KLIMAS

FASTENER TECHNOLOGIES

IFTODE UNIVERSAL

shop tehnic

FRAME FIXINGS

UNIVERSAL FIXINGS

HAMMER DRIVE FIXINGS

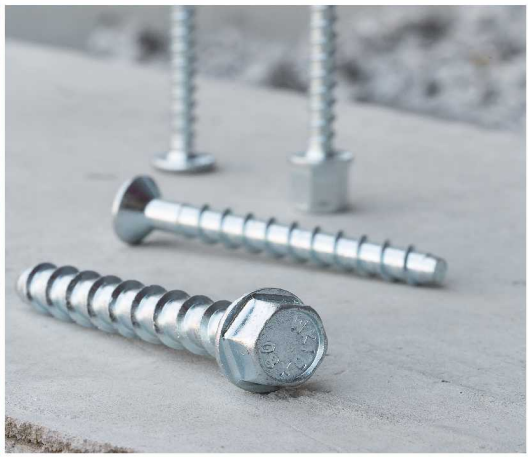
Wkręt-met®

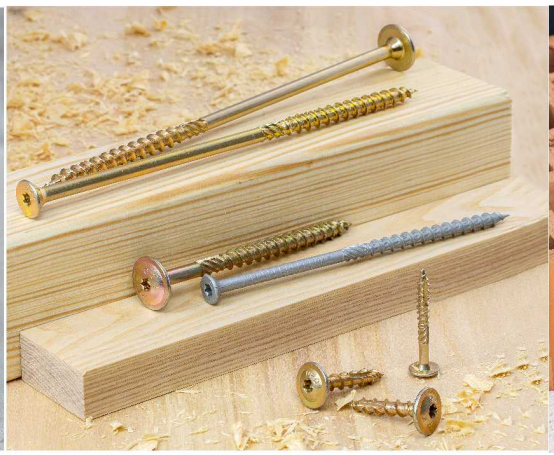
KLIMAS

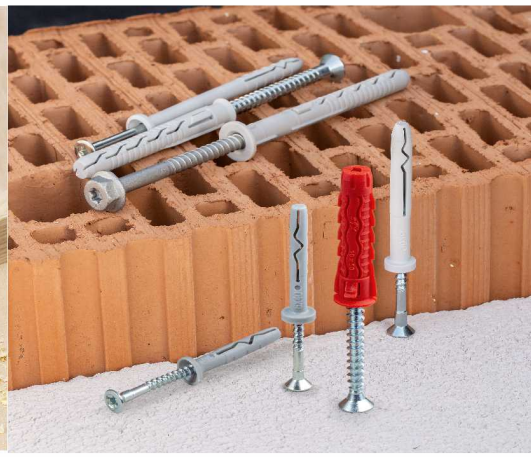
POLISH PRODUCER

POWER DEALS

100% cel mai bun preț!







Wkręt-met®
ROMÂNIA

centru logistic

IFTODE UNIVERSAL

rețea comercială în expansiune

30 ani experiență în România

"the ultimate business with fasteners technology"

√ distributie

√ shop

√ franciza

√ joint venture

0743 076 082

ADVANCED MACHINE PARK ROLLING MILL AND STAMPING PRESS DEPARTMENT

PRODUCTION PROCESS OF STEEL PRODUCTS:

- Top-quality raw-material from European steelworks.
- Various steel grades.
- Own R&D department.
- Extensive machine park.
- Hardening (heat treatment).
- Application of protective coats.
- Possibility of painting heads and washers to RAL colours.
- Quality control at each production stage.
- Polish and European technical assessments.

WE PRODUCE

30 000 000 pcs. of SCREWS DAILY

Production plant no. 1 - total area of 20,000 m²

OWN PRODUCTION OF FASTENER TECHNOLOGIES

PRODUCTS DEVELOPED BY R&D
WIDE RANGE OF SIZES
TOP QUALITY

MORE THAN
400
MODERN MACHINES

KLIMAS
FASTENER TECHNOLOGIES

ADVANCED MACHINE PARK INJECTION MOULDING DEPARTMENT

- Highest quality production materials.
- Appropriate flexibility is guaranteed by conditioning of polyamide products.
- Own production using the highest quality hybrid injection moulding machines with robots.
- Automatic packing process: from carton/blister to pallet wrapping.

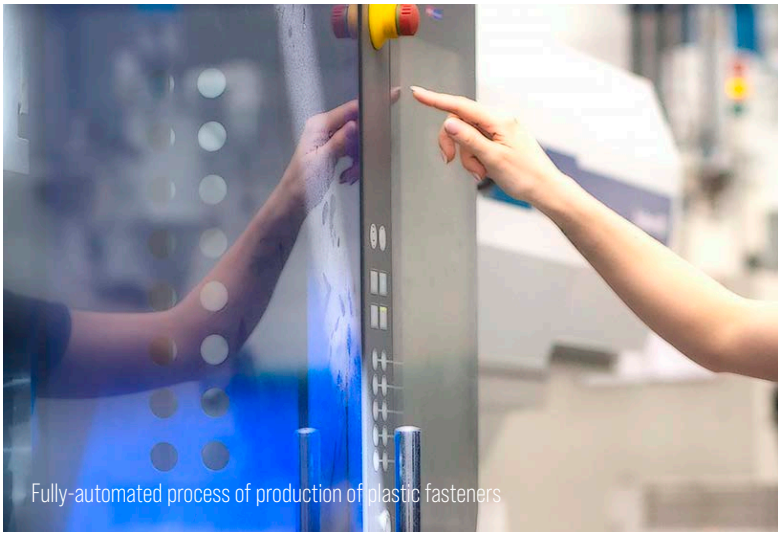
WE PRODUCE

9 000 000 pcs. of PLASTIC FASTENERS DAILY

Production plant no. 2 and central warehouse - total area of 30,000 m²

ADVANCED MACHINE PARK INJECTION MOULDING DEPARTMENT

KLIMAS
FASTENER TECHNOLOGIES



Fully-automated process of production of plastic fasteners

OWN PRODUCTION OF FASTENER TECHNOLOGIES

PRODUCTS DEVELOPED BY R&D
WIDE RANGE OF SIZES
TOP QUALITY

MORE THAN **120** **STATE-OF-THE-ART INJECTION MOULDING MACHINES**

ADVANCED MACHINE PARK
PROTECTIVE COATINGS DEPARTMENT

PROCESS OF SCREW HARDENING:

- Advanced machine park including 7 hardening furnaces.
- 2 modern furnaces for hardening of screws over 200 mm long while keeping high quality of parameters – no curvature.
- Automated hardening line – high capacity.

WE HARDEN

21 000 000 pcs. of SCREWS

DAILY

CUSTOM COATING

White Zinc
Zinc coating guarantee of quality and high level of anti-corrosion protection.

Yellow Zinc
Zinc coating guarantee of quality and high level of anti-corrosion protection.

SQ Ceramic
Very high level of anti-corrosion protection (several times higher than the traditional galvanization).

Advanced machine park: **ZN yellow without CR6+.**
Advanced processing line for SQ Cermic coating.
Automatic passivation and top coat line.
State-of-the-art robots and baths for sealing of coating.

ADVANCED PROCESSING LINE – HARDENING PLANT AND GALVANIZING LINE DEPARTMENT

PRECISION
HIGH QUALITY
HIGH PRODUCTION CAPACITY

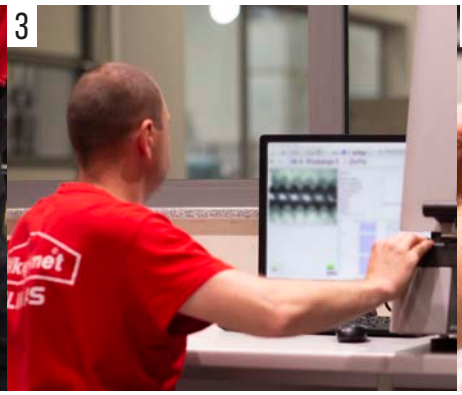
7 HARDENING FURNACES

ADVANCED MACHINE PARK RESEARCH & DEVELOPMENT DEPARTMENT

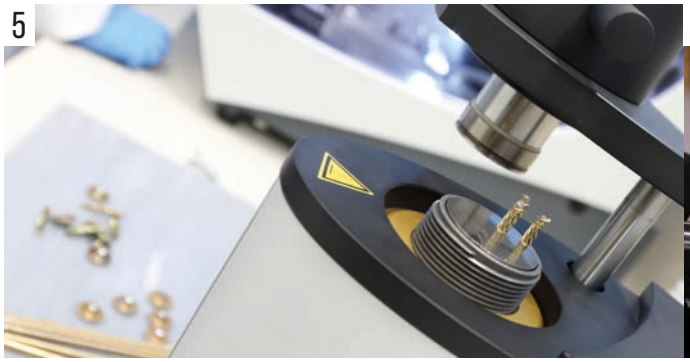
1

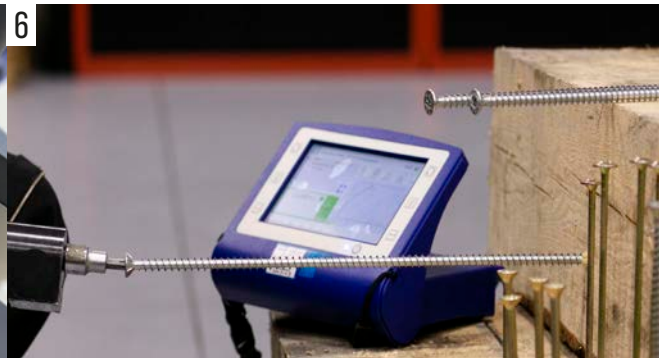
1. Hardness and micro Vickers hardness testing. | 2. Assembly and load-resistance tests for all substrate categories according to ETAG. | 3. Testing thickness of corrosion protection plating using X-ray fluorescence spectroscopy tester - Fischeroscope X-RAY XDL. Analysis of chemical composition of alloy steels. | 4. Preparation of metallographic micro-sections – metallographic tests. | 5. Preparation of metallographic micro-sections – metallographic tests. | 6. Torque value testing | 7. Determination of tensile strength for wire and finished goods. 8. Metallographic tests – control of thermal and chemical treatment process, hardness, structure. | 9. Testing of corrosion resistance in salt spray/cyclic chamber. | 10. Accelerated ageing of paint coats in UV chamber. | 11. Testing of loading resistance of fasteners – characteristic pull-out strength.


2

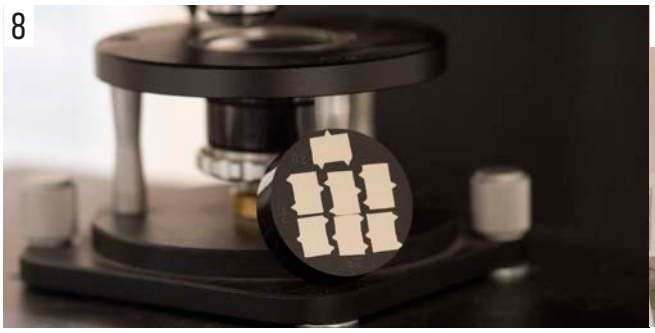

3


4


5


6

7


8

9

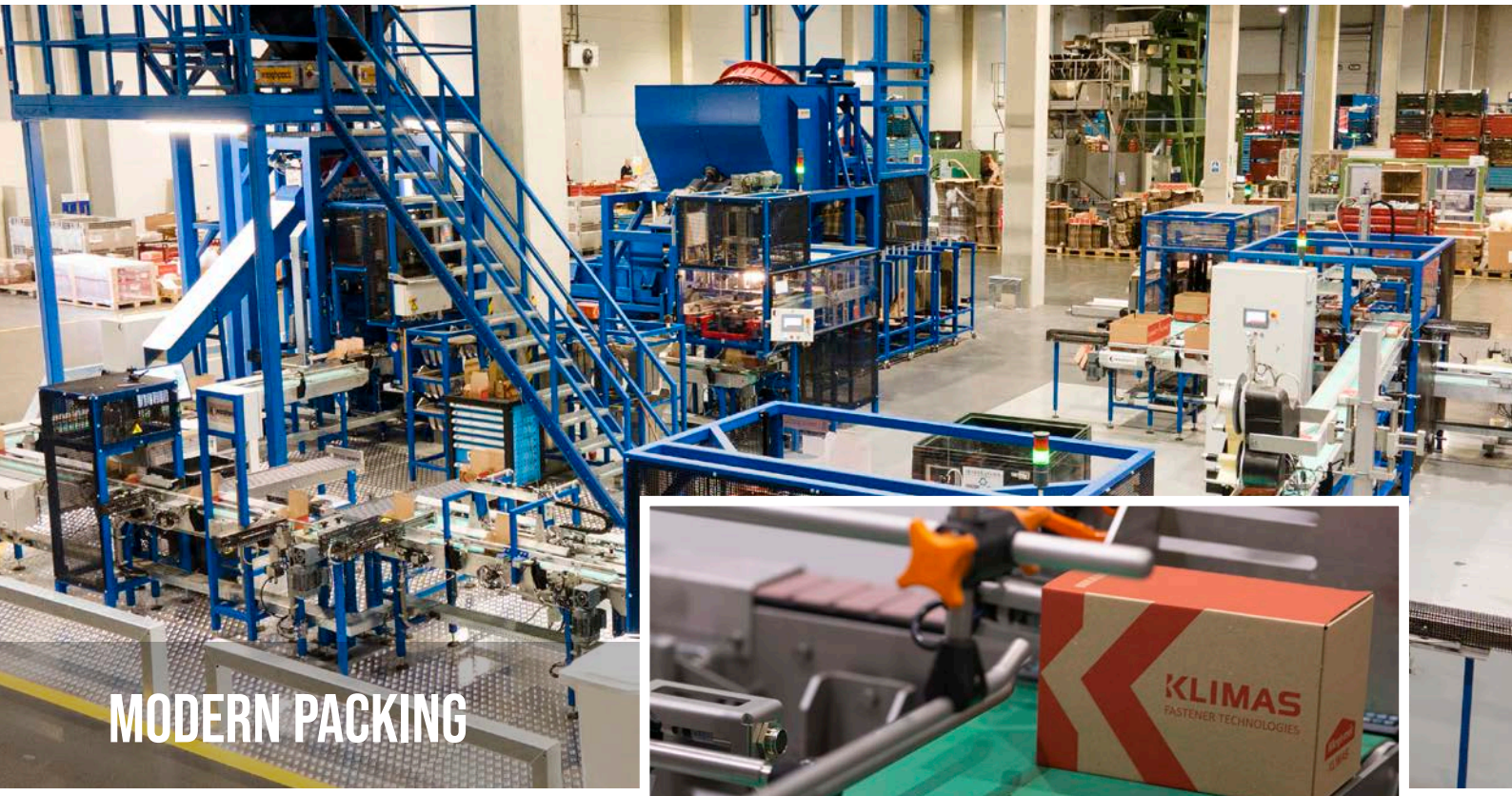

10


11

APPROVALS
CERTIFICATES
AWARDS

20
EUROPEAN APPROVALS

COMPREHENSIVE SOLUTIONS PACKING DEPARTMENT AND HIGH STORAGE WAREHOUSE



MODERN PACKING

- Automated picking and packing processes.
- Most popular packaging: unit packages, bags, blisters.
- High performance

HIGH STORAGE WAREHOUSE

24 000 PALLET PLACE

KLIMAS
FASTENER TECHNOLOGIES

BRAND MOST FREQUENTLY CHOSEN BY CONTRACTORS IN POLAND*

*according to annual research of ASM - Centre for Market Research and Analysis (2020)

Certified products - 21 European Technical Approvals and 21 Polish Technical Approvals
Our products regularly receive Polish and European technical approvals what proves their reliability. Due to these documents Polish and foreign Clients obtain a guarantee of the highest quality of Klimas Wkręt-met brand products.

Technical advisory
Caring about the Client's comfort, we ensure the assistance of technical advisors in the selection of our products. Persons interested in our offer may always count on the professional support in the selection of fastening systems adequate to the needs of the Client and requirements of the specific construction.

Partnership
Our company is set on continuous improvement of its production control processes at each stage of manufacture. We wish to provide our customers with services of the highest possible standard.

Our company offers products that find application in many different industries
Specialised sections of products reach many selected groups of customers who value and appreciate their reliability.
Klimas Wkręt-met undertakes cooperation with companies from various industries using products marked with our brand. Thus, for example, thanks to cooperation with window producers we deliver them high quality products used by them in the production process – and in return we receive the knowledge necessary for enhancing our products and developing brand new innovative products by Klimas Wkręt-met that perfectly fit the needs of a given industry or field.

Integrated Management System
Quality Management System according to PN-EN ISO 9001.
OH&S Management System according to PN-EN ISO 45001.
Energy Management System according to PN-EN ISO 50001.

PRIZES AND AWARDS

Budowlana Marka Roku 2021

For the 9th time, Klimas Wkręt-met won the most prestigious title on the market of building materials in Poland.

Forbes Diamond Award 2021

Klimas Wkręt-met has been awarded with Forbes Diamond 2021. According to the ranking compiled by Forbes Magazine and Bisnode Polska, the producer of fastening techniques dynamically increased its sales value in the last three years.

Statuettes of the Polish Windows and Doors Association

The Polish Windows and Doors Association awarded Klimas Wkręt-met for its achievements in the woodwork industry. The Association also awarded the prestigious title of Honorary Member to the founder and President of the company - Wojciech Klimas.

Construction Company of the Year

The editors and the Program Council of the "Builder" magazine once more awarded Klimas Wkręt-met the title of Construction Company of the Year. The distinction is awarded to companies characterized by dynamic development and strong market position. This title aims at selecting the most outstanding companies in the country, their promotion and popularization of good business practices.

Creator of Construction 2020

For 9 years now, the Polish Chamber of Civil Engineers has been distinguishing individuals and companies that shape the construction market with their activities, introduce new technologies and innovative solutions, as well as take care of the quality of products and services offered and can be proud of their CSR activities. The title of the Creator of Construction 2019 went to President Wojciech Klimas, as well as to the entire Klimas Wkręt-met company.

DAFA - Flat Roof and Fasade Contractors Association

The organization undertakes activities aimed at unification of executive standards and commercial conditions, creation of partnership relations, initiation of activities influencing the development of the industry and integration of environments that operate in the area of design and construction of flat roofs and facades.

POiD - Polish Windows and Doors Association

The organization unites domestic manufacturers, suppliers and distributors related to woodwork. The Association aims to combat all forms of unfair competition, set professional standards and carry out technical analyses, among other things.

PSD - Polish Roofers' Association

The Polish Roofers' Association unites professionals from the roofing industry: contractors, experts, designers, suppliers and manufacturers of construction materials for roofing.

EDG - Energy Efficient Finished Houses Association

The EDG Association is an organization associating manufacturers of prefabricated buildings and producers of materials dedicated to this type of construction in Poland. The organization places great emphasis on increasing awareness and taking care of the quality and reliability of services.

SSO - Association for External Thermal Insulation Composite Systems - ETICS

Membership in the Association for Thermal Insulation composite systems allows us to actively contribute to the development of energy efficient and sustainable construction industry. The Association unites the leading manufacturers of thermal insulation composite systems in Poland.

SDD - Wooden House Association

One of product categories carried by Klimas Wkręt-met are fasteners for wooden constructions that work great in the wooden construction industry. That is why, since 2014, the company has been a member of the Wooden House Association which promotes wood as an environmentally friendly material and gathers all stakeholders interested in the subject of wooden houses. A significant goal of the organization is to take up activities aimed at improving the quality of houses made of wood.

BCC - Business Centre Club

The Klimas Wkręt-met company has been awarded the European Medal. The award was granted by the largest organization of individual employers in the country - Business Center Club. Awards were granted by the Business Center Club on June 12th this year at Warsaw headquarter placed in the Lubomirski Palace. It was the final of the 30th edition of the event. Among the guests were European Medal winners, honorary winners, Chancellors of the BCC Regional Lodge and the representatives of the European Economic and Social Committee.

CONTENT

FRAME FIXINGS

UNIVERSAL FIXINGS

GENERAL PURPOSE FIXINGS

KRX		Expansion plug with countersunk head screw, PZ2, PZ3	60
KKX		Expansion plug with hex head screw, SW-10, 13, 17, 19	64
PX		Expansion plug straight hook	68
WX		Expansion plug with round hook	72
HX		Expansion plug with pig tail hook	76
HOX		Expansion plug with eye-bolt	80
PR		Frame plug with straight hook	84

HAMMER DRIVE FIXINGS

SM		Hammer drive fixing, PZ-2/PZ-3 - sleeve made from polyethylene	90
SMN		Hammer drive fixing, PZ-2/PZ-3 - sleeve made from polyamide	90
SMK		Hammer drive fixing with collar, PZ-2 - sleeve made from polyethylene	94
SMNK		Hammer drive fixing with collar, PZ-2 - sleeve made from polyamide	94
SMKC		Hammer drive fixing with cylindrical collar, PZ-2 - sleeve made from polyethylene	98
SMNKC		Hammer drive fixing with cylindrical collar, PZ-2 - sleeve made from polyamide	98

FRAME FIXINGS

Information	Name	Frame plug with TX-30/TX-40 countersunk head screw			Frame plug with hex & TX head screw TX-30/TX-40/TX-50		
	Symbol	KPS-FAST S	KPS-FAST S-D	KPS-FAST S-A4	KPR-FAST K	KPR-FAST K-D	KPR-FAST K-A4
Documents	ETA	ETA-12/0272					
	ITB	-	-	-	-	-	-
	Resistance to fire	✓**	✓**	✓**	✓**	✓**	✓**
Substrate	Cracked and uncracked concrete	A	A	A	A	A	A
	Solid brick	B	B	B	B	B	B
	Hollow brick	C	C	C	C	C	C
	Lightweight concrete hollow brick	D	D	D	D	D	D
	Aerated concrete	D	D	D	D	D	D
	Plasterboards	-	-	-	-	-	-
Material	Galvanized steel						
	Zink flakes coating	✓			✓		
	SQ CERAMIC		✓			✓	
	Stainless steel A4			✓			✓
Page		30			34		

				
Information	Name	Plug with double-threaded screw	Universal plug countersunk head screw / hex head screw	Universal plug with straight hook / round hook / with eye-bolt
	Symbol	KPD	SFXP / SFXK	SFXL/SFXC/SFXO
Documents	ETA	-	-	-
	ITB	ITB-KOT-2018/0528	ITB-KOT-2021/1847	
	Resistance to fire			
Substrate	Concrete C20/25- C50/60	✓	✓	✓
	Solid brick	✓	✓	✓
	Hollow brick	✓	✓	✓
	Lightweight concrete hollow brick			
	Aerated concrete	✓	✓	✓
	Plasterboards		✓	✓
	Fibreboard		✓	✓
Material	Galvanized steel	✓	✓	✓
	SQ CERAMIC			
	Stainless steel A4			
	Strona	**40**	**44 / 48**	**52**

FRAME FIXINGS

			
Information	Nazwa	Expansion plug with countersunk & hex head screw	Expansion plug with hook
	Symbol	**KRX / KKX**	**PX / WX / HX**
Documents	ETA	-	-
	ITB	ITB-KOT-2018/0528	
	Nośność ogniowa		
Substrates	Beton	✓	✓
	Cegła pełna	✓	✓
	Pustak		
	Beton o kruszywie lekkim		
	Gazobeton		
	G - K		
	Płyta włóknisto-cementowa		
Material	Stal ocynkowana galwanicznie	✓	✓
	SQ Ceramic		
	Stal nierdzewna A4		
Page		**60 / 64**	**68 / 72 / 76**

Information	Name	Expansion plug with eye-bolt	Expansion plug with straight hook	Hammer drive fixing		Hammer drive fixing with collar			
	Symbol	**HOX**	**PR**	**SM**	**SMN**	**SMK**	**SMNK**	**SMKC**	**SMNKC**
Documents	ETA	-	-	ETA-19/0156					
	ITB	ITB-KOT-2018/0528							
	Resistance to fire								
Substrates	Concrete	✓	✓	✓	✓	✓	✓	✓	✓
	Solid brick	✓	✓	✓	✓	✓	✓	✓	✓
	Hollow brick		✓	✓	✓	✓	✓	✓	✓
	Lightweight concrete hollow brick			✓	✓	✓	✓	✓	✓
	Aerated concrete		✓	✓	✓	✓	✓	✓	✓
	Plasterboards								
Material	Galvanized steel	✓	✓	✓	✓	✓	✓	✓	✓
	SQ CERAMIC								
	Stainless steel A4								
	Page	**80**	**84**	**90**		**94**		**98**	

DESIGN AND MATERIALS

All expansion drive fasteners have a similar design: they consist of a plastic sleeve and a steel screw. The sleeve resembles a cylinder of 5 mm to 16 mm in diameter and it has various cuts. This ensures tight fixing of the plug in the hole in solid materials and knotting fixing in hollow materials.

Fig. Fastener parts: a) sleeve b) screw

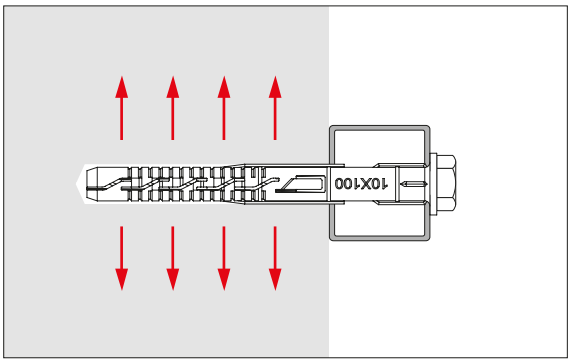


Fig. Forces

The plastic parts are mostly made of polypropylene - PP, polyethylene - PE, or material with better physical and chemical properties: polyamide - PA (nylon). The screws are made of carbon steel or steel intended for heat treatment and zinc-plated galvanized. Screws for external applications or screws used in corrosive environments are made of A2 stainless steel or A4 acid resistant steel. Screw heads come with different drives - PZ, TX, hex head, depending on the type and size of fixing.

Basic criteria for selecting expansion plugs

When selecting a fastener you should consider the substrate it is to be installed in and the type of anchorage. There are some basic criteria for fastener selection:

- type of anchorage (connecting heavy or lighthweight elements)

Check if heavy elements are connected (beams, columns, wall plates, stair supports, mechanical assemblies for ventilated facades, dry wall systems, windows, heavy chandeliers, furniture, etc.) or lightweight elements of fittings are mounted (skirting boards, lamp brackets, picture frames, etc.). For heavy elements fasteners with larger diameter, 10 mm, 12 mm and more, should be selected, and for lighweight elements fasteners from 6 to 8 mm in diameter can be used.

KPR FAST frame fastener used for connecting heavy elements. Fastening of ventilated facade bracket

Type of substrate (concrete, hollow clay brick, aerated concrete, plasterboard)

The type of substrate highly affects the anchorage resistance. Concrete and solid materials show best load bearing capacity, while hollow materials (hollow clay and sand-lime bricks) limit the resistance of anchorage due to their brittleness and irregular internal structure (different formation of voids and walls).

The capacity of aerated concrete depends on its density: class 600 blocks have twice the strength of class 350 blocks for the same fastener. Plasterboards are suitable only for installing lightweight fittings with knotting working principle fasteners. Fitting furniture or other heavy elements to plasterboards should be considered when constructing the wall frame, which should have additional supports in places where fixings are to be made, e.g. metal or wooden girts.

Incorrect use of fixings may result in poor load bearing capacity of the connection and lead to a failure or collapse.

Type of substrate according to ETAG020	Description	Category
	normal weight concrete	A
	solid masonry brick	B
	perforated (hollow) masonry	C
	autoclaved aerated concrete (AAC) + lightweight concretes	D

Loads acting on fasteners

When selecting the right fixing, it is necessary to determine the load that the fastener is going to carry. This can include tensile load - which pulls the fastener out of the substrate and is applied along the axis of fastener, shear load - which is perpendicular to the axis of fastener, and bending load - which is a shear force acting with lever arm, e.g. when fixing thick members. The right type of fastener should be specified in the construction design documentation.

When selecting the right fastener for commercial applications (furniture assembly or curtain rails/rods mounting), you should consider not only the weight of the fitted element but also the additional load it is going to carry (cabinet contents, books on the shelves, curtains, wind load acting on a satellite dish, etc.). For tensile loads fasteners with the diameter of 8, 10, or 12 mm can be selected; for mixed tensile-shear-bending loads fasteners with larger diameter should be used - 10 mm or more. Product catalogues and data sheets in most cases specify fastener resistance in kilonewtons [kN]; these can be roughly converted into a kilogram of load if we remember that one kN is a force with which the earth pulls an object of 100 kg, i.e 1kN = 100kg, and 10kg = 0.1kN.

Fig. Tensile, shear and bending forces

LOCATION OF FASTENER'S APPLICATION - CORROSION OF FASTENERS

Fasteners used in building structures are subject to two types of corrosion: atmospheric (gas) corrosion and electrochemical (galvanic) corrosion. Atmospheric corrosion is caused by the contact of the fastener with corrosive atmosphere. Electrochemical corrosion occurs when two metals with different electrochemical potential are in contact in the presence of electrolyte, e.g. contaminated water vapour.

Corrosion protection: Zinc flake coating – Zinc flake coating offers two times better corrosion resistance compared to standard zinc. The Klimas Wkręt-met laboratory has confirmed an excellent quality of the coating by testing in salt spray chamber

White Zinc - Guarantee of quality and high level of anti-corrosion protection.

SQ Ceramic - Very high level of anti-corrosion protection (several times higher than the traditional galvanization).

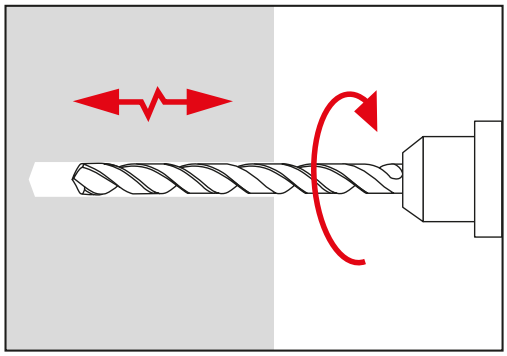
Stainless Steel A4 - Highest level of anti-corrosion protection.

Other conditions

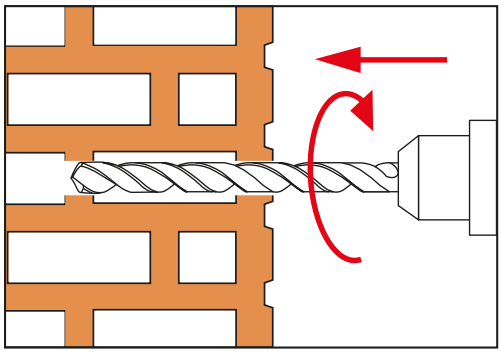
Quite often other conditions that affect the selection of the right fastener are ignored. These include e.g. diameter of the opening in the fixture, fixture thickness or environmental conditions in which the fastener is to be used.

HOLE DRILLING

Drilling depends mostly on the type of substrate. There are two basic types of drilling:



Hammer drill - to be used when working with solid materials, like concrete, solid brick.



Rotary drill - to be used when working with brittle materials and materials with voids that can be easily damaged or broken, like hollow clay brick, aerated concrete.

DRILL SELECTION – Carbide drills (SDS) carbide (SDS) drills should be used for drilling concrete or ceramic wall materials; when drilling through plasterboards, care should be taken not to damage the delicate structure of the board. Holes in plasterboards should be drilled using only rotary drilling with drill bits suited for steel or wood.

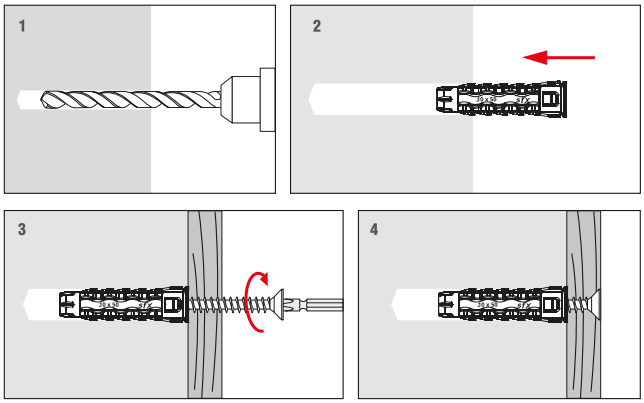
RESISTANCE TO FIRE

According to EOTA Technical Report TR 020 „Evaluation of anchorages in concrete concerning resistance to fire" it can be assumed that resistance to fire of facade system anchorages using KPR-FAST-10 and KPS-FAST-10 fixings is 90 minutes (R90) if the admissible load does not exceed 0.8 kN for a single anchorage.

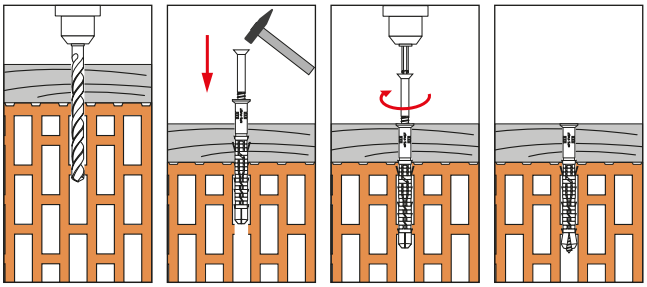
INSTALLATION METHODS

There are two most common types of installation for expansion plugs:

Pre-positioned installation - it involves drilling a hole in the substrate, inserting the expansion plug and then screwing in the screw through the fixture and securing the plug. The effective length of such fastener depends on the length of the screw used. Characteristic feature of such installation is, that the plug is shorter than the screw. This type of installation is suitable for single anchorage points (e.g. when fitting a picture hook or scaffolding hook). When fitting long elements, e.g. skirting boards, there is risk of making a hole in the wrong place - thus push--through installation should be applied.



Push-through installation - it involves drilling a hole in the substrate, inserting the plug in the hole through the fixture, screwing in the screw and securing the plug. The effective length of such fastener depends on the length of whole fastener. Characteristic feature of such installation is, that the length of the plug is the same as the length of the screw.



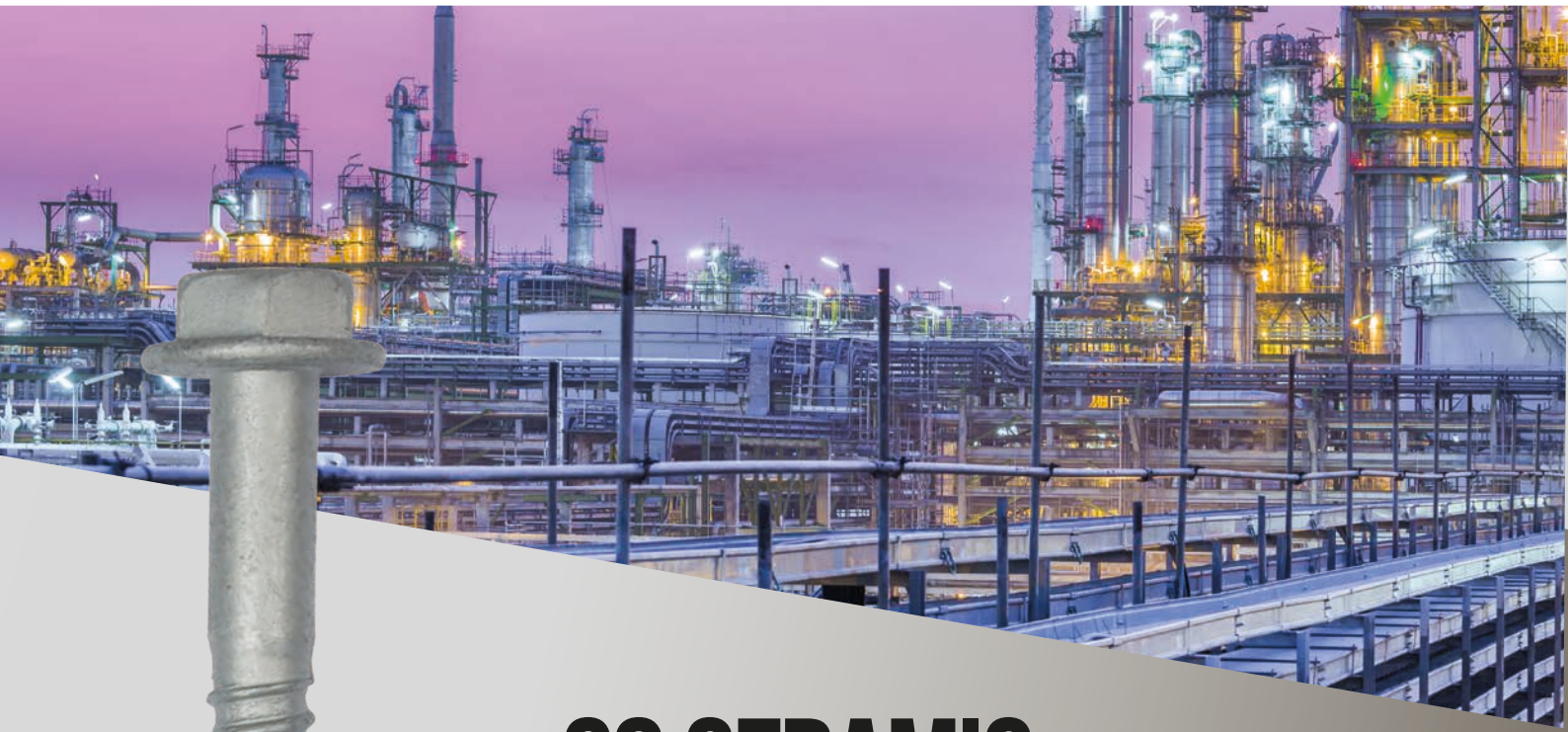
Effective length or fixture thickness t_{fix} - it is the so-called working length which allows for fitting an element with a given thickness while maintaining the anchorage depth h_{nom}. When selecting a fastener it is necessary to consider the fixture thickness plus thickness of non-bearing layers, e.g. mortar thickness. Anchorage depth h_{nom} - it is how deep the fastener should be embedded in the substrate and it depends on the fastener design and application.

MOST COMMON MISTAKES MADE WHEN INSTALLING EXPANSION PLUGS:

- **plugs and screws made by different manufacturers are used** - plugs and screws should always come in sets and expansion plugs should be used with dedicated screws,
- **the drill hole is not deep enough** - the depth of drilled hole should be at least 10 mm greater than the anchorage depth - this allows for the correct setting of the plug in the hole and eliminates the problem of screw failure,
- **the drill hole is not cleaned** - move the drill backwards in the hole twice to remove the drilling dust and debris; for holes drilled vertically downwards, deeper drilling or blowing out the drilling dust and debris of the hole is required,
- **using a fastener in the substrate for which it is not intended,**
- **hammer drill is used when drilling in hollow brick, and aerated concrete** - this damages the walls and does not guarantee a secure fixing,
- **too high installation torque is applied**, which causes screw failure,
- **fasteners are installed too close to the edge** - this can cause substrate edge failure,
- **the screw is hammered in, not screwed in** (not applicable to hammer drive fixings) ,
- **using push-through fasteners as pre-positioned may cause incorrect expansion** of the plug, which reduces the anchorage resistance.

KLIMAS
FASTENER TECHNOLOGIES

STRONG FOR GENERATIONS



SQ CERAMIC

10x improved resistance to corrosion*

*) compared to galvanising 5 µm

WHAT IS SQ CERAMIC?

SUPER QUALITY SQ CERAMIC

SQ Ceramic lamellar coating application technology is the modern way of protection against corrosion. Lamellar coating application technology properties are also used in the automotive and aerospace industries. The coating consists of a mix of zinc and aluminium flakes, and binding resins. The lamellar coating is characterised by exceptionally effective protection against corrosion despite a relatively thin layer. This ensures 10-time higher protection against corrosion in relation to zinc plating and 2-time higher protection in relation to hot-dip galvanizing (HDG). The coating has also high resistance to chemicals and UV radiation but does not contain heavy metals, including hexavalent chromium (VI).

KLIMAS
FASTENER TECHNOLOGIES

TECHNICAL SUPPORT

AT EACH STAGE OF INVESTMENT

DO YOU NEED TECHNICAL SUPPORT?

Contact us: dt@wkret-met.com

TECHNICAL ADVICE AND ENGINEERING SUPPORT ON THE JOBSITE | PULL-OUT TESTS | ASSISTANCE WITH SELECTION OF FASTENERS

KLIMAS
FASTENER TECHNOLOGIES

STRONG FOR GENERATIONS

FRAME FIXINGS

KPS-FAST K / KPR-FAST K / KPS-FAST S

RELIABLE AND SECURE

FASTENING

ZINC FLAKE COATING

Zinc flake coating offers two times better corrosion resistance compared to standard zinc. The klimas Wkręt-met laboratory has confirmed an excellent quality of the coating by testing in salt spray chamber (240 hours in salt spray chamber for zinc flake coating versus 120 hours in salt spray chamber for zinc coating).

RESISTANCE TO FIRE (Ø10)

For assembling facade systems the fastener has a sufficient fire resistance of at least 90 minutes (R90) if the admissible load for a single anchorage ≤ 0.8kN no permanent centric tension load.

EUROPEAN TECHNICAL ASSESSMENT
ETA-12/0272

KPS-FAST-S	Frame plug with TX-30/TX-40 countersunk head screw	30
ø8 ø10	**Sleeve length range:** 60 - 300 mm	**Zinc flake**

KPS-FAST-S-D	Frame plug with TX-30/TX-40 countersunk head screw	30
ø8 ø10	**Sleeve length range:** 60 - 300 mm	**SQ Ceramic**

KPS-FAST-S-A4	Frame plug with TX-30/TX-40 countersunk head screw	30
ø8 ø10	**Sleeve length range:** 60 - 300 mm	**Stainless steel A4**

KPS-FAST-K KPR-FAST-K	Frame plug with hex & TX head screw TX-30/TX-40/TX-50	34
ø8 ø10 ø12 ø14	**Sleeve length range:** 60 - 360 mm	**Zinc flake**

KPS-FAST-K-D KPR-FAST-K-D	Frame plug with hex & TX head screw TX-30/TX-40/TX-50	34
ø8 ø10 ø12 ø14	**Sleeve length range:** 60 - 360 mm	**SQ Ceramic**

KPS-FAST-K-A4 KPR-FAST-K-A4	Frame plug with hex & TX head screw TX-30/TX-40	34
ø8 ø10	**Sleeve length range:** 60- 300 mm	**Stainless steel A4**

KPD	Plug with double-threaded screw	38
ø10 ø12	**Sleeve length range:** 100 - 300 mm	**Galvanized steel**

Frame plug with TX-30/TX-40 countersunk head screw

KPS-FAST S

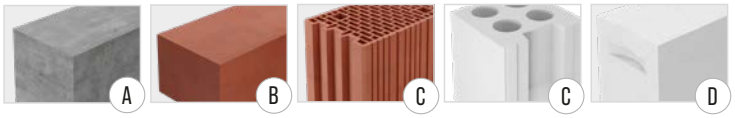
⌀8, ⌀10

Frame anchor with countersunk head screw and TX drive recommended for fastening wooden and woodbased elements.

ETA-12/0272

ZF ZINC FLAKES | PA 100% NYLON | A4 INOX | SUPER QUALITY SQ CERAMIC

SUBSTRATES (ETAG 014 ABCD)



A	B	C	C	D
Concrete	Solid clay brick, Solid calcium silicate brick	Hollow or perforated clay brick	Calcium silicate hollow block	AAC block

	Zinc flakes	SQ Ceramic	Stainless steel A4
⌀8	KPS-FAST 8 S	KPS-FAST 8 S-D	KPS-FAST 8 S-A4
	Plugs length range: 60 - 140 mm Screws length range: 65 - 145 mm		
⌀10	KPS-FAST 10 S	KPS-FAST 10 S-D	KPS-FAST 10 S-A4
	Plugs length range: 60 - 300 mm Screws length range: 65 - 305 mm		

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	· Carbon steel (KPS-FAST S) · Stainless steel A4 (KPS-FAST S-A4)
CORROSION PROTECTION	· Zinc flakes coating (KPS-FAST S) · SQ Ceramic (KPS-FAST S-D)
INSTALLATION METHOD	Push-through installation
APPLICATION	· Assembly of ventilated wooden facades. · Assembly of lightweight internal wooden or plastic structures. · Assembly of shop windows, glass walls or glazing. · Assembly of window and door frames, garage doors. · Assembly of railings and balustrades. · Fastening components of installation systems in buildings (air conditioners, water heaters, hydrophores, water filters, radiators, etc.). · Fastening medium and small warehouse racks, furniture. · Assembly of sunshades, window blinds, window shutters, roofing inside buildings.

COUNTERSUNK HEAD WITH TX
Countersunk head ensures the right embedment in the element being installed. TX drive ensures optimum transfer of torque.

CORROSION PROTECTION: ZINC FLAKE COATING
Zinc flake coating offers two times better corrosion resistance compared to standard zinc. The klimas wkręt-met laboratory has confirmed an excellent quality of the coating by testing in salt spray chamber (240 hours in salt spray chamber for zinc flake coating versus 120 hours in salt spray chamber for zinc coating).

RESISTANCE TO FIRE (⌀10 according to TR 020)
For assembling facade systems the fastener has a sufficient fire resistance of at least 90 minutes (R90) if the admissible load for a single anchorage ≤ 0.8kN no permanent centric tension load.

EXAMPLES OF APPLICATIONS

Assembly of wooden elements

Assembly of shop windows, glass walls or glazing.

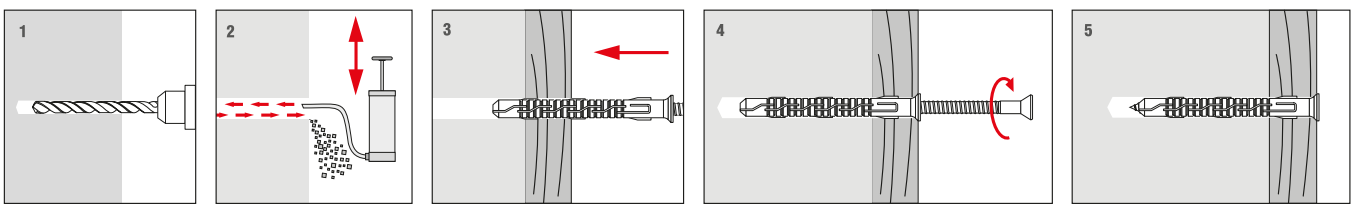
Fastening components of installation systems in buildings

Assembly of windows frame systems

Assembly of canopy

Assembly of railings and balustrades

INSTALLATION INSTRUCTIONS

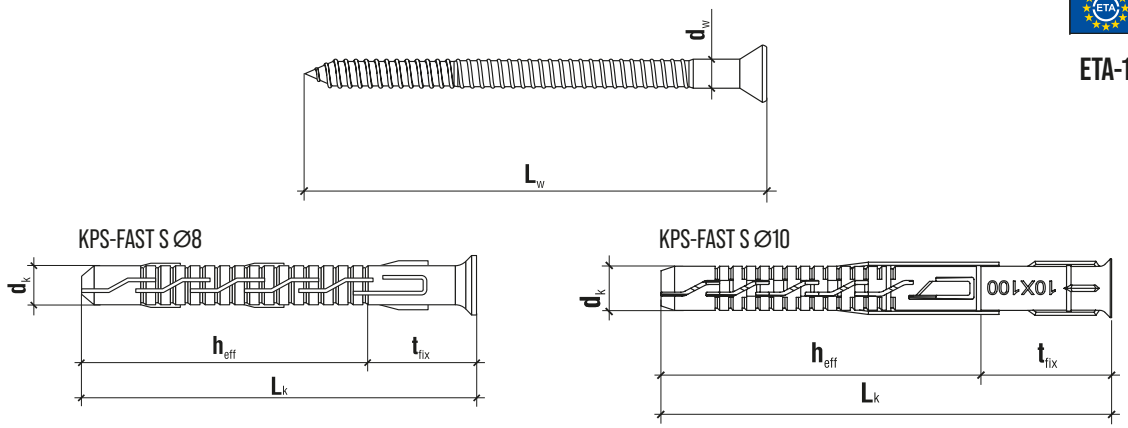


Frame plug with TX-30/TX-40 countersunk head screw

KPS-FAST S - TECHNICAL DATA

ZF ZINC FLAKES | PA 100% NYLON | A4 INOX | SUPER QUALITY SQ CERAMIC

ETA-12/0272



	Product code			Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
	Zinc flake	SQ Ceramic	Stainless steel A4	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
KPS-FAST 8 S								
ø8	KPS-FAST-08060S	KPS-FAST-08060S-D*	KPS-FAST-08060S-A4*	8,0 x 60	6,0 x 65	-/10**	TX-30	50
	KPS-FAST-08080S	KPS-FAST-08080S-D*	KPS-FAST-08080S-A4*	8,0 x 80	6,0 x 85	10/30**	TX-30	50
	KPS-FAST-08100S	KPS-FAST-08100S-D*	KPS-FAST-08100S-A4*	8,0 x 100	6,0 x 105	30/50**	TX-30	50
	KPS-FAST-08120S	KPS-FAST-08120S-D*	KPS-FAST-08120S-A4*	8,0 x 120	6,0 x 125	50/70**	TX-30	50
	KPS-FAST-08140S	KPS-FAST-08140S-D*	KPS-FAST-08140S-A4*	8,0 x 140	6,0 x 145	70/90**	TX-30	50
KPS-FAST 10 S								
ø10	KPS-FAST-10060S	KPS-FAST-10060S-D*	KPS-FAST-10060S-A4*	10 x 60	7,0 x 65	-/10**	TX-40	50
	KPS-FAST-10080S	KPS-FAST-10080S-D*	KPS-FAST-10080S-A4*	10 x 80	7,0 x 85	10/30**	TX-40	50
	KPS-FAST-10100S	KPS-FAST-10100S-D*	KPS-FAST-10100S-A4*	10 x 100	7,0 x 105	30/50**	TX-40	50
	KPS-FAST-10120S	KPS-FAST-10120S-D*	KPS-FAST-10120S-A4*	10 x 120	7,0 x 125	50/70**	TX-40	50
	KPS-FAST-10140S	KPS-FAST-10140S-D*	KPS-FAST-10140S-A4*	10 x 140	7,0 x 145	70/90**	TX-40	50
	KPS-FAST-10160S	KPS-FAST-10160S-D*	KPS-FAST-10160S-A4*	10 x 160	7,0 x 165	90/110**	TX-40	50
	KPS-FAST-10180S	KPS-FAST-10180S-D*	KPS-FAST-10180S-A4*	10 x 180	7,0 x 185	110/130**	TX-40	25
	KPS-FAST-10200S	KPS-FAST-10200S-D*	KPS-FAST-10200S-A4*	10 x 200	7,0 x 205	130/150**	TX-40	25
	KPS-FAST-10230S	KPS-FAST-10230S-D*	KPS-FAST-10230S-A4*	10 x 230	7,0 x 235	160/180**	TX-40	25
	KPS-FAST-10260S	KPS-FAST-10260S-D*	KPS-FAST-10260S-A4*	10 x 260	7,0 x 265	190/210**	TX-40	25
	KPS-FAST-10300S	KPS-FAST-10300S-D*	KPS-FAST-10300S-A4*	10 x 300	7,0 x 305	230/250**	TX-40	25

* Product available on request
** h_{eff}=70 mm/h_{eff}=50 mm

Product marking - KPS-FAST-08080S-D				
KPS-FAST	**08**	**080**	**S**	**-D**
Type	Sleeve diameter: 8 mm	Sleeve length: 80 mm	Head type: countersunk head	Coating: SQ Ceramic

TECHNICAL DATA

Type	Sleeve diameter	Hole/ drill bit diameter	Effective anchorage depth	Depth of drill hole	Drive type	Use categories	Sleeve material	Screw material	European Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]	[-]	[-]
KPS-FAST 8 S	8	8	70*/50**	80*/60**	TX-30	A B C D	PA Polyamide	Steel with applied electroplated zinc coating with non-electrolytically applied zinc flake coating --- Steel with non-electrolytically applied zinc flake coating SQ Ceramic --- Stainless steel	ETA-12/0272
KPS-FAST 10 S	10	10	70*/50***	80*/60**	TX-40	A B C D	PA Polyamide		ETA-12/0272

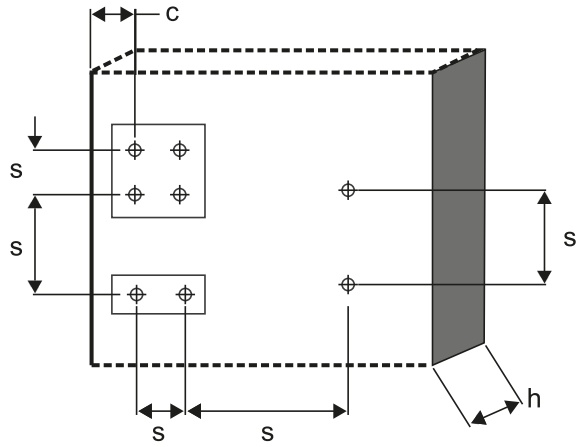
* for standard anchorage depth, use category A, B, C, D
** for KPS-FAST 8 S reduced anchorage depth not approved for category C and D
*** for KPS-FAST 10 S reduced anchorage depth not approved for AAC substrate type
For **KPS-FAST-08060S** and **KPS-FAST-10060S** is only available effective anchorage depth h_{eff} [mm] = 50 mm

MINIMUM THICKNESS OF MEMBER, EDGE DISTANCE AND SPACING IN CONCRETE

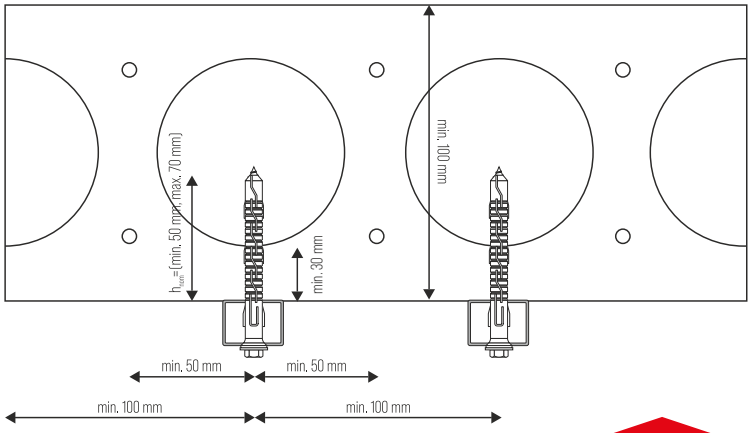
Use categories	Base material	Minimum thickness of member	Characteristic edge distance	Characteristic spacing	Minimum edge	Minimum spacing
		h_{min} [mm]	$c_{cr,N}$ [mm]	$s_{cr,N}$ [mm]	c_{min} [mm]	s_{min} [mm]
KPS-FAST 8/50*	Concrete ≥ C16/20	100	70	70	50	50
	Concrete ≥ C12/15	100	100	95	70	70
KPS-FAST 8/70**	Concrete ≥ C16/20	100	100	80	60	60
	Concrete ≥ C12/15	100	140	115	80	80
KPS-FAST 10/50*	Concrete ≥ C16/20	100	100	75	50 for s ≥ 150 mm	50 for c ≥ 100 mm
	Concrete ≥ C12/15	100	140	105	70 for s ≥ 210 mm	70 for c ≥ 140 mm
	Thin wall concrete elements ≥ C16/20	30	100	100	100	100
KPS-FAST 10/70**	Concrete ≥ C16/20	100	100	110	50 for s ≥ 150 mm	50 for c ≥ 100 mm
	Concrete ≥ C12/15	100	140	150	70 for s ≥ 210 mm	70 for c ≥ 150 mm
	Thin wall concrete elements ≥ C16/20	30	100	100	100	100

*h_{eff}=50 mm / **h_{eff}=70 mm
For **KPS-FAST-08060S** and **KPS-FAST-10060S** is only available effective anchorage depth h_{eff} [mm] = 50 mm

SCHEME OF EDGE DISTANCE AND SPACING IN CONCRETE



SCHEME OF EDGE DISTANCE AND SPACING IN THIN-WALL CONCRETE ELEMENTS



Frame plug with hex & TX head screw TX-30/TX-40

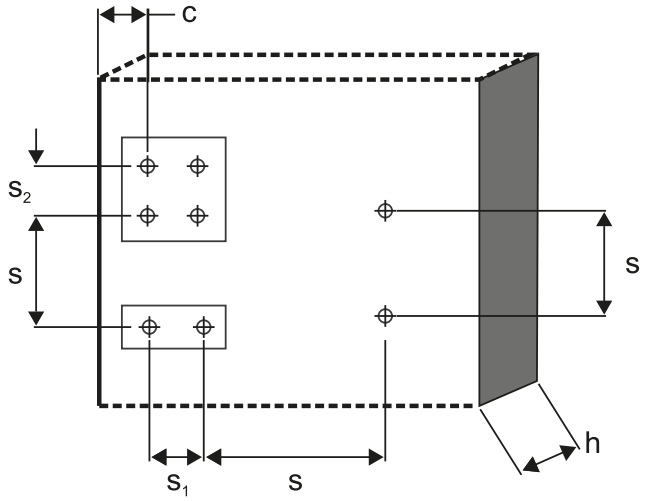
KPS-FAST S - TECHNICAL DATA

MINIMUM THICKNESS OF MEMBER, EDGE DISTANCE AND SPACING IN MASONRY

ANCHOR DIAMETER	Base material	Type of element	Single anchor			Anchor group [1]	
			Minimum thickness of member	Minimum edge distance	Minimum spacing	Minimum spacing	Minimum spacing
			h_{min} [mm]	c_{min} [mm]	s_{min} [mm]	s_{min1} [2] [mm]	s_{min2} [3] [mm]
Ø 8	masonry made of ceramic, calcium silicate and lightweight aggregate concrete elements	solid	120	100	100	100	200
		perforated or hollow	180	100	100	100	200
	masonry made of autoclaved aerated concrete elements	-	100	100	100	100	200
Ø 10	masonry made of ceramic, calcium silicate and lightweight aggregate concrete elements	solid	120	100	100	100	200
		perforated or hollow	180	100	100	100	200
	masonry made of autoclaved aerated concrete elements	-	100	100	100	100	200

[1] the design method valid for single anchor and anchor groups with two or four anchors
[2] in direction perpendicular to free edge
[3] in direction parallel to free edge

SCHEME OF EDGE DISTANCE AND SPACING IN CONCRETE



RESISTANCE

Use categories	Substrate type	Density	Compressive strength	Characteristic resistance [kN/pcs]			
				Ø8		Ø 10	
		[kg/dm^3]	[N/mm^2]	h_{eff}=50 mm	h_{eff}=70 mm	h_{eff}=50 mm	h_{eff}=70 mm
A	Concrete C12/15	≥ 2,25	$f_{c,cyl}$ ≥ 12	2,5**	3,0**	3,0**	6,0**
A	Concrete ≥ C16/20	≥ 2,30	$f_{c,cyl}$ ≥ 16	3,5**	4,5**	4,0**	8,5**
A	Thin-wall concrete elements C16/20, h ≥ 30mm	≥ 2,30	$f_{c,cyl}$ ≥ 16	-	-	4,0**	4,0**
B	Clay brick [1),5)]	≥ 1,70	≥ 10	-	-	1,5	2,0
B	Clay brick [1),5)]	≥ 1,70	≥ 20	-	-	2,0	3,5
B	Clay brick [1),6)]	≥ 2,00	≥ 10	3,0	2,5	2,0	2,0
B	Clay brick [1),6)]	≥ 2,00	≥ 20	3,0	3,0	3,0	3,0
B	Calcium silicate brick [2),7)]	≥ 2,00	≥ 20	3,0	3,0	3,0	3,0
C	Perforated ceramic brick [1),8)]	≥ 0,80	≥ 15	-	-	1,2	1,0
C	Perforated ceramic brick [1),9)]	≥ 0,80	≥ 15	-	1,2	2,5	1,0
C	Perforated ceramic brick [1),10)]	≥ 0,80	≥ 15	-	1,2	2,5	1,0
C	Perforated ceramic brick [1),11)]	≥ 1,20	≥ 12	-	-	1,5	1,5
C	Calcium silicate hollow block [2),12)]	≥ 1,60	≥ 12	-	2,5	2,5	2,5
C	Aggregate concrete masonry units [3), 14)]	≥ 0,80	≥ 2	-	-	1,5	1,5
C	Aggregate concrete masonry units [3), 15)]	≥ 1,5	≥ 25	-	-	3,5	3,5
D	Lightweight concrete blocks (LAC) [3)]	≥ 1,0	≥ 20	-	-	4,0	4,0
D	Hollow lightweight aggregate concrete element [3),13)]	≥ 0,80	≥ 2	-	2,0	-	-
D	Autoclaved aerated concrete AAC 2 [4)]	≥ 0,35	≥ 2	-	0,9	-	0,9
D	Autoclaved aerated concrete AAC 7 [4)]	≥ 0,65	≥ 6,5	-	2,0	-	2,0

**cracked concrete
[1)] According to EN 771-1
[2)] According to EN 771-2
[3)] According to EN 771-3
[4)] According to EN 771-4
[5)] Polish clay brick; (L x W x H) = 250 x 120 x 65 mm
[6)] German clay brick MZ Rd 2.0/20; (L x W x H) = 250 x 120 x 65 mm
[7)] For example Kalksandstein KS NF 20-2.0 Vollstein according to DIN 106; (L x W x H) = 250 x 115 x 71 mm
[8)] For example Porotherm 18.8; (L x W x H) = 468 x 188 x 238 mm
[8)] For example Porotherm 18.8; (L x W x H) = 468 x 188 x 238 mm
[9)] For example Porotherm 25 P+W; (L x W x H) = 250 x 373 x 238 mm
[10)] For example MAX 250; (L x W x H) = 250 x 373 x 238 mm
[11)] For example HLZ Rd1 1.2/12 according to DIN 105; (L x W x H) = 308 x 240 x 238 mm
[12)] For example KSL-R(P)8DF Lochstein according to DIN 106; (L x W x H) = 498 x 115 x 245 mm
[13)] For example Hbl 2/0.8 Leichtbetonhohlstein according to DINV 18 151-100; (L x W x H) = 365 x 247 x 238 mm
[14)] For example TeknoAmerBlok PK17,8; (L x W x H) = 178 x 390 x 190 mm
[15)] For example TeknoAmerBlok PK19; (L x W x H) = 190 x 390 x 190 mm

Frame plug with hex & TX head screw TX-30/TX-40/TX-50

KPS-FAST K / KPR-FAST K

⌀8, ⌀10, ⌀12, ⌀14

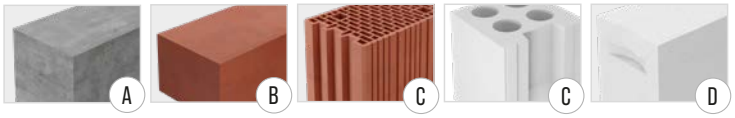
Frame anchor with hexagonal head screw, integrated washer and TX drive recommended for fastening metal elements.

ETA-12/0272

ZF ZINC FLAKES | PA 100% NYLON | A4 INOX | SUPER QUALITY SQ CERAMIC

	Zinc flakes	SQ Ceramic	Stainless steel A4
⌀8	KPS-FAST 8 K	KPS-FAST 8 K-D	KPS-FAST 8 K-A4
	Plugs length range: 60 - 140 mm Screws length range: 65 - 145 mm		
⌀10	KPR-FAST 10 K	KPR-FAST 10 K-D	KPR-FAST 10 K-A4
	Plugs length range: 60 - 300 mm Screws length range: 65 - 305 mm		
⌀12	KPR-FAST 12 K	KPR-FAST 12 K-D	-
	Plugs length range: 80 - 360 mm Screws length range: 85 - 365 mm		
⌀14	KPR-FAST 14 K	KPR-FAST 14 K-D	-
	Plugs length range: 80 - 200 mm Screws length range: 85 - 205 mm		

SUBSTRATES (ETAG 014 ABCD)



A	B	C	C	D
Concrete	Solid clay brick, Solid calcium silicate brick	Hollow or perforated clay brick	Calcium silicate hollow block	AAC block

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	· Carbon steel (KPS-FAST K, KPR-FAST K) · Stainless steel A4 (KPS-FAST K-A4, KPR-FAST K-A4)
CORROSION PROTECTION	· Zinc flakes coating (KPS-FAST K, KPR-FAST K) · SQ Ceramic (KPS-FAST K-D, KPR-FAST K-D)
INSTALLATION METHOD	Push-through installation.
APPLICATION	· Assembly of consoles of light ventilated facades. · Assembly of light internal steel structures. · Assembly of shop windows, glass walls or glazing. · Assembly of window and door frames, garage doors. · Assembly of railings and balustrades. · Fastening components of installation systems in buildings (air conditioners, water heaters, hydrophores, water filters, radiators) · Fastening medium and small warehouse racks, furniture and elements of interior design. · Assembly of sunshades, window blinds, window shutters, roofing inside buildings.

HEX HEAD WITH TX/SW DRIVE
TX drive ensures optimum transfer of torque while SW hex head allows for tightening the screw to the recommended value of installation torque (e.g. with torque wrench).

CORROSION PROTECTION: ZINC FLAKE COATING
Zinc flake coating offers two times better corrosion resistance compared to standard zinc. The klimas wkręt-met laboratory has confirmed an excellent quality of the coating by testing in salt spray chamber (240 hours in salt spray chamber for zinc flake coating versus 120 hours in salt spray chamber for zinc coating).

RESISTANCE TO FIRE (⌀10 according to TR 020)
For assembling facade systems the fastener has a sufficient fire resistance of at least 90 minutes (R90) if the admissible load for a single anchorage ≤ 0.8kN no permanent centric tension load.

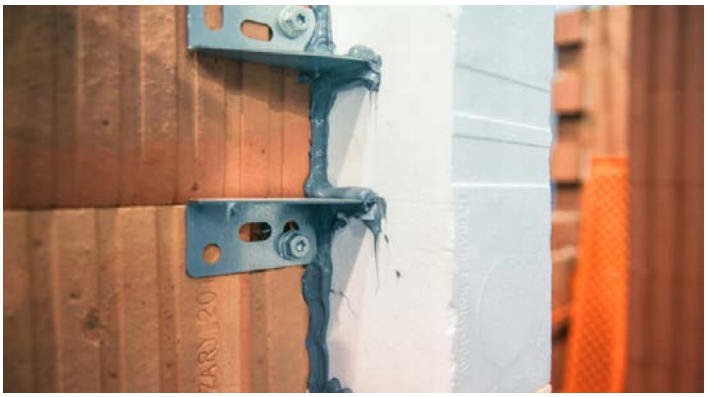
EXAMPLES OF APPLICATIONS

Assembly of consoles of light ventilated facades

Fastening components of installation systems in buildings

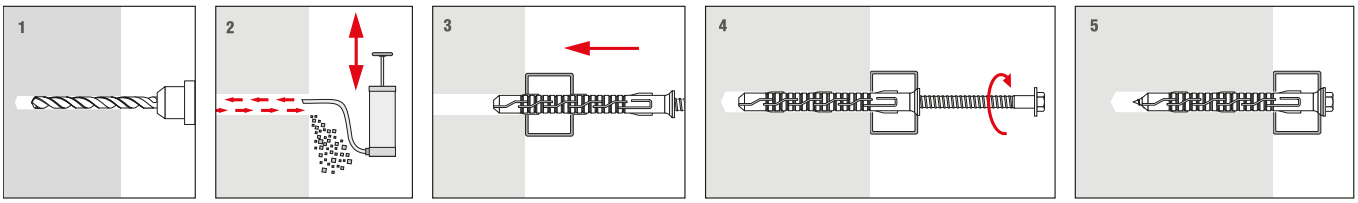
Fastening of window completely in the layer of external facade insulation using angle brackets

Fastening various elements of exterior design to masonry facade wall



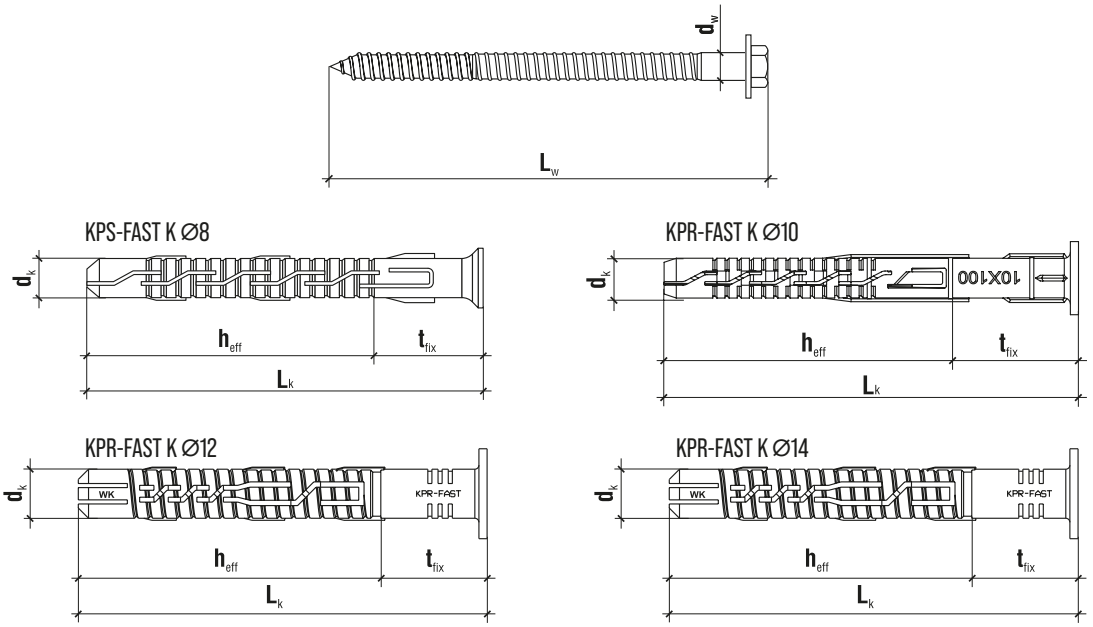
Fastening of window completely in the layer of external facade insulation using angle brackets

INSTALLATION INSTRUCTIONS



Frame plug with hex & TX head screw TX-30/TX-40/TX-50

KPS-FAST K / KPR-FAST K - TECHNICAL DATA



A4 INOX
SUPER QUALITY SQ CERAMIC
ZF ZINC FLAKES
PA 100% NYLON

ETA-12/0272

	Product code			Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
	Zinc flake	SQ Ceramic	Stainless steel A4	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
KPS-FAST 8 K								
ø8	KPS-FAST-08060K	KPS-FAST-08060K-D*	KPS-FAST-08060K-A4*	8x60	6x65	-/10**	TX-30/SW-10	50
	KPS-FAST-08080K	KPS-FAST-08080K-D*	KPS-FAST-08080K-A4*	8x80	6x85	10/30**	TX-30/SW-10	50
	KPS-FAST-08100K	KPS-FAST-08100K-D*	KPS-FAST-08100K-A4*	8x100	6x105	30/50**	TX-30/SW-10	50
	KPS-FAST-08120K	KPS-FAST-08120K-D*	KPS-FAST-08120K-A4*	8x120	6x125	50/70**	TX-30/SW-10	50
	KPS-FAST-08140K	KPS-FAST-08140K-D*	KPS-FAST-08140K-A4*	8x140	6x145	70/90**	TX-30/SW-10	50
KPR-FAST 10 K								
ø10	KPR-FAST-10060K	KPR-FAST-10060K-D*	KPR-FAST-10060K-A4*	10 x 60	7x65	-/10**	TX-40/SW-13	50
	KPR-FAST-10080K	KPR-FAST-10080K-D*	KPR-FAST-10080K-A4*	10x80	7x85	10/30**	TX-40/SW-13	50
	KPR-FAST-10100K	KPR-FAST-10100K-D*	KPR-FAST-10100K-A4*	10x100	7x105	30/50**	TX-40/SW-13	50
	KPR-FAST-10120K	KPR-FAST-10120K-D*	KPR-FAST-10120K-A4*	10x120	7x125	50/70**	TX-40/SW-13	50
	KPR-FAST-10140K(25)	KPR-FAST-10140K(25)-D*	KPR-FAST-10140K(25)-A4*	10x140	7x145	70/90**	TX-40/SW-13	50
	KPR-FAST-10160K(25)	KPR-FAST-10160K(25)-D*	KPR-FAST-10160K(25)-A4*	10x160	7x165	90/110**	TX-40/SW-13	50
	KPR-FAST-10180K	KPR-FAST-10180K-D*	KPR-FAST-10180K-A4*	10x180	7x185	110/130**	TX-40/SW-13	25
	KPR-FAST-10200K	KPR-FAST-10200K-D*	KPR-FAST-10200K-A4*	10x200	7x205	130/150**	TX-40/SW-13	25
	KPR-FAST-10230K	KPR-FAST-10230K-D*	KPR-FAST-10230K-A4*	10x230	7x235	160/180**	TX-40/SW-13	25
	KPR-FAST-10260K	KPR-FAST-10260K-D*	KPR-FAST-10260K-A4*	10x260	7x265	190/210**	TX-40/SW-13	25
	KPR-FAST-10300K	KPR-FAST-10300K-D*	KPR-FAST-10300K-A4*	10x300	7x305	230/250**	TX-40/SW-13	25

* Product available on request
** h_{eff}=50 mm/h_{eff}=70 mm

	Product code			Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
	Zinc flake	SQ Ceramic	Stainless steel A4	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
KPR-FAST 12 K								
ø12	KPR-FAST-12080K	KPR-FAST-12080K-D*	-	12x80	8x85	10	TX-40/SW-13	25
	KPR-FAST-12100K	KPR-FAST-12100K-D*	-	12x100	8x105	30	TX-40/SW-13	25
	KPR-FAST-12120K	KPR-FAST-12120K-D*	-	12x120	8x125	50	TX-40/SW-13	25
	KPR-FAST-12140K	KPR-FAST-12140K-D*	-	12x140	8x145	70	TX-40/SW-13	25
	KPR-FAST-12160K	KPR-FAST-12160K-D*	-	12x160	8x165	90	TX-40/SW-13	25
	KPR-FAST-12180K	KPR-FAST-12180K-D*	-	12x180	8x185	110	TX-40/SW-13	25
	KPR-FAST-12200K	KPR-FAST-12200K-D*	-	12x200	8x205	130	TX-40/SW-13	25
	KPR-FAST-12230K	KPR-FAST-12230K-D*	-	12x230	8x235	160	TX-40/SW-13	25
	KPR-FAST-12260K	KPR-FAST-12260K-D*	-	12x260	8x265	190	TX-40/SW-13	25
	KPR-FAST-12300K	KPR-FAST-12300K-D*	-	12x300	8x305	230	TX-40/SW-13	20
	KPR-FAST-12330K	KPR-FAST-12330K-D*	-	12x330	8x335	260	TX-40/SW-13	20
	KPR-FAST-12360K	KPR-FAST-12360K-D*	-	12x360	8x365	290	TX-40/SW-13	20
KPR-FAST 14 K								
ø14	KPR-FAST-14080K	KPR-FAST-14080K-D*	-	14x80	10x85	10	TX-50/SW-17	20
	KPR-FAST-14100K	KPR-FAST-14100K-D*	-	14x100	10x105	30	TX-50/SW-17	20
	KPR-FAST-14120K	KPR-FAST-14120K-D*	-	14x120	10x125	50	TX-50/SW-17	20
	KPR-FAST-14140K(20)	KPR-FAST-14140K(20)-D*	-	14x140	10x145	70	TX-50/SW-17	20
	KPR-FAST-14160K(20)	KPR-FAST-14160K(20)-D*	-	14x160	10x165	90	TX-50/SW-17	20
	KPR-FAST-14180K(20)	KPR-FAST-14180K(20)-D*	-	14x180	10x185	110	TX-50/SW-17	20
	KPR-FAST-14200K	KPR-FAST-14200K-D*	-	14x200	10x205	130	TX-50/SW-17	15

* Product available on request

Product marking - KPS-FAST-08080K-A4				
KPS-FAST	**08**	**080**	**K**	**-A4**
Type	Sleeve diameter: 8 mm	Sleeve length: 80 mm	Head type: hex head	Coating: stainless steel a4

TECHNICAL DATA

Type	Sleeve diameter	Hole/ drill bit diameter	Effective anchorage depth	Depth of drill hole	Drive type	Use categories	Sleeve material	Screw material	European Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]	[-]	[-]
KPS-FAST 8 K	8	8	70*/50**	80*/60**	TX-30 / SW-10	A B C D	PA - Polyamide	Steel with applied electroplated zinc coating with non-electrolytically applied zinc flake coating --- Steel with nonelectrolytically applied zinc flake coating SQ Ceramic --- Stainless steel	ETA-12/0272
KPR-FAST 10 K	10	10	70*/50***	80*/60**	TX-40 / SW-13	A B C D	PA - Polyamide		ETA-12/0272
KPR-FAST 12 K	12	12	70	80	TX-40 / SW-13	A B C D	PA - Polyamide	Steel with applied electroplated zinc coating with non-electrolytically applied zinc flake coating --- Steel with nonelectrolytically applied zinc flake coating SQ Ceramic	ETA-12/0272
KPR-FAST 14 K	14	14	70	85	TX-50 / SW-17	A B C D	PA - Polyamide		ETA-12/0272

* for standard anchorage depth, use category A, B, C, D
** for KPS-FAST 8 K reduced anchorage depth not approved for category C and D
*** for KPR-FAST 10 K reduced anchorage depth not approved for AAC substrate type
For **KPS-FAST-08060K** and **KPR-FAST-10060K** is only available effective anchorage depth h_{eff} [mm] = 50 mm

Frame plug with hex & TX head screw TX-30/TX-40/TX-50

KPS-FAST K / KPR-FAST K - TECHNICAL DATA

RESISTANCE

Use categories	Substrate type	Density	Compressive strength	Characteristic resistance [kN/pcs]					
				Ø8		Ø 10		Ø 12	Ø 14
		[kg/dm^3]	[N/mm^2]	h_{eff}=50 mm	h_{eff}=70 mm	h_{eff}=50 mm	h_{eff}=70 mm	-	-
A	Concrete C12/15	≥ 2,25	$f_{c,cyl}$ ≥ 12	2,5**	3,0**	3,0**	6,0**	3,5**	5,0**
A	Concrete ≥ C16/20	≥ 2,30	$f_{c,cyl}$ ≥ 16	3,5**	4,5**	4,0**	8,5**	5,0**	7,5**
A	Thin-wall concrete elements C16/20, h ≥ 30mm	≥ 2,30	$f_{c,cyl}$ ≥ 16	-	-	4,0**	4,0**	-	-
B	Clay brick [1),5)]	≥ 1,70	≥ 10	-	-	1,5	2,0	2,5	4,0
B	Clay brick [1),5)]	≥ 1,70	≥ 20	-	-	2,0	3,5	3,5	4,0
B	Clay brick [1),6)]	≥ 2,00	≥ 10	3,0	2,5	2,0	2,0	3,5	4,0
B	Clay brick [1),6)]	≥ 2,00	≥ 20	3,0	3,0	3,0	3,0	3,5	4,0
B	Calcium silicate brick [2),7)]	≥ 2,00	≥ 20	3,0	3,0	3,0	3,0	3,5	4,0
C	Perforated ceramic brick [1),8)]	≥ 0,80	≥ 15	-	-	1,2	1,0	-	-
C	Perforated ceramic brick [1),9)]	≥ 0,80	≥ 15	-	1,2	2,5	1,0	-	-
C	Perforated ceramic brick [1),10)]	≥ 0,80	≥ 15	-	1,2	2,5	1,0	-	-
C	Perforated ceramic brick [1),11)]	≥ 1,20	≥ 12	-	-	1,5	1,5	2,0	2,0
C	Calcium silicate hollow block [2),12)]	≥ 1,60	≥ 12	-	2,5	2,5	2,5	3,0	3,5
C	Aggregate concrete masonry units [3), 14)]	≥ 0,80	≥ 2	-	-	1,5	1,5	-	-
C	Aggregate concrete masonry units [3), 15)]	≥ 1,5	≥ 25	-	-	3,5	3,5	-	-
D	Lightweight concrete blocks (LAC) [3)]	≥ 1,0	≥ 20	-	-	4,0	4,0	-	-
D	Hollow lightweight aggregate concrete element [3),13)]	≥ 0,80	≥ 2	-	2,0	-	-	2,0	2,0
D	Autoclaved aerated concrete AAC 2 [4)]	≥ 0,35	≥ 2	-	0,9	-	0,9	0,75	0,9
D	Autoclaved aerated concrete AAC 7 [4)]	≥ 0,65	≥ 6,5	-	2,0	-	2,0	3,0	3,0

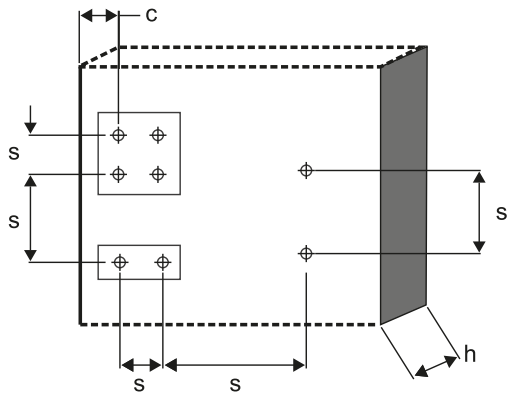
**cracked concrete
[1)] According to EN 771-1
[2)] According to EN 771-2
[3)] According to EN 771-3
[4)] According to EN 771-4
[5)] Polish clay brick; (L x W x H) = 250 x 120 x 65 mm
[6)] German clay brick MZ Rd 2.0/20; (L x W x H) = 250 x 120 x 65 mm
[7)] For example Kalksandstein KS NF 20-2.0 Vollstein according to DIN 106; (L x W x H) = 250 x 115 x 71 mm
[8)] For example Porotherm 18.8; (L x W x H) = 468 x 188 x 238 mm
[8)] For example Porotherm 18.8; (L x W x H) = 468 x 188 x 238 mm
[9)] For example Porotherm 25 P+W; (L x W x H) = 250 x 373 x 238 mm
[10)] For example MAX 250; (L x W x H) = 250 x 373 x 238 mm
[11)] For example HLZ Rd1 1.2/12 according to DIN 105; (L x W x H) = 308 x 240 x 238 mm
[12)] For example KSL-R(P)8DF Lochstein according to DIN 106; (L x W x H) = 498 x 115 x 245 mm
[13)] For example Hbl 2/0.8 Leichtbetonhohlstein according to DINV 18 151-100; (L x W x H) = 365 x 247 x 238 mm
[14)] For example TeknoAmerBlok PK17,8; (L x W x H) = 178 x 390 x 190 mm
[15)] For example TeknoAmerBlok PK19; (L x W x H) = 190 x 390 x 190 mm

MINIMUM THICKNESS OF MEMBER, EDGE DISTANCE AND SPACING IN CONCRETE

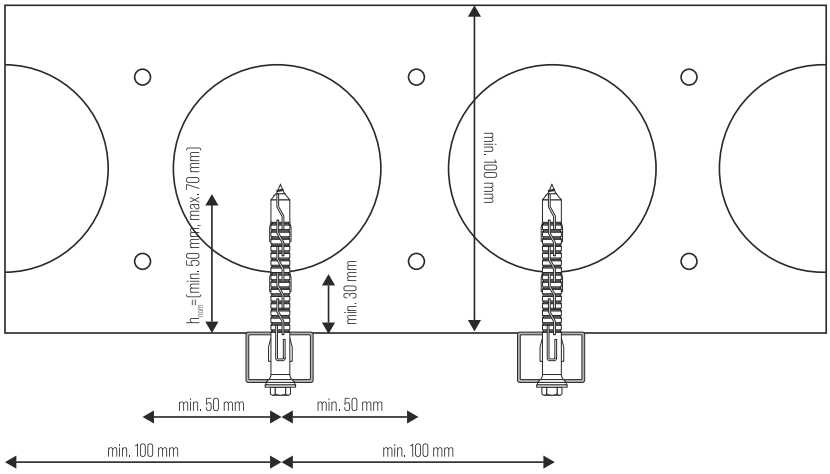
Use categories	Base material	Minimum thickness of member	Characteristic edge distance	Characteristic spacing	Minimum edge	Minimum spacing
		h_{min} [mm]	$c_{cr,N}$ [mm]	$s_{cr,N}$ [mm]	c_{min} [mm]	s_{min} [mm]
KPR-FAST 8/50*	Concrete ≥ C16/20	100	70	70	50	50
	Concrete ≥ C12/15	100	100	95	70	70
KPR-FAST 8/70**	Concrete ≥ C16/20	100	100	80	60	60
	Concrete ≥ C12/15	100	140	115	80	80
KPR-FAST 10/50*	Concrete ≥ C16/20	100	100	75	50 for s ≥ 150 mm	50 for c ≥ 100 mm
	Concrete ≥ C12/15	100	140	105	70 for s ≥ 210 mm	70 for c ≥ 140 mm
	Thin wall concrete elements ≥ C16/20	30	100	100	100	100
KPR-FAST 10/70**	Concrete ≥ C16/20	100	100	110	50 for s ≥ 150 mm	50 for c ≥ 100 mm
	Concrete ≥ C12/15	100	140	150	70 for s ≥ 210 mm	70 for c ≥ 150 mm
	Thin wall concrete elements ≥ C16/20	30	100	100	100	100
KPR-FAST 12	Concrete ≥ C16/20	100	100	85	100	100
	Concrete ≥ C12/15	100	140	120	140	140
KPR-FAST 14	Concrete ≥ C16/20	100	100	115	100	100
	Concrete ≥ C12/15	100	140	160	140	140

*h_{eff}=50 mm / **h_{eff}=70 mm
For **KPS-FAST-08060K** and **KPR-FAST-10060K** is only available effective anchorage depth h_{eff} [mm] = 50 mm

SCHEME OF EDGE DISTANCE AND SPACING IN CONCRETE



SCHEME OF EDGE DISTANCE AND SPACING IN THIN-WALL CONCRETE ELEMENTS



Frame plug with hex & TX head screw TX-30/TX-40/TX-50

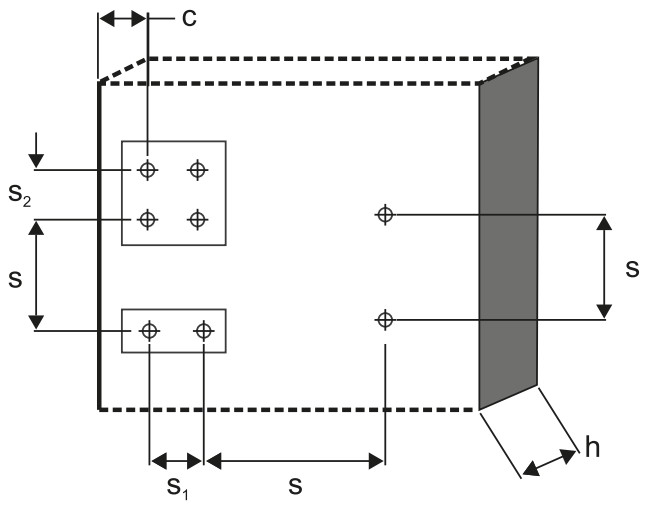
KPS-FAST K / KPR-FAST K - TECHNICAL DATA

MINIMUM THICKNESS OF MEMBER, EDGE DISTANCE AND SPACING IN MASONRY

ANCHOR DIAMETER	Base material	Type of element	Single anchor			Anchor group [1]	
			Minimum thickness of member	Minimum edge distance	Minimum spacing	Minimum spacing	Minimum spacing
			h_{min} [mm]	c_{min} [mm]	s_{min} [mm]	$s_{min\,1}$ [2][mm]	$s_{min\,2}$ [3][mm]
Ø 8	masonry made of ceramic, calcium silicate and lightweight aggregate concrete elements	solid	120	100	100	100	200
		perforated or hollow	180	100	100	100	200
	masonry made of autoclaved aerated concrete elements	-	100	100	100	100	200
Ø 10	masonry made of ceramic, calcium silicate and lightweight aggregate concrete elements	solid	120	100	100	100	200
		perforated or hollow	180	100	100	100	200
	masonry made of autoclaved aerated concrete elements	-	100	100	100	100	200
Ø 12	masonry made of ceramic, calcium silicate and lightweight aggregate concrete elements	solid	120	100	100	100	200
		perforated or hollow	180	100	100	100	200
	masonry made of autoclaved aerated concrete elements	-	100	100	100	100	200
Ø 14	masonry made of ceramic, calcium silicate and lightweight aggregate concrete elements	solid	120	100	100	100	200
		perforated or hollow	180	100	100	100	200
	masonry made of autoclaved aerated concrete elements	-	100	100	100	100	200

[1] the design method valid for single anchor and anchor groups with two or four anchors
[2] in direction perpendicular to free edge
[3] in direction parallel to free edge

SCHEME OF EDGE DISTANCE AND SPACING IN CONCRETE



KLIMAS
FASTENER TECHNOLOGIES

FRAME FIXINGS
- PRE-ASSEMBLED PRODUCTS

NEW PACKAGING!

The packaging has a protection against accidental opening and prevents product falling out

New labels mean simplified and more legible marking which facilitates finding the product on a shelf

Advantages of pre-assembled fixings:

- ✓ easy and fast installation
- ✓ products ready for use without need to assembling
- ✓ no mistakes with sleeves and screws connections

FROM NOW ALL OUR FRAME FIXINGS FAST ARE PRE-ASSEMBLED

Plug with double-threaded screw (fixing of downpipe clamps)

KPD

⌀10, ⌀12

Recommended for fixing downpipe clamps in roof drainage system or other elements through external facade insulation layer.

SUBSTRATES

Concrete | Solid bricks | Perforated bricks | AAC block

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Push-through installation.
APPLICATION	· Fixing of downpipe clamps in roof drainage systems. · Fixing of downpipe clamps in roof drainage systems through external thermal insulation layer (ETICS). · Fastening various elements through external thermal insulation layer (ETICS).

METRIC THREAD M8
Allow direct and secure installation as compatible with internal thread on downpipe clamp.

SW-10 DRIVE UNDER EXTERNAL METRIC THREAD PART
Facilitates installation of screw into the sleeve.

RELIABLE AND SECURE FASTENING
Increased expansion area thanks to 4 way expansion zone enable to achieve better anchorage resistance. Special plastic protrusions are keying sleeve in the hole , preventing rotation during installation.

	Galvanized steel
⌀ 10	KPD-10 **Plugs length range:** 100 - 200 mm **Screws length range:** 105 - 205 mm
⌀ 12	KPD-12 **Plugs length range:** 100 - 300 mm **Screws length range:** 105 - 305 mm

EXAMPLES OF APPLICATIONS

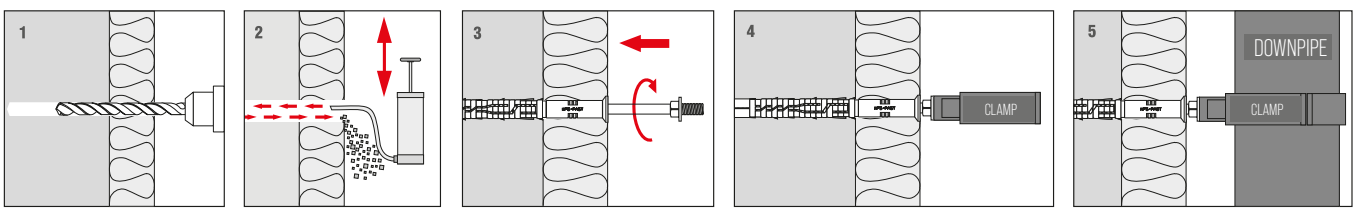
Fixing of downpipe clamps in roof drainage systems

Fixing of downpipe clamps in roof drainage systems

Fixing of downpipe clamps in roof drainage systems

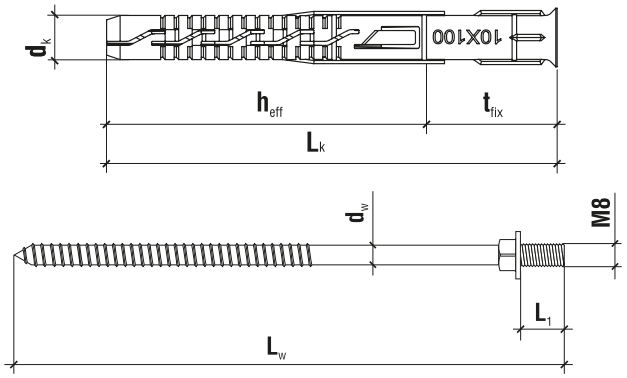
Fastening various elements through external thermal insulation layer (ETICS)

INSTALLATION INSTRUCTIONS



Plug with double-threaded screw (fixing of downpipe clamps)

KPD - TECHNICAL DATA



	Product code	Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
KPD-10						
ø10	KPD-10100	10 x 100	7,0 x 105	20	SW-10	50
	KPD-10160	10 x 160	7,0 x 165	80	SW-10	50
	KPD-10200	10 x 200	7,0 x 205	120	SW-10	25
KPD-12						
ø12	KPD-12100	12 x 100	8,0 x 105	20	SW-10	25
	KPD-12160	12 x 160	8,0 x 165	80	SW-10	25
	KPD-12200	12 x 200	8,0 x 205	120	SW-10	25
	KPD-12260	12 x 260	8,0 x 265	180	SW-10	25
	KPD-12300	12 x 300	8,0 x 305	220	SW-10	25

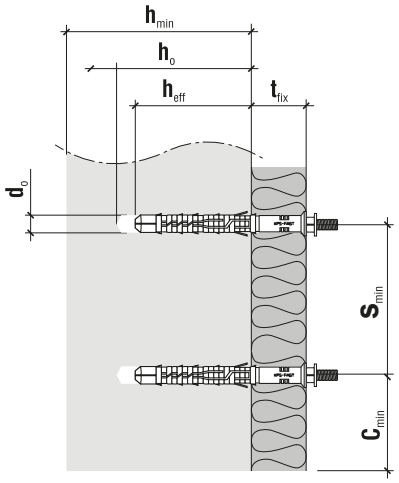
Product marking - KPD-12100		
KPD	**12**	**100**
Type	Sleeve diameter: 12 mm	Sleeve length: 100 mm

TECHNICAL DATA

Type	Sleeve diameter	Hole/ drill bit diameter	Effective anchorage depth	Depth of drill hole	Metric thread diameter	Drive type	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	D [mm]	[-]	[-]	[-]	[-]
KPD 10	10	10	70	80	M8	SW 10	PA – polyamide	Galvanized steel	ITB-KOT-2018/0528
KPD 12	12	12	70	80	M8	SW 10	PA – polyamide	Galvanized steel	ITB-KOT-2018/0528

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]												
Type	Concrete C20/25			Solid brick			Perforated bricks			AAC block		
	h_{min}	c_{min}	s_{min}	h_{min}	c_{min}	s_{min}	h_{min}	c_{min}	s_{min}	h_{min}	c_{min}	s_{min}
KPD 10	105	140	140	105	140	210	105	140	210	105	140	210
KPD 12	105	140	140	105	140	210	105	140	210	105	140	210

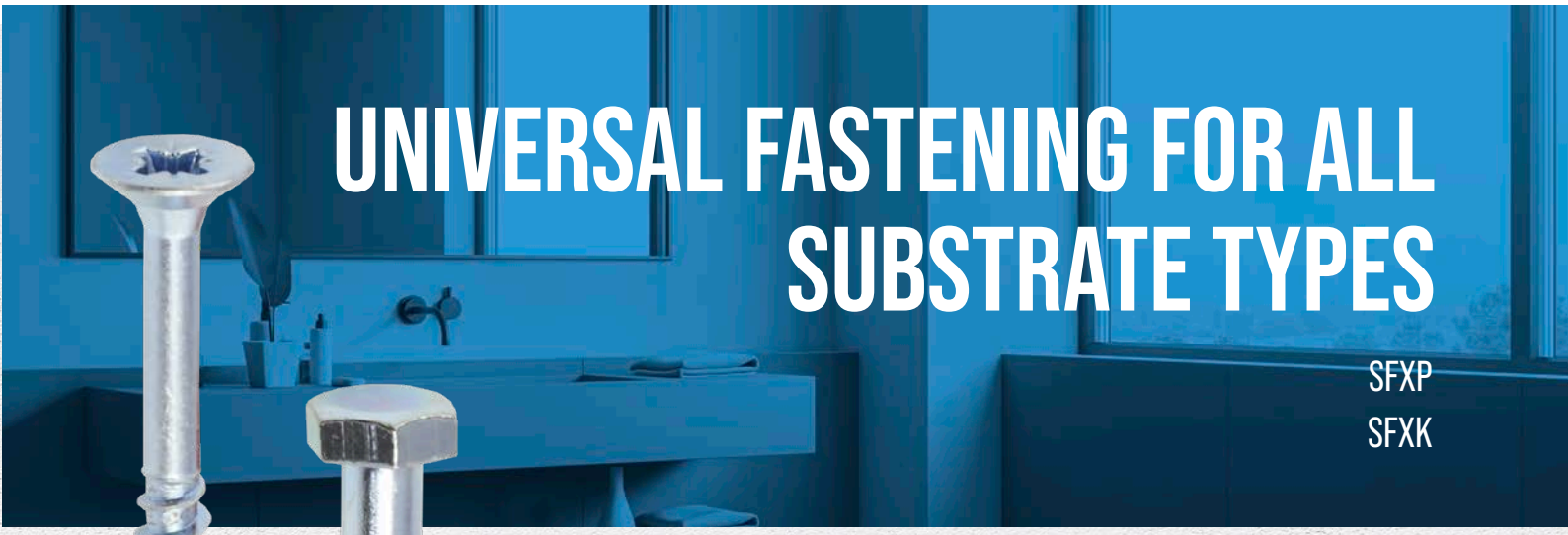


PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid brick	Perforated bricks	AAC block
KPD 10	1,5	2,5	1,2	2,0
KPD 12	1,5	2,0	1,2	2,0

KLIMAS
FASTENER TECHNOLOGIES

STRONG FOR GENERATIONS



UNIVERSAL FASTENING FOR ALL SUBSTRATE TYPES

SFXP
SFXK

INNOVATIVE SLEEVE DESIGN

Anti-rotation lugs keep the sleeve in place while screwing in the screw and increase expansion force in the substrate.

Unique sleeve design is suitable for all substrate types , what makes this fixing solution very universal.

SECURE FASTENING

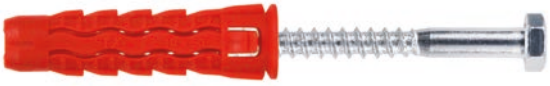
Unique design of the sleeve guarantees activation of „knotting" function in perforated substrates with voids thus increasing pressing of the sleeve against the wall of the drilled hole.

FAST AND EASY INSTALLATION

Inner shape design of sleeve reduces the possibility of a screw being incorrectly driven inside the sleeve and thus eliminate weak expansion as the screw is guided centrically towards the end of sleeve.

TECHNICAL ASSESSMENT
ITB-KOT-2021/1847

SFXP	Universal plug with PZ-2/PZ-3 countersunk head screw	46
ø5 ø6 ø8 ø10	**Sleeve length range:** 25 - 60 mm	**Galvanized steel**



SFXK	Universal plug ∅10 with hex head screw	50
ø10	**Sleeve length range:** 50 - 60 mm	**Galvanized steel**

SFXL	Universal plug with straight hook	54
ø6 ø8	**Sleeve length range:** 30 - 40 mm	**Galvanized steel**

SFXC	Universal plug with round hook	54
ø6 ø8	**Sleeve length range:** 30 - 40 mm	**Galvanized steel**

SFXO	Universal plug with eye-bolt	54
ø6 ø8	**Sleeve length range:** 30 - 40 mm	**Galvanized steel**

Universal plug with PZ-2/PZ-3 countersunk head screw

SFXP

⌀5, ⌀6, ⌀8, ⌀10

Countersunk head screw for fixing lightweight interior finish elements and lightweight components of installation systems in buildings.

Zn WHITE | PA 100% NYLON

SUBSTRATES

Concrete | Solid clay brick | Perforated bricks | Calcium silicate hollow blocks | AAC block | Gypsum board 2 x Gypsum board | Fiber -cement board

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	· Installation of apartment furnishing elements. · Installation of cable routes and wiring systems. · Installation of lighting elements.

	Galvanized steel
⌀5	SFXP-5 **Plugs length: 25 mm Screws length range: 35 - 45 mm**
⌀6	SFXP-6 **Plugs length: 30 mm Screws length range: 40 - 50 mm**
⌀8	SFXP-8 **Plugs length: 40 mm Screws length range: 50 - 60 mm**
⌀10	SFXP-10 **Plugs length range: 50 - 60 mm Screws length range: 60 - 80 mm**

COUNTERSUNK HEAD WITH PZ
It enables the screw to be screwed in with commonly used PZ drive and ensures flush installation with the surface of the element being fastened.

INCREASED COLLAR DIAMETER
Prevents slipping of the plug into the drill hole.

SPECIAL ANTI-ROTATION LUGS
Prevent rotation in the substrate during installation.

UNIQUE SHAPE
Inner thread in the sleeve guides the screw centrically towards the end of sleeve, preventing incorrect screwing and thus improper expansion.

REDUCED DIAMETER OF THE BOTTOM PART
Facilitates installation in the drill hole.

EXAMPLES OF APPLICATIONS

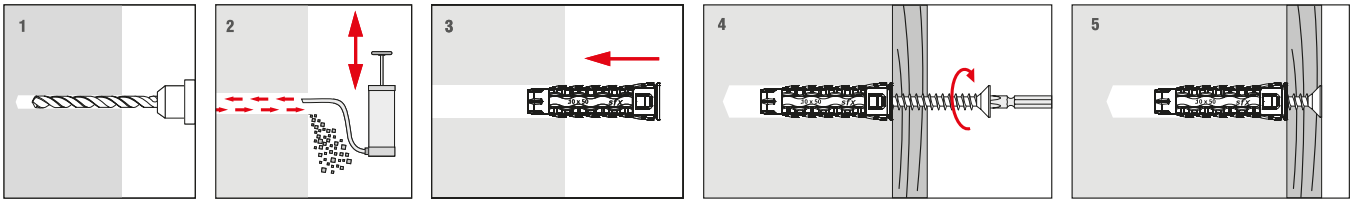
Installation of interior design elements in plasterboard substrates

Installation of decorative elements in OSB board substrates

Installation of elements of monitoring in brick walls

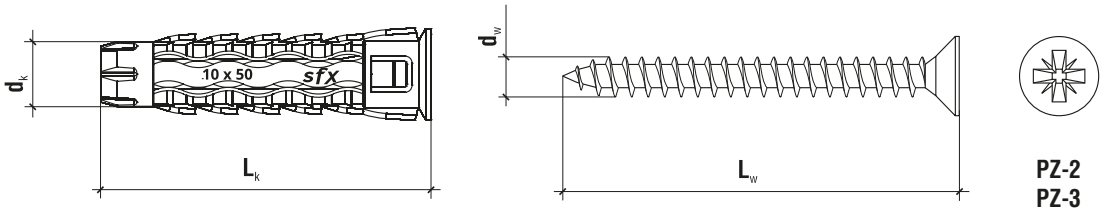
Installation of apartment finishing elements in mixed substrates

INSTALLATION INSTRUCTIONS



Universal plug with PZ-2/PZ-3 countersunk head screw

SFXP - TECHNICAL DATA

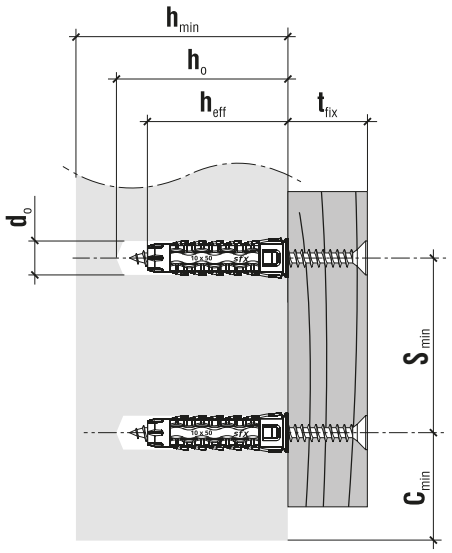


	Product code	Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
	SFXP-5					
ø5	SFXP-05025035	5,0 x 25	3,5 x 35	10	PZ-2	200
	SFXP-05025045	5,0 x 25	3,5 x 45	20	PZ-2	200
	SFXP-6					
ø6	SFXP-06030040	6,0 x 30	4,0 x 40	10	PZ-2	100
	SFXP-06030050	6,0 x 30	4,0 x 50	20	PZ-2	100
	SFXP-8					
ø8	SFXP-08040050	8,0 x 40	5,0 x 50	10	PZ-2	100
	SFXP-08040060	8,0 x 40	5,0 x 60	20	PZ-2	100
	SFXP-10					
ø10	SFXP-10050060	10 x 50	6,0 x 60	10	PZ-3	50
	SFXP-10050070	10 x 50	6,0 x 70	20	PZ-3	50
	SFXP-10060070	10 x 60	6,0 x 70	10	PZ-3	50
	SFXP-10060080	10 x 60	6,0 x 80	20	PZ 3	50

Product marking - SFXP-05025035			
SFXP	**050**	**25**	**035**
Type	Sleeve diameter: 5 mm	Sleeve length: 25 mm	Screw length: 35mm

TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Drive type	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]	[-]
SFXP Ø5	5	5	25	35	PZ-2	PA - Polyamide	Galvanized steel	ITB-KOT-2021/1847
SFXP Ø6	6	6	30	40	PZ-2	PA - Polyamide	Galvanized steel	ITB-KOT-2021/1847
SFXP Ø8	8	8	40	50	PZ-2	PA - Polyamide	Galvanized steel	ITB-KOT-2021/1847
SFXP Ø10	10	10	50/60	60/70	PZ-3	PA - Polyamide	Galvanized steel	ITB-KOT-2021/1847



PULL-OUT RESISTANCE [kN]

Type	Normal weight concrete class C20/25 - C50/60	Solid clay brick MZ class 20	Calcium silicate brick KS class 20	Calcium silicate hollow blocks (perforated) class15	Hollow perforated clay brick class 15	Autoclaved aerated concrete PP6 600/4	Gypsum board 12.5 mm	Gypsum board 2 x 12.5 mm	Fiber-cement board 12.5 mm
SFXP Ø5	0,1	0,1	0,1	0,1	0,2	0,1	-	-	-
SFXP Ø6	0,2	0,3	0,3	0,3	0,6	0,4	0,2	-	0,2
SFXP Ø8	0,3	0,75	0,9	0,6	0,6	0,9	0,2	-	0,2
SFXP Ø10	0,75	1,2	1,5	1,2	1,2	0,75	0,4	0,9	0,3

Universal plug with hex head screw

SFXK

⌀10

Hex head screw for fixing lightweight interior finish elements and lightweight components of installation systems in buildings - sleeve made from nylon.

Zn WHITE | PA 100% NYLON

SUBSTRATES

Concrete | Solid clay brick | Perforated bricks | Calcium silicate hollow block | AAC block | Gypsum board 2 x Gypsum board | Fiber -cement board

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	· Installation of apartment furnishing elements. · Installation of cable routes and wiring systems. · Installation of lighting elements.

HEX HEAD SW-10
SW-10 hex head allows for tightening the screw to the recommended value of installation torque (e.g. with torque wrench).

INCREASED COLLAR DIAMETER
Prevents slipping of the plug into the drill hole.

SPECIAL ANTI-ROTATION LUGS
Prevent rotation in the substrate during installation.

UNIQUE SHAPE
Inner thread in the sleeve guides the screw centrically towards the end of sleeve, preventing incorrect screwing and thus improper expansion.

REDUCED DIAMETER OF THE BOTTOM PART
Facilitates installation in the drill hole.

	Galvanized steel
⌀ 10	SFXK-10
	Plugs length range: 50 - 60 mm Screws length range: 60 - 80 mm

EXAMPLES OF APPLICATIONS

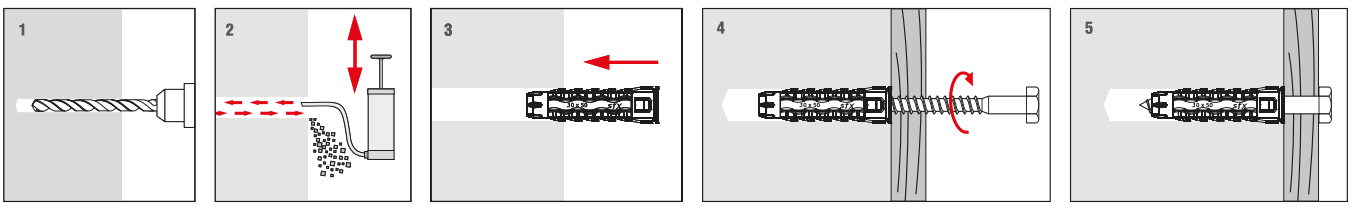
Installation of interior design elements in plasterboard substrates

Installation of curtain rods

Installation of interior design elements in brick walls

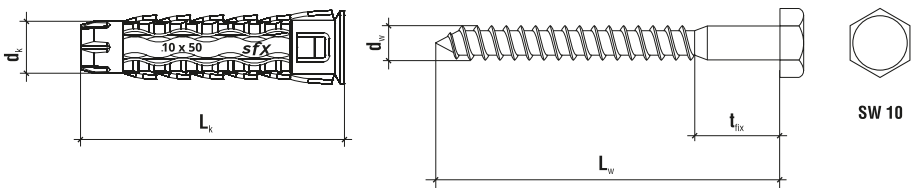
Installation of curtain rods in gypsum boards substrates

INSTALLATION INSTRUCTIONS



Universal plug with hex head screw

SFXK - TECHNICAL DATA

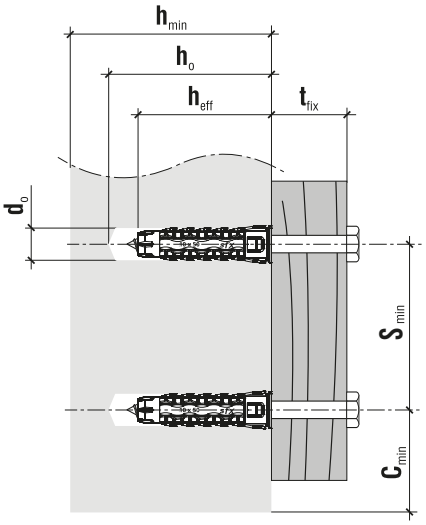


TECHNICAL DATA

	Product code	Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
SFXK-10						
⌀10	SFXK-10050060	10 x 50	6,0 x 60	10	SW-10	25
	SFXK-10050070	10 x 50	6,0 x 70	20	SW-10	25
	SFXK-10060070	10 x 60	6,0 x 70	10	SW-10	25
	SFXK-10060080	10 x 60	6,0 x 80	20	SW-10	25

TECHNICAL DATA

Type	Sleeve diameter	Hole/ drill bit diameter	Effective anchorage depth	Depth of drill hole	Drive type	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]	[-]
SFXK	10	10	50 / 60	60 / 70	SW-10	PA - Polyamide	Galvanized steel	ITB-KOT-2021/1847



PULL-OUT RESISTANCE [kN]

Type	Normal weight concrete class C20/25 - C50/60	Solid clay brick MZ class 20	Calcium silicate brick KS class 20	Calcium silicate hollow blocks (perforated) class15	Hollow perforated clay brick class 15	Autoclaved aerated concrete PP6 600/4	Gypsum board 12.5 mm	Gypsum board 2 x 12.5 mm	Fiber-cement board 12.5 mm
SFXK ⌀10	0,75	1,5	1,5	0,9	0,9	1,5	0,4	0,9	0,4

STRONG FOR GENERATIONS

KLIMAS
FASTENER TECHNOLOGIES

SFX - WHEN YOU NEED UNIVERSAL SOLUTIONS

INNOVATIVE SLEEVE DESIGN

Inner design of the sleeve guides the screw centrically towards the end of sleeve , preventing incorrect screwing and thus improper expansion.

INCREASED COLLAR DIAMETER

Prevents slipping of the plug into the drill hole.

SPECIAL ANTI-ROTATION LUGS

Prevent rotation in the substrate during installation.

SPECIAL RIBS

Innovative solution stabilising the sleeve in the substrate.

REDUCED DIAMETER OF THE BOTTOM PART

Facilitates installation in the drill hole.

PA
100% NYLON

Universal plug with hook

SFXL
SFXC
SFXO

ø6, ø8

Carbon steel galvanized hooks for fixing lightweight interior finish elements and lightweight components of installation systems in buildings - sleeve made from nylon.

SUBSTRATES

Concrete | Solid clay brick | Perforated bricks | Calcium silicate hollow block | AAC block | Gypsum board 2 x Gypsum board | Fiber -cement board

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	· Installation of apartment furnishing elements. · Installation of lighting elements.

	Galvanized steel	Galvanized steel	Galvanized steel
ø6	SFXL-6	SFXC-6	SFXO-6
	Plugs length: 30 mm Screws length range: 48 - 65 mm		
ø8	SFXL-8	SFXC-8	SFXO-8
	Plugs length: 40 mm Screws length range: 65 - 85 mm		

INCREASED COLLAR DIAMETER
Prevents slipping of the plug into the drill hole.

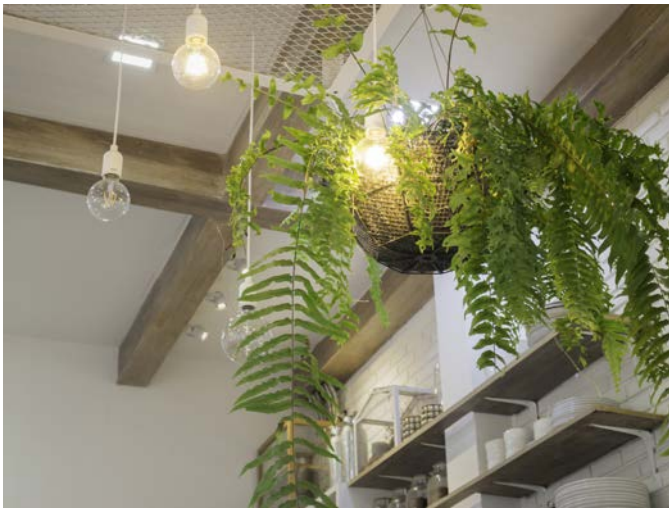
SPECIAL ANTI-ROTATION LUGS
Prevent rotation in the substrate during installation.

UNIQUE SHAPE
Inner thread in the sleeve guides the screw centrically towards the end of sleeve, preventing incorrect screwing and thus improper expansion.

REDUCED DIAMETER OF THE BOTTOM PART
Facilitates installation in the drill hole.

EXAMPLES OF APPLICATIONS

Fixing hanging elements in natural stone substrates

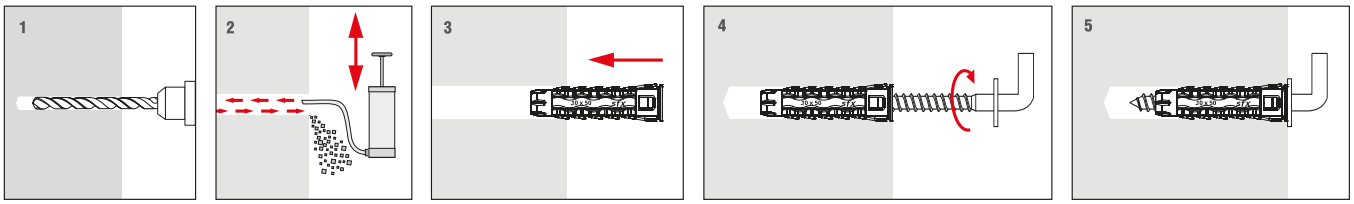


Fixing hanging elements in gypsum boards substrates

Fixing elements of interior finishing

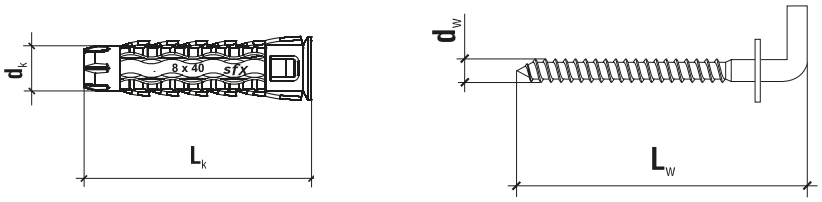
Installation of lighting elements

INSTALLATION INSTRUCTIONS



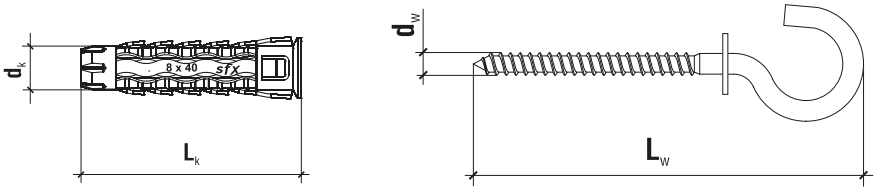
Universal plug with hook

SFXL / SFXC / SFXO - TECHNICAL DATA



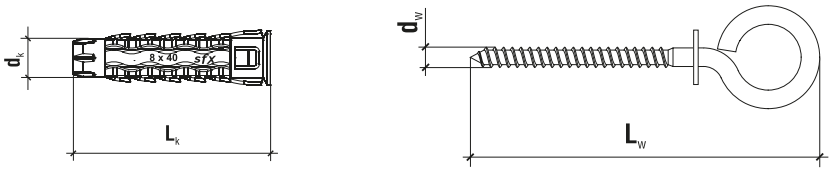
	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
SFXL-6				
ø6	SFXL-06030048	6,0 x 30	3,5 x 48	50
SFXL-8				
ø8	SFXL-08040065	8,0 x 40	4,5 x 65	25

Product marking - SFXL-06030048			
SFXL	**060**	**30**	**048**
Type: Straight hook	Sleeve diameter: 6 mm	Sleeve length: 30 mm	Screw length: 48 mm



	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
SFXC-6				
ø6	SFXC-06030065	6,0 x 30	3,5 x 65	50
SFXC-8				
ø8	SFXC-08040083	8,0 x 40	4,5 x 83	25

Product marking - SFXC-06030065			
SFXC	**060**	**30**	**065**
Type: Round hook	Sleeve diameter: 6 mm	Sleeve length: 30 mm	Screw length: 65 mm

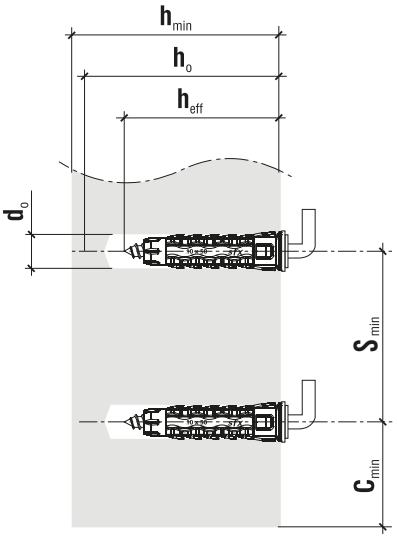


	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
	SFX0-6			
ø6	SFX0-06030064	6,0 x 30	3,5 x 64	50
	SFX0-8			
ø8	SFX0-08040085	8,0 x 40	4,5 x 85	25

Product marking - SFX0-08040085			
SFX0	**080**	**80**	**085**
Type: Eye-bolt	Sleeve diameter: 8 mm	Sleeve length: 40 mm	Screw length: 85 mm

TECHNICAL DATA

Type	Sleeve diameter	Hole/ drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
SFXL, SFXC, SFX0 Ø6	6	6	30	40	PA - polyamide	Galvanized steel	ITB-KOT-2021/1847
SFXL, SFXC, SFX0 Ø8	8	8	40	50	PA - polyamide	Galvanized steel	ITB-KOT-2021/1847



PULL-OUT RESISTANCE [KN]

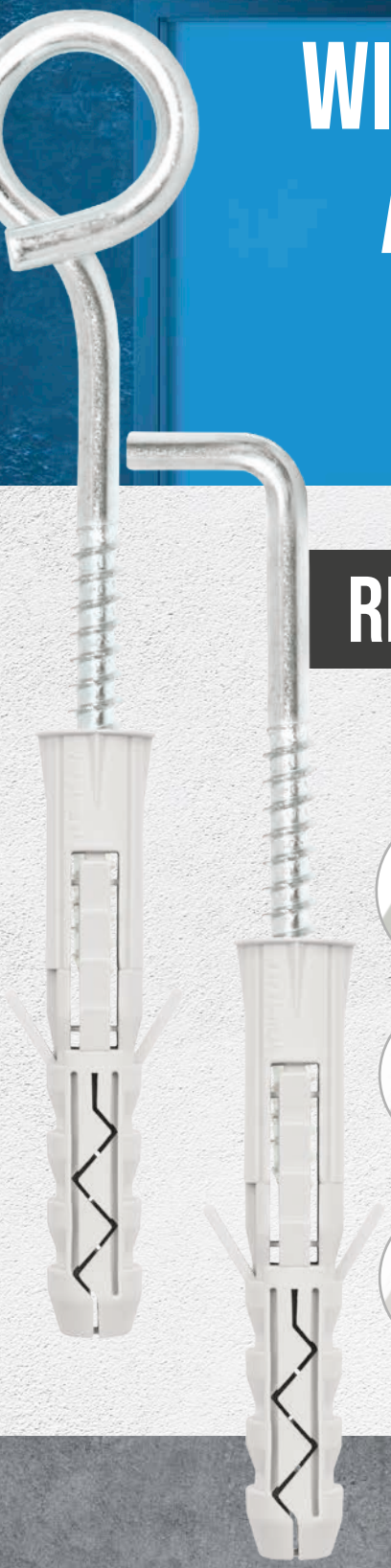
Type	Normal weight concrete class C20/25 - C50/60	Solid clay brick MZ class 20	Calcium silicate brick KS class 20	Calcium silicate hollow blocks (perforated) class15	Hollow perforated clay brick class 15	Autoclaved aerated concrete PP6 600/4	Gypsum board 12.5 mm	Fiber-cement board 12.5 mm
SFXL, SFXC, SFX0 Ø6	0,2	0,4	0,4	0,4	0,4	0,4	0,2	0,2
SFXL, SFXC, SFX0 Ø8	0,3	0,6	0,6	0,6	0,6	0,6	0,2	0,2

KLIMAS
FASTENER TECHNOLOGIES

STRONG FOR GENERATIONS

WIDE RANGE OF PRODUCTS AND SYSTEM SOLUTIONS

HX
PX



RELIABLE AND SECURE FASTENING

Special lugs and protrusions hold the sleeve in place and prevent it's rotation during tightening of the screw.

RELIABLE GUIDING OF SCREW

Inner design of the sleeve guides the screw centrically towards the end of sleeve.

SECURE INSTALLATION OF SLEEVE

Special plastic lugs and protrusions are keying the sleeve in the hole thus stabilising the sleeve in the substrate.

SAFE INSERTION OF SLEEVE INTO DRILL HOLE

Increased collar diameter prevents slipping of sleeve into the drill hole.

TECHNICAL ASSESSMENT
ITB-KOT-2018/0528

KRX	Expansion plug with countersunk head screw, PZ2, PZ3	60
ø6 ø8 ø10 ø12	**Sleeve length range:** 30 - 60 mm	**Galvanized steel**

KKX	Expansion plug with hex head screw, SW-10, 13, 17, 19	64
ø10 ø12 ø14	**Sleeve length range:** 60 - 80 mm	**Galvanized steel**

PX	Expansion plug straight hook	68
ø6 ø8 ø10 ø12	**Sleeve length range:** 30 - 60 mm	**Galvanized steel**

WX	Expansion plug with round hook	72
ø6 ø8 ø10 ø12	**Sleeve length range:** 30 - 60 mm	**Galvanized steel**

HX	Expansion plug with pig tail hook	76
ø12	**Sleeve length range:** 60 mm	**Galvanized steel**

HOX	Expansion plug with eye-bolt	80
ø14 ø16	**Sleeve length range:** 80 - 100 mm	**Galvanized steel**

PR	Frame plug with straight hook	84
ø8 ø10	**Sleeve length range:** 80 - 160 mm	**Galvanized steel**

Expansion plug with countersunk head screw, PZ2, PZ3

KRX

⌀6, ⌀8, ⌀10, ⌀12

Expansion plug with countersunk head screw recommended for fastening wooden and wood-based elements.

SUBSTRATES

Concrete

Solid clay brick
Solid calcium silicate brick

SLEEVE MATERIAL	Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	· Fixing wooden elements of interior finishing. · Fastening skirting boards. · Fixing elements of furnishings. · Fastening cable trays and bundles.

	Galvanized steel
⌀6	KRX-6
	Sleeve length: 30 mm **Screw length range: 30 - 60 mm**
⌀8	KRX-8
	Sleeve length range: 40-50 mm **Screw length range: 40 - 100 mm**
⌀10	KRX-10
	Sleeve length range: 50-60 mm **Screw length range: 50 - 120 mm**
⌀12	KRX-12
	Sleeve length: 60 mm **Screw length range: 60 - 120 mm**

COUNTERSUNK HEAD WITH PZ
It enables the screw to be screwed in with commonly used PZ drive and ensures flush installation with the surface of the element being fastened.

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

INNER DESIGN OF SLEEVE
Ensure centric guiding of screw.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

STABILISING FINS
Contribute to stabilization of sleeve in the substrate.

EXAMPLES OF APPLICATIONS

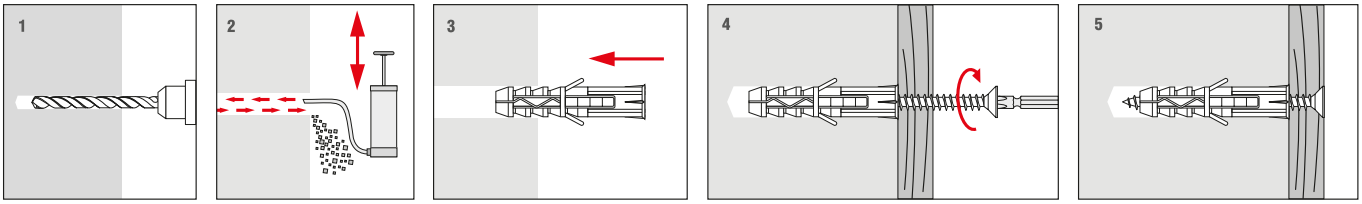
Fastening skirting boards

Fixing elements of furnishings

Installation of lighting elements

Fixing elements of furnishings

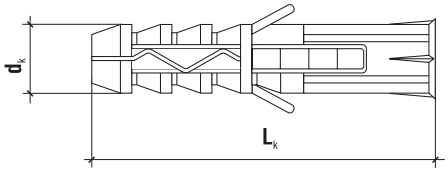
INSTALLATION INSTRUCTIONS

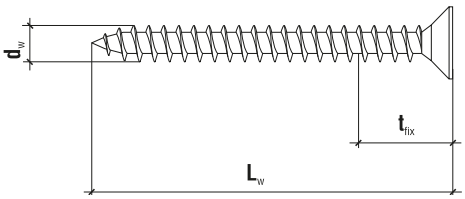


Expansion plug with countersunk head screw, PZ2, PZ3

KRX - TECHNICAL DATA

Zn WHITE | PE POLYETHYLENE





PZ-2
PZ-3

	Product code	Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
	KRX-6					
ø6	KRX-063530	6 x 30	3,5 x 30	1	PZ-2	200
	KRX-063535	6 x 30	3,5 x 35	5	PZ-2	200
	KRX-063540	6 x 30	3,5 x 40	10	PZ-2	200
	KRX-063550	6 x 30	3,5 x 50	20	PZ-2	200
	KRX-063560	6 x 30	3,5 x 60	30	PZ-2	200
	KRX-8					
ø8	KRX-084040	8 x 40	4,0 x 40	1	PZ-2	100
	KRX-084045	8 x 40	4,0 x 45	5	PZ-2	100
	KRX-084050	8 x 40	4,0 x 50	10	PZ-2	100
	KRX-084060	8 x 40	4,0 x 60	20	PZ-2	100
	KRX-085050	8 x 50	5,0 x 50	1	PZ-2	100
	KRX-085060	8 x 50	5,0 x 60	10	PZ-2	100
	KRX-085070	8 x 50	5,0 x 70	20	PZ-2	100
	KRX-085080	8 x 50	5,0 x 80	30	PZ-2	100
	KRX-085100	8 x 50	5,0 x 100	50	PZ-2	100
	KRX-10					
ø10	KRX-105050	10 x 50	5,0 x 50	1	PZ-2	100
	KRX-105060	10 x 50	5,0 x 60	10	PZ-2	100
	KRX-105070	10 x 50	5,0 x 70	20	PZ-2	100
	KRX-105080	10 x 50	5,0 x 80	30	PZ-2	100
	KRX-1050100	10 x 50	5,0 x 100	50	PZ-2	100
	KRX-106060	10 x 60	6,0 x 60	1	PZ-3	100
	KRX-106070	10 x 60	6,0 x 70	10	PZ-3	100
	KRX-106080	10 x 60	6,0 x 80	20	PZ-3	100
	KRX-106100	10 x 60	6,0 x 100	40	PZ-3	100
	KRX-106120	10 x 60	6,0 x 120	60	PZ-3	100
	KRX-12					
ø12	KRX-126060	12 x 60	6,0 x 60	1	PZ-3	100
	KRX-126070	12 x 60	6,0 x 70	10	PZ-3	100
	KRX-126080	12 x 60	6,0 x 80	20	PZ-3	100
	KRX-126100	12 x 60	6,0 x 100	40	PZ-3	100
	KRX-126120	12 x 60	6,0 x 120	60	PZ-3	100

Product marking - KRX-063550			
KRX	**06**	**35**	**50**
Type	Sleeve diameter: 6 mm	Screw diameter: 35 mm	Screw length: 50 mm

TECHNICAL DATA

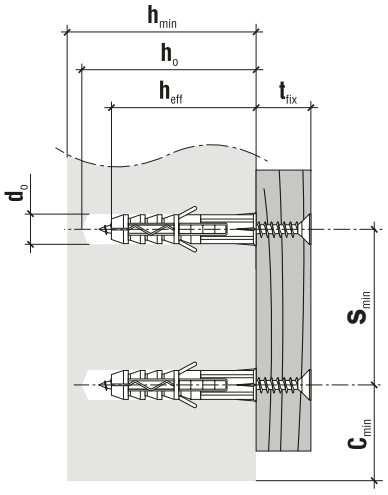
Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Drive type	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]	[-]
KRX Ø6	6	6	30	40	PZ-2	PE	Galvanized steel	ITB-KOT-2018/0528
KRX Ø8	8	8	40/50*	50/60*	PZ-2	PE	Galvanized steel	ITB-KOT-2018/0528
KRX Ø10	10	10	50/60**	60/70**	PZ-2, PZ-3	PE	Galvanized steel	ITB-KOT-2018/0528
KRX Ø12	12	12	60	70	PZ-3	PE	Galvanized steel	ITB-KOT-2018/0528

* - KRX-08/40, KRX-08/50
** - KRX-10/50, KRX-10/60

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	S_{min}
KRX-6	45	60	60/90*
KRX-8/40	60	80	80/120*
KRX-8/50, KRX-10/50	75	100	100/150*
KRX-10/60, KRX-12	90	120	120/180*

* - for concrete / other substrates



PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid clay brick	Solid calcium silicate brick
KRX-6/30	-	-	-
KRX-8/40	-	0,1	0,1
KRX-8/50	0,1	0,3	0,2
KRX-10/50	0,1	0,1	0,1
KRX-10/60	0,2	0,2	0,4
KRX-12	0,1	0,2	0,2

Expansion plug with hex head screw, SW-10, 13, 17, 19

KKX

⌀10, ⌀12, ⌀14, ⌀16

Expansion plug with hex head screw recommended for fixing of metal elements.

SUBSTRATES

Concrete

Solid clay brick
Solid calcium silicate brick

SLEEVE MATERIAL	Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	· Fixing wooden elements of interior finishing. · Fastening skirting boards. · Fixing elements of furnishings. · Fastening cable trays and bundles.

	Galvanized steel
⌀ 10	KKX-10
	Sleeve length: 60 mm **Screw length range: 60 - 140 mm**
⌀ 12	KKX-12
	Sleeve length range: 60 - 80 mm **Screw length range: 60 - 200 mm**
⌀ 14	KKX-14
	Sleeve length: 80 mm **Screw length range: 80 - 200 mm**

HEX HEAD
Hex head allows for tightening the screw to the recommended value of installation torque (e.g. with torque wrench).

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

INNER DESIGN OF SLEEVE
Ensure centric guiding of screw.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

STABILISING FINS
Contribute to stabilization of sleeve in the substrate.

EXAMPLES OF APPLICATIONS

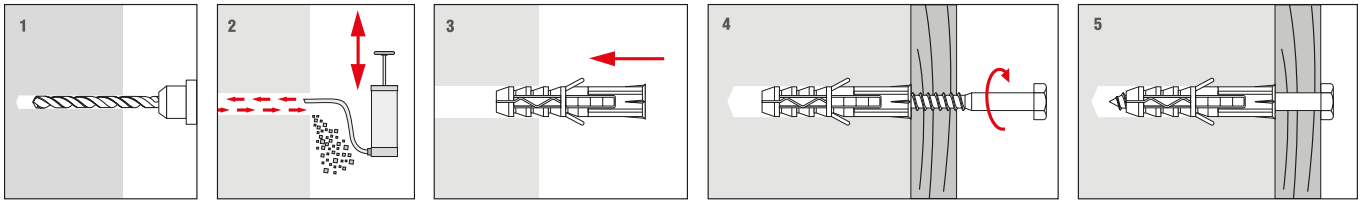
Fixing elements of interior finishing

Fixing wooden elements of interior finishing

Assembly of radiators

Fixing of brackets and cantilevers to secure various element in building interior

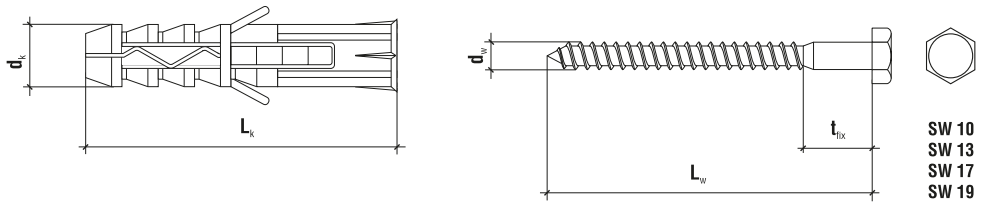
INSTALLATION INSTRUCTIONS



Expansion plug with hex head screw, SW-10, 13, 17, 19

KKX - TECHNICAL DATA

Zn WHITE | PE POLYETHYLENE



	Product code	Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
KKX-10						
ø10	KKX-10060	10 x 60	6,0 x 60	1	SW-10	100
	KKX-10070	10 x 60	6,0 x 70	10	SW-10	100
	KKX-10080	10 x 60	6,0 x 80	20	SW-10	100
	KKX-10090	10 x 60	6,0 x 90	30	SW-10	100
	KKX-10100	10 x 60	6,0 x 100	40	SW-10	100
	KKX-10120	10 x 60	6,0 x 120	60	SW-10	100
	KKX-10140	10 x 60	6,0 x 140	80	SW-10	100
KKX-12						
ø12	KKX-12060	12 x 60	8,0 x 60	1	SW-13	100
	KKX-12070	12 x 60	8,0 x 70	10	SW-13	100
	KKX-12080	12 x 60	8,0 x 80	20	SW-13	100
	KKX-12090	12 x 60	8,0 x 90	30	SW-13	100
	KKX-12100	12 x 80	8,0 x 100	20	SW-13	50
	KKX-12120	12 x 80	8,0 x 120	40	SW-13	50
	KKX-12140	12 x 80	8,0 x 140	60	SW-13	50
	KKX-12160	12 x 80	8,0 x 160	80	SW-13	50
	KKX-12180	12 x 80	8,0 x 180	100	SW-13	50
	KKX-12200	12 x 80	8,0 x 200	120	SW-13	50
KKX-14						
ø14	KKX-14080	14 x 80	10 x 80	1	SW-17	50
	KKX-14100	14 x 80	10 x 100	20	SW-17	50
	KKX-14120	14 x 80	10 x 120	40	SW-17	50
	KKX-14140	14 x 80	10 x 140	60	SW-17	50
	KKX-14160	14 x 80	10 x 160	80	SW-17	25
	KKX-14180	14 x 80	10 x 180	100	SW-17	25
	KKX-14200	14 x 80	10 x 200	120	SW-17	25

Product marking - KKX-12060		
KKX	**12**	**060**
Type	Sleeve diameter: 12 mm	Screw length: 60 mm

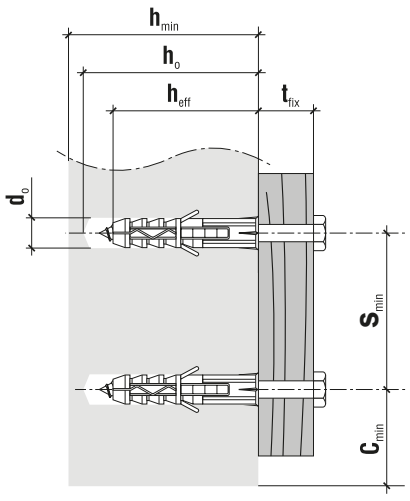
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Drive type	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]	[-]
KKX Ø10	10	10	60	70	SW-10	PE	Galvanized steel	ITB-KOT-2018/0528
KKX Ø12/60 KKX Ø12/80	12	12	60/80	70/90	SW-13	PE	Galvanized steel	ITB-KOT-2018/0528
KKX Ø14	14	14	80	90	SW-17	PE	Galvanized steel	ITB-KOT-2018/0528

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	s_{min}
KKX-10, KKX-12/60	90	120	120/180*
KKX-12/80, KKX-14	120	160	160/240*

* - for concrete / other substrates



PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid clay brick	Solid calcium silicate brick
KKX-10x60	0,2	0,4	0,4
KKX -12x60	0,3	0,75	0,9
KKX-12x80	0,6	0,6	1,2
KKX-14x80	0,6	1,2	2,5

Expansion plug straight hook

PX

⌀6, ⌀8, ⌀10, ⌀12

Zn WHITE | PE POLYETHYLENE

SUBSTRATES

Concrete

Solid clay brick
Solid calcium silicate brick

SLEEVE MATERIAL	Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	Fastening typical wall decorative elements

	Galvanized steel
⌀6	PX-6
	Sleeve length: 30 mm Screw length: 40 mm
⌀8	PX-8
	Sleeve length: 40 mm Screw length: 50 mm
⌀10	PX-10
	Sleeve length range: 50 - 60 mm Screw length range: 60 - 75 mm
⌀12	PX-12
	Sleeve length range: 60 - 80 mm Screw length range: 75 - 100 mm

STRAIGHT HOOK INSTALLATION BY SCREWING
Enables to adjust appropriate hook offset distance relative to substrate wall depending on particular application needs.

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

INNER DESIGN OF SLEEVE
Ensure centric guiding of screw.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

STABILISING FINS
Contribute to stabilization of sleeve in the substrate.

EXAMPLES OF APPLICATIONS

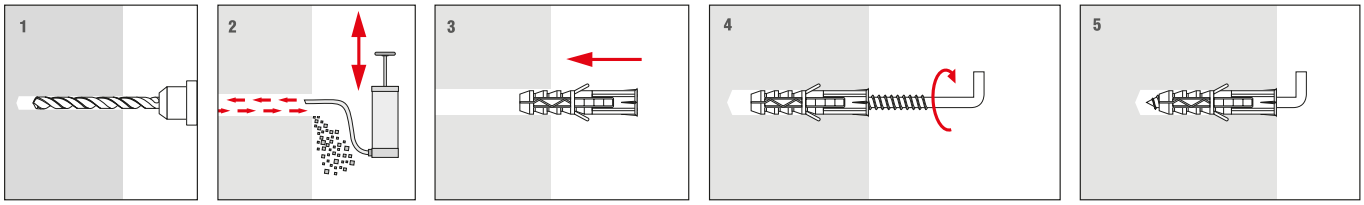
Fixing decorative elements

Fixing decorative hanging elements

Fixing decorative hanging elements

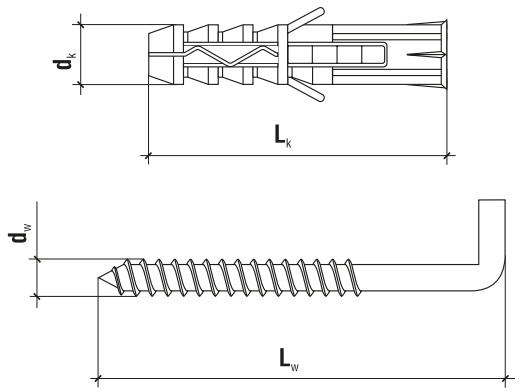
Fixing frames of paintings and pictures

INSTALLATION INSTRUCTIONS



Expansion plug straight hook

PX - TECHNICAL DATA

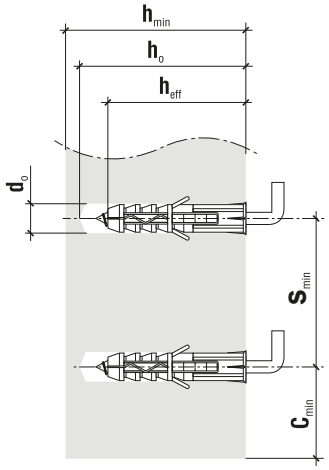


	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
	PX-06			
ø6	PX-06	6,0 x 30	4,0 x 40	200
	PX-08			
ø8	PX-08	8,0 x 40	4,5 x 50	100
	PX-10			
ø10	PX-10	10 x 50	5,5 x 60	100
	PX-10D	10 x 60	6,0 x 75	100
	PX-12			
ø12	PX-12	12 x 60	7,5 x 75	100
	PX-12D	12 x 80	8,0 x 100	50

Product marking - PX-06	
PX	**06**
Type	Sleeve diameter - 6 mm

TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	Technical Assessment
[-]	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
PX-06	6	6	30	40	PE	Galvanized steel	ITB-KOT-2018/0528
PX-08	8	8	40	50	PE	Galvanized steel	ITB-KOT-2018/0528
PX-10	10	10	50	60	PE	Galvanized steel	ITB-KOT-2018/0528
PX-10 D	10	10	60	70	PE	Galvanized steel	ITB-KOT-2018/0528
PX-12	12	12	60	70	PE	Galvanized steel	ITB-KOT-2018/0528
PX-12 D	12	12	80	90	PE	Galvanized steel	ITB-KOT-2018/0528



INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	s_{min}
PX-06	45	60	60/90*
PX-08	60	80	80/120*
PX-10	75	100	100/150*
PX-10 D	90	120	120/180*
PX-12	90	120	120/180*
PX-12 D	120	160	160/240*

* - for concrete / other substrates

PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid clay brick	Solid calcium silicate brick
PX-06	-	-	-
PX-08	-	0,1	0,1
PX-10	0,1	0,1	0,1
PX-10 D	0,2	0,4	0,4
PX-12	0,1	0,2	0,2
PX-12 D	0,6	0,6	1,2

Expansion plug with round hook

WX

⌀6, ⌀8, ⌀10, ⌀12

Zn WHITE | PE POLYETHYLENE

SUBSTRATES

Concrete

Solid clay brick
Solid calcium silicate brick

SLEEVE MATERIAL	Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	Suitable for fixing lightweight typical interior furnishing elements or decorations into ceiling

	Galvanized steel
⌀6	WX-6 Sleeve length: 30 mm Screw length: 55 mm
⌀8	WX-8 Sleeve length: 40 mm Screw length: 65 mm
⌀10	WX-10 Sleeve length: 50 mm Screw length: 90 mm
⌀12	WX-12 Sleeve length: 60 mm Screw length: 97 mm

SCREW-ROUND HOOK
Enables to adjust appropriate hook offset distance relative to substrate wall depending on particular application needs.

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

INNER DESIGN OF SLEEVE
Ensure centric guiding of screw.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

STABILISING FINS
Contribute to stabilization of sleeve in the substrate.

EXAMPLES OF APPLICATIONS

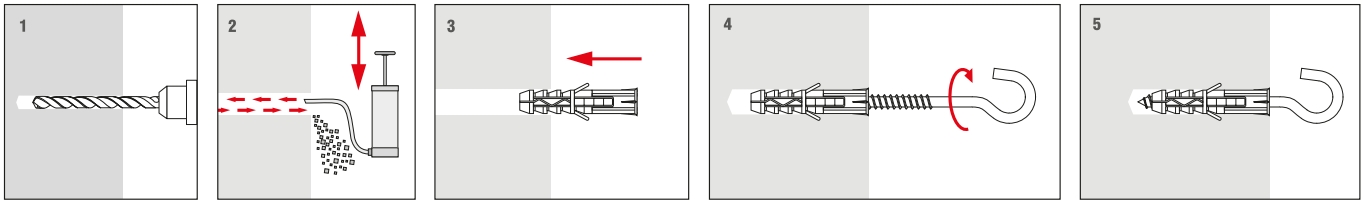
Installation of typical ceiling lighting

Fixing of hanging elements to the precast concrete ceiling

Fixing decorative hanging elements

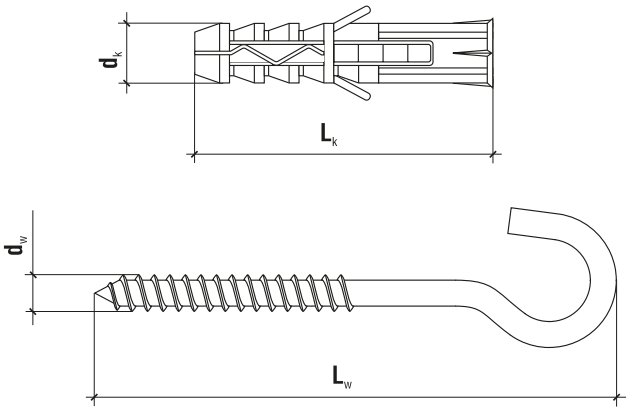
Installation of typical ceiling lighting

INSTALLATION INSTRUCTIONS



Expansion plug with round hook

WX - TECHNICAL DATA



	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
WX-06				
ø6	WX-06	6,0 x 30	4,0 x 55	100
WX-08				
ø8	WX-08	8,0 x 40	4,5 x 65	100
WX-10				
ø10	WX-10	10 x 50	5,5 x 90	100
WX-12				
ø12	WX-12	12 x 60	7,5 x 97	100

Product marking - WX-06	
WX	**06**
Type	Sleeve diameter - 6 mm

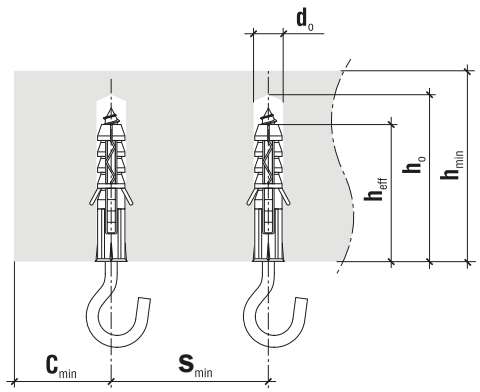
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
WX-06	6	6	30	40	PE	Galvanized steel	ITB-KOT-2018/0528
WX-08	8	8	40	50	PE	Galvanized steel	ITB-KOT-2018/0528
WX-10	10	10	50	60	PE	Galvanized steel	ITB-KOT-2018/0528
WX-12	12	12	60	70	PE	Galvanized steel	ITB-KOT-2018/0528

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	s_{min}
WX-6	45	60	60/90*
WX-8	60	80	80/120*
WX-10	75	100	100/150*
WX-12	90	120	120/180*

* - for concrete / other substrates



PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid clay brick	Solid calcium silicate brick
WX-6	-	-	-
WX-8	-	0,1	0,1
WX-10	0,1	0,1	0,1
WX-12	0,1	0,2	0,2

Expansion plug with pig tail hook

HX

⌀12

Zn WHITE | PE POLYETHYLENE

SUBSTRATES

Concrete

Solid clay brick
Solid calcium silicate brick

SLEEVE MATERIAL	Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	Suitable for fixing lightweight typical interior furnishing elements or decorations into ceiling

SCREW-PIG TAIL HOOK
Enables to adjust appropriate hook offset distance relative to substrate wall depending on particular application needs.

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

INNER DESIGN OF SLEEVE
Ensure centric guiding of screw.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

STABILISING FINS
Contribute to stabilization of sleeve in the substrate.

	Galvanized steel
⌀ 12	HX-12
	Sleeve length: 60 mm **Screw length: 130 mm**

EXAMPLES OF APPLICATIONS

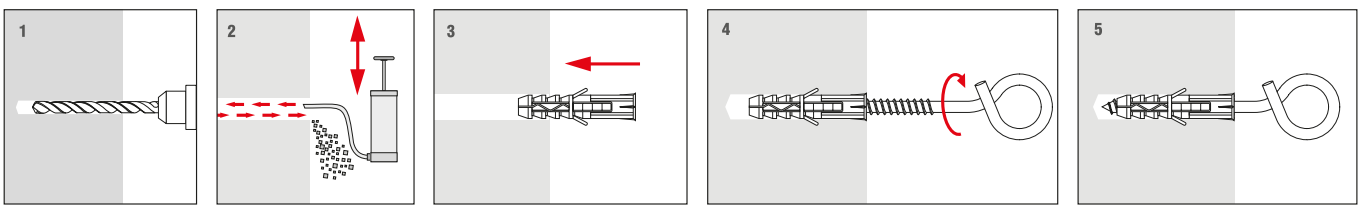
Fastenings in solid substrates

Fixing of hanging elements to the precast concrete ceiling

Fastening hanging elements to the solid substrates

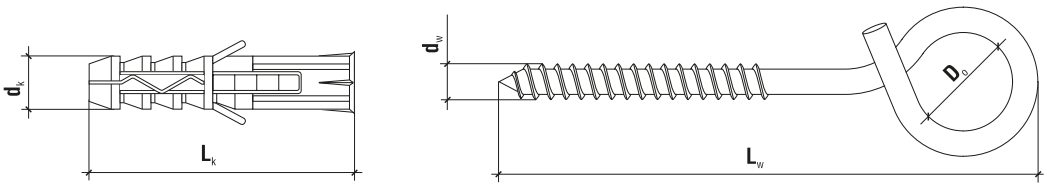
Fastening swing to the solid substrate ceiling

INSTALLATION INSTRUCTIONS



Expansion plug with pig tail hook

HX - TECHNICAL DATA



	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
HX-12				
ø12	HX-12	12 x 60	8,0 x 130	100

Product marking - HX-12	
HX	**12**
Type	Sleeve diameter - 12 mm

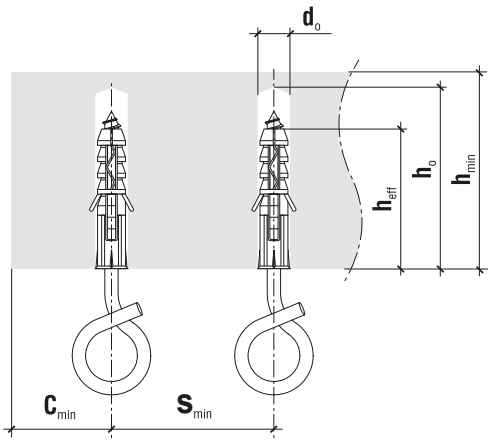
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
HX-12	12	12	60	70	PE	Galvanized steel	ITB-KOT-2018/0528

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	s_{min}
HX-12	90	120	120/180*

* - for concrete / other substrates



PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid clay brick	Solid calcium silicate brick
HX-12	0,3	0,75	0,9

STRONG FOR GENERATIONS

KLIMAS
FASTENER TECHNOLOGIES

QUALITY INCLUDED IN THE PROCESS

We have launched a high-tech quality-control laboratory to ensure the highest quality of the products from our portfolio.

Our laboratory is equipped with measuring microscope, X-ray spectrometer, salt spray chamber, load capacity testing machine, Vickers microhardness tester, Rockwell hardness tester, torque converters, permascope and a number of other equipment, which allow us to:

- check and control paint and zinc coat thickness;
- check resistance of protective coating to highly corrosive environments;
- check hardness of the screw surface and screw core, thickness of carburized layer;
- measure the torque required for a particular screw to be installed;
- test the pull-out strength;
- measure rigidity of the support washer;
- measure installation time of screws;
- and many others.

Expansion plug with eye-bolt

HOX

⌀14, ⌀16

Nylon expansion plug with eye-bolt for fastening building scaffolding with compatible plastic cap to cover holes on building facade

Zn WHITE | PA 100% NYLON

SUBSTRATES

Concrete

Solid clay brick
Solid calcium silicate brick

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	Fastening building scaffolding to solid substrate walls

IMPROVED EYE STRENGTH
Thanks to eye bent from one piece of wire.

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

INNER DESIGN OF SLEEVE
Ensure centric guiding of screw.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

STABILISING FINS
Contribute to stabilization of sleeve in the substrate.

SLEEVE MADE FROM THE BEST QUALITY MATERIAL
PA (Polyamide) providing extra safety of the fastening.

	Galvanized steel
⌀ 14	HOX-14
	Sleeve length: 80 mm **Screw length range: 165 - 275 mm**
⌀ 16	HOX-16
	Sleeve length: 100 mm **Screw length range: 210 - 400 mm**

EXAMPLES OF APPLICATIONS

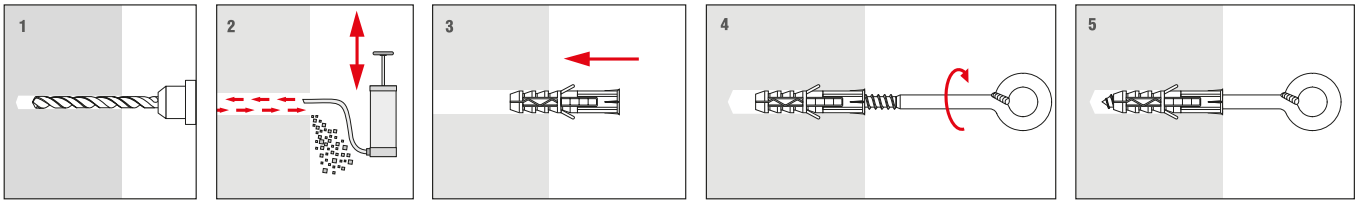
Fastening of scaffolding in housing estate residential development

Fastening of scaffolding in single-family buildings

Fastening of scaffolding to perform installation of ventilated facade systems

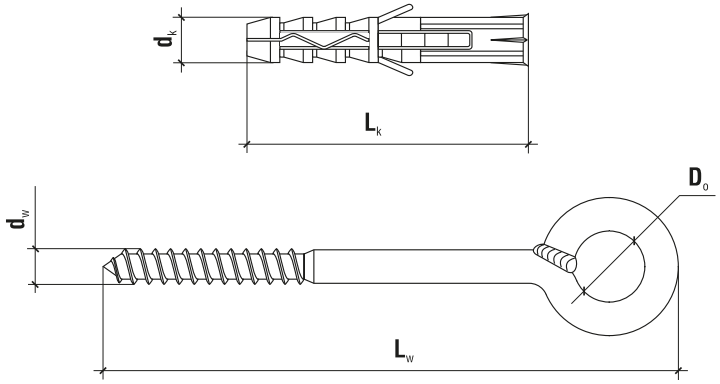
Fastening of scaffolding to perform external thermal insulation of walls

INSTALLATION INSTRUCTIONS



Expansion plug with eye-bolt

HOX - TECHNICAL DATA



	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
HOX-14				
ø14	HOX-14120	14 x 80	10 x 165	20
	HOX-14160	14 x 80	10 x 205	20
	HOX-14190	14 x 80	10 x 235	20
	HOX-14230	14 x 80	10 x 275	20
HOX-16				
ø16	HOX-16160	16 x 100	12 x 210	15
	HOX-16190	16 x 100	12 x 240	15
	HOX-16230	16 x 100	12 x 280	15
	HOX-16300	16 x 100	12 x 350	15
	HOX-16350	16 x 100	12 x 400	10

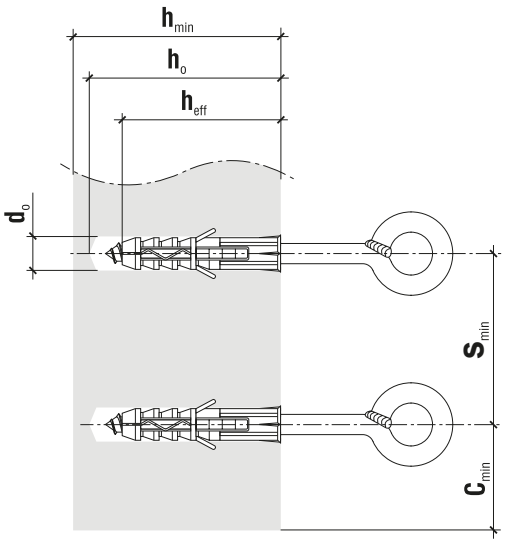
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
HOX-14	14	14	80	90	PA	Galvanized steel	ITB-KOT-2018/0528
HOX-16	16	16	100	115	PA	Galvanized steel	ITB-KOT-2018/0528

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	s_{min}
HOX-14	120	160	160/240*
HOX-16	150	200	200/300*

* - for concrete / other substrates



PULL-OUT RESISTANCE [KN]

Type	Concrete C20/25	Solid clay brick	Solid calcium silicate brick
HOX-14	0,6	1,2	2,5
HOX-16	1,2	2,5	4,5

Nylon plug with straight hook

PR

⌀8, ⌀10

Expansion plug for fixing of interior furnishing elements.

Zn WHITE | PA 100% NYLON

SUBSTRATES


Concrete


Solid bricks


Perforated bricks


AAC block

SLEEVE MATERIAL	Polyamide (PA)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized steel
INSTALLATION METHOD	Pre-positioned installation
APPLICATION	Fastening typical wall decorative elements

	Galvanized steel
⌀8	PR-8
	Sleeve length range: 80 - 100 mm Screw length range: 105 - 125 mm
⌀10	PR-10
	Sleeve length range: 100 - 160 mm Screw length range: 125 - 185 mm

STRAIGHT HOOK INSTALLATION BY SCREWING
Enables to adjust appropriate hook offset distance relative to substrate wall depending on particular application needs.

INCREASED COLLAR DIAMETER
Prevents slipping of sleeve into the drill hole.

DESIGN OF EXPANSION ZONE AND SLEEVE MADE FROM THE BEST QUALITY MATERIAL
Allow applications in wider range of substrates , recommended also for perforated bricks and AAC blocks. PA (Polyamide) providing extra safety of the fastening.

ANTI-ROTATION ELEMENTS
Special lugs and protrusions hold the sleeve in place and prevent its rotation during tightening of the screw.

EXAMPLES OF APPLICATIONS

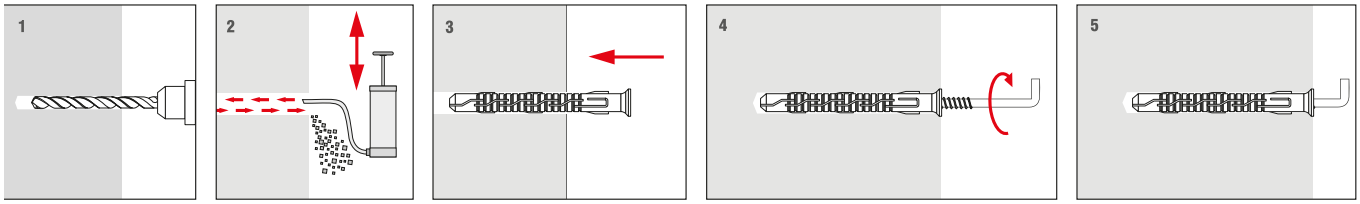
Fastening typical wall decorative elements

Fastening of kitchen cupboards and other elements of interior furnishing

Fastening decorative hanging elements , e.g. mirrors

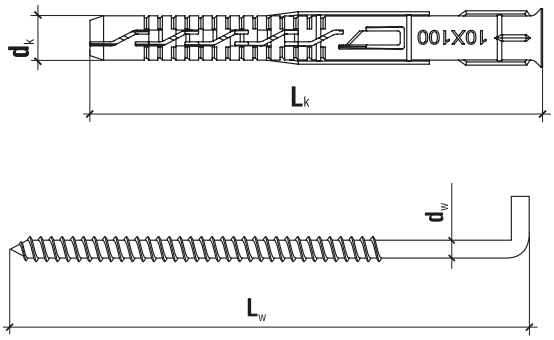
Fastening hanging elements of interior furnishing

INSTALLATION INSTRUCTIONS



Frame plug with straight hook

PR - TECHNICAL DATA



	Product code	Sleeve diameter and length	Screw diameter and length	Unit pack quantity
		d_k x L_k [mm]	d_w x L_w [mm]	[pcs.]
PR-8				
ø8	PR-08080	8,0 x 80	6,0 x 105	50
	PR-08100	8,0 x 100	6,0 x 125	50
PR-10				
ø10	PR-10100	10 x 100	7,0 x 125	50
	PR-10135	10 x 140	7,0 x 165	50
	PR-10160	10 x 160	7,0 x 185	50

Product marking - PR-08080		
PR	**08**	**080**
Type	Sleeve diameter: 8 mm	Sleeve length: 80 mm

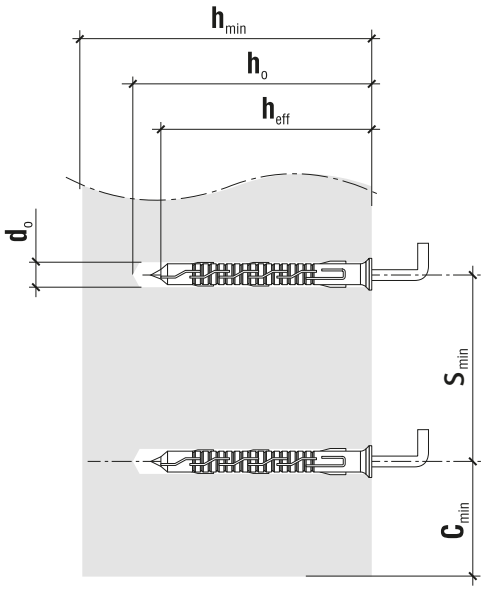
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
PR 8	8	8	60	70	PA – polyamide	Galvanized steel	ITB-KOT-2018/0528
PR 10	10	10	70	80	PA – polyamide	Galvanized steel	ITB-KOT-2018/0528

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] / Min. spacing - s_{min} [mm]			
Type	h_{min}	c_{min}	s_{min}
PR-8	90	120	120/180*
PR-10	105	140	140/210*

* - for concrete / other substrates



PULL-OUT RESISTANCE [KN]

Type	Concrete	Solid clay brick	Perforated brick	Autoclaved aerated concrete
PR-8	0,75	0,9	0,9	0,9
PR-10	-	1,5	1,2	1,5

KLIMAS
FASTENER TECHNOLOGIES

STRONG FOR GENERATIONS

FAST AND EASY PUSH-THROUGH INSTALLATION

SM / SMN

REDUCTION OF INSTALLATION TIME

Special design of hammer drive fixings is allowing their intended use in application requiring fast and easy multiple fastening

INCREASED HEAD DIAMETER OF SCREW

It exerts greater surface pressure on the elements being fastened.

COUNTERSUNK HEAD OF SCREW

Countersunk head of screw is more massive and shank under head has a significant thickening.

OPTIMUM EXPANSION ZONE

Ensures ideal expansion in wide range of substrates.

Countersunk collar
(SM, SMN)

Flat collar
(SMK, SMNK)

Cylindrical collar
(SMKC, SMNKC)

EUROPEAN TECHNICAL ASSESSMENT
ETA-19/0156

SM	Hammer drive fixing, PZ-2/PZ-3	90
ø5 ø6 ø8 ø10	**Sleeve length range:** 25 - 220 mm	**Sleeve material - polyethylene**

SMN	Hammer drive fixing, PZ-2/PZ-3	90
ø5 ø6 ø8 ø10	**Sleeve length range:** 25 - 220 mm	**Sleeve material - polyamide**

SMK	Hammer drive fixing with flat collar, PZ-2	94
ø5 ø6 ø8	**Sleeve length range:** 25 - 120 mm	**Sleeve material - polyethylene**

SMNK	Hammer drive fixing with flat collar, PZ-2	94
ø5 ø6 ø8	**Sleeve length range:** 25 - 120 mm	**Sleeve material - polyamide**

SMKC	Hammer drive fixing with cylindrical collar, PZ-2	98
ø5 ø6 ø8	**Sleeve length range:** 25 - 120 mm	**Sleeve material - polyethylene**

SMNKC	Hammer drive fixing with cylindrical collar, PZ-2	98
ø5 ø6 ø8	**Sleeve length range:** 25 - 120 mm	**Sleeve material - polyamide**

Hammer drive fixing, PZ-2/PZ-3

SM / SMN

ø5, ø6, ø8, ø10

Plastic fixings recommended for fastening wood and wood based elements.

CE ETA-19/0156

Zn WHITE

PA 100% NYLON

PE POLYETHYLENE

SUBSTRATES

A	B	C	D	E
Concrete	Solid clay brick, Solid calcium silicate brick	Calcium silicate hollow block	Elements on LAC lightweight aggregate concrete	Autoclaved aerated concrete

	Polyethylene (PE)	Polyamide (PA)
ø5	SM-5	SMN-5
	Plugs length range: 25 - 50 mm Screws length range: 30 - 55 mm	
ø6	SM-6	SMN-6
	Plugs length range: 35 - 80 mm Screws length range: 40 - 85 mm	
ø8	SM-8	SMN-8
	Plugs length range: 50 - 160 mm Screws length range: 55 - 165 mm	
ø10	SM-10	SMN-10
	Plugs length range: 80 - 220 mm Screws length range: 90 - 230 mm	

SLEEVE MATERIAL	· Polyamide (PA) · Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized
INSTALLATION METHOD	Push-through installation
APPLICATION	· Plastic fixings recommended for fastening wood and wood based elements. · Recommended for fast multiple fastening. · For skirting boards installation.

INCREASED HEAD DIAMETER OF SCREW
It exerts greater surface pressure on the elements being fastened.

COUNTERSUNK HEAD OF SCREW
Countersunk head of screw is more massive and shank under head has a significant thickening.

OPTIMUM EXPANSION ZONE
Ensures ideal expansion in wide range of substrates.

FAST AND EASY PUSH-THROUGH INSTALLATION
Reduction of installation time.

EXAMPLES OF APPLICATIONS

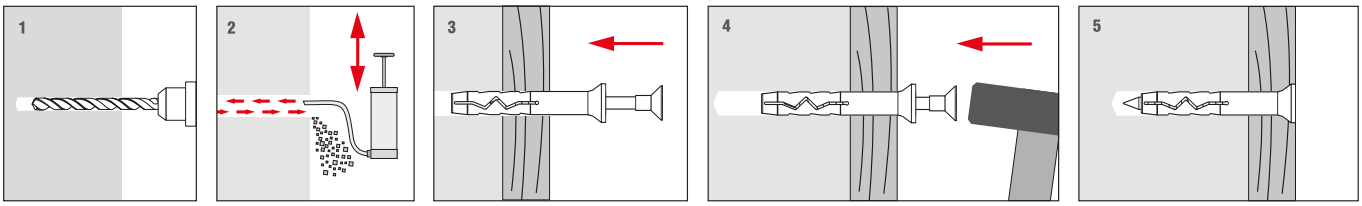
Installation of skirting boards

Fastening of lightweight decorative elements

Installation of perimeter profiles in suspended ceilings systems

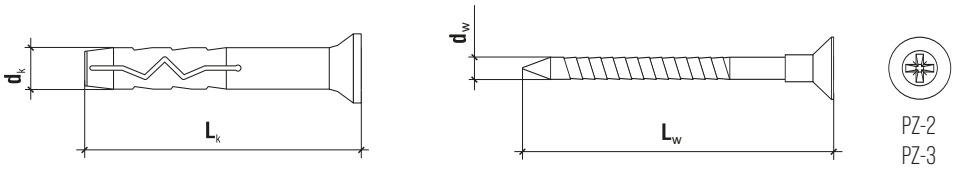
Installation of perimeter profiles in suspended ceiling tiles systems

INSTALLATION INSTRUCTIONS



Hammer drive fixing, PZ-2/PZ-3

SM / SMN - TECHNICAL DATA



	Product code		Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
	Polyethylene	Polyamide	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
SM-05 / SMN-05							
ø5	SM-05025*	SMN-05025*	5x25	3,5x30	0,5	PZ-2	200
	SM-05030*	SMN-05030*	5x30	3,5x35	5	PZ-2	200
	SM-05035	SMN-05035*	5x35	3,5x40	10	PZ-2	200
	SM-05040*	SMN-05040*	5x40	3,5x45	15	PZ-2	200
	SM-05050	SMN-05050	5x50	3,5x55	25	PZ-2	200
SM-06 / SMN-06							
ø6	SM-06035*	SMN-06035*	6x35	3,9x40	7	PZ-2	200
	SM-06040	SMN-06040	6x40	3,9x45	12	PZ-2	200
	SM-06050	SMN-06050	6x50	3,9x55	22	PZ-2	200
	SM-06060	SMN-06060	6x60	3,9x65	32	PZ-2	200
	SM-06080	SMN-06080	6x80	3,9x85	52	PZ-2	100
SM-08 / SMN-08							
ø8	SM-08050	SMN-08050	8x50	4,9x55	10	PZ-2	100
	SM-08060	SMN-08060	8x60	4,9x65	20	PZ-2	100
	SM-08080	SMN-08080	8x80	4,9x85	40	PZ-2	100
	SM-08100	SMN-08100	8x100	4,9x105	60	PZ-2	100
	SM-08120	SMN-08120	8x120	4,9x125	80	PZ-2	100
	SM-08140	SMN-08140	8x140	4,9x145	100	PZ-2	100
	SM-08160	SMN-08160	8x160	4,9x165	120	PZ-2	100
SM-10 / SMN-10							
ø10	SM-10080	SMN-10080	10 x 80	6,9 x 90	30	PZ-3	50
	SM-10100	SMN-10100	10 x 100	6,9 x 110	50	PZ-3	50
	SM-10120	SMN-10120	10 x 120	6,9 x 130	70	PZ-3	50
	SM-10140	SMN-10140	10 x 140	6,9 x 150	90	PZ-3	50
	SM-10160	SMN-10160	10 x 160	6,9 x 170	110	PZ-3	50
	SM-10180	SMN-10180	10 x 180	6,9 x 190	130	PZ-3	50
	SM-10200	SMN-10200	10 x 200	6,9 x 210	150	PZ-3	50
	SM-10220	SMN-10220	10 x 220	6,9 x 230	170	PZ-3	50

* Product available on request

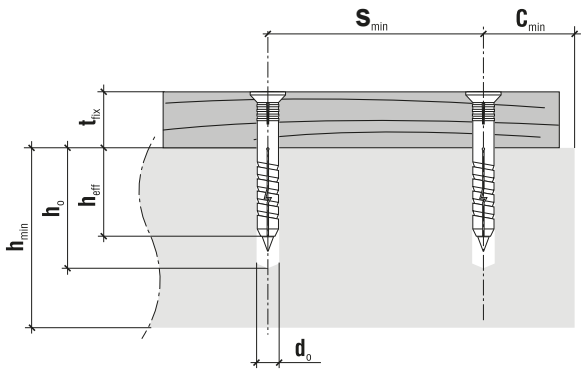
Product marking - SMN-05025			
SM	**N**	**05**	**025**
Type	Sleeve diameter: Polyamide	Sleeve diameter: 5 mm	Sleeve length: 25 mm

TECHNICAL DATA

Type	Plug diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	European Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
SM Ø5 / SMN Ø5	5	5	25	35	PE / PA	Galvanized steel	ETA-19/0156
SM Ø6 / SMN Ø6	6	6	28	40	PE / PA	Galvanized steel	ETA-19/0156
SM Ø8 / SMN Ø8	8	8	40	50	PE / PA	Galvanized steel	ETA-19/0156
SM Ø10 / SMN Ø10	10	10	50	60	PE / PA	Galvanized steel	ETA-19/0156

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm] Min. spacing - s_{min} [mm]			
Typ	h_{min}	c_{min}	s_{min}
SM	100	100	100
SMN	100	100	100



PULL-OUT RESISTANCE [kN]

Type	Normal weight concrete class C12/15	Normal weight concrete class C16/20 - C50/6	Solid clay brick MZ	Solid calcium silicate brick	Calcium silicate hollow block (cat. C)	Lightweight concrete blocks LAC (cat. D)	Autoclaved aerated concrete AAC2 (cat. E)	Autoclaved aerated concrete AAC7 (cat. E)
	cat. A		cat. B		cat. C	cat. D	cat. E	
SM Ø5	0,2	0,3	0,3	0,3	0,25	0,1	-	-
SMN Ø5	0,3	0,45	0,35	0,34	0,6	0,35	0,1	0,15
SM Ø6	0,4	0,6	0,6	0,6	0,3	0,25	0,1	0,1
SMN Ø6	0,6	0,9	0,9	0,9	0,9	0,4	0,2	0,3
SM Ø8	0,4	0,6	0,6	0,6	0,4	0,35	0,1	0,25
SMN Ø8	0,75	1,0	1,0	1,0	1,0	0,6	0,5	0,7
SM Ø10	0,55	0,8	1,2	1,2	0,9	0,6	0,2	0,2
SMN Ø10	1,5	1,5	1,5	1,5	1,5	1,5	0,75	0,9

	Polyethylene (PE)	Polyamide (PA)
ø5	SMK-5	SMNK-5
	Plugs length range: 25 - 50 mm Screws length range: 30 - 55 mm	
ø6	SMK-6	SMNK-6
	Plugs length range: 35 - 80 mm Screws length range: 40 - 85 mm	
ø8	SMK-8	SMNK-8
	Plugs length range: 50 - 120 mm Screws length range: 55 - 125 mm	

Hammer drive fixing with flat collar, PZ-2

SMK / SMNK

ø5, ø6, ø8

Plastic fixings with flat collar recommended for fastening metal elements.

ETA-19/0156

Zn WHITE | PA 100% NYLON | PE POLYETHYLENE

SUBSTRATES

A **Concrete**

B **Solid clay brick, Solid calcium silicate brick**

C **Calcium silicate hollow block**

D **Elements on LAC lightweight aggregate concrete**

E **Autoclaved aerated concrete**

SLEEVE MATERIAL	· Polyamide (PA) · Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized
INSTALLATION METHOD	Push-through installation
APPLICATION	· Plastic fixings with flat collar recommended for fastening metal elements · Installation of perimeter profiles in suspended ceilings systems. · Installation of base and top main profiles running horizontally in drywall systems. · Recommended for fast multiple fastening.

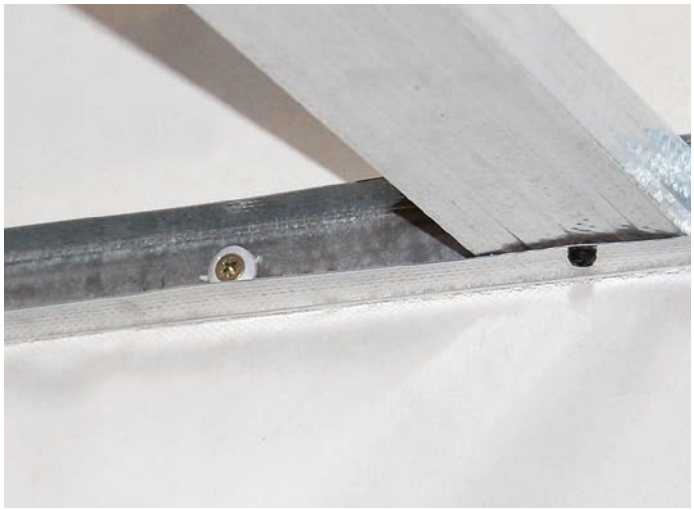
INCREASED HEAD DIAMETER OF SCREW
It exerts greater surface pressure on the elements being fastened.

COUNTERSUNK HEAD OF SCREW
Countersunk head of screw is more massive and shank under head has a significant thickening.

OPTIMUM EXPANSION ZONE
Ensures ideal expansion in wide range of substrates.

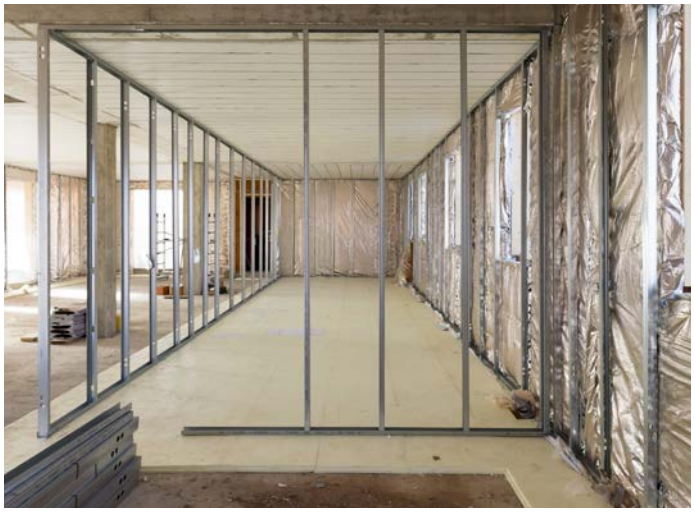
FAST AND EASY PUSH-THROUGH INSTALLATION
Reduction of installation time.

EXAMPLES OF APPLICATIONS



Installation of perimeter profiles in suspended ceilings systems

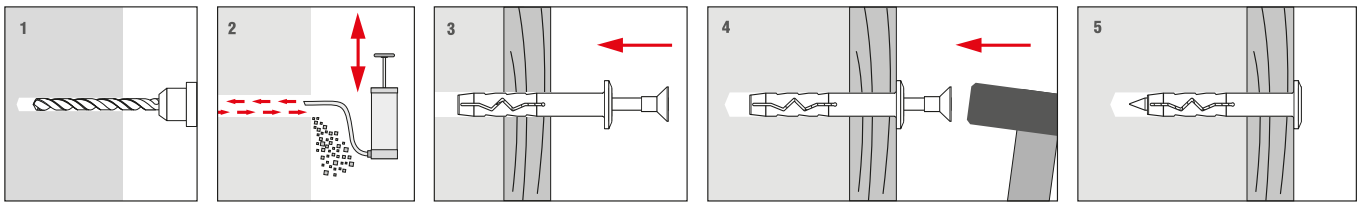
Fastening of window and door frames to supporting wall using metal plates



Installation of base and top main profiles running horizontally in drywall systems

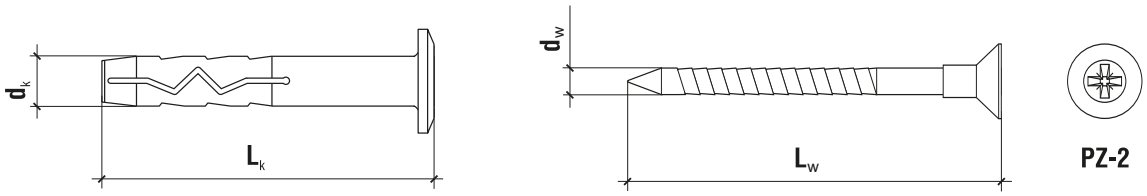
Fastening wall plates of timber frame in partition gypsum board wall

INSTALLATION INSTRUCTIONS



Hammer drive fixing with flat collar, PZ-2

SMK / SMNK - TECHNICAL DATA



	Product code		Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
	Polyethylene	Polyamide	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
SMK-05 / SMNK-05							
ø5	SMK-05025*	SMNK-05025*	5x25	3,5x30	0,5	PZ-2	200
	SMK-05030*	SMNK-05030*	5x30	3,5x35	5	PZ-2	200
	SMK-05035*	SMNK-05035*	5x35	3,5x40	10	PZ-2	200
	SMK-05040*	SMNK-05040*	5x40	3,5x45	15	PZ-2	200
	SMK-05050*	SMNK-05050*	5x50	3,5x55	25	PZ-2	200
SMK-06 / SMNK-06							
ø6	SMK-06035*	SMNK-06035*	6x35	3,9x40	7	PZ-2	200
	SMK-06040	SMNK-06040	6x40	3,9x45	12	PZ-2	200
	SMK-06050*	SMNK-06050*	6x50	3,9x55	22	PZ-2	200
	SMK-06060	SMNK-06060	6x60	3,9x65	32	PZ-2	200
	SMK-06080	SMNK-06080	6x80	3,9x85	52	PZ-2	100
SMK-08 / SMNK-08							
ø8	SMK-08050	SMNK-08050*	8x50	4,9x55	10	PZ-2	100
	SMK-08060	SMNK-08060*	8x60	4,9x65	20	PZ-2	100
	SMK-08080	SMNK-08080*	8x80	4,9x85	40	PZ-2	100
	SMK-08100	SMNK-08100*	8x100	4,9x105	60	PZ-2	100
	SMK-08120	SMNK-08120*	8x120	4,9x125	80	PZ-2	100

* Product available on request

Product marking - SMNK-05025				
SM	**N**	**K**	**05**	**025**
Type	Sleeve diameter: Polyamide	Type of collar: flat collar	Sleeve diameter: 5 mm	Sleeve length: 25 mm

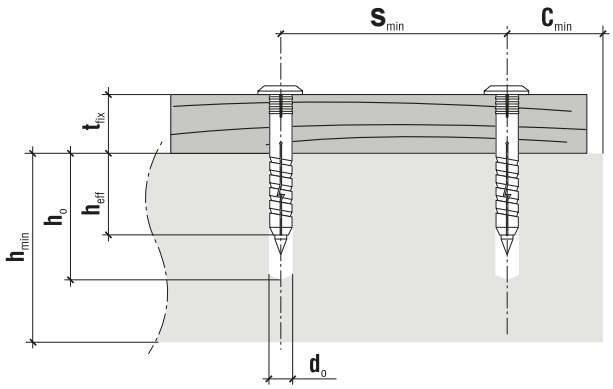
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	European Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
SMK Ø5 / SMNK Ø5	5	5	25	35	PE / PA	Galvanized steel	ETA-19/0156
SMK Ø6 / SMNK Ø6	6	6	28	40	PE / PA	Galvanized steel	ETA-19/0156
SMK Ø8 / SMNK Ø8	8	8	40	50	PE / PA	Galvanized steel	ETA-19/0156

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm]
Min. spacing - s_{min} [mm]

Type	h_{min}	c_{min}	s_{min}
SMK	100	100	100
SMNK	100	100	100



PULL-OUT RESISTANCE [kN]

Type	Normal weight concrete class C12/15	Normal weight concrete class C16/20 - C50/6	Solid clay brick MZ	Solid calcium silicate brick	Calcium silicate hollow block (cat. C)	Lightweight concrete blocks LAC (cat. D)	Autoclaved aerated concrete AAC2 (cat. E)	Autoclaved aerated concrete AAC7 (cat. E)
	cat. A		cat. B		cat. C	cat. D	cat. E	
SMK Ø5	0,2	0,3	0,3	0,3	0,25	0,1	-	-
SMNK Ø5	0,3	0,45	0,35	0,34	0,6	0,35	0,1	0,15
SMK Ø6	0,4	0,6	0,6	0,6	0,3	0,25	0,1	0,1
SMNK Ø6	0,6	0,9	0,9	0,9	0,9	0,4	0,2	0,3
SMK Ø8	0,4	0,6	0,6	0,6	0,4	0,35	0,1	0,25
SMNK Ø8	0,75	1,0	1,0	1,0	1,0	0,6	0,5	0,7

Hammer drive fixing with cylindrical collar, PZ-2

SMKC / SMNKC

ø5, ø6, ø8

Plastic fixings with cylindrical collar recommended for fastening metal elements.

ETA-19/0156

Zn WHITE | PA 100% NYLON | PE POLYETHYLENE

SUBSTRATES

A	B	C	D	E
Concrete	Solid clay brick, Solid calcium silicate brick	Calcium silicate hollow block	Elements on LAC lightweight aggregate concrete	Autoclaved aerated concrete

SLEEVE MATERIAL	· Polyamide (PA) · Polyethylene (PE)
SCREW MATERIAL	Carbon steel
CORROSION PROTECTION	Galvanized
INSTALLATION METHOD	Push-through installation
APPLICATION	· Plastic fixings with flat collar recommended for fastening metal elements · Installation of perimeter profiles in suspended ceilings systems. · Installation of base and top main profiles running horizontally in drywall systems. · Recommended for fast multiple fastening.

	Polyethylene (PE)	Polyamide (PA)
ø5	SMKC-5	SMNKC-5
	Plugs length range: 25 - 50 mm Screws length range: 30 - 55 mm	
ø6	SMKC-6	SMNKC-6
	Plugs length range: 35 - 80 mm Screws length range: 40 - 85 mm	
ø8	SMKC-8	SMNKC-8
	Plugs length range: 50 - 120 mm Screws length range: 55 - 125 mm	

INCREASED HEAD DIAMETER OF SCREW
It exerts greater surface pressure on the elements being fastened.

COUNTERSUNK HEAD OF SCREW
Countersunk head of screw is more massive and shank under head has a significant thickening.

OPTIMUM EXPANSION ZONE
Ensures ideal expansion in wide range of substrates.

FAST AND EASY PUSH-THROUGH INSTALLATION
Reduction of installation time.

EXAMPLES OF APPLICATIONS

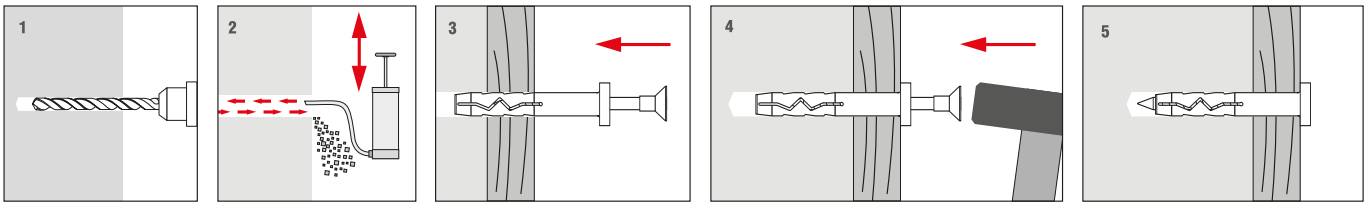
Installation of base profile for External Thermal Insulation Systems

Installation of metal flashings in balconies and terraces

Installation of metal edge flashings of flat roofs

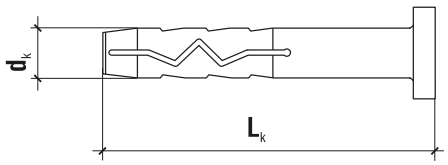
Installation of cable management systems

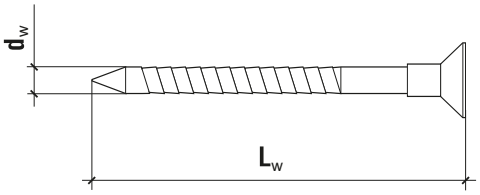
INSTALLATION INSTRUCTIONS



Hammer drive fixing with cylindrical collar, PZ-2

SMKC / SMNKC - TECHNICAL DATA





	Product code		Sleeve diameter and length	Screw diameter and length	Max. usable length	Type of drive	Unit pack quantity
	Polyethylene	Polyamide	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
SMKC-05 / SMNKC-05							
ø5	SMKC-05025*	SMNKC-05025	5x25	3,5x30	0,5	PZ-2	200
	SMKC-05030*	SMNKC-05030	5x30	3,5x35	5	PZ-2	200
	SMKC-05035	SMNKC-05035	5x35	3,5x40	10	PZ-2	200
	SMKC-05040*	SMNKC-05040	5x40	3,5x45	15	PZ-2	200
	SMKC-05050	SMNKC-05050	5x50	3,5x55	25	PZ-2	200
SMKC-06 / SMNKC-06							
ø6	SMKC-06035*	SMNKC-06035	6x35	3,9x40	7	PZ-2	200
	SMKC-06040	SMNKC-06040	6x40	3,9x45	12	PZ-2	200
	SMKC-06050*	SMNKC-06050	6x50	3,9x55	22	PZ-2	200
	SMKC-06060	SMNKC-06060	6x60	3,9x65	32	PZ-2	200
	SMKC-06080*	SMNKC-06080	6x80	3,9x85	52	PZ-2	100
SMKC-08 / SMNKC-08							
ø8	SMKC-08050*	SMNKC-08050	8x50	4,9x55	10	PZ-2	200
	SMKC-08060*	SMNKC-08060	8x60	4,9x65	20	PZ-2	200
	SMKC-08080*	SMNKC-08080	8x80	4,9x85	40	PZ-2	200
	SMKC-08100*	SMNKC-08100	8x100	4,9x105	60	PZ-2	200
	SMCK-08120*	SMNCK-08120	8x120	4,9x125	80	PZ-2	200

* Product available on request

Product marking - SMNKC-05025				
SM	**N**	**KC**	**05**	**025**
Type	Sleeve diameter: Polyamide	Type of collar: cylindrical	Sleeve diameter: 5 mm	Sleeve length: 25 mm

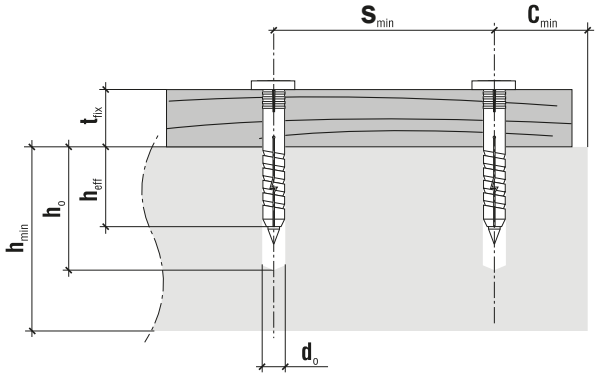
TECHNICAL DATA

Type	Sleeve diameter	Hole/drill bit diameter	Effective anchorage depth	Depth of drill hole	Sleeve material	Screw material	European Technical Assessment
	d_k [mm]	d_0 [mm]	h_{eff} [mm]	h_0 [mm]	[-]	[-]	[-]
SMKC-05 / SMNKC-05	5	5	25	35	PE / PA	Galvanized steel	ETA-19/0156
SMKC-06 / SMNKC-06	6	6	28	40	PE / PA	Galvanized steel	ETA-19/0156
SMKC-08 / SMNKC-08	8	8	40	50	PE / PA	Galvanized steel	ETA-19/0156

INSTALLATION PARAMETERS

Min. thickness of substrate - h_{min} [mm] / Min. edge distance - c_{min} [mm]
Min. spacing - s_{min} [mm]

Type	h_{min}	c_{min}	s_{min}
SMKC	100	100	100
SMNKC	100	100	100



PULL-OUT RESISTANCE [kN]

Type	Normal weight concrete class C12/15	Normal weight concrete class C16/20 - C50/6	Solid clay brick MZ	Solid calcium silicate brick	Calcium silicate hollow block (cat. C)	Lightweight concrete blocks LAC (cat. D)	Autoclaved aerated concrete AAC2 (cat. E)	Autoclaved aerated concrete AAC7 (cat. E)
	cat. A		cat. B		cat. C	cat. D	cat. E	
SMK Ø5	0,2	0,3	0,3	0,3	0,25	0,1	-	-
SMNK Ø5	0,3	0,45	0,35	0,34	0,6	0,35	0,1	0,15
SMK Ø6	0,4	0,6	0,6	0,6	0,3	0,25	0,1	0,1
SMNK Ø6	0,6	0,9	0,9	0,9	0,9	0,4	0,2	0,3
SMK Ø8	0,4	0,6	0,6	0,6	0,4	0,35	0,1	0,25
SMNK Ø8	0,75	1,0	1,0	1,0	1,0	0,6	0,5	0,7

KLIMAS

FASTENER TECHNOLOGIES

STRONG FOR GENERATIONS

STRONG FOR GENERATIONS

KLIMAS
FASTENER TECHNOLOGIES

KLIMAS
FASTENER TECHNOLOGIES

POLISH PRODUCER OF FASTENER TECHNOLOGIES

SCAN THE QR CODE AND SEE OTHER KLIMAS WKRĘT-MET PRODUCT CATALOGUES!

EAN-R-KAT-FRAMEWORK-ENG

KLIMAS Sp. z o.o.
ul. Wincentego Witosa 135/137, Kuźnica Kiedrzyńska
42-233 Mykanów, POLAND, **www.wkret-met.com**

Wkręt-met®
KLIMAS