



1



**Frame and general
purpose fasteners**

KLIMAS

GENERAL CATALOGUE 2015

NEW!

KPR-PIKE $\varnothing 8$

FRAME PLUG $\varnothing 8$ mm WITH:



TORX COUNTERSUNK
HEAD SCREW:
KPR-PIKE ST



CROSS RECESSED
COUNTERSUNK HEAD SCREW:
KPR-PIKE SK



HEX HEAD SCREW:
KPR-PIKE K



ETA-12/0272

ETAG 020

A B C D



100% ^{pure material} nylon ★★★

100% secure fixing



NEW!

KPR-PIKE Ø8



ETAG 020
A B C D



RESISTANCE

Substrate	Description	Density [kg/dm ³]	Standard	Characteristic pull-out resistance [kN]
	concrete C12/15	≥1,8	EN 206-1	0,9*
	concrete ≥C16/20	≥2,3	EN 206-1	1,2*
	clay brick	≥1,7	EN 771-1	2,0
	clay brick (np. MZ Rd 2,0/20)	≥2,0	EN 771-1	3,0
	calcium silicate brick (np. Kalksandstein KS NF 20-2.0 Vollstein - DIN 106)	≥2,0	EN 771-2	2,0
	calcium silicate hollow block (np. Kalksandstein KS L-R(P) 8 DF Lochstein - DIN 106)	≥1,6	EN 771-2	0,75
	vertical perforated porosited block (np. Porotherm 25 P+W)	≥0,8	EN 771-1	0,5
	vertical perforated ceramic block (np. MAX 250)	≥0,8	EN 771-1	0,6
	perforated ceramic brick (np. Hlz Rd1 1,2/12)	≥1,2	EN 771-1	0,9
	VBL 2/0.8	≥0,8	EN 771-2	0,9
	HBL 2/0.8	≥0,8	EN 771-2	0,6
	autoclaved aerated concrete AAC2	≥0,35	EN 771-4	0,3
	autoclaved aerated concrete AAC7	≥0,65	EN 771-4	0,6

* RESISTANCE FOR CRACK CONCRETE



KPR-PIKE Ø8 FRAME PLUG WITH SCREW

NEW!



ETAG 020
A B C D

100% nylon

KPR-PIKE SK



KPR-PIKE ST



KPR-PIKE K



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE



INSTALLATION DATA

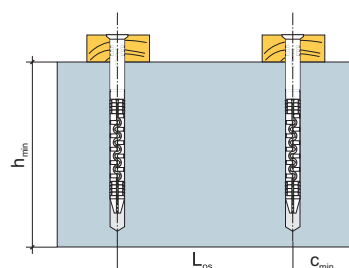
Substrate	Minimum edge distance c_{min} (mm)	Min. member thickness h_{min} (mm)
concrete C20/25	60	100
clay brick,	100	120
calcium silicate brick	100	120
hollow masonry	100	250
AAC	100	250

SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

RESISTANCE

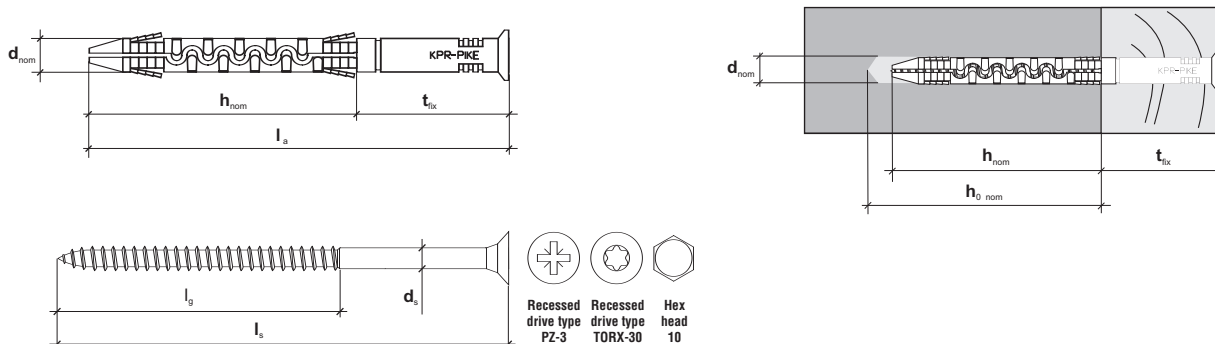
Check out - page 25





Frame and general purpose fasteners

KPR-PIKE Ø8 FRAME PLUG WITH SCREW



TECHNICAL DATA

Code and size	Hex head (K)	Recessed drive type (SK)/(ST)	Drill hole diameter d_{nom} [mm]	Plug length l_s [mm]	Screw diameter and length $d_s \times l_s$ [mm]	Minimum depth of drilled hole $h_{o\ nom}$ [mm]	Minimum anchorage depth h_{nom} [mm]	Maximum fixture thickness t_{fx} [mm]	Pcs per pack
KPR-PIKE-08065(K)(SK)(ST)	10	PZ-3/TORX30	8	65	6,0 x 70	70	60	5	100
KPR-PIKE-08080(K)(SK)(ST)	10	PZ-3/TORX30	8	80	6,0 x 80	70	60	20	50
KPR-PIKE-08100(K)(SK)(ST)	10	PZ-3/TORX30	8	100	6,0 x 100	70	60	40	50
KPR-PIKE-08120(K)(SK)(ST)	10	PZ-3/TORX30	8	120	6,0 x 120	70	60	60	50
KPR-PIKE-08140(K)(SK)(ST)	10	PZ-3/TORX30	8	140	6,0 x 140	70	60	80	50

NEW!

KPR-FAST $\varnothing 10$

KPS-FAST $\varnothing 10$

FRAME PLUG $\varnothing 10$ mm WITH:



HEX & TORX HEAD SCREW:

KPR-FAST K



TORX COUNTERSUNK
HEAD SCREW:

KPS-FAST S



EUROPEAN TECHNICAL APPROVAL

ETA-12/0272

ETAG 020

A B C D

 **watch
video**



wkret-met.com/frameplugs

THREAD REDUCTION

- precision drive of the screw
- greater expansion force in the second expansion zone



pure material
100% nylon

**100% secure
fixing**

300mm length
up to



NEW!

KPR-FAST Ø10

KPS-FAST Ø10



ETA-12/0272

ETAG 020

A B C D



According to the technical report TR 020 "Fire resistance evaluation of concrete anchoring", it can be stated that for the purpose of fixing facade systems, KPS-FAST, KPR-FAST fasteners have sufficient fire resistance of at least 90 minutes (R90) if the design load per one anchor is $N_d \leq 0,8 \text{ kN}$ (with no permanent centric loading)



RESISTANCE

Substrate	Description	Density [kg/dm³]	Standard	Characteristic pull-out resistance [kN]
	concrete C12/15	≥1,8	EN 206-1	3,0*
	concrete ≥C20/25	≥2,3	EN 206-1	4,0*
	clay brick	≥1,7	EN 771-1	3,5
	clay brick (np. MZ Rd 2,0/20)	≥2,0	EN 771-1	3,5
	calcium silicate brick (np. Kalksandstein KS NF 20-2.0 Vollstein - DIN 106)	≥2,0	EN 771-2	3,5
	calcium silicate hollow block (np. Kalksandstein KS L-R(P) 8 DF Lochstein - DIN 106)	≥1,6	EN 771-2	2,5
	vertical perforated porosited block (np. Porothersm 25 P+W)	≥0,8	EN 771-1	1,2
	vertical perforated ceramic block (np. MAX 250)	≥0,8	EN 771-1	0,9
	perforated ceramic brick (np. Hlz Rd1 1,2/12)	≥1,2	EN 771-1	2,0
	VBL 2/0.8	≥0,8	EN 771-2	2,0
	HBL 2/0.8	≥0,8	EN 771-2	2,0
	autoclaved aerated concrete AAC2	≥0,35	EN 771-4	0,6
	autoclaved aerated concrete AAC7	≥0,65	EN 771-4	1,5

* RESISTANCE FOR CRACK CONCRETE



KPR-FAST K 10 FRAME PLUG WITH HEX & TORX HEAD SCREW

NEW!



ETAG 020
A B C D

100% nylon



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE

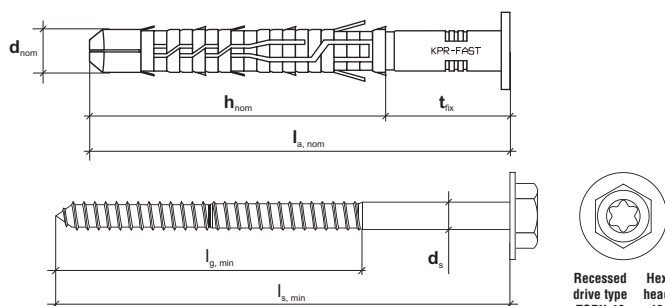


SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

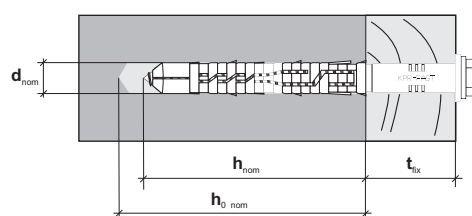
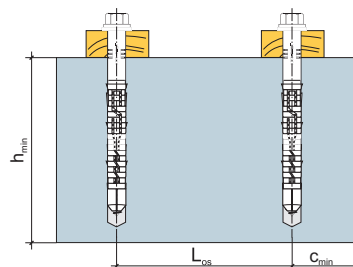
RESISTANCE

Check out - page 29



INSTALLATION DATA

Substrate	Minimum edge distance c_{min} (mm)	Min. member thickness h_{min} (mm)
concrete C20/25	60	100
clay brick,	100	120
calcium silicate brick	100	120
hollow masonry	100	250
AAC	100	250



TECHNICAL DATA

Code and size	Recessed drive type	Hex head	Drill hole diameter d_{nom} [mm]	Plug length l_s [mm]	Screw diameter and length $d_s \times l_s$ [mm]	Minimum depth of drilled hole h_0, nom [mm]	Minimum anchorage depth h_{nom} [mm]	Maximum fixture thickness t_{fix} [mm]	Pcs per pack
KPR-FAST-10080K	TORX40	13	10	80	7,0 x 85	80	70	10	50
KPR-FAST-10100K	TORX40	13	10	100	7,0 x 105	80	70	30	50
KPR-FAST-10120K	TORX40	13	10	120	7,0 x 125	80	70	50	50
KPR-FAST-10140K	TORX40	13	10	140	7,0 x 145	80	70	70	50
KPR-FAST-10160K	TORX40	13	10	160	7,0 x 165	80	70	90	50
KPR-FAST-10180K	TORX40	13	10	180	7,0 x 185	80	70	110	25
KPR-FAST-10200K	TORX40	13	10	200	7,0 x 205	80	70	130	25
KPR-FAST-10230K	TORX40	13	10	230	7,0 x 235	80	70	160	25
KPR-FAST-10260K	TORX40	13	10	260	7,0 x 265	80	70	190	25
KPR-FAST-10300K	TORX40	13	10	300	7,0 x 305	80	70	230	25



Frame and general purpose fasteners

KPS-FAST S Ø10 FRAME PLUG WITH TORX COUNTERSUNK HEAD SCREW

NEW!



ETAG 020
A B C D

100% nylon



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE

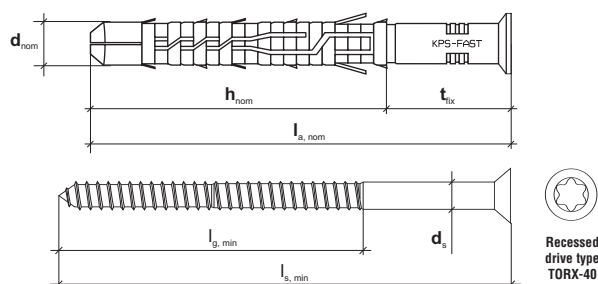


SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

RESISTANCE

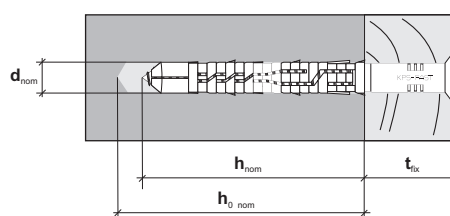
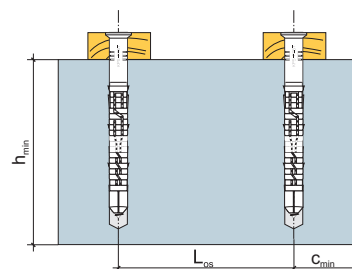
Check out - page 29



Recessed
drive type
TORX-40

INSTALLATION DATA

Substrate	Minimum edge distance c_{min} (mm)	Min. member thickness h_{min} (mm)
concrete C20/25	60	100
clay brick,	100	120
calcium silicate brick	100	120
hollow masonry	100	250
AAC	100	250



TECHNICAL DATA

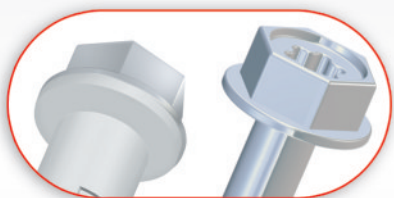
Code and size	Recessed drive type	Drill hole diameter d_{nom} [mm]	Plug length l_s [mm]	Screw diameter and length $d_s \times l_s$ [mm]	Minimum depth of drilled hole $h_{s, nom}$ [mm]	Minimum anchorage depth h_{nom} [mm]	Maximum fixture thickness t_{fix} [mm]	Pcs per pack
KPS-FAST-10080S	TORX40	10	80	7,0 x 85	80	70	10	50
KPS-FAST-10100S	TORX40	10	100	7,0 x 105	80	70	30	50
KPS-FAST-10120S	TORX40	10	120	7,0 x 125	80	70	50	50
KPS-FAST-10140S	TORX40	10	140	7,0 x 145	80	70	70	50
KPS-FAST-10160S	TORX40	10	160	7,0 x 165	80	70	90	50
KPS-FAST-10180S	TORX40	10	180	7,0 x 185	80	70	110	50
KPS-FAST-10200S	TORX40	10	200	7,0 x 205	80	70	130	25
KPS-FAST-10230S	TORX40	10	230	7,0 x 235	80	70	160	25
KPS-FAST-10260S	TORX40	10	260	7,0 x 265	80	70	190	25
KPS-FAST-10300S	TORX40	10	300	7,0 x 305	80	70	230	25

NEW!

KPR-FAST Ø12

KPS-FAST Ø12

FRAME PLUG Ø12mm WITH:



HEX & TORX HEAD SCREW:

KPR-FAST K



TORX COUNTERSUNK
HEAD SCREW:

KPS-FAST S



EUROPEAN TECHNICAL APPROVAL

ETA-12/0272

ETAG 020

A B C D

 **watch
video**



wkret-met.com/frameplugs

THREAD REDUCTION

- precision drive of the screw
- greater expansion force in the second expansion zone

100% ^{pure material} **nylon** ★★★

100% **secure
fixing**

360mm **length
up to**



NEW!

KPR-FAST Ø12

KPS-FAST Ø12



RESISTANCE

Substrate	Description	Density [kg/dm ³]	Standard	Characteristic pull-out resistance [kN]
	concrete C12/15	≥1,8	EN 206-1	3,5*
	concrete ≥C16/20	≥2,3	EN 206-1	5,0*
	clay brick	≥1,7	EN 771-1	3,5
	clay brick (np. MZ Rd 2,0/20)	≥2,0	EN 771-1	3,5
	calcium silicate brick (np. Kalksandstein KS NF 20-2.0 Vollstein - DIN 106)	≥2,0	EN 771-2	3,5
	calcium silicate hollow block (np. Kalksandstein KS L-R(P) 8 DF Lochstein - DIN 106)	≥1,6	EN 771-2	3,0
	perforated ceramic brick (np. Hlz Rd1 1,2/12)	≥1,2	EN 771-1	2,0
	HBL 2/0.8	≥0,8	EN 771-2	2,0
	autoclaved aerated concrete AAC2	≥0,35	EN 771-4	0,75
	autoclaved aerated concrete AAC7	≥0,65	EN 771-4	3,0

* RESISTANCE FOR CRACK CONCRETE



KPR-FAST K 12 FRAME PLUG WITH HEX & TORX HEAD SCREW

NEW!



ETAG 020
A B C D

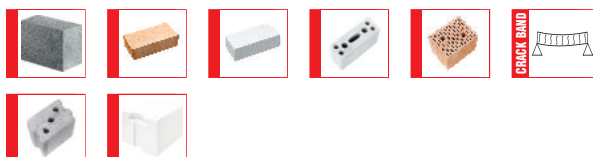
100% nylon



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE

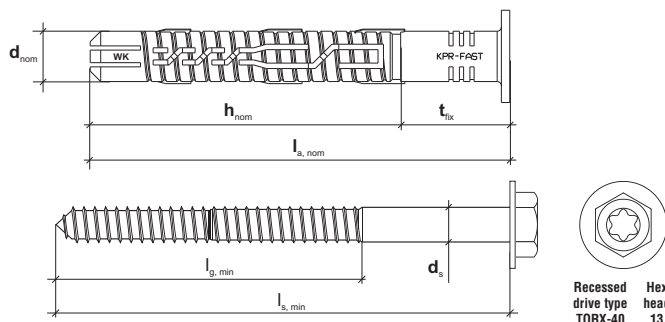


SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

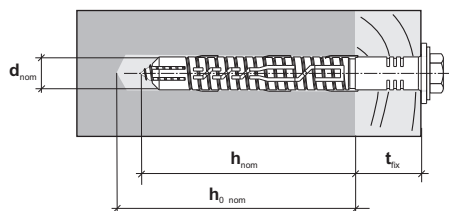
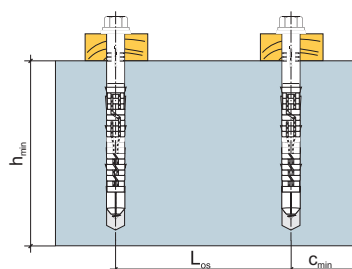
RESISTANCE

Check out - page 33



INSTALLATION DATA

Substrate	Minimum edge distance c_{min} (mm)	Min. member thickness h_{min} (mm)
concrete C20/25	60	100
clay brick,	100	120
calcium silicate brick	100	120
hollow masonry	100	250
AAC	100	250



TECHNICAL DATA

Code and size	Recessed drive type	Hex head	Drill hole diameter d_{nom} [mm]	Plug length l_s [mm]	Screw diameter and length $d_s \times l_s$ [mm]	Minimum depth of drilled hole $h_{e, nom}$ [mm]	Minimum anchorage depth h_{nom} [mm]	Maximum fixture thickness t_{fix} [mm]
KPR-FAST-12080K	TORX40	13	12	80	8,0 x 85	80	70	10
KPR-FAST-12100K	TORX40	13	12	100	8,0 x 105	80	70	30
KPR-FAST-12120K	TORX40	13	12	120	8,0 x 125	80	70	50
KPR-FAST-12140K	TORX40	13	12	140	8,0 x 145	80	70	70
KPR-FAST-12160K	TORX40	13	12	160	8,0 x 165	80	70	90
KPR-FAST-12180K	TORX40	13	12	180	8,0 x 185	80	70	110
KPR-FAST-12200K	TORX40	13	12	200	8,0 x 205	80	70	130
KPR-FAST-12230K	TORX40	13	12	230	8,0 x 235	80	70	160
KPR-FAST-12260K	TORX40	13	12	260	8,0 x 265	80	70	190
KPR-FAST-12300K	TORX40	13	12	300	8,0 x 305	80	70	220
KPR-FAST-12330K	TORX40	13	12	330	8,0 x 335	80	70	250
KPR-FAST-12360K	TORX40	13	12	360	8,0 x 365	80	70	280



Frame and general purpose fasteners

Wkręt-met®
FASTENER TECHNOLOGIES

KPS-FAST S Ø12 FRAME PLUG WITH TORX COUNTERSUNK HEAD SCREW

NEW!



ETAG 020
A B C D

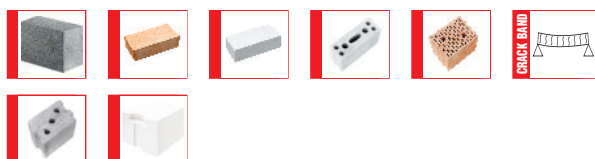
100% nylon



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE

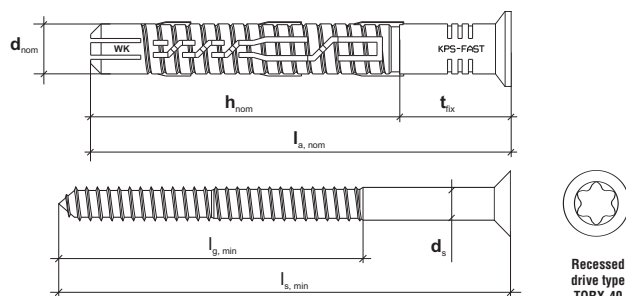


SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

RESISTANCE

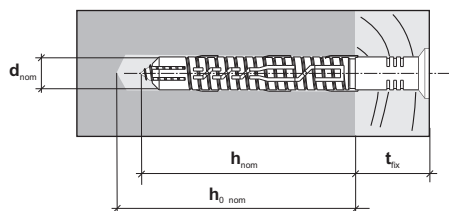
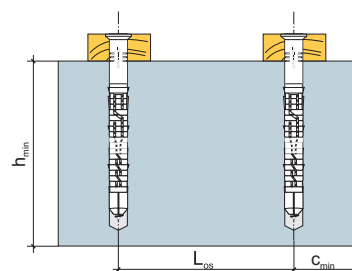
Check out - page 33



Recessed
drive type
TORX-40

INSTALLATION DATA

Substrate	Minimum edge distance c_{min} (mm)	Min. member thickness h_{min} (mm)
concrete C20/25	60	100
clay brick,	100	120
calcium silicate brick	100	120
hollow masonry	100	250
AAC	100	250



TECHNICAL DATA

Code and size	Recessed drive type	Drill hole diameter d_{nom} (mm)	Plug length l_s (mm)	Screw diameter and length $d_s \times l_s$ (mm)	Minimum depth of drilled hole $h_{g, nom}$ (mm)	Minimum anchorage depth h_{nom} (mm)	Maximum fixture thickness t_{fix} (mm)
KPS-FAST-12080S	TORX40	12	80	8,0 x 85	80	70	10
KPS-FAST-12100S	TORX40	12	100	8,0 x 105	80	70	30
KPS-FAST-12120S	TORX40	12	120	8,0 x 125	80	70	50
KPS-FAST-12140S	TORX40	12	140	8,0 x 145	80	70	70
KPS-FAST-12160S	TORX40	12	160	8,0 x 165	80	70	90
KPS-FAST-12180S	TORX40	12	180	8,0 x 185	80	70	110
KPS-FAST-12200S	TORX40	12	200	8,0 x 205	80	70	130
KPS-FAST-12230S	TORX40	12	230	8,0 x 235	80	70	160
KPS-FAST-12260S	TORX40	12	260	8,0 x 265	80	70	190
KPS-FAST-12300S	TORX40	12	300	8,0 x 305	80	70	220
KPS-FAST-12330S	TORX40	12	330	8,0 x 335	80	70	250
KPS-FAST-12360S	TORX40	12	360	8,0 x 365	80	70	280

KLIMAS

FASTENER TECHNOLOGIES

NEW!

KPR-FAST Ø14

KPS-FAST Ø14

FRAME PLUG Ø14mm WITH:



HEX & TORX HEAD SCREW:

KPR-FAST K



TORX COUNTERSUNK
HEAD SCREW:

KPS-FAST S



ETA-12/0272

ETAG 020

A B C D

 **watch
video**



wkret-met.com/frameplugs

THREAD REDUCTION

- precision drive of the screw
- greater expansion force in the second expansion zone

100% ^{pure material} **nylon** ★★

100% **secure
fixing**

360mm **length
up to**



NEW!

KPR-FAST Ø14

KPS-FAST Ø14



RESISTANCE

Substrate	Description	Density [kg/dm³]	Standard	Characteristic pull-out resistance [kN]
	concrete C12/15	≥1,8	EN 206-1	5,0*
	concrete ≥C16/20	≥2,3	EN 206-1	7,5*
	clay brick	≥1,7	EN 771-1	4,0
	clay brick (np. MZ Rd 2,0/20)	≥2,0	EN 771-1	4,0
	calcium silicate brick (np. Kalksandstein KS NF 20-2.0 Vollstein - DIN 106)	≥2,0	EN 771-2	4,0
	calcium silicate hollow block (np. Kalksandstein KS L-R(P) 8 DF Lochstein - DIN 106)	≥1,6	EN 771-2	3,5
	perforated ceramic brick (np. Hlz Rd1 1,2/12)	≥1,2	EN 771-1	2,0
	HBL 2/0.8	≥0,8	EN 771-2	2,0
	autoclaved aerated concrete AAC2	≥0,35	EN 771-4	0,9
	autoclaved aerated concrete AAC7	≥0,65	EN 771-4	3,0

* RESISTANCE FOR CRACK CONCRETE



KPR-FAST K 14 FRAME PLUG WITH HEX & TORX HEAD SCREW

NEW!



ETAG 020
A B C D

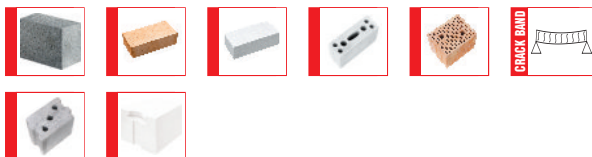
100% **nylon**



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE

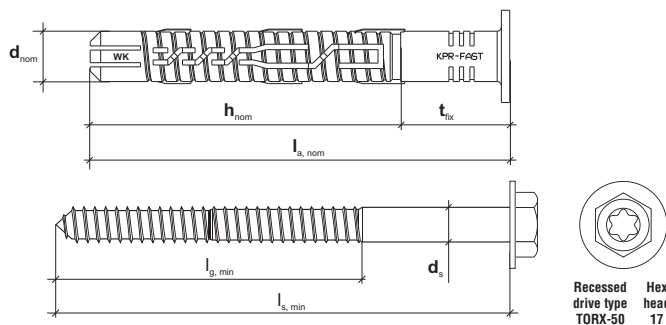


SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

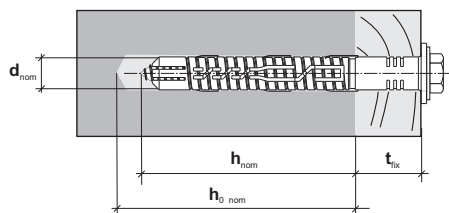
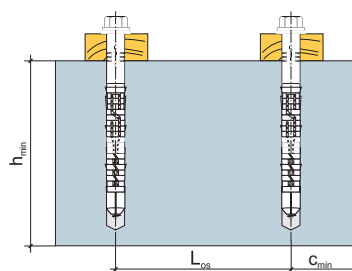
RESISTANCE

Check out - page 37



INSTALLATION DATA

Substrate	Minimum edge distance c_{min} (mm)	Min. member thickness h_{min} (mm)
concrete C20/25	60	100
clay brick,	100	120
calcium silicate brick	100	120
hollow masonry	100	250
AAC	100	250



TECHNICAL DATA

Code and size	Recessed drive type	Hex head	Drill hole diameter d_{nom} [mm]	Plug length l_s [mm]	Screw diameter and length $d_s \times l_s$ [mm]	Minimum depth of drilled hole $h_{o, nom}$ [mm]	Minimum anchorage depth h_{nom} [mm]	Maximum fixture thickness t_{fix} [mm]
KPR-FAST-14080K	TORX50	17	14	80	10,0 x 85	80	70	10
KPR-FAST-14100K	TORX50	17	14	100	10,0 x 105	80	70	30
KPR-FAST-14120K	TORX50	17	14	120	10,0 x 125	80	70	50
KPR-FAST-14140K	TORX50	17	14	140	10,0 x 145	80	70	70
KPR-FAST-14160K	TORX50	17	14	160	10,0 x 165	80	70	90
KPR-FAST-14180K	TORX50	17	14	180	10,0 x 185	80	70	110
KPR-FAST-14200K	TORX50	17	14	200	10,0 x 205	80	70	130
KPR-FAST-14230K	TORX50	17	14	230	10,0 x 235	80	70	160
KPR-FAST-14260K	TORX50	17	14	260	10,0 x 265	80	70	190
KPR-FAST-14300K	TORX50	17	14	300	10,0 x 305	80	70	220
KPR-FAST-14330K	TORX50	17	14	330	10,0 x 335	80	70	250
KPR-FAST-14360K	TORX50	17	14	360	10,0 x 365	80	70	280



Frame and general purpose fasteners

KPS-FAST S Ø14 FRAME PLUG WITH TORX COUNTERSUNK HEAD SCREW

NEW!



ETAG 020
A B C D

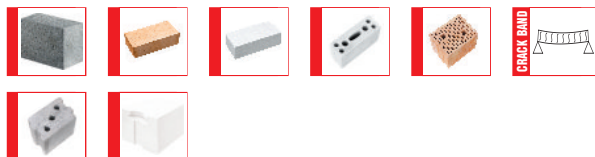
100% nylon



APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE

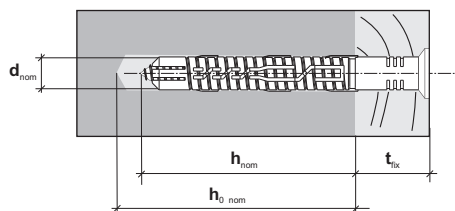
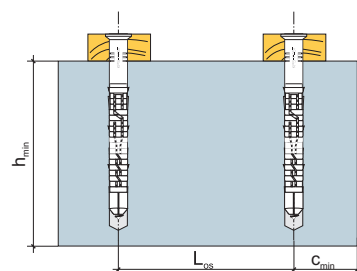
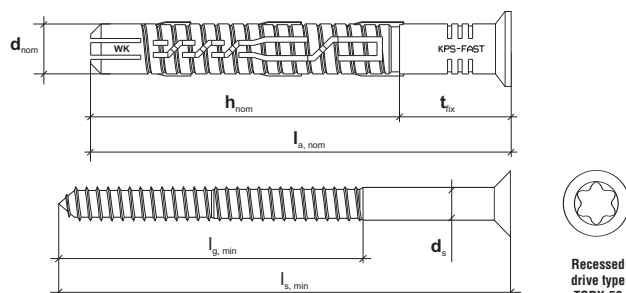


SPECIFICATIONS

Plug material	NYLON
Screw material	steel
Corrosion protection	zinc

RESISTANCE

Check out - page 37



TECHNICAL DATA

Code and size	Recessed drive type	Drill hole diameter d_{nom} [mm]	Plug length l_s [mm]	Screw diameter and length $d_s \times l_s$ [mm]	Minimum depth of drilled hole $h_{g, nom}$ [mm]	Minimum anchorage depth h_{nom} [mm]	Maximum fixture thickness t_{fix} [mm]
KPS-FAST-14080S	TORX50	14	80	10,0 x 85	80	70	10
KPS-FAST-14100S	TORX50	14	100	10,0 x 105	80	70	30
KPS-FAST-14120S	TORX50	14	120	10,0 x 125	80	70	50
KPS-FAST-14140S	TORX50	14	140	10,0 x 145	80	70	70
KPS-FAST-14160S	TORX50	14	160	10,0 x 165	80	70	90
KPS-FAST-14180S	TORX50	14	180	10,0 x 185	80	70	110
KPS-FAST-14200S	TORX50	14	200	10,0 x 205	80	70	130
KPS-FAST-14230S	TORX50	14	230	10,0 x 235	80	70	160
KPS-FAST-14260S	TORX50	14	260	10,0 x 265	80	70	190
KPS-FAST-14300S	TORX50	14	300	10,0 x 305	80	70	220
KPS-FAST-14330S	TORX50	14	330	10,0 x 335	80	70	250
KPS-FAST-14360S	TORX50	14	360	10,0 x 365	80	70	280



KPK $\varnothing 10$

FRAME PLUG WITH HEX & TORX HEAD SCREW

KPS $\varnothing 10$

FRAME PLUG WITH TORX COUNTERSUNK HEAD SCREW

100% nylon

100% nylon



KPK $\varnothing 10$



KPS $\varnothing 10$

APPLICATION

For facade fixing of wooden members, battens and cover trims, steel profiles in cavity brick walls.

SUBSTRATE



CONCRETE



PERFORATED
CERAMIC BRICK



AERATED
CONCRETE
BLOCKS

SPECIFICATIONS

Plug material **NYLON**

Screw material steel

Corrosion protection zinc

RESISTANCE

Design pull-out resistance and shear strength

Code and size	Concrete C 20/25 [kN]	Perforated ceramic brick [kN]	Aerated concrete [kN]
KPK - 10/KPS - 10	3.08	1.49	0.85

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003

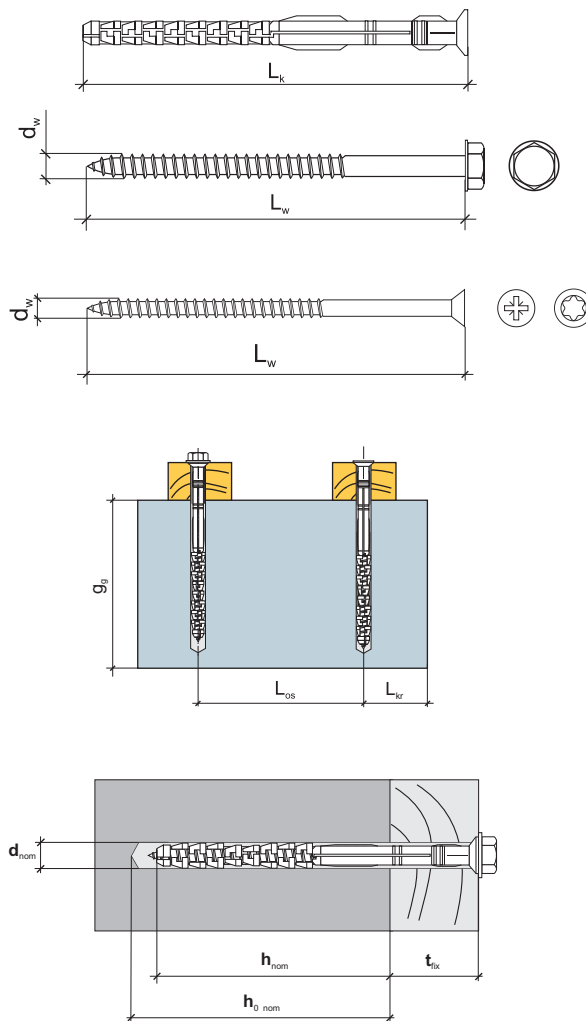
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011

Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

INSTALLATION DATA

Code and size	Minimum spacing L_{os} (mm)	Minimum edge distance L_{tr} (mm)	Minimum member thickness g_p (mm)
KPK - 10 / KPS - 10	200	100	100

TECHNICAL DATA



Code and size	Code and size	Recessed drive type	Hex head	Drill hole d _{nom} (mm)	Plug length l _s (mm)	Screw diameter and length d _s x l _s (mm)	Minimum depth of drilled hole h _{o nom} (mm)	Minimum anchorage depth h _{nom} (mm)	Maximum fixture thickness t _{fix} (mm)	Pcs per pack
KPK-10080N	KPS-10080N	PZ-3	13	10	80	7.0 x 85	70	60	20	50
KPK-10100N	KPS-10100N	PZ-3	13	10	100	7.0 x 105	70	60	40	50
KPK-10115N	KPS-10115N	PZ-3	13	10	115	7.0 x 120	70	60	55	50
KPK-10135N	KPS-10135N	PZ-3	13	10	135	7.0 x 140	70	60	75	50
KPK-10160N	KPS-10160N	PZ-3	13	10	160	7.0 x 165	70	60	100	50
KPK-10180N	KPS-10180N	PZ-3	13	10	180	7.0 x 185	70	60	120	50
KPK-10200N	KPS-10200N	PZ-3	13	10	200	7.0 x 205	70	60	140	25
KPK-10220N	KPS-10220N	PZ-3	13	10	220	7.0 x 225	70	60	160	25



Frame and general purpose fasteners

KPK 12 FRAME PLUG WITH HEX HEAD WOOD SCREW



Technical Approval
AT-15-9031/2012



APPLICATION

For fixing of timber components (square timber, scantlings, boards), aluminum curtain wall components and steel members.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



SILICA
BRICK,
CLASS 15



AERATED
CONCRETE
BLOCKS



PERFORATED
CERAMIC BRICK

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Design pull-out resistance and shear strength

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]	Perforated ceramic brick [kN]
KPK - 12	1.74	0.52	0.93	0.19	0.39

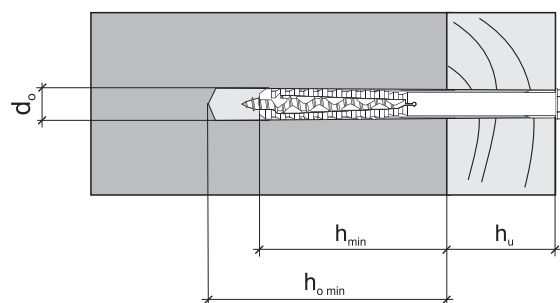
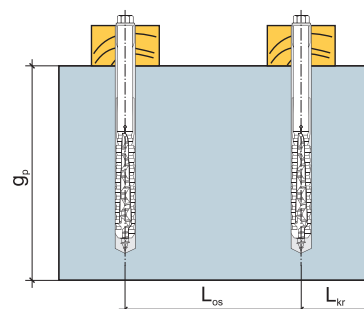
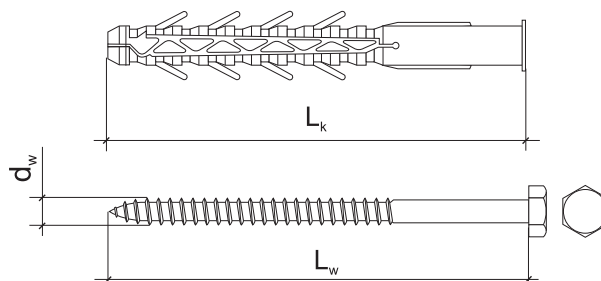
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011

INSTALLATION DATA

Code and size	Minimum spacing L_{os} (mm)	Minimum edge distance L_{kr} (mm)	Minimum member thickness g_p (mm)
KPK - 12	160	80	160

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_i [mm]	Screw diameter and length $d_w \times L_w$ [mm]	Minimum depth of drilled hole $h_{o\ min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_s [mm]	Width across flats	Pcs per pack
KPK-12100N	12	100	8 x 100	90	80	20	13	25
KPK-12120N	12	120	8 x 120	90	80	40	13	25
KPK-12140N	12	140	8 x 140	90	80	60	13	25
KPK-12160N	12	160	8 x 160	90	80	80	13	25
KPK-12180N	12	180	8 x 180	90	80	100	13	25
KPK-12200N	12	200	8 x 200	90	80	120	13	25





KPD FRAME PLUG WITH DOUBLE ENDED SCREW

Technical Approval
AT-15-9031/2012



100% **nylon**

APPLICATION

For fixing of clamps for down pipes and ventilation ducts or for joining two components.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



SILICA
BRICK,
CLASS 15



AERATED
CONCRETE
BLOCKS



PERFORATED
CERAMIC BRICK

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Design pull-out resistance and shear strength

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]	Perforated ceramic brick [kN]
KPD - 10	5.19	3.79	3.72	0.86	0.7
KPD - 12	1.80	1.18	1.23	0.49	-

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003

Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011

Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

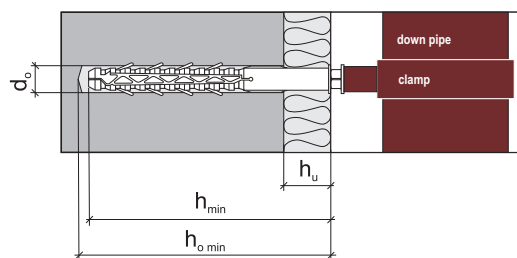
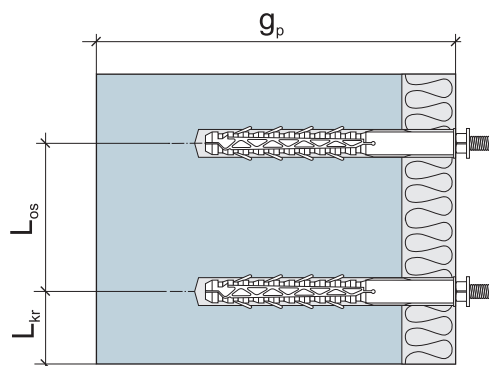
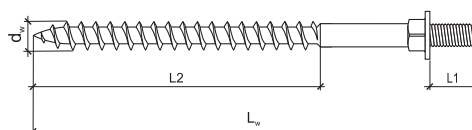
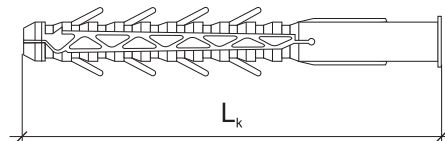
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011

INSTALLATION DATA

Code and size	Minimum spacing L_{os} (mm)	Minimum edge distance L_{kr} (mm)	Minimum member thickness g_p (mm)
KPD - 12	160	80	160

TECHNICAL DATA

Code and size	Drill hole diameter d_o (mm)	Plug length L_k (mm)	Screw diameter and length $d_s \times L_w$ (mm)	Minimum depth of drilled hole $h_{o min}$ (mm)	Minimum anchorage depth h_{min} (mm)	Maximum fixture thickness h_p (mm)	Width across flats	Pcs per pack
KPD-10100N	10	100	7 x 105	90	70	20	10	50
KPD-10160N	10	160	7 x 165	90	70	80	10	50
KPD-10200N	10	200	7 x 205	90	70	120	10	25
KPD-12100N	12	100	8 x 105	90	80	20	10	25
KPD-12160N	12	160	8 x 165	90	80	80	10	25
KPD-12200N	12	200	8 x 205	90	80	120	10	25





Frame and general purpose fasteners

KPO FRAME PLUG WITH HEX FLANGE SCREW



Technical Approval
AT-15-9031/2012



100% **nylon**

APPLICATION

For fixing of timber components (square timber, scantlings, boards), curtain wall components and steel profiles.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



SILICA
BRICK,
CLASS 15



AERATED
CONCRETE
BLOCKS



PERFORATED
CERAMIC BRICK

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Design pull-out resistance and shear strength

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]	Perforated ceramic brick [kN]
KPO - 16	2.59	1.88	1.72	0.87	1.34

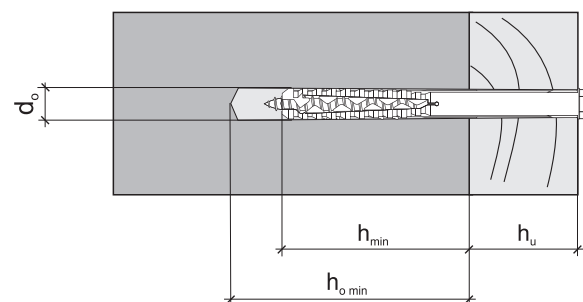
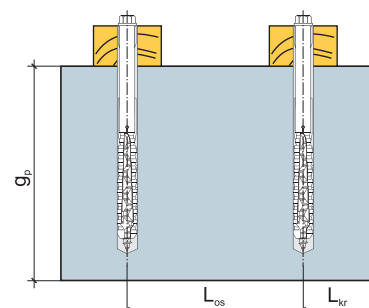
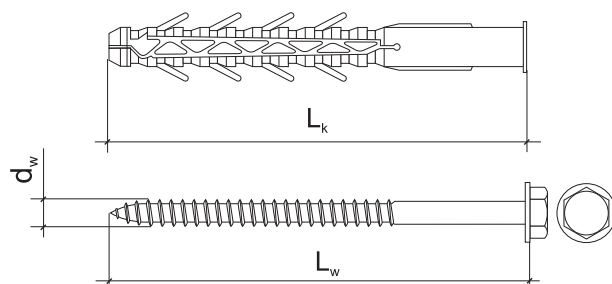
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011

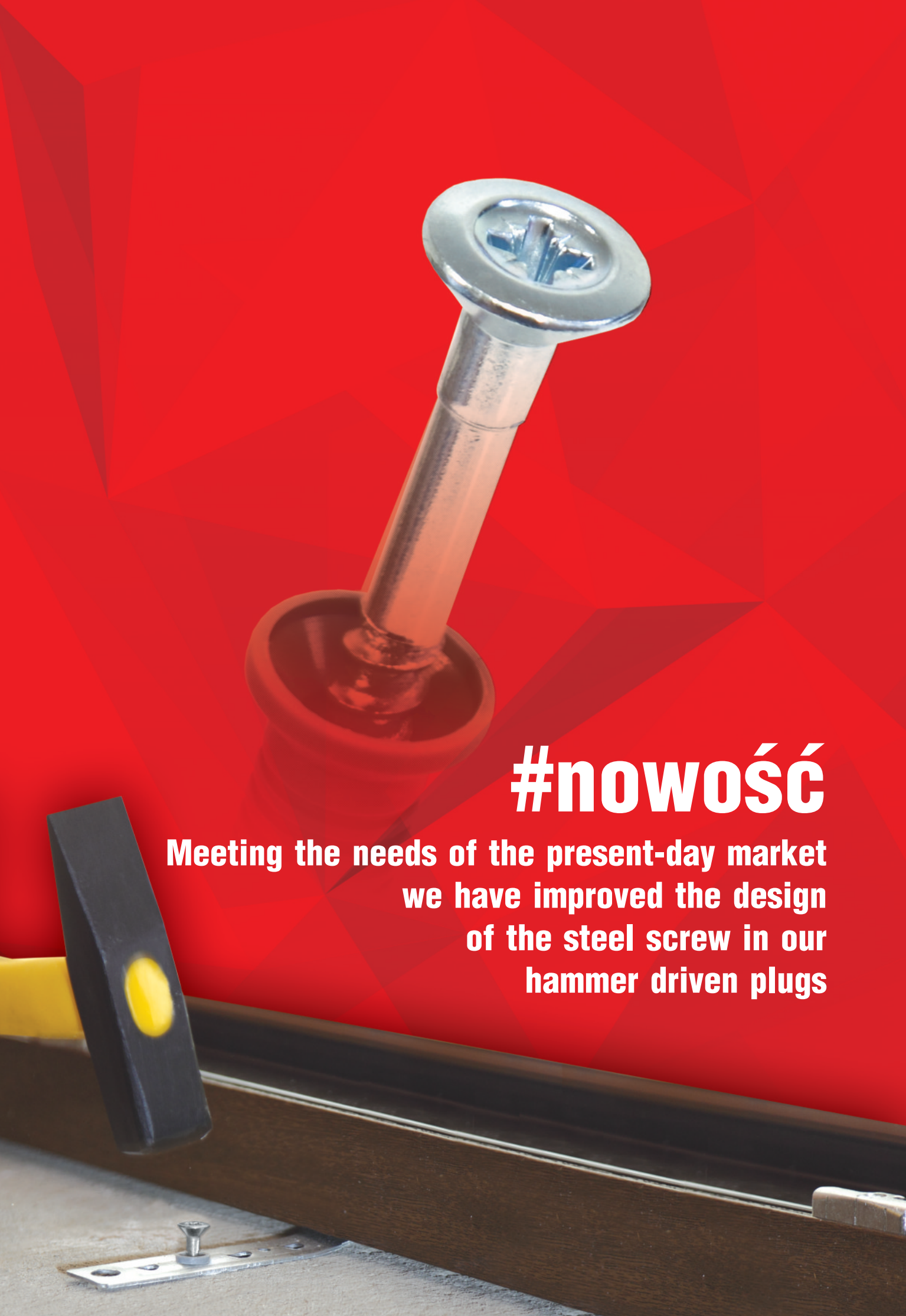
INSTALLATION DATA

Code and size	Minimum spacing L_s (mm)	Minimum edge distance L_e (mm)	Minimum member thickness g_p (mm)
KPO - 16	240	120	240

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_p [mm]	Screw diameter and length $d_s \times L_s$ [mm]	Minimum depth of drilled hole $h_{o \min}$ [mm]	Minimum anchorage depth $h_{\min}$ [mm]	Maximum fixture thickness h_u [mm]	Width across flats	Pcs per pack
KPO-16140N	16	140	12 x 150	130	120	20	19	15
KPO-16160N	16	160	12 x 170	130	120	40	19	15
KPO-16200N	16	200	12 x 210	130	120	80	19	15
KPO-16240N	16	240	12 x 250	130	120	120	19	10





#nowość

**Meeting the needs of the present-day market
we have improved the design
of the steel screw in our
hammer driven plugs**

NEW!

SM, SMK, SMKC

IMPROVED HOLDING

Increased head diameter
holds down the mounted
elements better!

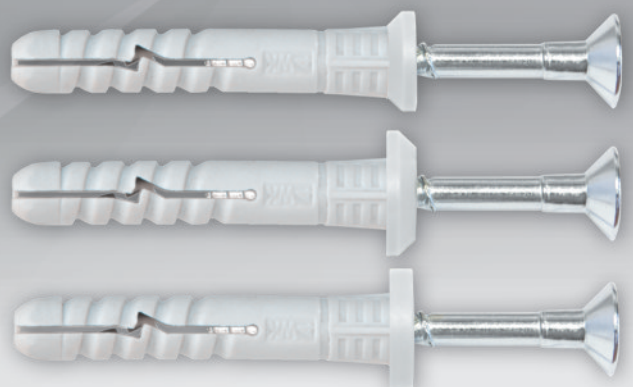
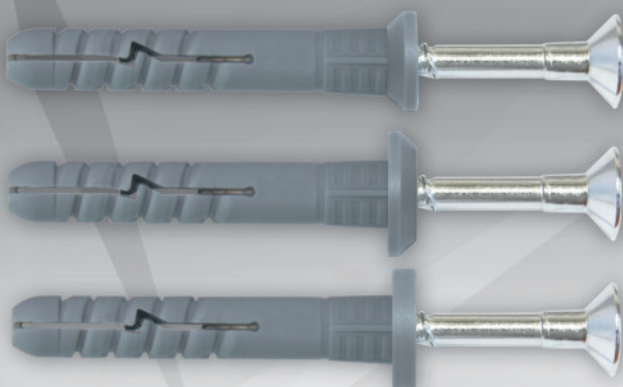
SECURE INSTALLATION

The countersunk screw head
is more solid and boasts
a significant bead at its base!

WHITE ZINC PLATING FINISH

Screws for hammer driven plugs
are corrosion protected by zinc plating
- in the white colour!

100% pure material nylon





SM / SMN HAMMER DRIVE FIXING

 Technical Approval
AT-15-9031/2012

100% nylon



SM - POLIPROPYLENE

SMN - NYLON

APPLICATION

For fixing of wooden battens, frame structures for plasterboard partition walls, electrical conduits and pipe mounting clamps.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



NATURAL
STONE



SILICA
BRICK,
CLASS 15



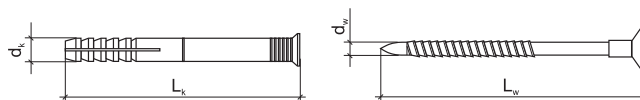
AERATED
CONCRETE
BLOCKS

SPECIFICATIONS

Plug material	SM - polipropylene, SMN - NYLON
Nail screw	steel
Corrosion protection	zinc chromate plating

INSTALLATION DATA

Code and size	Minimum spacing L_w (mm)	Minimum edge distance L_e (mm)	Minimum member thickness g_s (mm)
SM - 5 (SMN - 5)	120	60	60
SM - 6 (SMN - 6)	120	60	60
SM - 8 (SMN - 8)	160	80	80
SM - 10 (SMN - 10)	200	100	100



RESISTANCE

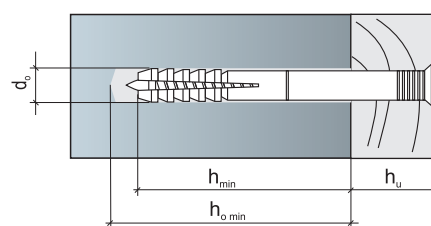
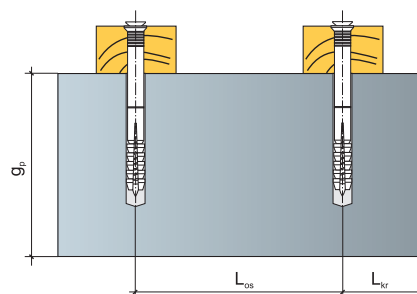
Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
SM - 5 (SMN - 5)	0.31 (0.64)	0.06 (0.40)	0.26 (0.42)	0.10 (0.08)
SM - 6 (SMN - 6)	0.23 (0.67)	0.18 (0.30)	0.32 (0.42)	0.13 (0.11)
SM - 8 (SMN - 8)	0.42 (1.08)	0.21 (0.48)	0.43 -	0.23 (0.20)
SM - 10 (SMN - 10)	1.13 (2.02)	0.36 (1.34)	1.00 -	0.30 (0.44)

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003

Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011

Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011

Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011



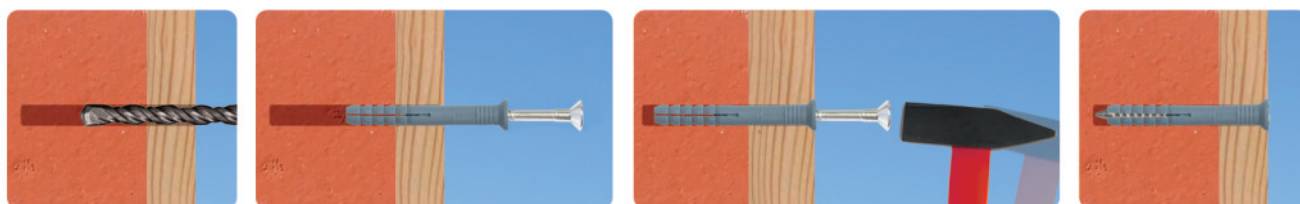


SM / SMN HAMMER DRIVE FIXING

TECHNICAL DATA

POLIPROPYLENE	NYLON	Drill hole diameter d_h [mm]	Plug length L_p [mm]	Minimum depth of drilled hole $h_{p, min}$ [mm]	Minimum anchorage depth h_{an} [mm]	Screw diameter and length d_w [mm]	Pcs per pack
Code and size	Code and size						
SM-05045	SMN-05045	5	45	40	30	3.5 x 50	200
SM-06040	SMN-06040	6	40	40	30	3.9 x 45	200
SM-06050	SMN-06050	6	50	40	30	3.9 x 55	200
SM-06060	SMN-06060	6	60	40	30	3.9 x 65	200
SM-06070	SMN-06070	6	70	40	30	3.9 x 75	100
SM-06080	SMN-06080	6	80	40	30	3.9 x 85	100
SM-08045	SMN-08045	8	45	50	40	4.9 x 50	100
SM-08060	SMN-08060	8	60	50	40	4.9 x 65	100
SM-08080	SMN-08080	8	80	50	40	4.9 x 85	100
SM-08100	SMN-08100	8	100	50	40	4.9 x 105	100
SM-08120	SMN-08120	8	120	50	40	4.9 x 125	100
SM-08140	SMN-08140	8	140	50	40	4.9 x 145	100
SM-08160	SMN-08160	8	160	50	40	4.9 x 165	100
SM-10080	SMN-10080	10	80	60	50	6.9 x 90	50
SM-10100	SMN-10100	10	100	60	50	6.9 x 110	50
SM-10120	SMN-10120	10	120	60	50	6.9 x 130	50
SM-10140	SMN-10140	10	140	60	50	6.9 x 150	50
SM-10160	SMN-10160	10	160	60	50	6.9 x 170	50
SM-10180	SMN-10180	10	180	60	50	6.9 x 190	50
SM-10200	SMN-10200	10	200	60	50	6.9 x 210	50
SM-10220	SMN-10220	10	220	60	50	6.9 x 230	50

INSTALLATION





SMK / SMNK HAMMER DRIVE FIXING WITH COLLAR

 Technical Approval
AT-15-9031/2012

100% **nylon**



SMK - POLIPROPYLENE



SMNK - NYLON

APPLICATION

For fixing of wooden battens, components of drywall frameworks and mounting devices.

SUBSTRATE



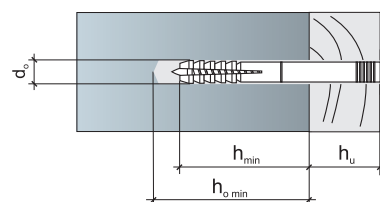
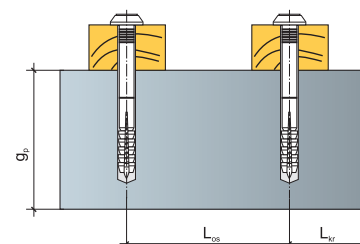
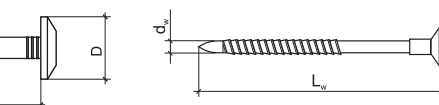
SPECIFICATIONS

Plug	SMK - polipropylene. SMNK - NYLON
Nail screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
SMK - 5 (SMNK - 5)	0.31 (0.64)	0.06 (0.40)	0.26 (0.42)	0.10 (0.08)

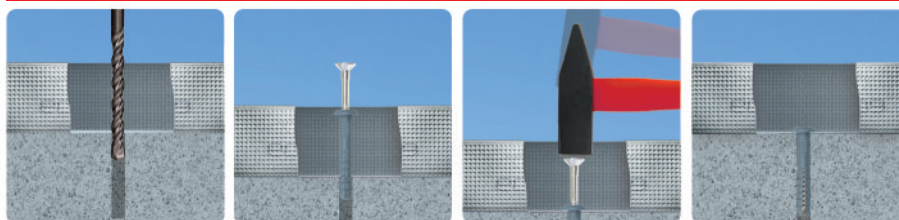
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011



TECHNICAL DATA

POLIPROPYLENE	NYLON	Drill hole diameter d _s [mm]	Plug length L _k [mm]	Minimum depth of drilled hole h _{o min} [mm]	Minimum anchorage depth h _{min} [mm]	Screw diameter and length d _w [mm]	Pcs per pack
Code and size	Code and size						
SMK-06040	SMNK-06040	6	40	40	30	3.9 x 45	200
SMK-06060	SMNK-06060	6	60	40	30	3.9 x 65	200
SMK-06080	SMNK-06080	6	80	40	30	3.9 x 85	100

INSTALLATION





Frame and general purpose fasteners

SMKC / SMNKC

HAMMER DRIVE FIXING WITH CYLINDRICAL COLLAR



Technical Approval
AT-15-9031/2012



SMKC - POLIPROPYLENE



SMNKC - NYLON

APPLICATION

For fixing of PVC assembly components in locations with limited manual access, electrical accessories and components which require greater surface hold-down.

SUBSTRATE



SPECIFICATIONS

Plug	SMKC - polipropylene, SMNKC - NYLON
Nail screw	steel
Corrosion protection	zinc chromate plating

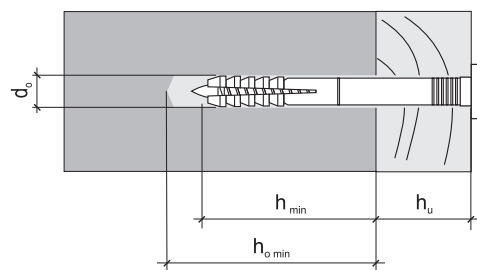
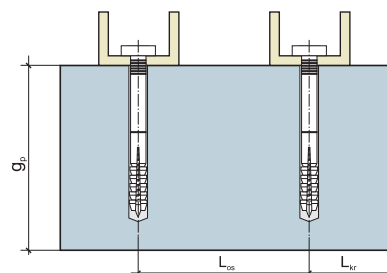
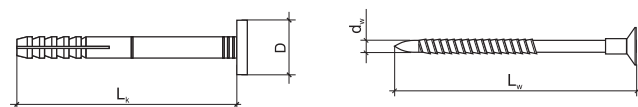
RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
SMKC - 5 (SMNKC - 5)	0.31 (0.64)	0.06 (0.40)	0.26 (0.42)	0.10 (0.08)
SMKC - 6 (SMNKC - 6)	0.23 (0.67)	0.18 (0.30)	0.32 (0.42)	0.13 (0.11)

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

INSTALLATION DATA

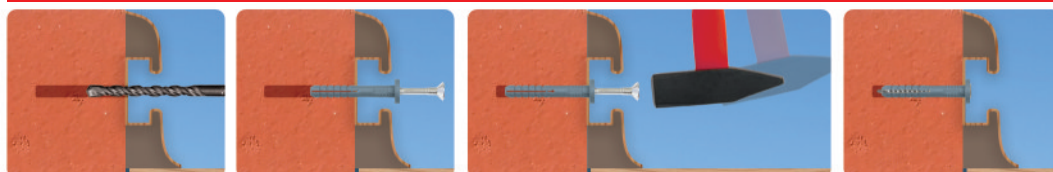
Code and size	Minimum spacing L_{ss} (mm)	Minimum edge distance L_{sr} (mm)	Minimum member thickness g_s (mm)
SMKC-5 (SMNKC-5)	120	60	60
SMKC-6 (SMNKC-6)	120	60	60



TECHNICAL DATA

POLIPROPYLENE	NYLON	Drill hole diameter d_o [mm]	Plug length L_p [mm]	Collar diameter D [mm]	Screw diameter and length $d_w \times L_w$ [mm]	Minimum depth of drilled hole $h_{o min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_u [mm]	Pcs per pack
SMKC-05035	SMNKC-05035	5	35	9	3,5 x 40	40	30	5	200
SMKC-06040	SMNKC-06040	6	40	12	3,9 x 45	40	30	10	200
SMKC-06060	SMNKC-06060	6	60	12	3,9 x 65	40	30	30	100

INSTALLATION





SMM METAL HAMMER DRIVE ANCHOR

 Technical Approval
AT-15-9018/2012



APPLICATION

For hammering of assembly components, structural elements of drywall frameworks and mounting profiles particularly where high fire resistance is required

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK

SPECIFICATIONS

Plug	ZnAl alloy
Pin	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]
SMM - 6 x L	1.47	1.06

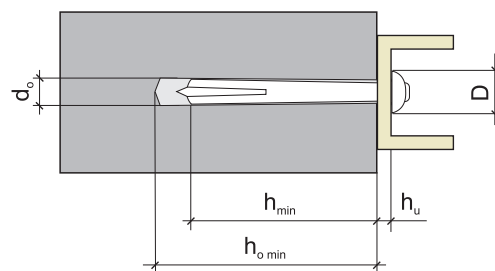
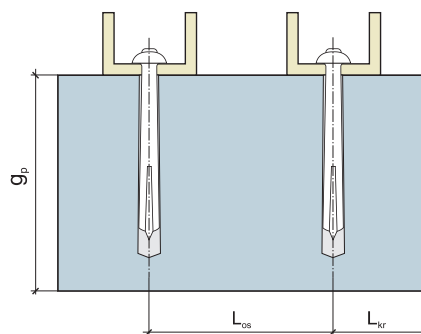
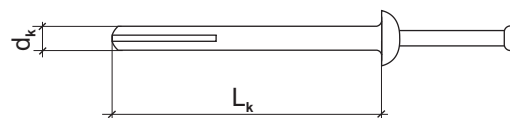
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011

INSTALLATION DATA

Code and size	Minimum spacing L_{os} (mm)	Minimum edge distance L_{kr} (mm)	Minimum member thickness g_s (mm)
SMM - 6 X L	120	60	60

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_k [mm]	Collar diameter D [mm]	Pin diameter and length $d_s \times L_s$ [mm]	Minimum depth of drilled hole $h_{o\ min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_u [mm]	Pcs per pack
SMM-06040	6	40	13	3.8 x 50	40	30	10	100
SMM-06050	6	50	13	3.8 x 60	40	30	20	100
SMM-06065	6	65	13	3.8 x 75	40	30	35	100





Frame and general purpose fasteners

KRW HAMMER DRIVE EXPANSION ANCHOR FOR SUSPENDED CEILINGS

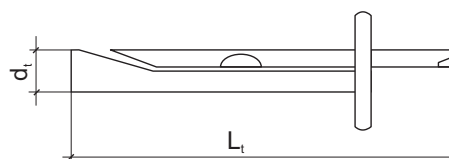


Technical Approval
AT-15-9018/2012



APPLICATION

For through and suspended ceiling fixings in concrete.



SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



CRACK
BAND

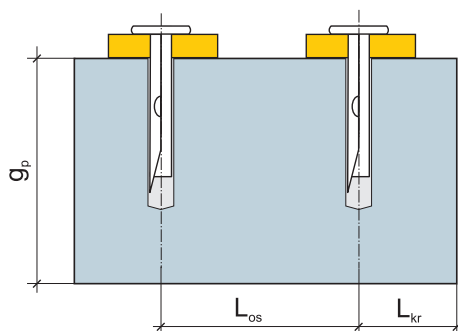
SPECIFICATIONS

Material	steel
Corrosion protection	zinc chromate plating

RESISTANCE

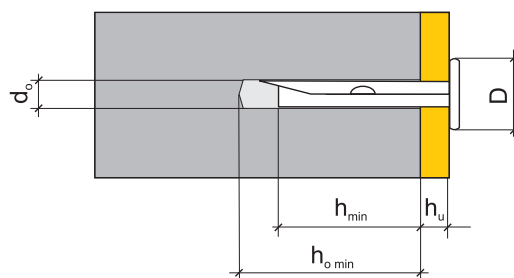
Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Design resistance in crack concrete [kN]
KRW - 6 x L	2.56	1.00	1.19

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011



INSTALLATION DATA

Code and size	Minimum spacing L _{ss} (mm)	Minimum edge distance L _{es} (mm)	Minimum member thickness g _p (mm)
KRW - 6 x L	120	60	60



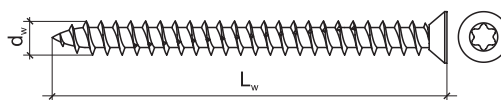
TECHNICAL DATA

Code and size	Drill hole diameter d _o [mm]	Collar diameter D [mm]	Pin diameter and length d _s x L _s [mm]	Minimum depth of drilled hole h _{o min} [mm]	Minimum anchorage depth h _{min} [mm]	Maximum fixture thickness h _u [mm]	Pcs per pack
KRW-06035	6	15	6.0 x 32.5	40	30	4.5	100
KRW-06065	6	15	6.0 x 62.5	45	30	30.5	100



WHO METAL FRAME COUNTERSUNK HEAD SCREW

 Technical Approval
AT-15-8977/2012



APPLICATION

For fixing of PVC and timber window frames, door framework and metal mounting devices.

SUBSTRATE



SPECIFICATIONS

Material	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code	Design resistance in concrete C 20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]
WHO	1.68	0.95	0.97

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011

INSTALLATION DATA

Code	Minimum spacing L_{os} (mm)	Minimum edge distance L_{kr} (mm)	Minimum member thickness g_s (mm)
WHO	120	60	$2 \times h_{min}$

INSTALLATION DATA

WHO	Minimum anchorage depth h_{min} (mm)
Solid concrete, strength class C12/15 to C50/60	30
Solid ceramic or silica brick, strength class not lower than 10	40

TECHNICAL DATA

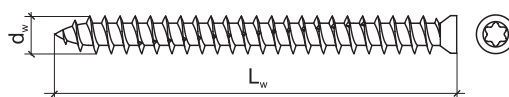
Code and size	Pre-drilled hole diameter d_o [mm]	Screw diameter and length $d_s \times L_w$ [mm]	Head size [mm]	Recessed drive type	Pcs per pack
WHO-72	6	7.5 x 72	11	TORX-30	100
WHO-92	6	7.5 x 92	11	TORX-30	100
WHO-112	6	7.5 x 112	11	TORX-30	100
WHO-132	6	7.5 x 132	11	TORX-30	100
WHO-152	6	7.5 x 152	11	TORX-30	100
WHO-182	6	7.5 x 182	11	TORX-30	100



Frame and general purpose fasteners

WHOW METAL FRAME PAN HEAD SCREW

 Technical Approval
AT-15-8977/2012



APPLICATION

For fixing of PVC and wooden window frames, door framework and metal mounting devices.

SUBSTRATE



SPECIFICATIONS

Material	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code	Design resistance in concrete C 20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]
WHOW	1.68	0.95	0.97

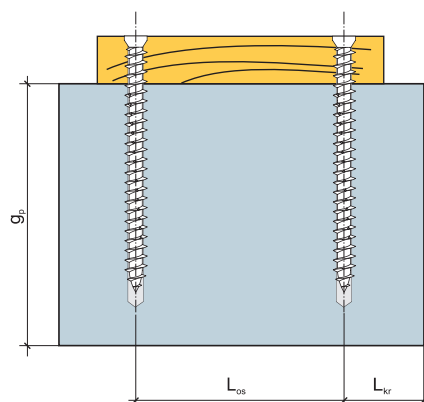
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011

INSTALLATION DATA

Code	Minimum spacing L_{os} (mm)	Minimum edge distance L_{kr} (mm)	Minimum member thickness g_p (mm)
WHOW	120	60	$2 \times h_{min}$

TECHNICAL DATA

Code and size	Pre-drilled hole diameter d_o [mm]	Screw diameter and length $d_w \times L_w$ [mm]	Head size [mm]	Recessed drive type	Pcs per pack
WHOW-72	6	7.5 x 72	8.5	TORX-30	100
WHOW- 92	6	7.5 x 92	8.5	TORX-30	100
WHOW-112	6	7.5 x 112	8.5	TORX-30	100
WHOW-132	6	7.5 x 132	8.5	TORX-30	100
WHOW-152	6	7.5 x 152	8.5	TORX-30	100
WHOW-182	6	7.5 x 182	8.5	TORX-30	100



INSTALLATION DATA

WHOW	Minimum anchorage depth h_{min} (mm)
Solid concrete, strength class C12/15 to C50/60	30
Solid ceramic or silica brick, strength class not lower than 10	40



LO METAL FRAME FIXING

 Technical Approval
AT-15-8976/2012



APPLICATION

For fixing of PVC and timber window frames, door framework and metal mounting devices.

SUBSTRATE



SPECIFICATIONS

Material: steel, ZnAl alloy
Corrosion protection: zinc chromate plating

RESISTANCE

Code	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Perforated ceramic brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
LO	1.70	1.11	0.29	1.14	0.29

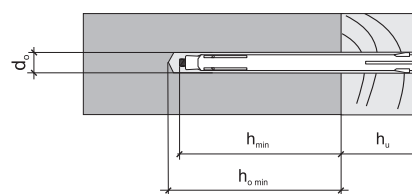
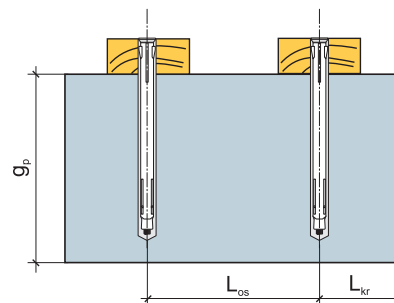
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011

INSTALLATION DATA

Code	Substrate	Minimum spacing L_{os} (mm)	Minimum edge distance L_{kr} (mm)	Minimum member thickness g_p (mm)
LO	concrete, brick	120	60	60
LO	hollow brick, aerated concrete	200	100	100

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_1 [mm]	Minimum depth of drilled hole $h_{o, min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_u [mm]	Head diameter	Recessed drive type	Pcs per pack
LO-10072	10	72	50	30	42	13	PZ-2	100
LO-10092	10	92	50	30	62	13	PZ-2	100
LO-10112	10	112	50	30	82	13	PZ-2	100
LO-10132	10	132	50	30	102	13	PZ-2	100
LO-10152	10	152	50	30	122	13	PZ-2	100
LO-10182	10	182	50	30	152	13	PZ-2	50
LO-10202	10	202	50	30	172	13	PZ-2	50



Z CAPS FOR METAL FRAME FIXINGS



TECHNICAL DATA

Code	Colour	Outer diameter (mm)	Pcs per pack
ZB	WHITE	16	100
ZBR	BROWN	16	100
ZCZ	BLACK	16	100
ZSZ	GREY	16	100

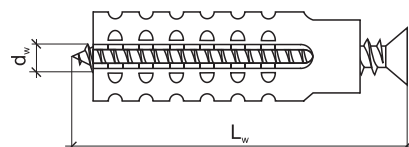
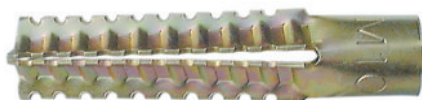


Frame and general purpose fasteners

KMG METAL PLUG FOR AERATED CONCRETE



Technical Approval
AT-15-9018/2012



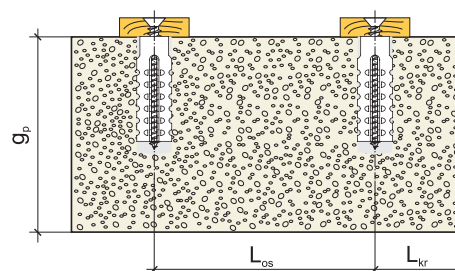
APPLICATION

Use with screws, hooks, etc.

SUBSTRATE

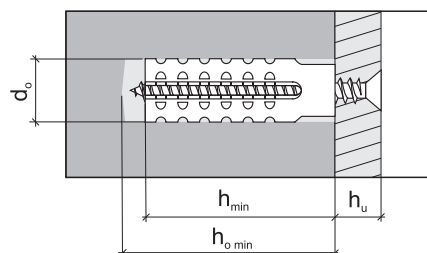


AERATED
CONCRETE
BLOCKS



SPECIFICATIONS

Material	steel
Corrosion protection	zinc chromate plating



RESISTANCE

Code and size	Design resistance in aerated concrete [kN]
KMG - 5	0.21
KMG - 6	0.34
KMG - 8	0.59
KMG - 8D	1.72
KMG - 10	2.39

Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

INSTALLATION DATA

Code and size	Minimum spacing L_{ss} (mm)	Minimum edge distance L_w (mm)	Minimum member thickness g_p (mm)
KMG - 5	120	60	60
KMG - 6	120	60	60
KMG - 8	140	70	70
KMG - 8D	240	120	120
KMG - 10	240	120	120

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug diameter and length $d_p \times L_p$ [mm]	Minimum depth of drilled hole $h_o \text{ min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Screw diameter [mm]	Pcs per pack
KMG-05	5	5 x 30	40	30	4.5	200
KMG-06	6	6 x 32	40	32	4.5 - 5.0	200
KMG-08	8	8 x 36	45	36	5.0 - 6.0	100
KMG-08D	8	8 x 60	70	60	5.0 - 6.0	50
KMG-10	10	10 x 60	70	60	6.0 - 8.0	50

NEW! *sfx*

#for all substrates!

Ø5x25; Ø6x30
Ø8x40; Ø10x50
Ø10x60

100% pure material **nylon** ★★★

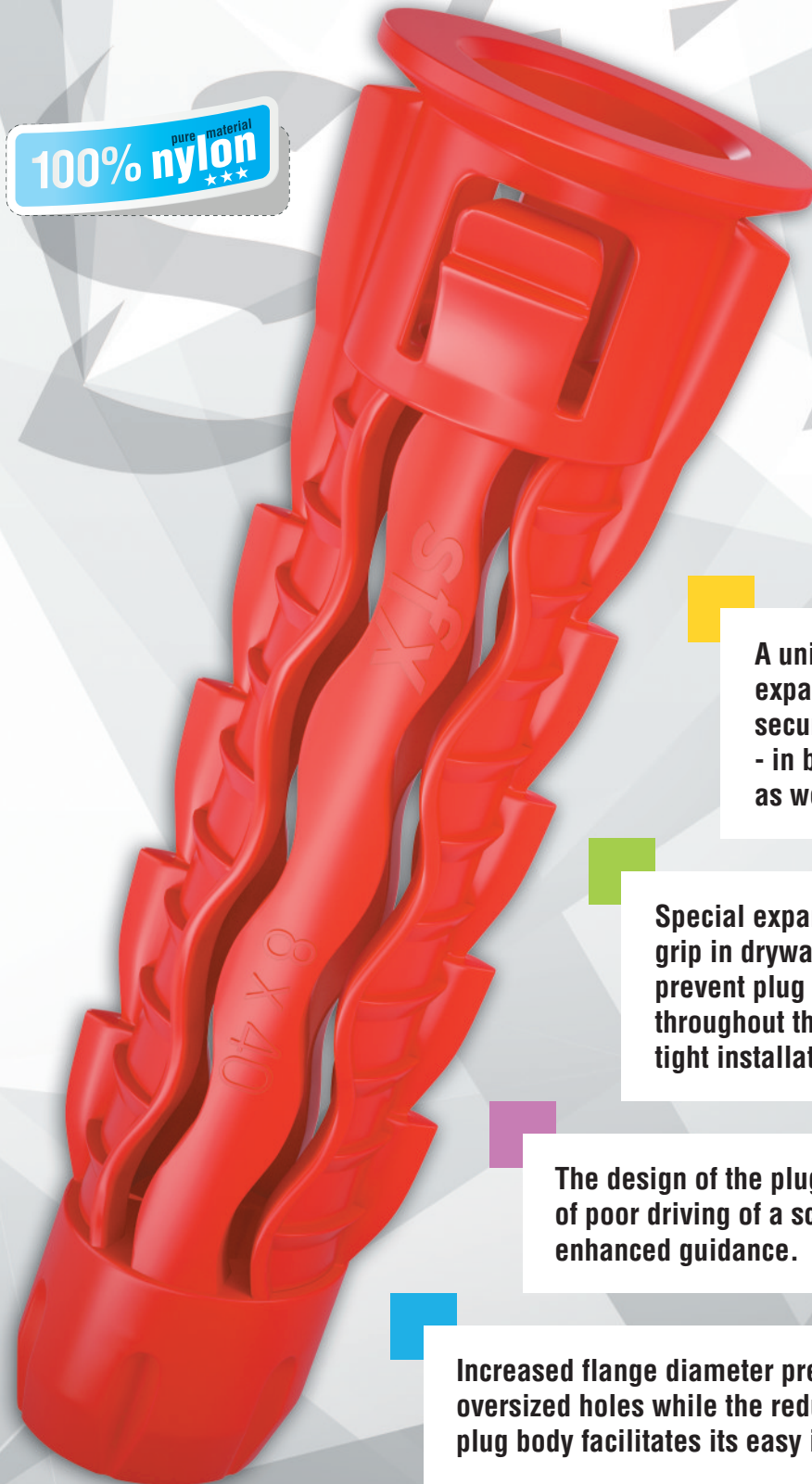


A unique design of the expansion/torsion zone provides secure installation in any substrate - in both solid and hollow substrates as well as in plasterboards.

Special expansion fins guarantee secure grip in drywalls as thin as 10 mm and prevent plug rotation. The ribs provided throughout the length of the plug secure its tight installation in solid substrates.

The design of the plug inside reduces the possibility of poor driving of a screw into the plug by its enhanced guidance.

Increased flange diameter prevents the plug from falling into oversized holes while the reduced diameter of the tip of the plug body facilitates its easy installation in a hole.



sfx



#one plug
a number of applications...



SFX

EXPANSION PLUG FEATURES SUITABLE FOR A NUMBER OF SUBSTRATES

NEW!



100% **nylon**

APPLICATION

fixings for installing construction elements to masonry substrates, plasterboards and wood-base materials (of min 10 mm in thickness)

SUBSTRATE



CONCRETE



CLAY BRICK



CALCIUM SILICATE
BRICK



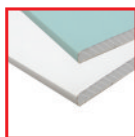
CALCIUM SILICATE
HOLLOW BLOCK



PERFORATED
CERAMIC BRICK



AUTOCLAVED
AERATED CONCRETE



PLASTERBOARDS

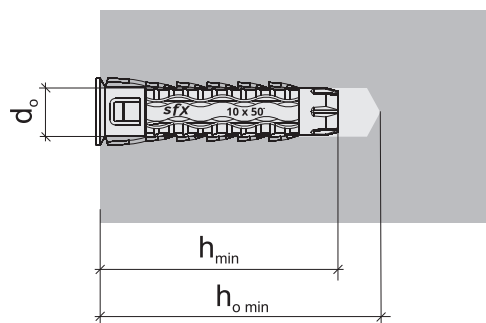
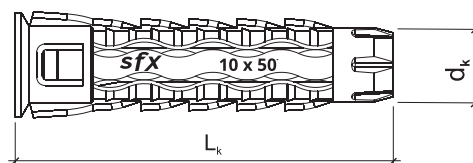


WOODEN SUBSTRATES,
(TIMBER, PLYWOOD,
OSB PANEL)

SPECIFICATIONS

Material

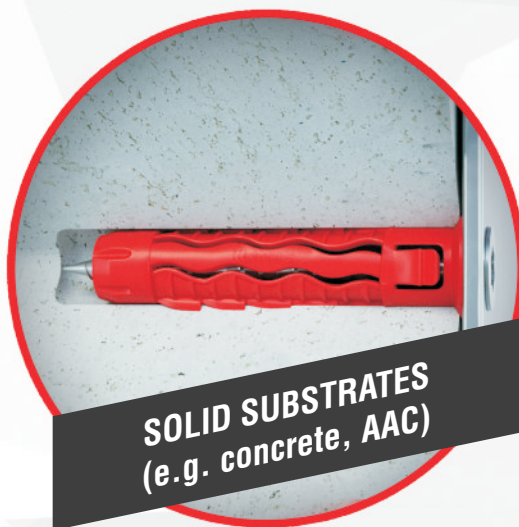
NYLON



TECHNICAL DATA

Code	Drill hole diameter d_o [mm]	Plug length L_k [mm]	Minimum depth of drilled hole h_o min [mm]	Minimum anchorage depth h_{min} [mm]	Screw diameter d_s [mm]
SXF-05025*	5	25	35	25	3,5
SXF-06030*	6	30	40	30	4
SXF-08040*	8	40	50	40	5
SXF-10050	10	50	60	50	6
SXF-10060	10	60	70	60	6

*available in the oncoming months of 2015



sfx
#for all substrates!

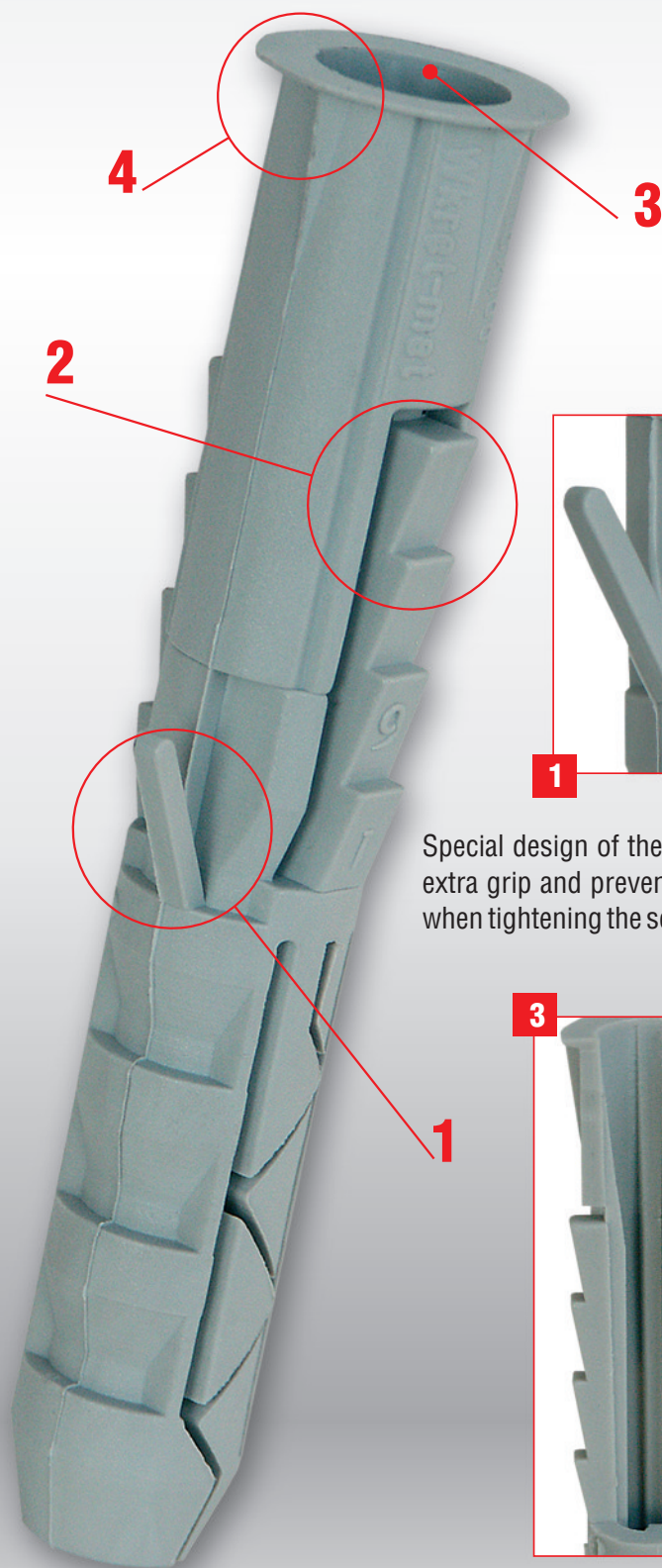


3-WAY EXPANSION PLUG WITH ANTI-ROTATION LUGS

KNX / KPX



Technical Approval AT-15-9031/2012



This multi-purpose expansion plug was developed by our company for high load-bearing capacity fixings in basic building materials. The plug has a unique design with several expansion and anti-rotation elements acting in two planes. This ensures even distribution of pressure over the material and perfect fitting of the plug rim in the installation hole.

At the first stage of installation, the lugs **(1)** and 3-way expansion lock hold the plug firmly in place.

Special design of the sleeve **(2)** gives an extra grip and prevents the plug rotation when tightening the screw.

2

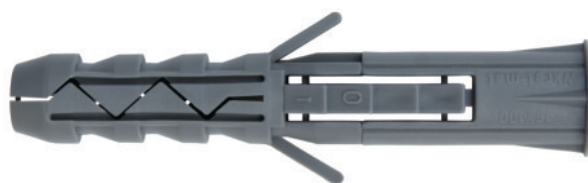
The inside of KPX plug has four guides **(3)** along its length which keep the screw straight when tightened. The perfect design of the sleeve offers maximum performance for fixings in concrete, solid brick, natural stone and perforated materials.

4

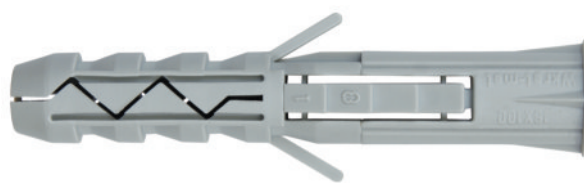
Additionally, the wide rim **(4)** prevents the plug from sinking into the drill hole ensuring visual aesthetics.



KPX, KNX 3-WAY EXPANSION PLUG WITH ANTI-ROTATION LUGS



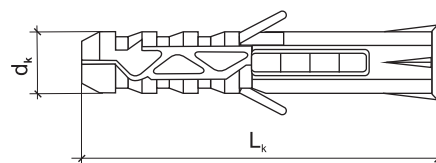
KPX - POLIPROPYLENE



KNX - NYLON

APPLICATION

For fixing in normal weight concrete, strength class not lower than C16/20 (PN-EN 206/1:2003), solid brick, strength class not lower than 7.5 (PN-B 12050/1996) and aerated concrete 400, class not lower than 3 (PN-B 19301/1997), non-cracked concrete.



SUBSTRATE



CONCRETE



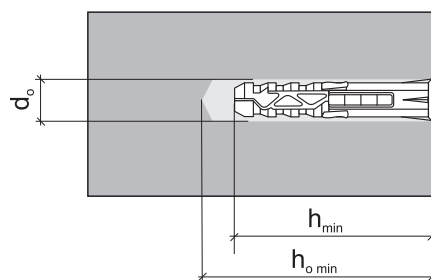
SOLID
CERAMIC
BRICK



AERATED
CONCRETE
BLOCKS

SPECIFICATIONS

Material **KPX - polipropylene, KNX - NYLON**



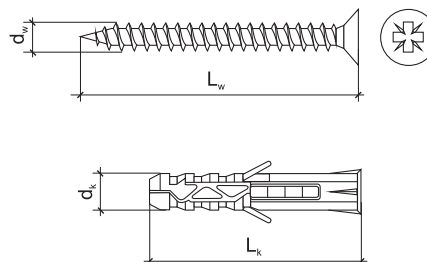
TECHNICAL DATA

POLIPROPYLENE	NYLON	Drill hole diameter d_o [mm]	Plug length L_k [mm]	Minimum depth of drilled hole $h_{o \min}$ [mm]	Minimum anchorage depth $h_{\min}$ [mm]	Screw diameter d_w [mm]	Pcs per pack
Code and size	Code and size						
KPX-06030	KNX-06030	6	30	40	30	3.5 - 4	1000
KPX-08040	KNX-08040	8	40	50	40	4 - 6	500
KPX-08050	KNX-08050	8	50	60	50	4 - 6	400
KPX-10050	KNX-10050	10	50	60	50	5 - 7	300
KPX-10060	KNX-10060	10	60	70	60	5 - 7	200
KPX-12060	KNX-12060	12	60	70	60	6 - 8	150
KPX-12080	KNX-12080	12	80	90	80	6 - 8	100
KPX-14080	KNX-14080	14	80	90	80	10	100
KPX-16100	KNX-16100	16	100	110	100	12	50



KRX 3-WAY EXPANSION PLUG WITH COUNTERSUNK WOOD SCREW

 Technical Approval
AT-15-9031/2012



APPLICATION

For fixing conduits and interior finish products to walls and ceilings.

SUBSTRATE



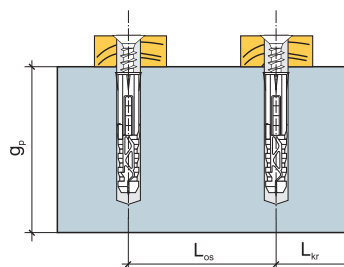
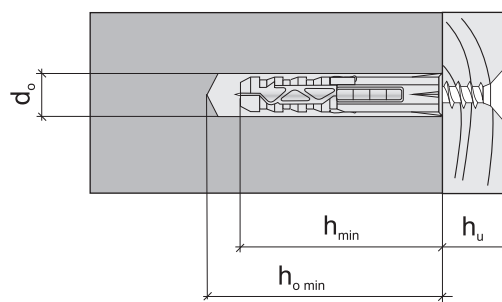
SPECIFICATIONS

Plug	polipropylene
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
KRX - 6/30	0.13	0.03	0.05	-
KRX - 8/40	0.09	-	0.07	0.02
KRX - 8/50	0.24	0.16	0.42	0.12
KRX - 10/50	0.24	0.13	0.19	-
KRX - 10/60	0.49	0.14	0.48	0.20
KRX - 12/60	0.47	0.30	0.36	-

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011



INSTALLATION DATA

Code and size	Minimum spacing L_w (mm)	Minimum edge distance L_e (mm)	Minimum member thickness g, (mm)
KRX - 6	60	30	60
KRX - 8	80	40	80
KRX - 8	100	50	100
KRX - 10	100	50	100
KRX - 10	120	60	120
KRX - 12	120	60	120



KRX 3-WAY EXPANSION PLUG WITH COUNTERSUNK WOOD SCREW

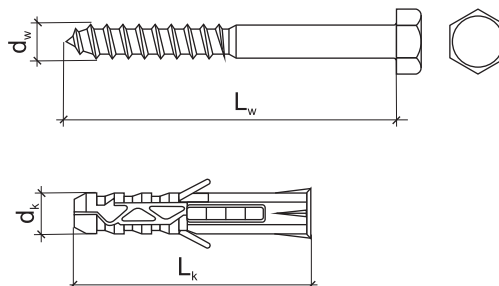
TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_t [mm]	Screw diameter and length $d_w \times L_w$ [mm]	Minimum depth of drilled hole h_o min [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_o [mm]	Recessed drive type	Pcs per pack
KRX-063530	6	30	3.5 x 30	40	30	1	PZ-2	200
KRX-063535	6	30	3.5 x 35	40	30	5	PZ-2	200
KRX-063540	6	30	3.5 x 40	40	30	10	PZ-2	200
KRX-063550	6	30	3.5 x 50	40	30	20	PZ-2	200
KRX-084040	8	40	4.0 x 40	50	40	1	PZ-2	100
KRX-084045	8	40	4.0 x 45	50	40	5	PZ-2	100
KRX-084050	8	40	4.0 x 50	50	40	10	PZ-2	100
KRX-084060	8	40	4.0 x 60	50	40	20	PZ-2	100
KRX-085050	8	50	5.0 x 50	60	50	1	PZ-2	100
KRX-085060	8	50	5.0 x 60	60	50	10	PZ-2	100
KRX-085070	8	50	5.0 x 70	60	50	20	PZ-2	100
KRX-085080	8	50	5.0 x 80	60	50	30	PZ-2	100
KRX-085100	8	50	5.0 x 100	60	50	50	PZ-2	100
KRX-105050	10	50	5.0 x 50	60	50	1	PZ-2	100
KRX-105060	10	50	5.0 x 60	60	50	10	PZ-2	100
KRX-105070	10	50	5.0 x 70	60	50	20	PZ-2	100
KRX-105080	10	50	5.0 x 80	60	50	30	PZ-2	100
KRX-105100	10	50	5.0 x 100	60	50	50	PZ-2	100
KRX-106060	10	60	6.0 x 60	70	60	1	PZ-3	100
KRX-106070	10	60	6.0 x 70	70	60	10	PZ-3	100
KRX-106080	10	60	6.0 x 80	70	60	20	PZ-3	100
KRX-106100	10	60	6.0 x 100	70	60	40	PZ-3	100
KRX-106120	10	60	6.0 x 120	70	60	60	PZ-3	100
KRX-126060	12	60	6.0 x 60	70	60	1	PZ-3	100
KRX-126070	12	60	6.0 x 70	70	60	10	PZ-3	100
KRX-126080	12	60	6.0 x 80	70	60	20	PZ-3	100
KRX-126100	12	60	6.0 x 100	70	60	40	PZ-3	100
KRX-126120	12	60	6.0 x 120	70	60	60	PZ-3	100



KKX 3-WAY EXPANSION PLUG WITH HEX HEAD WOOD SCREW

 Technical Approval
AT-15-9031/2012



APPLICATION

For fixing conduits and interior finish products to walls and ceilings.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



NATURAL
STONE



SILICA
BRICK,
CLASS 15



AERATED
CONCRETE
BLOCKS

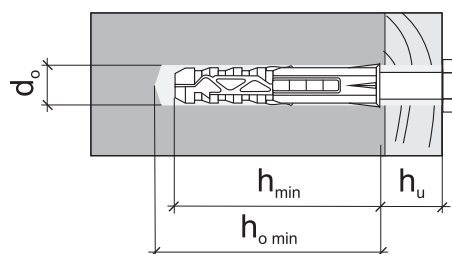
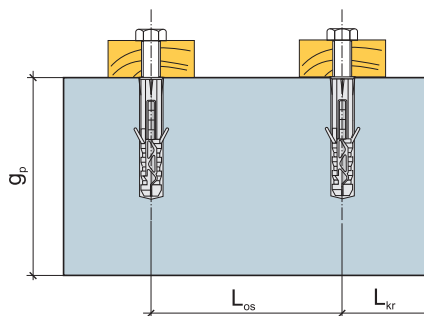
SPECIFICATIONS

Plug	polipropylene
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
KKX - 10 x 60	0.79	0.18	0.35	0.28
KKX - 12 x 60	1.20	1.03	1.00	0.45
KKX - 12 x 80	1.57	1.14	0.79	0.64
KKX - 14 x 80	2.17	1.22	1.29	0.50
KKX - 16 x 100	2.38	3.03	0.74	1.28

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011



INSTALLATION DATA

Code and size	Minimum spacing L _{ss} (mm)	Minimum edge distance L _{kr} (mm)	Minimum member thickness g _p (mm)
KKX - 10	120	60	120
KKX - 12/60	120	60	120
KKX - 12/80	160	80	160
KKX - 14	160	80	160
KKX - 16	200	100	200

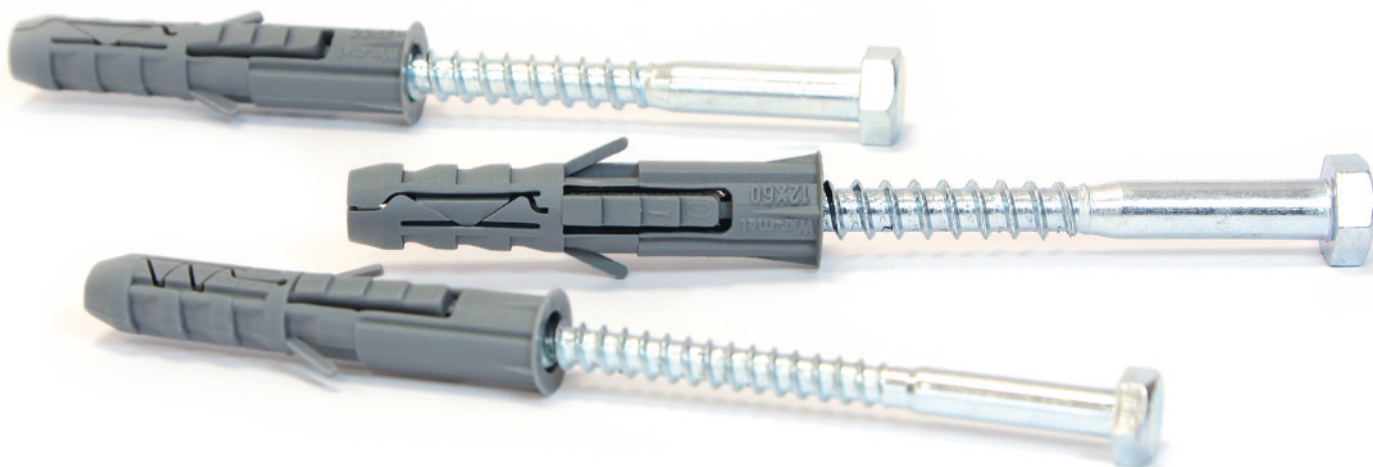


Frame and general purpose fasteners

KKX 3-WAY EXPANSION PLUG WITH HEX HEAD WOOD SCREW

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_p [mm]	Screw diameter and length $d_s \times L_s$ [mm]	Minimum depth of drilled hole h_o min [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_s [mm]	Width across flats	Pcs per pack
KKX-10060	10	60	6.0 x 60	70	60	1	10	100
KKX-10070	10	60	6.0 x 70	70	60	10	10	100
KKX-10080	10	60	6.0 x 80	70	60	20	10	100
KKX-10090	10	60	6.0 x 90	70	60	30	10	100
KKX-10100	10	60	6.0 x 100	70	60	40	10	100
KKX-10120	10	60	6.0 x 120	70	60	60	10	100
KKX-10140	10	60	6.0 x 140	70	60	80	10	100
KKX-12060	12	60	8.0 x 60	70	60	1	13	100
KKX-12070	12	60	8.0 x 70	70	60	10	13	100
KKX-12080	12	60	8.0 x 80	70	60	20	13	100
KKX-12090	12	60	8.0 x 90	70	60	30	13	100
KKX-12100	12	80	8.0 x 100	90	80	20	13	50
KKX-12120	12	80	8.0 x 120	90	80	40	13	50
KKX-12140	12	80	8.0 x 140	90	80	60	13	50
KKX-12160	12	80	8.0 x 160	90	80	80	13	50
KKX-12180	12	80	8.0 x 180	90	80	100	13	50
KKX-12200	12	80	8.0 x 200	90	80	120	13	50
KKX-14080	14	80	10 x 80	90	80	1	17	50
KKX-14100	14	80	10 x 100	90	80	20	17	50
KKX-14120	14	80	10 x 120	90	80	40	17	50
KKX-14140	14	80	10 x 140	90	80	60	17	50
KKX-14160	14	80	10 x 160	90	80	80	17	25
KKX-14180	14	80	10 x 180	90	80	100	17	25
KKX-14200	14	80	10 x 200	90	80	120	17	25
KKX-16120	16	100	12 x 120	110	100	20	19	25
KKX-16140	16	100	12 x 110	110	100	40	19	25
KKX-16160	16	100	12 x 160	110	100	60	19	25
KKX-16180	16	100	12 x 180	110	100	80	19	20
KKX-16200	16	100	12 x 200	110	100	100	19	20
KKX-16220	16	100	12 x 220	110	100	120	19	20
KKX-16240	16	100	12 x 240	110	100	140	19	20
KKX-16260	16	100	12 x 260	110	100	160	19	20





PX 3-WAY EXPANSION PLUG WITH STRAIGHT HOOK

 Technical Approval
AT-15-9031/2012



APPLICATION

Fixing of interior finish products like curtain rods, shelves, picture frames, cupboards, wall lights, etc.

SUBSTRATE



SPECIFICATIONS

Plug	polipropylene
Screw	steel
Corrosion protection	zinc chromate plating

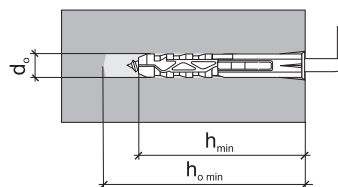
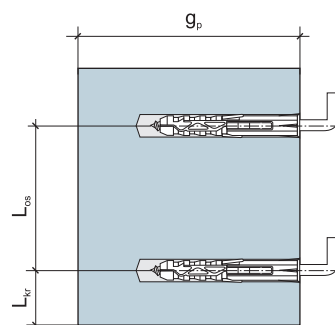
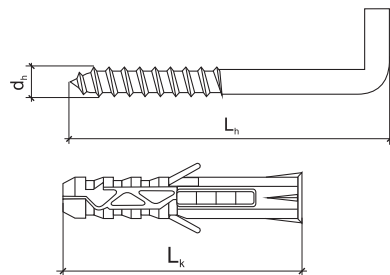
RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
PX - 6 x 30	0.13	0.03	0.05	-
PX - 8 x 40	0.23	0.12	0.21	0.08
PX - 10 x 50	0.28	0.16	0.47	0.06
PX - 10 x 60	0.28	0.16	0.47	0.06
PX - 12 x 60	0.74	0.13	0.61	0.18
PX - 12 x 80	0.74	0.13	0.61	0.18

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_p [mm]	Hook diameter d_h [mm]	Minimum depth of drilled hole $h_{o \min}$ [mm]	Minimum anchorage depth $h_{\min}$ [mm]	Hook diameter and length $d_h \times L_h$ [mm]	Pcs per pack
PX-06	6	30	4	40	30	4.0 x 40	200
PX-08	8	40	4.5	50	40	4.5 x 50	100
PX-10	10	50	5.5	60	50	5.5 x 60	100
PX-10D	10	60	6	70	60	6.0 x 75	100
PX-12	12	60	7.5	70	60	7.5 x 75	100
PX-12D	12	80	8	90	80	8.0 x 100	50



INSTALLATION DATA

Code and size	Minimum spacing L_{st} (mm)	Minimum edge distance L_{ex} (mm)	Minimum member thickness g_p (mm)
PX - 6	60	30	60
PX - 8	80	40	80
PX - 10	100	50	100
PX - 10	120	60	120
PX - 12	120	60	120
PX - 12	160	80	160



Frame and general purpose fasteners

PR FRAME PLUG WITH L-HOOK



Technical Approval
AT-15-9031/2012



100% nylon

APPLICATION

Fixing of interior finish products like curtain rods, shelves, picture frames, cupboards, wall lights; etc.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



SILICA
BRICK,
CLASS 15



AERATED
CONCRETE
BLOCKS



PERFORATED
CERAMIC BRICK

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Design pull-out resistance and shear strength

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]	Perforated ceramic brick [kN]
PR - 8	0.41	0.29	0.29	0.37	0.29
PR - 10	0.84	0.61	0.61	0.76	0.61

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003

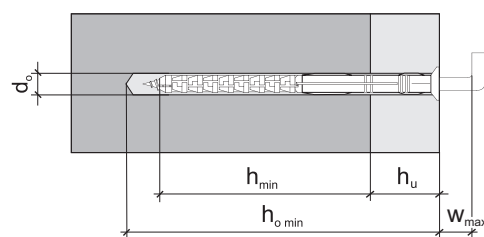
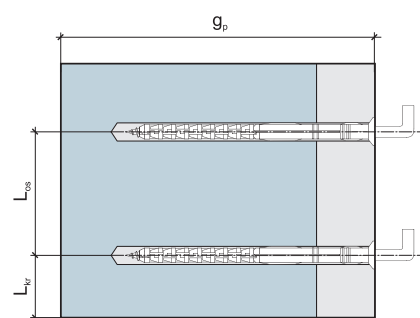
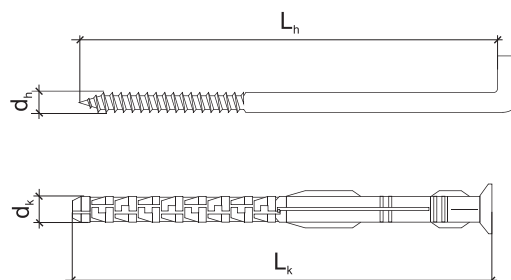
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011

Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_i [mm]	Hook diameter and length $d_h \times L_h$ [mm]	Minimum depth of drilled hole $h_{o\ min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Maximum fixture thickness h_{uz} [mm]	Maximum protruding length w_{max} [mm]	Pcs per pack
PR-08080	8	80	6.0 x 100	60	50	30	15	50
PR-08100	8	100	6.0 x 120	60	50	50	15	50
PR-10100	10	100	7.0 x 120	70	60	40	15	50
PR-10135	10	135	7.0 x 155	70	60	75	15	50
PR-10160	10	160	7.0 x 180	70	60	100	15	50



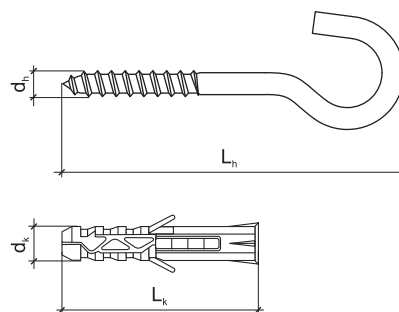
INSTALLATION DATA

Code and size	Minimum spacing L_{os} (mm)	Minimum edge distance L_{e1} (mm)	Minimum member thickness g_o (mm)
PR - 8	200	100	100
PR - 10	240	120	120



WX 3-WAY EXPANSION PLUG WITH ROUND HOOK

 Technical Approval
AT-15-9031/2012



APPLICATION

For fixing interior finish products to ceilings.

SUBSTRATE



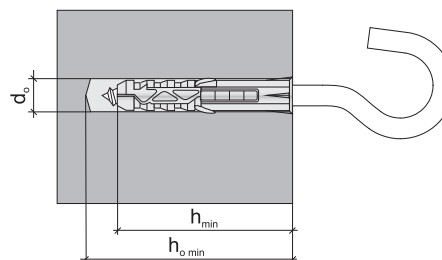
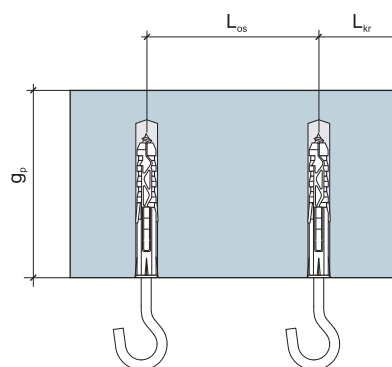
SPECIFICATIONS

Plug	polipropylene
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
WX - 6	0.13	0.03	0.05	-
WX - 8	0.23	0.12	0.21	0.08
WX - 10	0.28	0.16	0.47	0.06
WX - 12	0.74	0.13	0.61	0.18

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011



INSTALLATION DATA

Code and size	Minimum spacing L _{ss} (mm)	Minimum edge distance L _{kr} (mm)	Minimum member thickness g _p (mm)
WX - 6	60	30	60
WX - 8	80	40	80
WX - 10	100	50	100
WX - 12	120	60	120

TECHNICAL DATA

Code and size	Drill hole diameter d _i [mm]	Plug length L _s [mm]	Hook diameter and length d _s x L _h [mm]	Minimum depth of drilled hole h _{o min} [mm]	Minimum anchorage depth h _{min} [mm]	Pcs per pack
WX-06	6	30	4.0 x 55	40	30	100
WX-08	8	40	4.5 x 65	50	40	100
WX-10	10	50	5.5 x 90	60	50	100
WX-12	12	60	7.5 x 97	70	60	100



Frame and general purpose fasteners

HX 3-WAY EXPANSION PLUG WITH PIG TAIL HOOK



Technical Approval
AT-15-9031/2012



APPLICATION

Use for fixing interior finish products to ceilings.

SUBSTRATE



CONCRETE

SOLID
CERAMIC
BRICK

NATURAL
STONE

SILICA
BRICK,
CLASS 15

AERATED
CONCRETE
BLOCKS

SPECIFICATIONS

Plug	polipropylene
Screw	steel
Corrosion protection	zinc chromate plating

RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
HX - 12	0.74	0.13	0.61	0.18

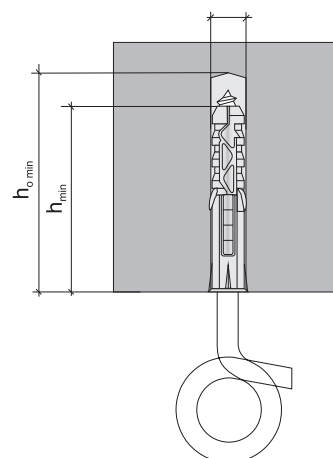
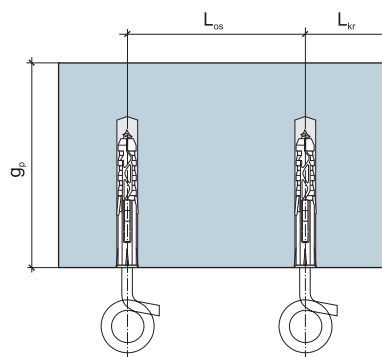
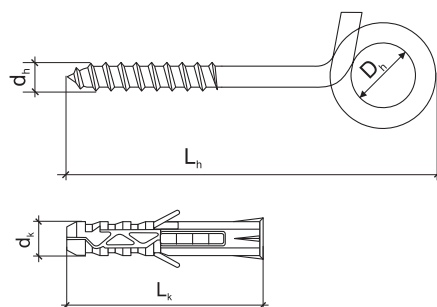
Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

INSTALLATION DATA

Code and size	Minimum spacing L_s (mm)	Minimum edge distance L_{ex} (mm)	Minimum member thickness g_p (mm)
HX - 12	120	60	120

TECHNICAL DATA

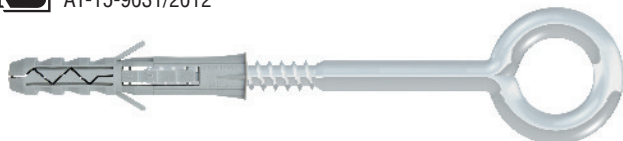
Code and size	Drill hole diameter d_o [mm]	Plug length L_p [mm]	Hook diameter and length $d_h \times L_h$ [mm]	Minimum depth of drilled hole $h_{o, min}$ [mm]	Minimum anchorage depth h_{min} [mm]	Inner eye diameter D_h [mm]	Pcs per pack
HX-12	12	60	8.0 x 120	70	60	22	50



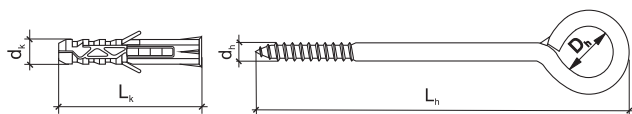


HOX 3-WAY EXPANSION PLUG WITH EYEBOLT

Technical Approval
AT-15-9031/2012



100% nylon



APPLICATION

For anchoring of movable scaffolding systems and other individual design scaffolds, suspended scaffolding, chains, ropes, etc, in masonry.

SUBSTRATE



SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating

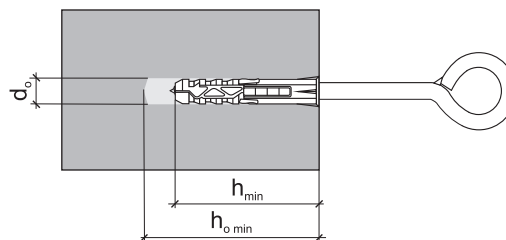
RESISTANCE

Code and size	Design resistance in concrete C20/25 [kN]	Design resistance in solid brick [kN]	Calcium silicate brick [kN]	Aerated concrete [kN]
HOX - 14	9.30	4.08	2.35	1.28
HOX - 16	16.80	2.39	2.65	-

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 15 according to PN-EN 771-1:2011
Calcium silicate brick, class not lower than 20 according to PN-EN 771-2:2011
Aerated concrete blocks 600, class not lower than 5 according to PN-EN 771-4:2011

TECHNICAL DATA

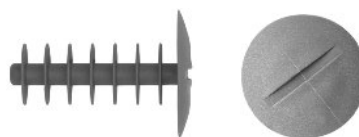
Code and size	Drill hole diameter d ₀ [mm]	Plug length L _k [mm]	Hook diameter and length d _h x L _h [mm]	Minimum depth of drilled hole h _{0 min} [mm]	Minimum anchorage depth h _{min} [mm]	Inner eye diameter D _i [mm]	Pcs per pack
HOX-14120	14	80	10 x 165	90	80	25	20
HOX-14160	14	80	10 x 205	90	80	25	20
HOX-14190	14	80	10 x 235	90	80	25	20
HOX-14230	14	80	10 x 275	90	80	25	20
HOX-16160	16	100	12 x 210	110	100	25	15
HOX-16190	16	100	12 x 240	110	100	25	15
HOX-16230	16	100	12 x 280	110	100	25	15
HOX-16300	16	100	12 x 350	110	100	25	15
HOX-16350	16	100	12 x 400	110	100	25	15



INSTALLATION DATA

Code and size	Minimum spacing L _s (mm)	Minimum edge distance L _e (mm)	Minimum member thickness g _p (mm)
HOX - 14	240	120	160
HOX - 16	300	150	200

ZHO CAPS FOR METAL FRAME FIXINGS



TECHNICAL DATA

Code	Outer diameter [mm]	Collar diameter [mm]	Pcs per pack
ZHO - white	14	28	100
ZHO - grey	14	28	100
ZHO - sand beige	14	28	100



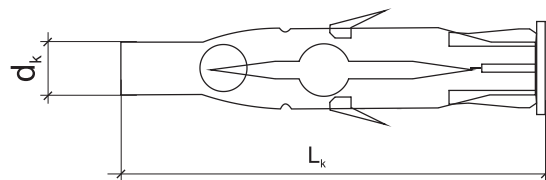
Frame and general purpose fasteners

KPU UNIVERSAL PLUG

 Technical Approval
AT-15-8943/2012



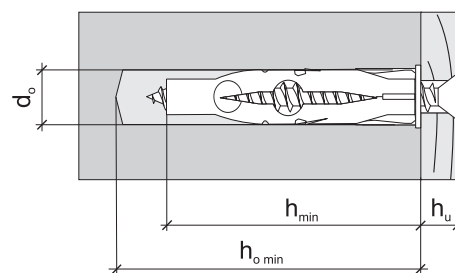
100% pure material **nylon** ***



APPLICATION

Use with screws for fixing of interior finish products and lightweight system components.

SUBSTRATE



SPECIFICATIONS

Material **NYLON**

TECHNICAL DATA

Code and size	Drill hole diameter $d_o = d_k$ [mm]	Plug length L_k [mm]	Screw diameter d_s [mm]	Minimum depth of drilled hole $h_{o \min}$ [mm]	Minimum anchorage depth $h_{\min}$ [mm]	Pcs per pack
KPU-06035	6	35	3.0 - 3.5	45	35	500
KPU-08050	8	50	4.0 - 5.0	60	50	300
KPU-10060	10	60	5.0 - 6.0	70	60	200

INSTALLATION



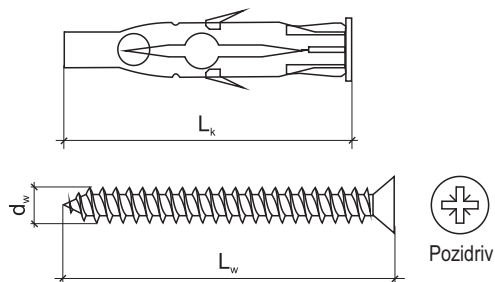


RU UNIVERSAL PLUG WITH HARDENED WOOD SCREW

 Technical Approval
AT-15-8943/2012



100% nylon



APPLICATION

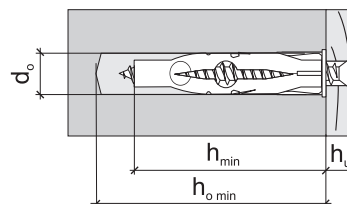
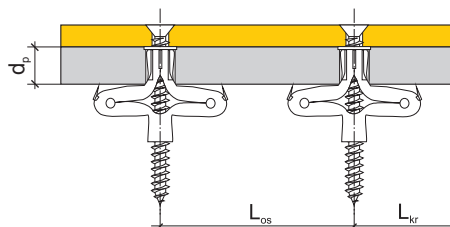
For fixing of interior finish products and lightweight system components.

SUBSTRATE



SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating



RESISTANCE

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Perforated ceramic brick [kN]	Design resistance in plasterboard [kN]
RU - 6	0.38	0.25	0.20	0.24
RU - 8	0.52	0.36	0.25	0.26
RU - 10	0.92	0.64	0.25	0.28

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 20 according to PN-EN 771-1:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011
Plasterboard according to PN-EN 520+A1:2010

INSTALLATION DATA

Code and size	Minimum spacing L _{ss} (mm)	Minimum edge distance L _{er} (mm)
RU - 6	140	70
RU - 8	200	100
RU - 10	240	120

TECHNICAL DATA

Code and size	Drill hole diameter d _o (mm)	Plug length L _k (mm)	Screw diameter and length d _w x L _w (mm)	Minimum depth of drilled hole h _{o min} (mm)	Minimum anchorage depth h _{min} / d _w (mm)	Maximum fixture thickness h _u (mm)	Recessed drive type	Pcs per pack
RU-06045	6	35	3.5 x 45	45	35 / 6	5	PZ-2	100
RU-06060	6	35	3.5 x 60	45	35 / 6	20	PZ-2	100
RU-08060	8	50	4.5 x 60	60	50 / 6	5	PZ-2	100
RU-08080	8	50	4.5 x 80	60	50 / 6	25	PZ-2	100
RU-10080	10	60	6.0 x 80	70	60 / 6	15	PZ-3	100
RU-10100	10	60	6.0 x 100	70	60 / 6	35	PZ-3	100



Frame and general purpose fasteners

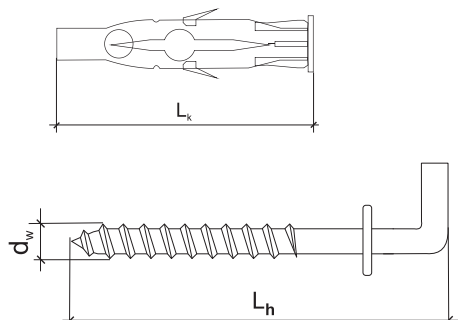
RUL UNIVERSAL PLUG WITH STRAIGHT HOOK



Technical Approval
AT-15-8943/2012



100% **nylon** ***



APPLICATION

For fixing of interior finish products, system components, etc.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



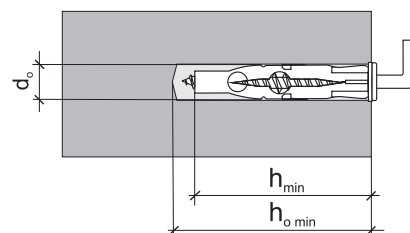
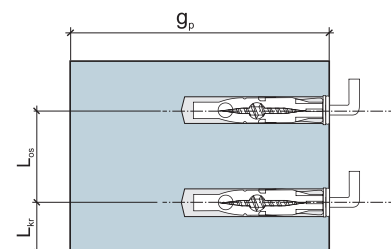
PERFORATED
CERAMIC
BRICK



PLASTERBOARD

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating



RESISTANCE

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Perforated ceramic brick [kN]	Design resistance in plasterboard [kN]
RUL - 6	0.20	0.14	0.14	0.18
RUL - 8	0.28	0.20	0.20	0.26

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 20 according to PN-EN 771-1:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011
Plasterboard according to PN-EN 520+A1:2010

INSTALLATION DATA

Code and size	Minimum spacing L _{ss} (mm)	Minimum edge distance L _{sr} (mm)
RUL - 6	140	70
RUL - 8	200	100

TECHNICAL DATA

Code and size	Drill hole diameter d _o [mm]	Plug length L _s [mm]	Hook diameter and length d _w x L _h [mm]	Minimum depth of drilled hole h _{o min} [mm]	Minimum anchorage depth h _{min} / d _p [mm]	Pcs per pack
RUL-06048	6	35	3.5 x 48	45	35 / 6	50
RUL-08065	8	50	4.5 x 65	60	50 / 6	25



RUC UNIVERSAL PLUG WITH ROUND HOOK

 Technical Approval
AT-15-8943/2012



100% nylon

APPLICATION

For fixing of interior finish products, system components, etc.

SUBSTRATE



SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating

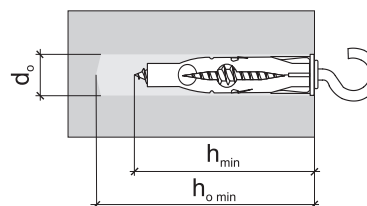
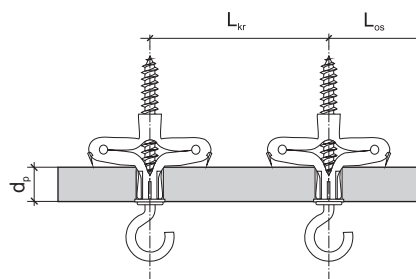
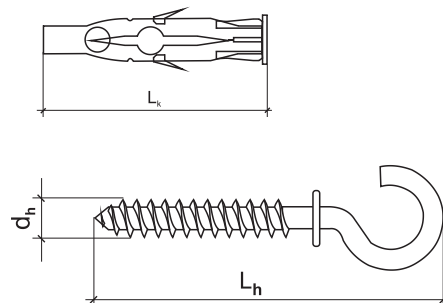
RESISTANCE

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Perforated ceramic brick [kN]	Design resistance in plasterboard [kN]
RUC - 6	0.20	0.14	0.14	0.18
RUC - 8	0.28	0.20	0.20	0.26

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 20 according to PN-EN 771-1:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011
Plasterboard according to PN-EN 520+A1:2010

TECHNICAL DATA

Code and size	Drill hole diameter d _o [mm]	Plug length L _s [mm]	Hook diameter and length d _w x L _h [mm]	Minimum depth of drilled hole h _{o min} [mm]	Minimum anchorage depth h _{min} / d _p [mm]	Pcs per pack
RUC-06065	6	35	3.5 x 65	45	35 / 6	50
RUC-08083	8	50	4.5 x 83	60	50 / 6	25



INSTALLATION DATA

Code and size	Minimum spacing L _{os} (mm)	Minimum edge distance L _{kr} (mm)
RUC - 6	140	70
RUC - 8	200	100



Frame and general purpose fasteners

RUO UNIVERSAL PLUG WITH EYE HOOK



Technical Approval
AT-15-8943/2012



100% **nylon**

APPLICATION

Use for fixing of interior finish products, system components, etc.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



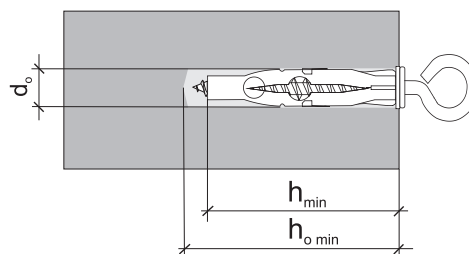
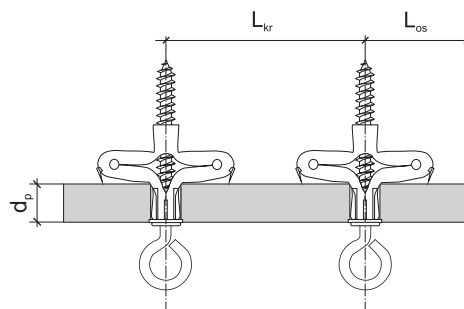
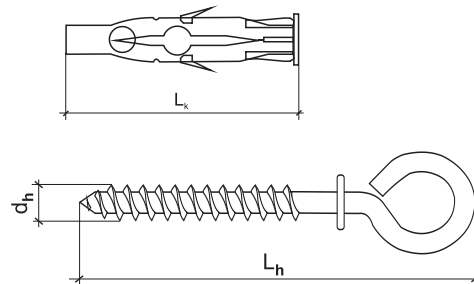
PERFORATED
CERAMIC BRICK



PLASTERBOARD

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating



RESISTANCE

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Perforated ceramic brick [kN]	Design resistance in plasterboard [kN]
RUO - 6	0.20	0.14	0.14	0.18
RUO - 8	0.28	0.20	0.20	0.26

INSTALLATION DATA

Code and size	Minimum spacing L_{ax} (mm)	Minimum edge distance L_{ex} (mm)
RUO - 6	140	70
RUO - 8	200	100

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 20 according to PN-EN 771-1:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011
Plasterboard according to PN-EN 520+A1:2010

TECHNICAL DATA

Code and size	Drill hole diameter d_o [mm]	Plug length L_k [mm]	Hook diameter and length $d_w \times L_h$ [mm]	Minimum depth of drilled hole $h_{o min}$ [mm]	Minimum anchorage depth h_{min} / d_p [mm]	Pcs per pack
RUO-06064	6	35	3.5 x 64	45	35 / 6	50
RUO-08084	8	50	4.5 x 85	60	50 / 6	25

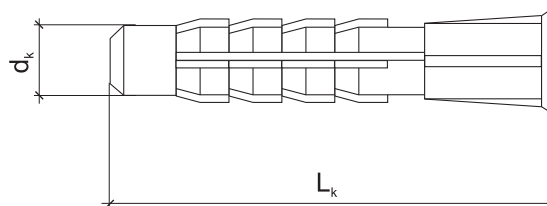


KPW VERSATILE PLUG

 Technical Approval
AT-15-8943/2012



100% **nylon**



APPLICATION

Use with screws for fixing of interior finish products and lightweight system components, electrical conduits, etc.

SUBSTRATE



CONCRETE



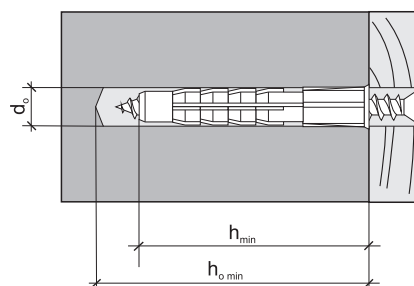
SOLID
CERAMIC
BRICK



PERFORATED
CERAMIC
BRICK



PLASTERBOARD



SPECIFICATIONS

Material **NYLON**

TECHNICAL DATA

Code and size	Drill hole diameter $d_o = d_k$ [mm]	Plug length L_k [mm]	Screw diameter d_w [mm]	Minimum depth of drilled hole $h_{o \min}$ [mm]	Minimum anchorage depth $h_{\min}$ [mm]	Pcs per pack
KPW-06035	6	35	3.0-4.0	45	35	500
KPW-06050	6	50	3.0-4.0	60	50	500
KPW-08050	8	50	4.0-5.0	60	50	300
KPW-10060	10	60	5.0-6.0	70	60	200



Frame and general purpose fasteners

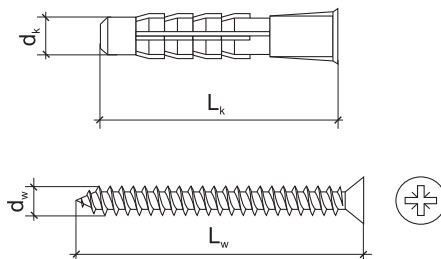
KW MULTI-PURPOSE PLUG WITH HARDENED WOOD SCREW



Technical Approval
AT-15-8943/2012



100% **nylon** ***



APPLICATION

Use for fixing of interior finish products, system components and electrical conduits.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



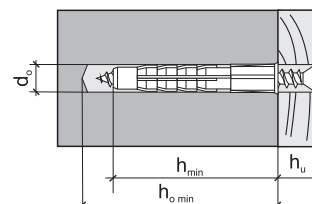
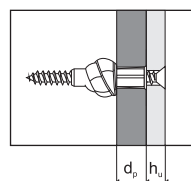
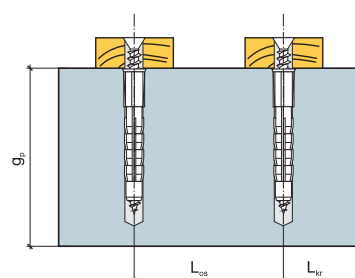
PERFORATED
CERAMIC
BRICK



PLASTERBOARD

SPECIFICATIONS

Plug	NYLON
Screw	steel
Corrosion protection	zinc chromate plating



RESISTANCE

Code and size	Concrete C 20/25 [kN]	Solid clay brick [kN]	Perforated ceramic brick [kN]	Design resistance in plasterboard [kN]
KW - 6	0.48	0.33	0.20	0.23
KW - 8	0.79	0.52	0.22	0.28
KW - 10	1.01	0.70	0.24	0.29

INSTALLATION DATA

Code and size	Minimum spacing L _{ss} (mm)	Minimum edge distance L _{tr} (mm)
KW - 6	140	70
KW - 8	200	100
KW - 10	240	120

Normal weight concrete, strength class not lower than C20/25 according to PN-EN 206/1:2003
Solid ceramic brick, strength class not lower than 20 according to PN-EN 771-1:2011
Porous hollow brick, strength class not lower than 15, according to PN-EN 771-1:2011
Plasterboard according to PN-EN 520+A1:2010

TECHNICAL DATA

Code and size	Drill hole diameter d _o (mm)	Plug length L _p (mm)	Screw diameter and length d _s x L _s (mm)	Minimum depth of drilled hole h _{o min} (mm)	Minimum anchorage depth h _{min} (mm)	Minimum anchorage depth h _{min} / d _p (mm)	Maximum fixture thickness h _u (mm)	Recessed drive type	Pcs per pack
KW-06045	6	35	3.5 x 45	45	35	35 / 9	5	PZ-2	100
KW-06060	6	50	3.5 x 60	50	50	50 / 12	5	PZ-2	100
KW-08060	8	50	4.5 x 60	60	50	50 / 12	5	PZ-2	100
KW-08080	8	50	4.5 x 80	60	50	50 / 12	25	PZ-2	100
KW-10080	10	60	6.0 x 80	70	60	60 / 12	15	PZ-3	100
KW-10100	10	60	6.0 x 100	70	60	60 / 12	35	PZ-3	100



BODB DOORSTOP



APPLICATION

For blocking relatively lightweight interior panel door.

SUBSTRATE



CONCRETE



SOLID
CERAMIC
BRICK



NATURAL
STONE

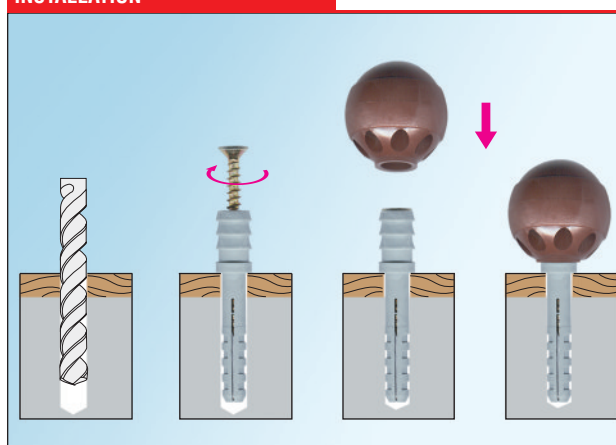


SILICA
BRICK.
CLASS 15

SPECIFICATIONS

Plug	polipropylene
Screw	steel
Doorstop	dyed PVC
Corrosion protection	zinc chromate plating
Substrate	concrete, jointless cement floor, solid brick, natural and artificial stone

INSTALLATION



TECHNICAL DATA

Code and size	Doorstop colour	Drill hole diameter d_o [mm]	Plug length L_x [mm]	Screw diameter and length $d_w \times L_w$ [mm]	Minimum depth of drilled hole $h_{o \min}$ [mm]	Pcs per pack
BODB-08060BI	white	8	60	5 x 60	70	1
BODB-08060BR	brown	8	60	5 x 60	70	1
BODB-08060CZ	black	8	60	5 x 60	70	1
BODB-08060SZ	grey	8	60	5 x 60	70	1

