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PRODUCT DATA SHEET – KPR-FAST 14 K

Section 1. PRODUCT DESCRIPTION

FRAME PLUG WITH HEX HEAD SCREW AND TX DRIVE – KPR-FAST 14 K



Sleeves of frame plugs are made of polyamide with a specially shaped steel screw type K (hex head) for fixing of members to all substrate types. The screws are made of steel with applied electroplated zinc coating or with non-electrolytically applied zinc flake coating. The plastic sleeve is expanded by screwing in the specific screw which presses the sleeve against the wall of the drilled hole. Frame plugs are characterized by very high resistance and problem-free installation in various materials. Plugs with hex head (K) are mostly used for fixing of metal members. The sleeve is pre-assembled with the screw.

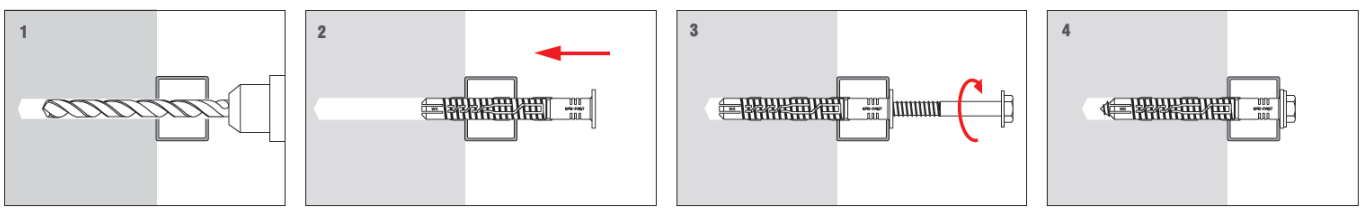
Substrates on which frame plug KPR-FAST 14K can be installed according to *EAD 330284-00-0604*:

- **Category A – concrete67***
- **Category B – solid clay brick and sand-lime brick**
- **Category C – hollow clay and sand-lime brick, porous block**
- **Category D – lightweight concrete blocks, autoclaved aerated concrete**

Frame plugs hold European Technical Assessment: ETA-12/0272

Section 2. METHOD OF INSTALLATION

1. Original frame plugs delivered by the manufacturer can be used only
2. Before installation identify a substrate into which the plug will be installed and compare loads which the plug will carry to resistance values given in Product Data Sheet or European Technical Assessment
3. Select an adequate length of the plug so that expansion zone is in the construction material of the wall (thickness of member being fixed matches max. usable length of the plug – t_{fix})
4. Use proper method of drilling according to a substrate type (holes in brickwork substrate made of hollow or autoclaved aerated concrete blocks should be drilled using a drill without impact)
5. Diameter of drilled holes should match diameter of the plugs used
6. Drilled holes in substrates of solid materials should be deeper by min. 10mm compared to the plug anchorage depth
7. Clean the holes in solid materials from drilling dust and debris with a back and forth motion of the drill at a reduced speed
8. Then insert the plug into a drilled hole, and drive the screw until it completely penetrates the sleeve
9. Forceful tightening of the screw can result in its failure which is not covered by the manufacturer's warranty
10. Installation shall be executed in temperature from -20°C to +40°C. (this applies to substrate temperature)



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Section 3. TECHNICAL DATA

TECHNICAL PARAMETERS		
Parameter	Unit	Value
Plug diameter	d_k [mm]	14
Hole/drill diameter	d_0 [mm]	14
Effective anchorage depth	h_{eff} [mm]	70
Drilled hole depth	h_0 [mm]	80
Drive type	[-]	TX-50/SW-17
Use categories	[-]	A B C D
Sleeve material	[-]	PA – polyamide
Screw material	[-]	Steel with applied electroplated zinc coating or with non-electrolytically applied zinc flake coating
European Technical Assessment	[-]	ETA-12/0272

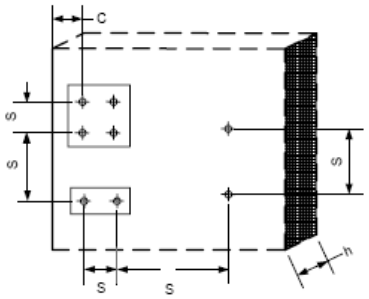
RESISTANCE					
Use categories	Substrate type	Density	Compressive strength	Characteristic resistance [kN/pcs]	**Design resistance [kN/pcs]**
		[kg/dm³]	[N/mm²]	KPR-FAST 14K	**KPR-FAST 14K**
A	Concrete C12/15	≥ 2,25	$f_{c,cyl} \geq 12$	5,0**	**2,77****
A	Concrete ≥ C16/20	≥ 2,30	$f_{c,cyl} \geq 16$	7,5**	**4,16****
B	Clay brick [1),5)]	≥ 1,70	≥ 10	4,0	**1,6**
B	Clay brick [1),5)]	≥ 1,70	≥ 20	4,0	**1,6**
B	Clay brick [1),6)]	≥ 2,00	≥ 10	4,0	**1,6**
B	Clay brick [1),6)]	≥ 2,00	≥ 20	4,0	**1,6**
B	Calcium silicate brick [2),7)]	≥ 2,00	≥ 20	4,0	**1,6**
C	Perforated ceramic brick [1),11)]	≥ 1,20	≥ 12	2,0	**0,8**
C	Calcium silicate hollow block [2),12)]	≥ 1,60	≥ 12	3,5	**1,4**
D	Hollow lightweight aggregate concrete element [3),13)]	≥ 0,80	≥ 2	2,0	**0,8**
D	Autoclaved aerated concrete AAC 2 [4)]	≥ 0,35	≥ 2	0,9	**0,45**
D	Autoclaved aerated concrete AAC 7 [4)]	≥ 0,65	≥ 6,5	3,0	**1,5**

** 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
[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

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MINIMUM THICKNESS OF MEMBER, EDGE DISTANCE AND SPACING IN CONCRETE						
ANCHOR TYPE	Base material	Minimum thickness of member	Characteristic edge distance	Characteristic spacing	Minimum edge distance	Minimum spacing
		h_{min} [mm]	$c_{cr,N}$ [mm]	$s_{cr,N}$ [mm]	c_{min} [mm]	s_{min} [mm]
KPR-FAST 14	Concrete ≥ C16/20	100	100	115	100	100
	Concrete ≥ C12/15	100	140	160	140	140

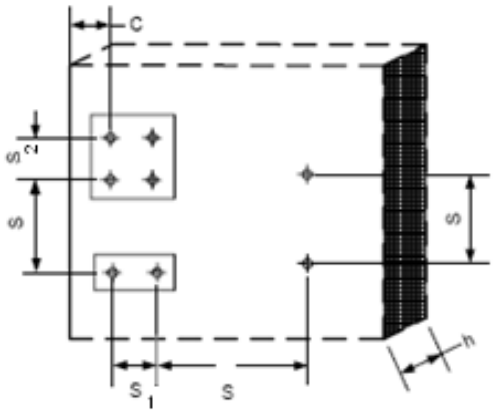
Scheme of edge distance and spacing in concrete



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]
Φ14	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 masonry



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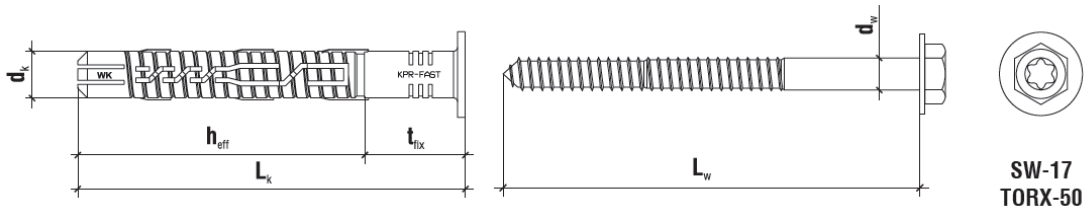


TABELA DOBORU – KPR-FAST 14 K					
Product code	Sleeve diameter and length	Screw diameter and length	Max. usable length	Drive type	Number of pieces in a box
	d_k x L_k [mm]	d_w x L_w [mm]	t_{fix} [mm]	[-]	[pcs.]
KPR-FAST-14080K	14x80	10x85	10	TX-50/SW-17	20
KPR-FAST-14100K	14x100	10x105	30	TX-50/SW-17	20
KPR-FAST-14120K	14x120	10x125	50	TX-50/SW-17	20
KPR-FAST-14140K(20)	14x140	10x145	70	TX-50/SW-17	20
KPR-FAST-14160K(20)	14x160	10x165	90	TX-50/SW-17	20
KPR-FAST-14180K(20)	14x180	10x185	110	TX-50/SW-17	20
KPR-FAST-14200K	14x200	10x205	130	TX-50/SW-17	15



Section 4. REMARKS

1. All previous versions of this Product Data Sheet shall cease to be valid
2. Data given in this Product Data Sheet is in accordance with current knowledge and published in good faith. KLIMAS Sp. z o.o. is not responsible for correctness and quality of the fixing if recommendations regarding method of use and installation are not followed.

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