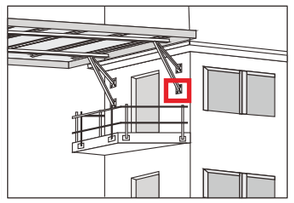
* = ETA-16/0067 (multiple use); ** = ETA-15/0815 (part3, option1)

Application

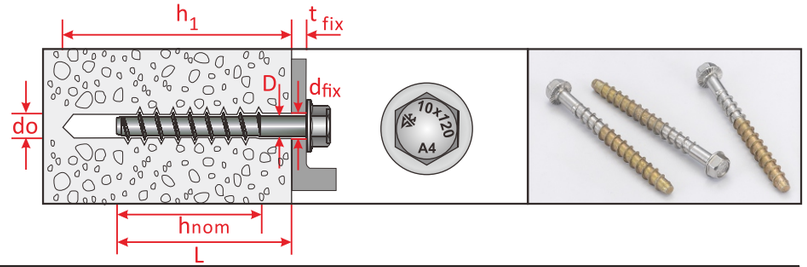

Guardrail


Railings


Safety Cones


Supporting Systems

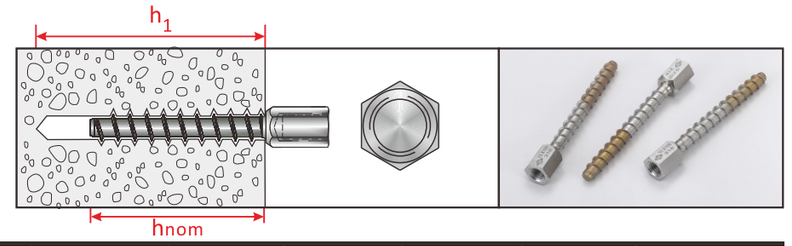
SK Bi-metal Concrete Anchor (Stainless Steel) Hex Washer Head



Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-H10 x 105 A4	10 (10.20-10.45)	100	5	13	SW-17	**
SK-H10 x 115 A4	10 (10.20-10.45)	100	15	13	SW-17	**
SK-H10 x 125 A4	10 (10.20-10.45)	100	25	13	SW-17	**
SK-H10 x 135 A4	10 (10.20-10.45)	100	35	13	SW-17	**
SK-H10 x 150 A4	10 (10.20-10.45)	100	50	13	SW-17	**
SK-H10 x 80/5 A4	10 (10.20-10.45)	75	5	13	SW-17	
SK-H10 x 90/15 A4	10 (10.20-10.45)	75	15	13	SW-17	
SK-H10 x 100/25 A4	10 (10.20-10.45)	75	25	13	SW-17	
SK-H10 x 110/35 A4	10 (10.20-10.45)	75	35	13	SW-17	
SK-H12 x 125 A4	12 (12.20-12.50)	120	5	15	SW-19	**
SK-H12 x 135 A4	12 (12.20-12.50)	120	15	15	SW-19	**
SK-H12 x 150 A4	12 (12.20-12.50)	120	30	15	SW-19	**
SK-H10 x 100/5 A4	12 (12.20-12.50)	95	5	15	SW-19	
SK-H10 x 110/15 A4	12 (12.20-12.50)	95	15	15	SW-19	
SK-H10 x 120/30 A4	12 (12.20-12.50)	95	30	15	SW-19	

* = ETA-16/0067 (multiple use); ** = ETA-15/0815 (part3, option1)

SK Bi-metal Concrete Anchor (Stainless Steel) Internal Thread Head (Hanger Bolt)

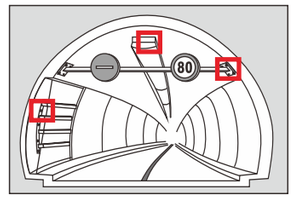


Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Hanger threaded rod (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval	Item number
SK-HB 10 x 105-M12 A4	10 (10.20-10.45)	100	M12	NA	SW-19	**	

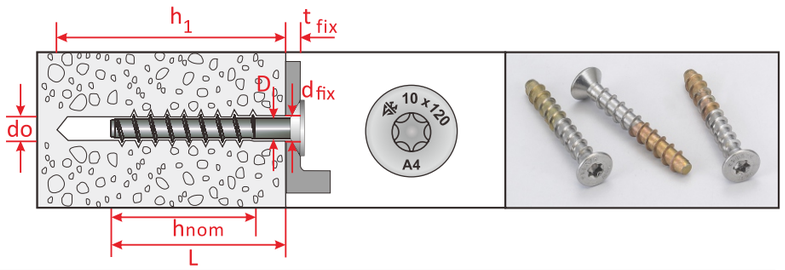
** = ETA-15/0815(part3, option1)

Application

- Tunnel Structures



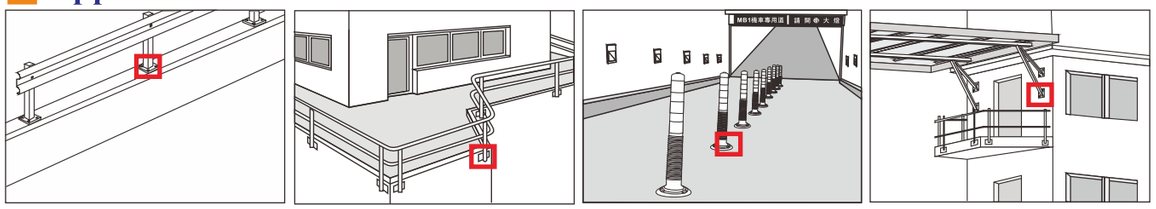
SK Bi-metal Concrete Anchor (Stainless Steel) Countersunk Head



Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-CS 6 x 80 A4	6 (6.15-6.40)	70	10	9	T-40	*
SK-CS 6 x 85 A4	6 (6.15-6.40)	70	15	9	T-40	*
SK-CS 6 x 95 A4	6 (6.15-6.40)	70	25	9	T-40	*
SK-CS 6 x 115 A4	6 (6.15-6.40)	70	45	9	T-40	*
SK-CS 6 x 140 A4	6 (6.15-6.40)	70	70	9	T-40	*
SK-CS 6 x 65/10 A4	6 (6.15-6.40)	55	10	9	T-40	
SK-CS 6 x 70/15 A4	6 (6.15-6.40)	55	15	9	T-40	
SK-CS 6 x 80/25 A4	6 (6.15-6.40)	55	25	9	T-40	
SK-CS 8 x 95 A4	8 (8.20-8.45)	85	10	11	T-45	**
SK-CS 8 x 100 A4	8 (8.20-8.45)	85	15	11	T-45	**
SK-CS 8 x 110 A4	8 (8.20-8.45)	85	25	11	T-45	**
SK-CS 8 x 120 A4	8 (8.20-8.45)	85	35	11	T-45	**
SK-CS 8 x 130 A4	8 (8.20-8.45)	85	45	11	T-45	**
SK-CS 8 x 150 A4	8 (8.20-8.45)	85	65	11	T-45	**
SK-CS 8 x 75/10 A4	8 (8.20-8.45)	65	10	11	T-45	
SK-CS 8 x 80/15 A4	8 (8.20-8.45)	65	15	11	T-45	
SK-CS 8 x 90/25 A4	8 (8.20-8.45)	65	25	11	T-45	
SK-CS 8 x 100/35 A4	8 (8.20-8.45)	65	35	11	T-45	
SK-CS 10 x 110 A4	10 (10.20-10.45)	100	10	13	T-50	**
SK-CS 10 x 115 A4	10 (10.20-10.45)	100	15	13	T-50	**
SK-CS 10 x 125 A4	10 (10.20-10.45)	100	25	13	T-50	**
SK-CS 10 x 135 A4	10 (10.20-10.45)	100	35	13	T-50	**
SK-CS 10 x 150 A4	10 (10.20-10.45)	100	50	13	T-50	**
SK-CS 10 x 85/10 A4	10 (10.20-10.45)	75	10	13	T-50	
SK-CS 10 x 90/15 A4	10 (10.20-10.45)	75	15	13	T-50	
SK-CS 10 x 100/25 A4	10 (10.20-10.45)	75	25	13	T-50	
SK-CS 10 x 110/35 A4	10 (10.20-10.45)	75	35	13	T-50	

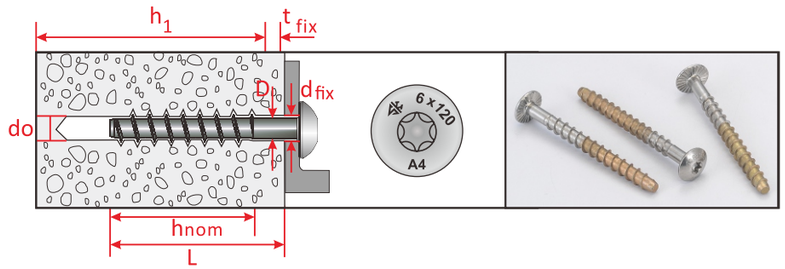
* = ETA-16/0067(multiple use); ** = ETA-15/0815(part3, option1)

Application



Guardrail | Railings | Safety Cones | Supporting Systems

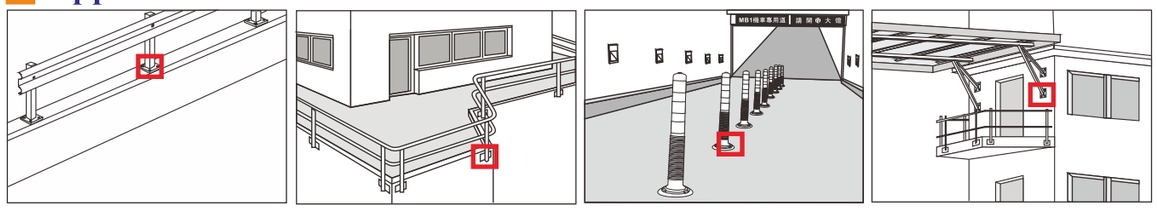
SK Bi-metal Concrete Anchor (Stainless Steel) Pan Head



Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-PH 6 x 75 A4	6 (6.15-6.40)	70	5	9	T-40	*
SK-PH 6 x 85 A4	6 (6.15-6.40)	70	15	9	T-40	*
SK-PH 6 x 95 A4	6 (6.15-6.40)	70	25	9	T-40	*
SK-PH 6 x 115 A4	6 (6.15-6.40)	70	45	9	T-40	*
SK-PH 6 x 140 A4	6 (6.15-6.40)	70	70	9	T-40	*
SK-PH 6 x 60/5 A4	6 (6.15-6.40)	55	5	9	T-40	
SK-PH 6 x 70/15 A4	6 (6.15-6.40)	55	15	9	T-40	
SK-PH 6 x 80/25 A4	6 (6.15-6.40)	55	25	9	T-40	
SK-PH 8 x 90 A4	8 (8.20-8.45)	85	5	11	T-45	**
SK-PH 8 x 100 A4	8 (8.20-8.45)	85	15	11	T-45	**
SK-PH 8 x 110 A4	8 (8.20-8.45)	85	25	11	T-45	**
SK-PH 8 x 120 A4	8 (8.20-8.45)	85	35	11	T-45	**
SK-PH 8 x 130 A4	8 (8.20-8.45)	85	45	11	T-45	**
SK-PH 8 x 150 A4	8 (8.20-8.45)	85	65	11	T-45	**
SK-PH 8 x 70/5 A4	8 (8.20-8.45)	65	5	11	T-45	
SK-PH 8 x 80/15 A4	8 (8.20-8.45)	65	15	11	T-45	
SK-PH 8 x 80/25 A4	8 (8.20-8.45)	65	25	11	T-45	
SK-PH 8 x 100/35 A4	8 (8.20-8.45)	65	35	11	T-45	
SK-PH 10 x 105 A4	10 (10.20-10.45)	100	5	13	T-50	**
SK-PH 10 x 115 A4	10 (10.20-10.45)	100	15	13	T-50	**
SK-PH 10 x 125 A4	10 (10.20-10.45)	100	25	13	T-50	**
SK-PH 10 x 135 A4	10 (10.20-10.45)	100	35	13	T-50	**
SK-PH 10 x 150 A4	10 (10.20-10.45)	100	50	13	T-50	**
SK-PH 10 x 80/5 A4	10 (10.20-10.45)	75	5	13	T-50	
SK-PH 10 x 90/15 A4	10 (10.20-10.45)	75	15	13	T-50	
SK-PH 10 x 100/25 A4	10 (10.20-10.45)	75	25	13	T-50	
SK-PH 10 x 110/35 A4	10 (10.20-10.45)	75	35	13	T-50	

* = ETA-16/0067(multiple use); ** = ETA-15/0815(part3, option1)

Application



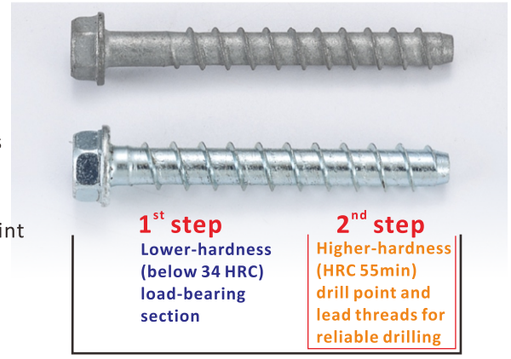
Guardrail | Railings | Safety Cones | Supporting Systems

Advantages of Dual Hardness Concrete Screw Anchor

- ETA option 1 approved for cracked and non-cracked concrete, with superior installation performance
- Deter against hydrogen assisted corrosion cracking
- Hardness controlled below Rockwell C34 in the loading section to immune hydrogen embrittlement issues.
- Reliable loading performance for safety assurances
- Perfect for temporary fixing with removable capability on heavy duty items
- Option with Mechanical Galvanized Coating for better corrosion resistance

Two Steps Heat - Treatment

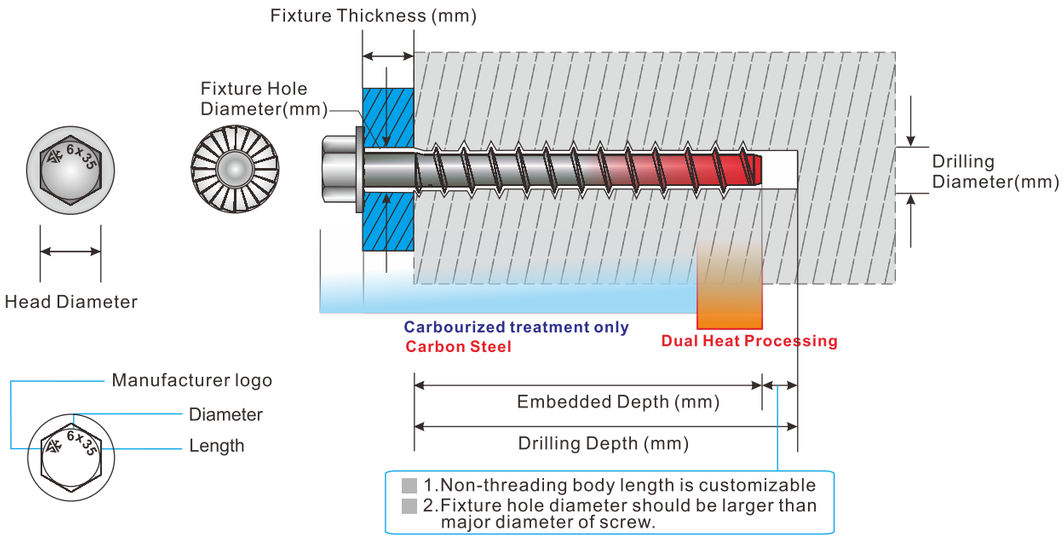
- **1st step**-Case hardening on the head and shank of the screws with ductile strength, more endurable, and hydrogen embrittlement resistant characteristics
- **2nd step**-Selective through hardening to provide the drill point and lead threads with good drilling and tapping performance.



Immune to Hydrogen embrittlement corrosion

Through diffusion of hydrogen into the metals as well corrosion in the application environment, the brittleness creates weakness, and cracks within the structure of the metal. Known as Hydrogen Assisted corrosion cracking, it fosters an environment with which the product could fail in an unpredictable manner, induces danger to the user of the product.

Product Specifications & Selection for Application



1. Non-threading body length is customizable
2. Fixture hole diameter should be larger than major diameter of screw.

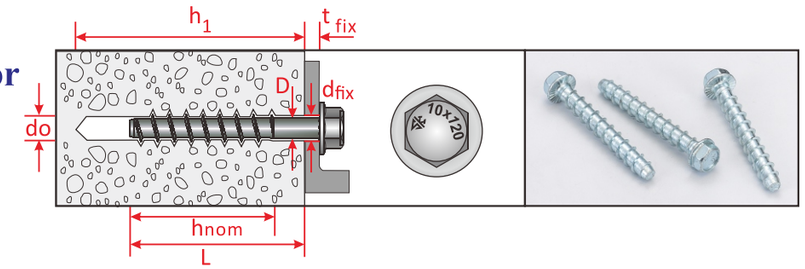
SK Concrete Anchor Installation Parameters

Carbon Steel (10B21)

Anchor size / head types [1]			SK6				SK8			SK10			SK12
			H HF	Hi-M8 Hi-M10 Hi-M8/ M10	CS	PH	H HF	CS	PH	H HF	CS	PH	H HF
Length of anchor	min L	[mm]	60	57	65	60	70	75	70	80	85	80	100
	max L	[mm]	140	57	140	140	150	150	150	150	150	150	150
Thread diameter	D	[mm]	7.5				9.9			12.5			14.3
Shaft diameter	d	[mm]	5.5				7.4			9.4			11.3
Thread pitch	p	[mm]	4.45				5.8			7.7			8.1
Nominal diameter of drill bit	d_0	[mm]	6				8			10			12
Nominal embedment depth	h_{nom}	[mm]	55				65			75			95
Min. hole depth in concrete	$h_1 \geq$	[mm]	64				75			85			105
Effective anchorage depth	h_{ef}	[mm]	42.6				50.6			58.1			75.4
Clearance hole	d_f	[mm]	9				11			13			15
Thickness of fixture	t_{fix}	[mm]	5-85	–	10-85	5-85	5-85	10-85	5-85	5-75	10-75	5-75	5-55
Installation torque	T_{inst}	[Nm]	20	20	2)	2)	40	2)	2)	60	2)	2)	80
Wrench size (H,HF,HI types)	WS	[mm]	10	12.7	–	–	13	–	–	17	–	–	19
Torx size (CS,PH types)	TX	–	–	–	40		–	45			50		–
Max. torque moment, machine setting	$T_{max} \geq$	[Nm]	80	80	80	80	185	120	120	350	120	120	350
Minimum member thickness	h_{min}	[mm]	100				110			130			160
Minimum edge distance	C_{min}	[mm]	40				50			60			70
Minimum spacing	S_{min}	[mm]	40				50			60			70
Char.resis.tension(steel)	NRK,s	[kN]	19.7				35.9			57			83
Char.resis.pull-out(crack)	NRK,p,c	[kN]	5				4.5			10			12
Char.sesis.Pull-out(non-crack)	NRK,p, nc	[kN]					9	9	6.5	16	16	11	25
Char.sesis.shear(steel)	VRK,s	[kN]	7.9				16.9			26.9			39
Permissible tension(cracked)	Nzul	[kN]	2.4				2.1			4.7			5.7
Permissible shear(cracked)	Vzul	[kN]	3.8				8			12.8			18.6
Permissible tension(uncracked)	Nzul	[kN]	2.4				4.3	4.3	3.1	7.6	7.6	5.2	11.9
Permissible shear(uncracked)	Vzul	[kN]	3.8				8			12.8			18.6
Approval [3]			*				**			**			**

Note: [1] H,HF=Hexagon washer Head, CS=Countersunk Head, PH=Pan Head, HI=Internal Thread Head.
[2] The installation of the CS and PH head types can only use impact screw driver.
[3] * = ETA-16/0067(multiple use); ** = ETA-15/0815(part3, option1).

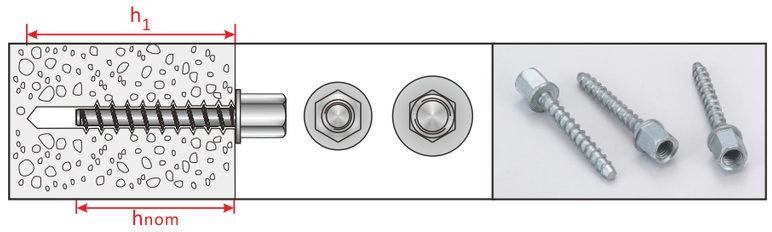
SK Concrete Anchor
(Carbon Steel)
Hex Washer Head



Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-H5 x 40/5	5 (5.15-5.40)	35	5	8	SW-10	
SK-H5 x 50/15	5 (5.15-5.40)	35	15	8	SW-10	
SK-H5 x 60/25	5 (5.15-5.40)	35	25	8	SW-10	
SK-H5 x 80/45	5 (5.15-5.40)	35	45	8	SW-10	
SK-H6 x 60	6 (6.15-6.40)	55	5	9	SW-10	*
SK-H6 x 70	6 (6.15-6.40)	55	15	9	SW-10	*
SK-H6 x 80	6 (6.15-6.40)	55	25	9	SW-10	*
SK-H6 x 100	6 (6.15-6.40)	55	45	9	SW-10	*
SK-H6 x 120	6 (6.15-6.40)	55	65	9	SW-10	*
SK-H6 x 140	6 (6.15-6.40)	55	85	9	SW-10	*
SK-H6 x 40/5	6 (6.15-6.40)	35	5	9	SW-10	
SK-H6 x 50/15	6 (6.15-6.40)	35	15	9	SW-10	
SK-H6 x 60/25	6 (6.15-6.40)	35	25	9	SW-10	
SK-H6 x 80/45	6 (6.15-6.40)	35	45	9	SW-10	
SK-H6 x 100/65	6 (6.15-6.40)	35	65	9	SW-10	
SK-H8 x 70	8 (8.20-8.45)	65	5	11	SW-13	**
SK-H8 x 80	8 (8.20-8.45)	65	15	11	SW-13	**
SK-H8 x 90	8 (8.20-8.45)	65	25	11	SW-13	**
SK-H8 x 100	8 (8.20-8.45)	65	35	11	SW-13	**
SK-H8 x 110	8 (8.20-8.45)	65	45	11	SW-13	**
SK-H8 x 130	8 (8.20-8.45)	65	65	11	SW-13	**
SK-H8 x 150	8 (8.20-8.45)	65	85	11	SW-13	**
SK-H10 x 80	10 (10.20-10.45)	75	5	13	SW-17	**
SK-H10 x 90	10 (10.20-10.45)	75	15	13	SW-17	**
SK-H10 x 100	10 (10.20-10.45)	75	25	13	SW-17	**
SK-H10 x 110	10 (10.20-10.45)	75	35	13	SW-17	**
SK-H10 x 130	10 (10.20-10.45)	75	55	13	SW-17	**
SK-H10 x 150	10 (10.20-10.45)	75	75	13	SW-17	**
SK-H12 x 100	12 (12.20-12.50)	95	5	15	SW-19	**
SK-H12 x 110	12 (12.20-12.50)	95	15	15	SW-19	**
SK-H12 x 130	12 (12.20-12.50)	95	35	15	SW-19	**
SK-H12 x 150	12 (12.20-12.50)	95	55	15	SW-19	**

* = ETA-16/0067 (multiple use); ** = ETA-15/0815 (part3, option1)

SK Concrete Anchor
(Carbon Steel)
Internal Thread Head
(Hanger Bolt)

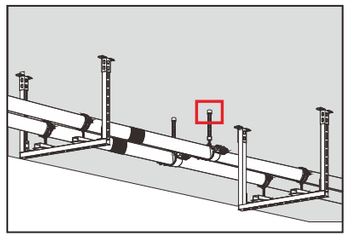


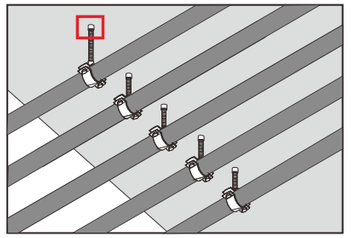
Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-HI 6x60-M8	6 (6.15-6.40)	55	M8	NA	SW-13	*
SK-HI 6x60-M10	6 (6.15-6.40)	55	M10	NA	SW-13	*
SK-HI 6x60-M8/M10	6 (6.15-6.40)	55	M8 or M10	NA	SW-13	*
SK-HI 6x40-M8	6 (6.15-6.40)	35	M8	NA	SW-13	
SK-HI 6x40-M10	6 (6.15-6.40)	35	M10	NA	SW-13	
SK-HI 6x40-M8/M10	6 (6.15-6.40)	35	M8 or M10	NA	SW-13	

* = ETA-16/0067(multiple use)

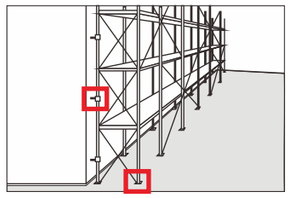
Application

- Rod hangers for pipes.
- Piping or ventilation duct installation application.

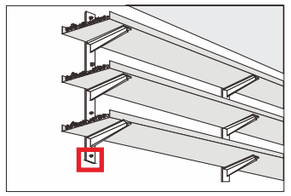




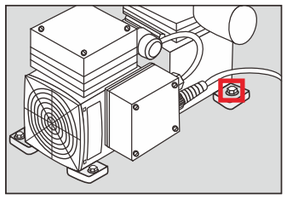
Application



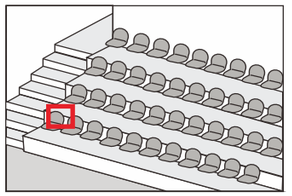
Scaffolding



Rack

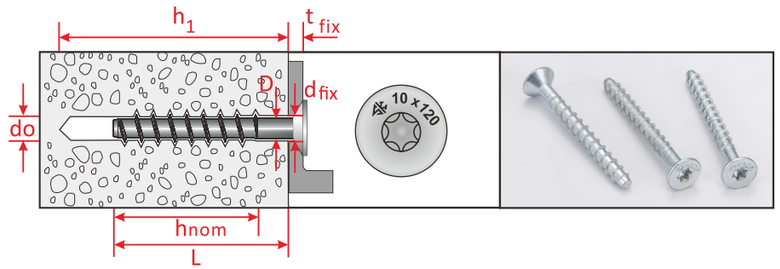


Facility Fixing



Seat Fixing

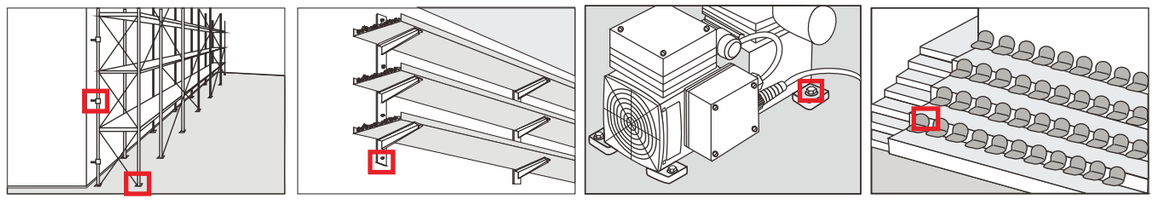
SK Concrete Anchor
(Carbon Steel)
Countersunk Head



Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-CS 5 x 45/10	5 (5.15-5.40)	35	10	8	T-40	
SK-CS 5 x 50/15	5 (5.15-5.40)	35	15	8	T-40	
SK-CS 5 x 60/25	5 (5.15-5.40)	35	25	8	T-40	
SK-CS 5 x 80/45	5 (5.15-5.40)	35	45	8	T-40	
SK-CS 6 x 65	6 (6.15-6.40)	55	10	9	T-40	*
SK-CS 6 x 70	6 (6.15-6.40)	55	15	9	T-40	*
SK-CS 6 x 80	6 (6.15-6.40)	55	25	9	T-40	*
SK-CS 6 x 100	6 (6.15-6.40)	55	45	9	T-40	*
SK-CS 6 x 120	6 (6.15-6.40)	55	65	9	T-40	*
SK-CS 6 x 140	6 (6.15-6.40)	55	85	9	T-40	*
SK-CS 6 x 45/10	6 (6.15-6.40)	35	10	9	T-40	
SK-CS 6 x 50/15	6 (6.15-6.40)	35	15	9	T-40	
SK-CS 6 x 60/25	6 (6.15-6.40)	35	25	9	T-40	
SK-CS 6 x 80/45	6 (6.15-6.40)	35	45	9	T-40	
SK-CS 6 x 100/65	6 (6.15-6.40)	35	65	9	T-40	
SK-CS 8 x 75	8 (8.20-8.45)	65	10	11	T-45	**
SK-CS 8 x 80	8 (8.20-8.45)	65	15	11	T-45	**
SK-CS 8 x 90	8 (8.20-8.45)	65	25	11	T-45	**
SK-CS 8 x 100	8 (8.20-8.45)	65	35	11	T-45	**
SK-CS 8 x 110	8 (8.20-8.45)	65	45	11	T-45	**
SK-CS 8 x 130	8 (8.20-8.45)	65	65	11	T-45	**
SK-CS 8 x 150	8 (8.20-8.45)	65	85	11	T-45	**
SK-CS 10 x 85	10 (10.20-10.45)	75	10	13	T-50	**
SK-CS 10 x 90	10 (10.20-10.45)	75	15	13	T-50	**
SK-CS 10 x 100	10 (10.20-10.45)	75	25	13	T-50	**
SK-CS 10 x 110	10 (10.20-10.45)	75	35	13	T-50	**
SK-CS 10 x 130	10 (10.20-10.45)	75	55	13	T-50	**
SK-CS 10 x 150	10 (10.20-10.45)	75	75	13	T-50	**

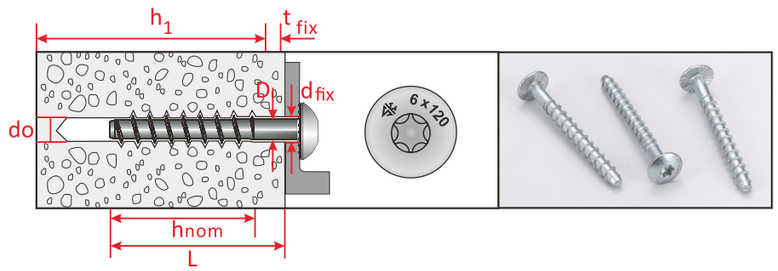
* = ETA-16/0067(multiple use); ** = ETA-15/0815(part3, option1)

Application



Scaffolding | Rack | Facility Fixing | Seat Fixing

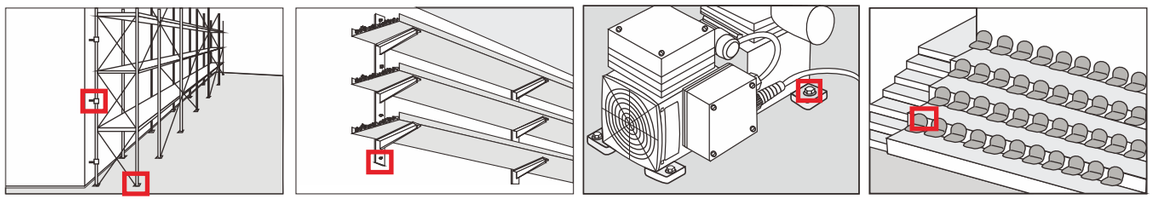
SK Concrete Anchor
(Carbon Steel)
Pan Head



Item Size D x L (mm)	Drill bit d_0 (mm)	Embedment depth h_{nom} (mm)	Clamping fixture thickness t_{fix} (mm)	Fixture hole diameter (mm)	Installation Socket/ Torx	Approval
SK-PH 5 x 40/5	5 (5.15-5.40)	35	5	8	T-40	
SK-PH 5 x 50/15	5 (5.15-5.40)	35	15	8	T-40	
SK-PH 5 x 60/25	5 (5.15-5.40)	35	25	8	T-40	
SK-PH 5 x 80/45	5 (5.15-5.40)	35	45	8	T-40	
SK-PH 6 x 60	6 (6.15-6.40)	55	5	9	T-40	*
SK-PH 6 x 70	6 (6.15-6.40)	55	15	9	T-40	*
SK-PH 6 x 80	6 (6.15-6.40)	55	25	9	T-40	*
SK-PH 6 x 100	6 (6.15-6.40)	55	45	9	T-40	*
SK-PH 6 x 120	6 (6.15-6.40)	55	65	9	T-40	*
SK-PH 6 x 140	6 (6.15-6.40)	55	85	9	T-40	*
SK-PH 6 x 40/5	6 (6.15-6.40)	35	5	9	T-40	
SK-PH 6 x 50/15	6 (6.15-6.40)	35	15	9	T-40	
SK-PH 6 x 60/25	6 (6.15-6.40)	35	25	9	T-40	
SK-PH 6 x 80/45	6 (6.15-6.40)	35	45	9	T-40	
SK-PH 6 x 100/65	6 (6.15-6.40)	35	65	9	T-40	
SK-PH 8 x 70	8 (8.20-8.45)	65	5	11	T-45	**
SK-PH 8 x 80	8 (8.20-8.45)	65	15	11	T-45	**
SK-PH 8 x 90	8 (8.20-8.45)	65	25	11	T-45	**
SK-PH 8 x 100	8 (8.20-8.45)	65	35	11	T-45	**
SK-PH 8 x 110	8 (8.20-8.45)	65	45	11	T-45	**
SK-PH 8 x 130	8 (8.20-8.45)	65	65	11	T-45	**
SK-PH 8 x 150	8 (8.20-8.45)	65	85	11	T-45	**
SK-PH 10 x 80	10 (10.20-10.45)	75	5	13	T-50	**
SK-PH 10 x 90	10 (10.20-10.45)	75	15	13	T-50	**
SK-PH 10 x 100	10 (10.20-10.45)	75	25	13	T-50	**
SK-PH 10 x 110	10 (10.20-10.45)	75	35	13	T-50	**
SK-PH 10 x 130	10 (10.20-10.45)	75	55	13	T-50	**
SK-PH 10 x 150	10 (10.20-10.45)	75	75	13	T-50	**

* = ETA-16/0067(multiple use); ** = ETA-15/0815(part3, option1)

Application



Scaffolding | Rack | Facility Fixing | Seat Fixing

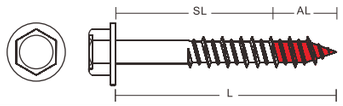
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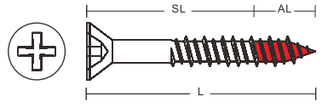


Hex Washer Head
HI-LO Thread



Size (mm)	Drive System	Head Style	Drill Bit Size(mm)	Alloy steel Length(mm)
Ø6.3 x 45	8mm Hex	Hex Washer	Ø4.8 x 89	13
Ø6.3 x 57	8mm Hex	Hex Washer	Ø4.8 x 114	13
Ø6.3 x 70	8mm Hex	Hex Washer	Ø4.8 x 114	13
Ø6.3 x 83	8mm Hex	Hex Washer	Ø4.8 x 140	13
Ø6.3 x 100	8mm Hex	Hex Washer	Ø4.8 x 140	13

Flat Head Phillips #3 Drive
HI-LO Thread

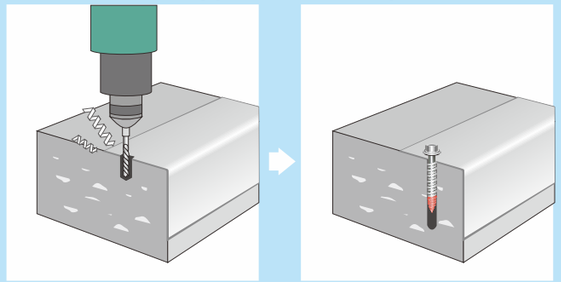


Size (mm)	Drive System	Head Style	Drill Bit Size(mm)	Alloy steel Length (mm)
Ø6.3 x 45	#3 Phillips	Flat Head	Ø4.8 x 89	13
Ø6.3 x 57	#3 Phillips	Flat Head	Ø4.8 x 114	13
Ø6.3 x 70	#3 Phillips	Flat Head	Ø4.8 x 114	13
Ø6.3 x 83	#3 Phillips	Flat Head	Ø4.8 x 140	13
Ø6.3 x 100	#3 Phillips	Flat Head	Ø4.8 x 140	13

Application

- By using Bi-Metal Hex Washer head & Flat head Concrete screw, first to drill a hole with depth of 6mm than the total thread length. Best used in concrete & brick foundation building.
- RSP or Tufcote coatings provide extended corrosion resistance.

Application Example



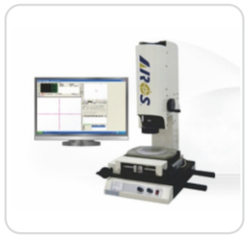
Testing Environment



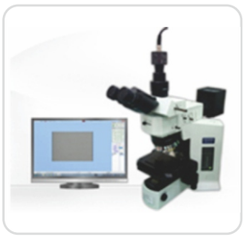
Coating thickness testing machine



Vickers hardness testing machine



Non contact visual measuring microscope



Metallographic analysis microscop



Pull out testing machine



Computerized pullout testing machine



Kesternich testing machine



Salt spray testing machine



Installation test



Torque test

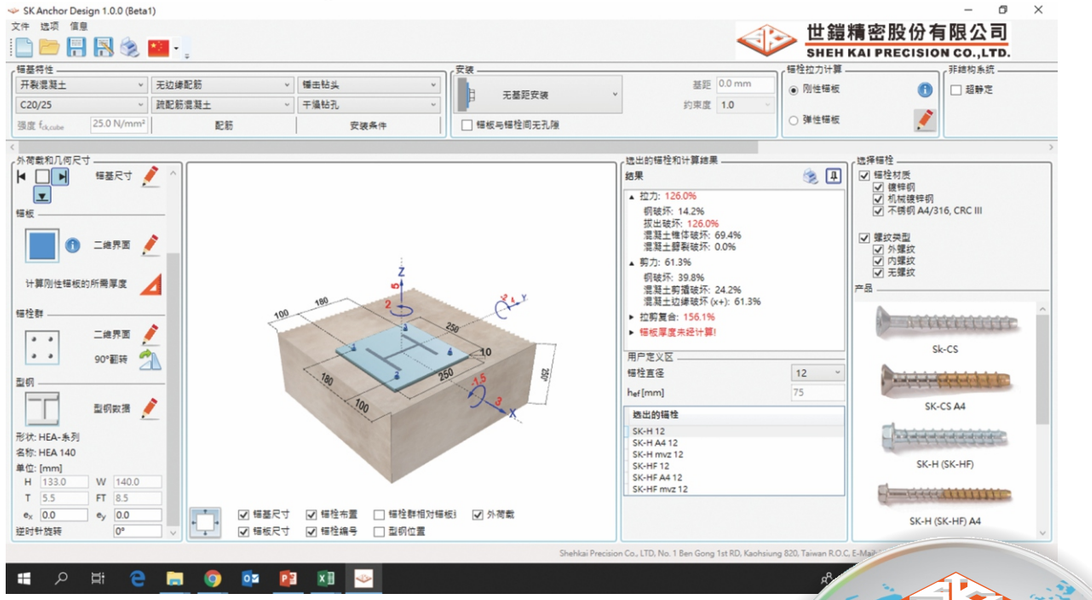


Pull out test



Supporting Software

Professional Anchor Design Software is available for download from the web site.





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- Meet the requirements of European Technical Assessment.

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Project



Tunnel Construction Project.



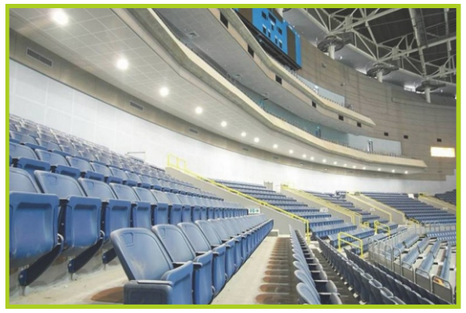
Railings Project.



Natural Stone Wall Cladding Project.



Pedestrian Walkway.



Stadium Seat Fixing.



High Way Acoustic Barriers.



Taiwan High Speed Rail Miaoli Station Construction Project.



Kaohsiung Rapid Transit Construction Project.