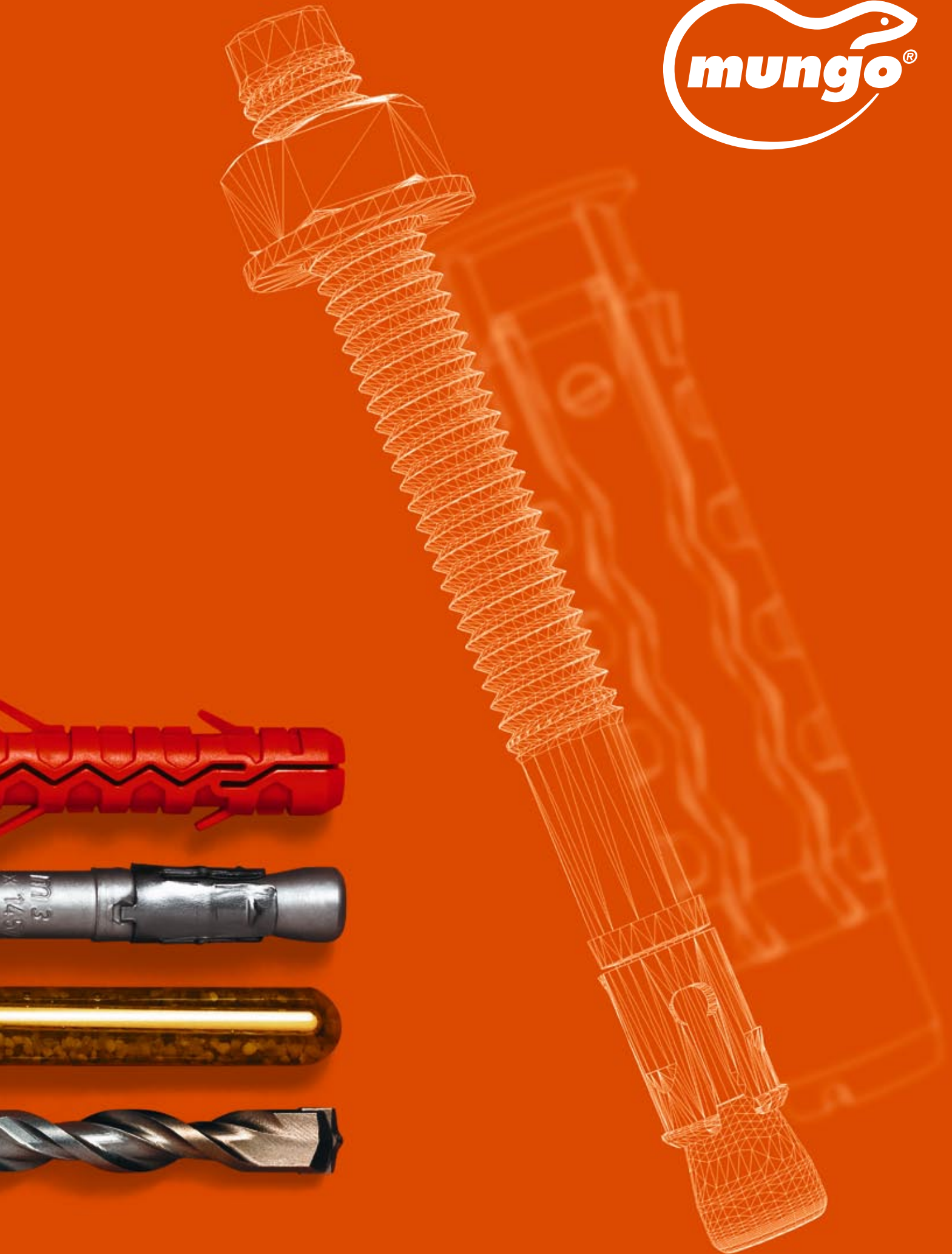




Approvals/ Test Reports



Nylon Quality PA 6
Proved Material



Institute of Material, Construction and Fire Protection
iMB, Braunschweig



Test Office for Equipment Safety
RWTÜV, Essen



Certificate of conformity
Controlled by independent laboratory



European Organisation for Technical Approval
EOTA, Brussels



German Institute of Construction Technic
DIBT, Berlin



Institute of Constructional Physics
IFB, Mühlheim



Swiss Federal Laboratories for Materials and Research
EMPA, Dübendorf



Approved fire resistance classification



Fire Resistance



Testing and Inspection Community for Tools Remscheid



Shock proofed fastening in civil defence projects



Approved for use with fixed water sprinkler systems, from M8

Building Material



Concrete
C20/25 = compression strength
25 N/mm²



Sandstone



Metal



Aerated Concrete



Perforated Brick



Plasterboard / Chipboard



Brick



Gypsum



Natural Stone / Rock

Nylon Products

Nylon Plug	MN, MN-S, MNK, MNK-S, MNL
Quattro® Nylon Plug	MQ, MQ-S
Multi Plug Nylon	MU, MU-S
Hollow Brick Plug	ML, MLK
Hammer Screw	MNA, MNAF, MNAm, MNAr-N
Skirting Board Fixing, Facade Fixing	MFB, MFS, MFABr, MFASr
Nylon Frame Plug with screw for solid materials	MBR-S
High Performance Frame Plug with screw	MBR-X
Nylon Frame Plug with screw for softer materials	MB-S
Nylon Frame Plug incl. screw with head hole	MBR-SK, MB-SK, SR-SK
Safety Screw	SR
Profile Plug	MPD-S
Sound Insulation Plug	SD, SDK
Sanitary Fixing	MWTE, MWT, MWC, MCE
Scaffold Plug, End Cap, Scaffold Screw	MGD, MVS, MGv, MGvM

Metal Products

Throughbolt	m2
Throughbolt	m3
Heavy Duty Anchor	HL-S, HL-B
Concrete Screw	MUA
Shield Anchor, Sleeve Anchor	MSG, MSS, MSS-S, MSS-B, MHA-S, MHA-B
Drop in Anchor	ESA, ESAK
Brass Anchor	MMD
Ceiling Anchor	MAN
Wire Hanger	MOA
Hammer Nail	MHN
Metal Frame Anchor, Standard	MMS
Metal Frame Anchor, Multi	MMM
Express Nail	MEN
Hexagon Screw DIN 571	SH-SS
Wall Screw, Adjusting Screw, Frame Fixing Screw, Spacer Screw	MRS-H, MRS-U, MJB, TR-R, TR-RK, TR

Chemical Products

Epoxy-Acrylate mortar, Styrene free	MIT-SE
Polyester mortar, Styrene free	MIT-SP
Epoxy-Acrylate mortar, Polyester mortar, MIT Accessories	MIT-E, MIT-P, MIT-COOL, MIT-G, MIT-S
Resin Capsule and Accessories	MVA, MVA-S, MVA-I
Hammer Capsule and Accessories	MSP
Foams and Sealants	MPU, MSI, MDA, MMK

Insulation Fixings

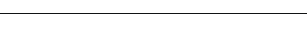
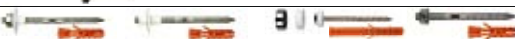
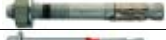
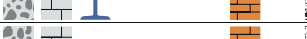
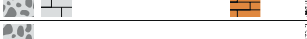
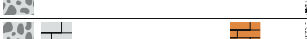
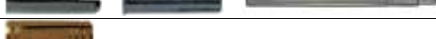
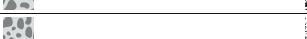
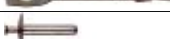
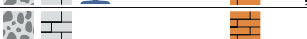
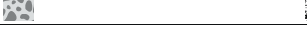
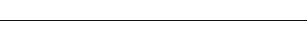
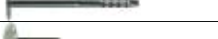
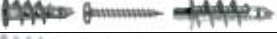
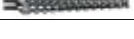
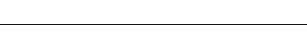
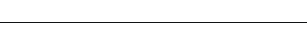
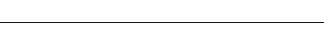
Thermal Plug with setting tool, Thermal Star, Thermal Mushroom	MTD, MTR, MSF, MTS, MTP
Insulation Fixing	MDD, MDD-S
For Lightweight Panel, Insulation Plug, for Mineral Wool Type	MIS, MID, MIP
Metal Insulation Nail	MIDS
Metal Insulation Nail with head protection cap	MIDS-K

Special Products

Jet Plug metal	MJP, MJP-S, MJPm
Fiber Jet polyamide	MFJ, MFJ-S
Cavity Wall Anchor and Accessories	MHD-S
Cavity Toggle	MF, MK
Taro-Anchor	TD
Easy-Fix	MEF

Drill Bits, Abrasive Discs, Accessories

Drill, Chisel, Bit	
Cutting Disc, Flap disc, Diamond Blade, Diamond Grinding Disc	TRS, FRS, DS, DD, TDS
Dictionary	

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Fixing solutions around the globe

Formed in 1968, Mungo has developed into a medium-sized enterprise with a worldwide customer base and has secured a firm position as a professional partner in the fastening industry. This is due to its consistent enhancements of its product range and the active expansion of its presence on the international market. 2003 has seen the company reach a significant milestone with the opening of the multi-stage cold forming plant in Olten for the manufacture of steel products. Thanks to its innovations, Mungo will continue to shape the development of fastening technology well into the future.

The Milestones

- 1968** Mungo Befestigungstechnik AG is formed
- 1976** Foundation of the establishment in Germany, Stettenhofen
- 1977** Establishment of our worldwide distribution organisation
- 1980** The company moved into the new administration and storage building
- 1994** In-house production is started in Bremen
- 1997** Start of steel throughbolt production in the Bremen plant
- 2000** The fully automated high-bay warehouse is commissioned
- 2003** Opening of the multi-stage cold forming plant in Olten
- 2004** Japanese honour for extraordinary product innovation
- 2005** Winner of the Solothurn Innovation Award





Fixings from the heart of Europe

The head office and production facility in Olten is ideally placed centrally in Switzerland, which offers advantages in our home country and, moreover, provides an ideal platform for distribution of our products to more than 50 countries worldwide.

Our label "Swiss Quality" is an obligation and challenge at the same time. Around the globe it is synonymous with high quality, excellent customer satisfaction, and a first-class delivery service.



Our brand name

The Mongoose, also known as a Mungo, inhabits South America, the Mediterranean coastline and Asia. This corresponds perfectly to Mungo's international reputation.

The Mungo is fast, mobile and resilient – similar characteristics as application friendliness, flexibility and maximum strength distinguish our products.

The need to discover new technology and developments is our commitment to the future.

Life as part of a community is natural for the Mungo, as is for us with the constant exchange with customers, prospective customers and co-workers.

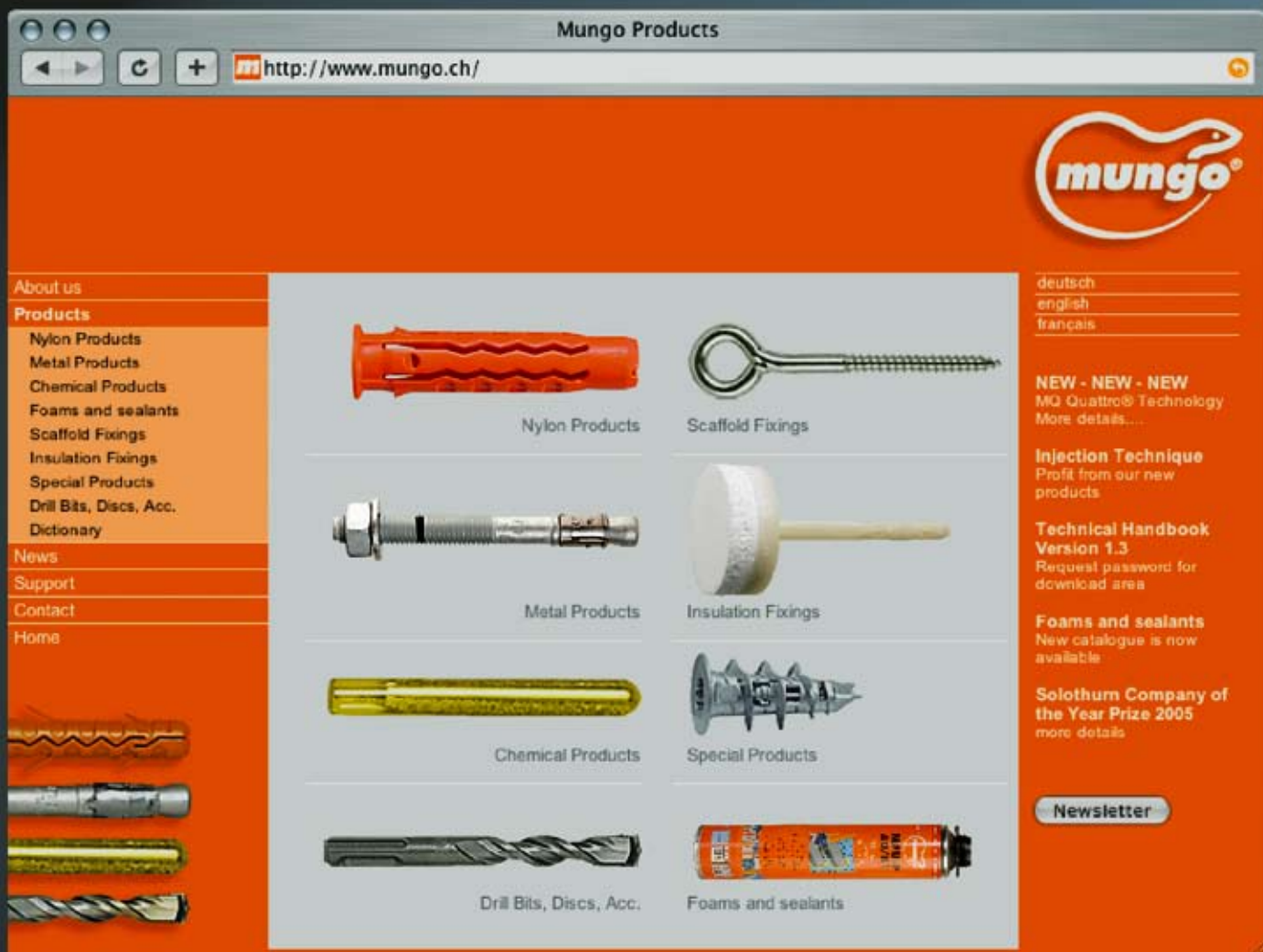




On site service

Their satisfaction is our drive.
Whether the solution to a complex project or a consultation
is needed on the building site we are able to compile optimum
fixing solutions together with your company.





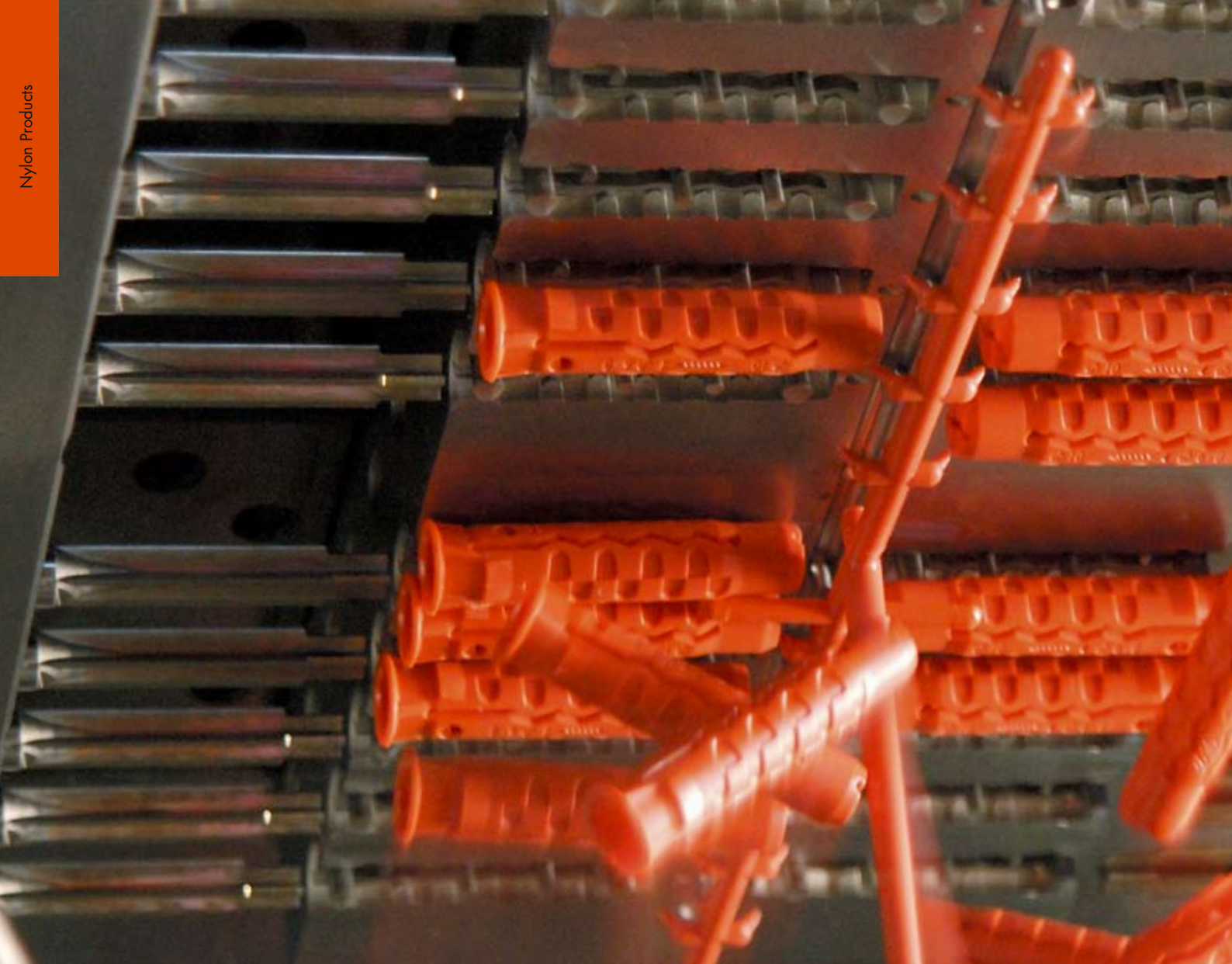
Up to date

Current information about our

- products
- news
- promotions

Our Website offers our customers a support and download-area facility. If you prefer an active information service, register yourselves on-line for our newsletter.





Nylon – the optimum material for the fastening world

Mungo nylon-products are made from high-grade polyamide PA6. Due to its excellent characteristics PA6 can be described as the most valuable material in the fastening world.

- Large temperature range of -40°C up to $+100^{\circ}\text{C}$
- Absorption of humidity results in high mechanical features such as impact strength and resistant to distortion
- Excellent stability in terms of dynamic loads
- Minor inflammability and self-extinguishing
- Halogen-free material

History of the nylon

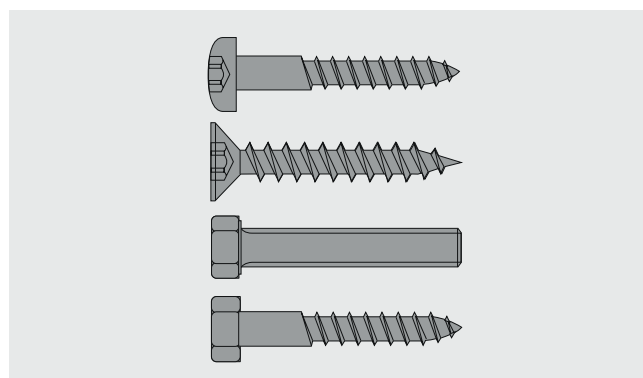
Nylon was the DuPont trade name PP 66 manufactured in the USA. After the war, in Anglo-Saxon countries this became the official collective term for all other PP types. Today, besides polycarbonates (PC), polyamides are the most important group of the technical plastics.

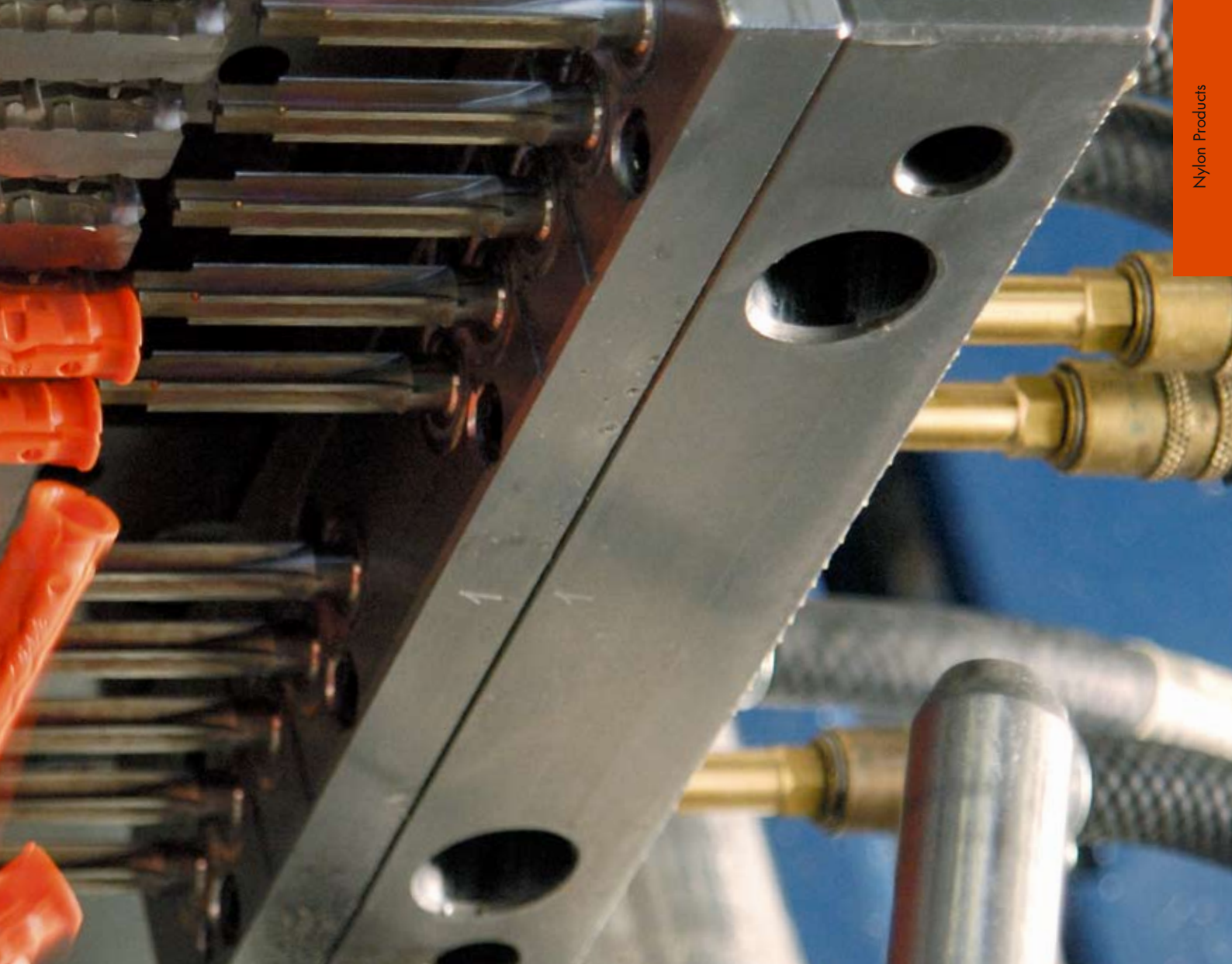
Screw types

The following screw types can be used with Mungo nylon plugs:

- Wood screws
- Chipboard screws
- Metric screws

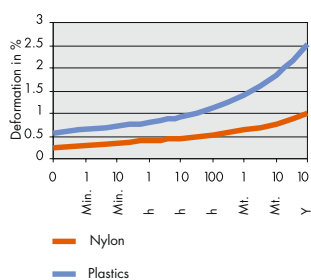
(with exception of Hammer screws that contain special nails with single cut threads)





Material strength

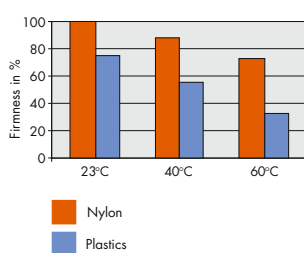
The deformation characteristics of polyamide PA6 clearly offer better values in comparison to conventional materials.



legend:
Min. = minutes
h = hours
Mt. = months
Y = year

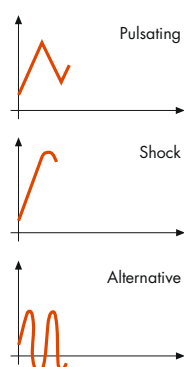
Solidity under temperature influences

PA6 exhibits higher strength under temperature influences compared with conventional plastics.



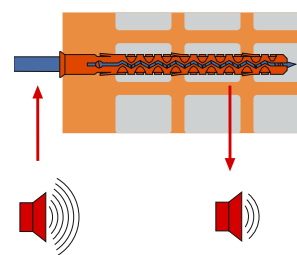
Dynamic loads

Polyamide PA6 - plugs are suitable as a safe means of mounting in dynamic load.



Sound absorption

Polyamide PA6 absorbs sound transmissions between construction unit and building material.

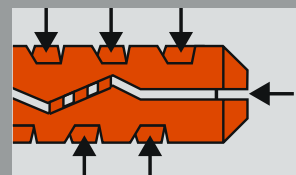


Nylon Plug



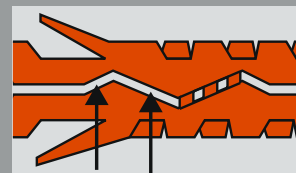
Knock-in protection

Prevents premature expansion while installing.



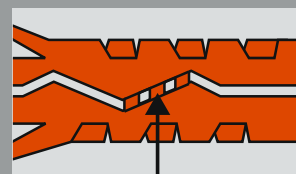
Block Profile / Tapered end

Holds the plug firm in the hole against rotation; guarantees immediate grip as the plug expands.



M-Teeth

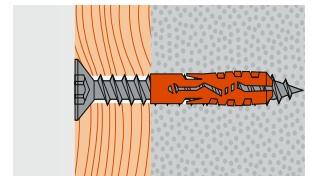
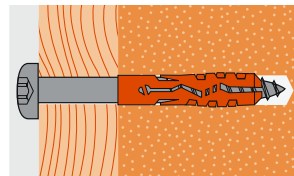
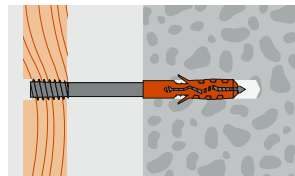
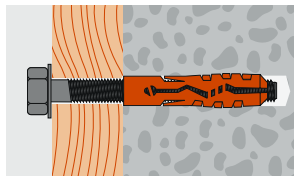
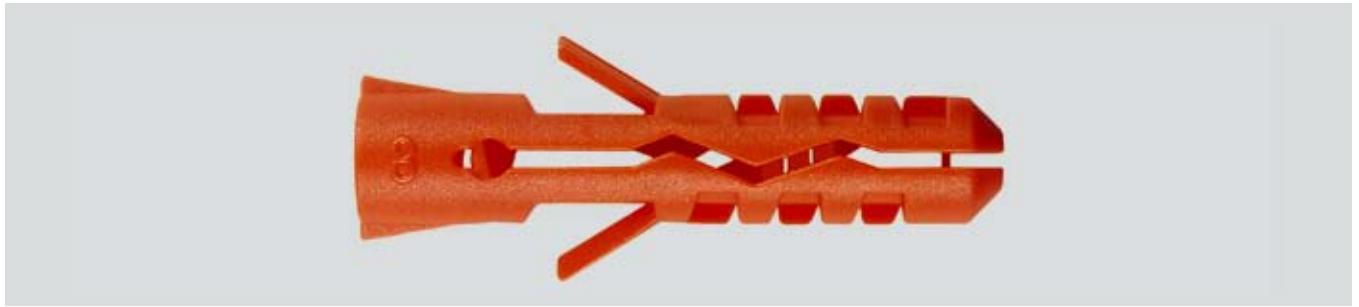
Ensuring a complete radial expansion during screw insertion.



Stabilization points

Prevent the plug from breaking open while inserting into the hole.

MN Nylon Plug



MN Nylon Plug

Article code	Plug and drill Ø mm	Length mm	Screwtype Wood/Chip-board Ø mm	Screwtype metric Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1000040	4	20	2.2-3	-	100 1/2	3600 22	
1000050	5	25	2.6-4	M 3	100 1/2	3600 22	
1000060	6	30	3.5-5	M 4	100 1/2	3600 22	
1000070	7	35	4.5-5	M 4	100 1/2	3600 32	
1000080	8	40	4.5-6	M 5	100 1/2	3600 32	
1000100	10	50	6-8	M 6	50 1/2	1800 32	
1000120	12	60	8-10	M 8	25 1/2	900 32	
1000140	14	70	10-12	M 10	20 1/2	720 32	
1000150	15	75	10-12	M 10	10 1/2	360 32	
1000160	16	80	12-14	M 12	10 1/2	360 32	
1000200	20	90	14-16	M 14	5 1/2	180 32	

¹⁾ For use with TR Toproc Spacer Screw (see page 55)

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Aerated Concrete
MN 4	0.25	0.2	0.02
MN 5	0.35	0.3	0.04
MN 6	0.6	0.5	0.06
MN 7	0.7	0.65	0.07
MN 8	0.85	0.8	0.09
MN 10	1.4	1.0	0.2
MN 12	1.8	1.4	0.4
MN 14	3.0	1.5	0.5
MN 15	3.1	1.6	0.6
MN 16	3.5	-	0.6
MN 20	5.2	-	1.0

Reached with max. diameter wood screw / Safety factor 5

MN-S / MN-SS with screw



MN-S with countersunk screw Pozi

Article code	Plug and drill Ø mm	Length mm	Screw	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1380076	5	25	3.5x30	2	100 1/2	3600 22	
1380077	6	30	4.5x40	2	100 1/2	3600 32	
1380078	8	40	5.0x50	2	50 1/2	1800 32	
1380070	10	50	6.0x60	3	25 1/2	450 32	



MN-SS with hexagon screw

Article code	Plug and drill Ø mm	Length mm	Screw	Spanner size	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1380079	10	50	7.0x65	13	25 1/2	450 22	
1380080	12	60	8.0x80	13	10 1/2	180 22	
1380081	14	70	10.0x90	17	10 1/2	180 22	

MN in Maxi-Box



MN in Maxi-Box

Article code	Plug and drill Ø mm	Length mm	Box contents FS	Unit contents	Price per unit
1000041	4	20	100 $\frac{3}{4}$	5600	
1000051	5	25	100 $\frac{3}{4}$	5600	
1000061	6	30	100 $\frac{3}{4}$	5600	
1000071	7	35	100 $\frac{3}{4}$	2800	
1000081	8	40	100 $\frac{3}{4}$	2800	
1000101	10	50	50 $\frac{3}{4}$	1400	
1000121	12	60	25 $\frac{3}{4}$	700	
1000141	14	70	20 $\frac{3}{4}$	560	
1000151	15	75	10 $\frac{3}{4}$	280	
1000161	16	80	10 $\frac{3}{4}$	280	
1000201	20	90	5 $\frac{3}{4}$	140	

MN in Mini-Box, bulk packed



MN in Mini-Box, bulk packed

Article code	Plug and drill Ø mm	Length mm	Unit contents	Price per unit
1380031	4	20	5000	
1380032	5	25	4000	
1380033	6	30	3000	
1380034	8	40	1300	
1380035	10	50	700	

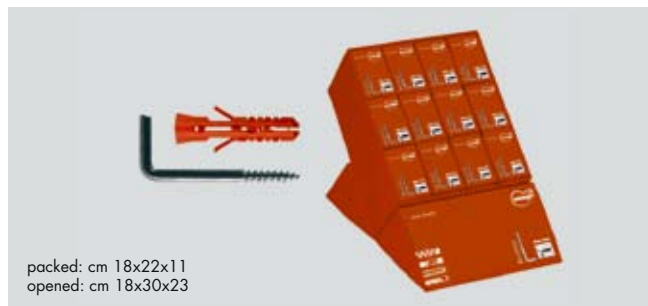
MN in outer carton, bulk packed



MN in outer carton, bulk packed

Article code	Plug and drill Ø mm	Length mm	Unit contents SKI	Price per 100 pieces
1000055	5	25	20000 $\frac{32}{2}$	
1000065	6	30	15000 $\frac{32}{2}$	
1000085	8	40	5000 $\frac{32}{2}$	
1000105	10	50	2500 $\frac{32}{2}$	
1000125	12	60	2000 $\frac{32}{2}$	
1000145	14	70	1000 $\frac{32}{2}$	

MN-S4L Display



MN-S4L Display with Corner Screw

Article code	Plug and drill Ø mm	Length mm	Screw	Box contents	Display contents	Price per Display
1000014	4	20	2.5x30x10	10	480	

MN Display

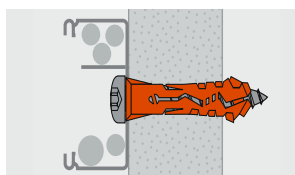
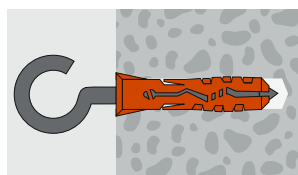
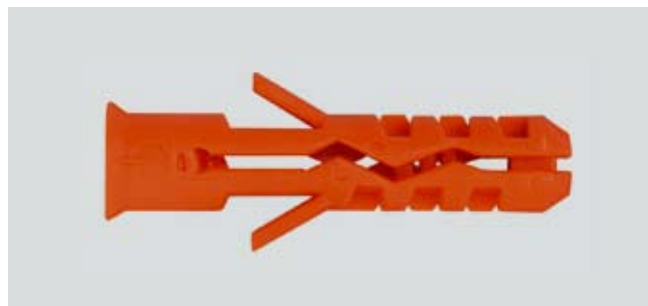
Article code	Description	Display contents	Price per Display
1000017	MN Display	11200	



Combination MN Display:

Plug and drill Ø mm	Length mm	Box contents FS	Number FS	Tray contents
6	30	100 $\frac{32}{2}$	64	6400
8	40	100 $\frac{32}{2}$	32	3200
10	50	50 $\frac{32}{2}$	32	1600

MNK Nylon Plug with collar



- Thanks to the collar controllable fixing
- Clean cover of the drill hole

MNK Nylon Plug with collar

Article code	Plug and drill Ø mm	Length mm	Screwtype Wood/Chip-board Ø mm	Screwtype metric Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1040510	5	18	2.6-4	M3	100 1/2	3600 22	
1040520	5	25	2.6-4	M3	100 1/2	3600 22	
1040630	6	30	3.5-5	M4	100 1/2	3600 22	
1040840	8	40	4.5-6	M5	100 1/2	3600 32	
1041050	10	50	6-8	M6	50 1/4	1800 32	
1041250	12	60	8-10	M8	25 1/4	900 32	

MNK-S with countersunk screw Pozi



MNK-S with countersunk screw Pozi

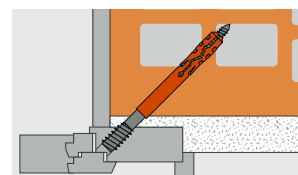
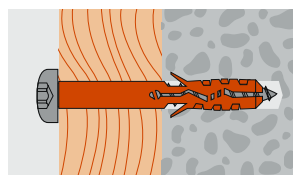
Article code	Plug and drill Ø mm	Length mm	Screw	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1380095	5	25	3.5x30	2	100 1/2	3600 22	
1380096	6	30	4.5x40	2	100 1/2	3600 32	
1380097	8	40	5.0x50	2	50 1/4	1800 32	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Aerated Concrete
MNK 5	0.35	0.3	0.04
MNK 6	0.6	0.5	0.06
MNK 8	0.85	0.8	0.09
MNK 10	1.4	1.0	0.2
MNK 12	1.8	1.4	0.4

Reached with max. diameter wood screw / Safety factor 5

MNL Nylon Plug long



- Long shank prevents sidesteps
- Appropriate for frame fixing
- The extended shank makes the setting deep-controlled through fixing possible
- For use with TR Toproc Spacer Screw (see page 55)

MNL Nylon Plug long

Article code	Plug and drill Ø mm	Length mm	Screwtype Wood/Chip-board Ø mm	Screwtype metric Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1000600	6	50	3.5-5	M4	100 1/4	1800 22	
1000800	8	60	4.5-6	M5	50 1/4	900 22	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Aerated Concrete
MNL 6	0.6	0.5	0.06
MNL 8	0.85	0.8	0.09

Reached with max. diameter wood screw / Safety factor 5

MNL in Maxi-Box

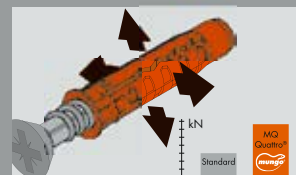


cm 40x30x23.5

MNL in Maxi-Box

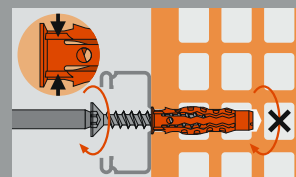
Article code	Plug and drill Ø mm	Length mm	Box contents [FS]	Unit contents	Price per unit
1000610	6	50	100 1/4	2800	
1000810	8	60	50 1/4	1400	

Quattro® Nylon Plug



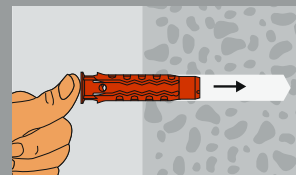
Quattro® Technology

Highest possible retaining values in the lower and middle load area. Particularly suitable for applications with chipboard screws.



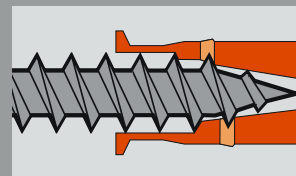
Rotation resistance

stops the plug rotating in the drill hole.



Reduced assembling time

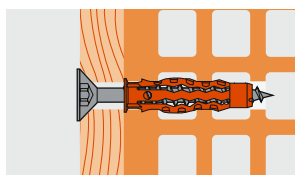
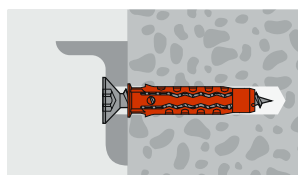
Special plug geometry allows ease of entry into the drillhole.



Knock-in protection

Prevents premature expansion while installing.

MQ Quattro® Nylon Plug



MQ Quattro® Nylon Plug

Article code	Plug and drill Ø mm	Length mm	Screwtype Wood/Chip-board Ø mm	Screwtype metric Ø mm	Box contents FS	Outer carton SK	Price per 100 pieces
1050050	5	25	2.6-4	M 3	100 ^{1/2}	3600 ²²	
1050060	6	30	3.5-5	M 4	100 ^{1/2}	3600 ²²	
1050080	8	40	4.5-6	M 5	100 ^{1/2}	3600 ³²	
1050100	10	50	6-8	M 6	50 ^{1/2}	1800 ³²	
1050120	12	60	8-10	M 8	25 ^{1/2}	900 ³²	
1050140	14	70	10-12	M 10	20 ^{1/2}	720 ³²	

MQ Display

Article code	Description	Display contents	Price per Display
1000018	MQ Display	11200	



Combination MQ Display:

Plug and drill Ø mm	Length mm	Box contents FS	Number FS	Tray contents
6	30	100 ^{1/2}	64	6400
8	40	100 ^{1/2}	32	3200
10	50	50 ^{1/2}	32	1600

Recommended loads in kN (1 kN ≙ 100 kg)

Size	Concrete C20/25	Brick	Aerated Concrete	Sandstone	Perforated Brick
MQ 5	0.45	0.45	0.12	0.45	0.15 ¹⁾
MQ 6	1.10	0.90	0.12	0.70	0.20 ¹⁾
MQ 8	1.20	1.00	0.19	1.00	0.40 ¹⁾
MQ 10	1.90	1.10	0.30	1.80	0.45 ¹⁾
MQ 12	2.70	1.50	0.40	2.10	0.50
MQ 14	3.00	1.80	0.55	2.30	0.60

Reached with max. diameter wood screw / Safety factor 5

¹⁾ Chipboard screw

MQ-S with countersunk screw Pozi



MQ-S with countersunk screw Pozi

Article code	Plug and drill Ø mm	Length mm	Screw	PZ	Box contents FS	Outer carton SK	Price per 100 pieces
1380050	5	25	3.5x30	2	100 ^{1/2}	3600 ²²	
1380051	6	30	4.5x40	2	100 ^{1/2}	3600 ³²	
1380052	8	40	5.0x50	2	50 ^{1/2}	1800 ³²	
1380053	10	50	6.0x60	3	25 ^{1/2}	450 ²²	

MQ in Maxi-Box / Mini-Box



MQ in Maxi-Box

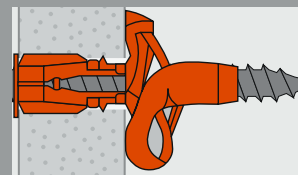
Article code	Plug and drill Ø mm	Length mm	Box contents FS	Unit contents	Price per unit
1050051	5	25	100 ^{1/2}	5600	
1050061	6	30	100 ^{1/2}	5600	
1050081	8	40	100 ^{1/2}	2800	
1050101	10	50	50 ^{1/2}	1400	
1050121	12	60	25 ^{1/2}	700	
1050141	14	70	20 ^{1/2}	560	



MQ in Mini-Box, bulk packed

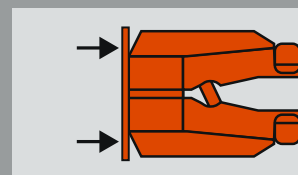
Article code	Plug and drill Ø mm	Length mm	Unit contents	Price per unit
1380532	5	25	3500	
1380533	6	30	2000	
1380534	8	40	1000	
1380535	10	50	500	

Multi Plug



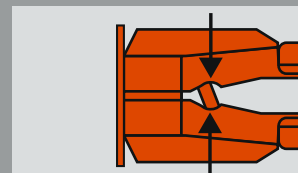
Multi-functional application

Owing to the knotting of the plug shank, it has a safe stop in cavities.



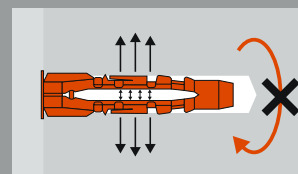
Face fixing - and through fixing possible

Automatic collar detachment makes the plug multi-functional.



Knock-in protection

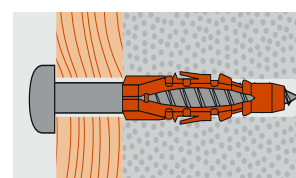
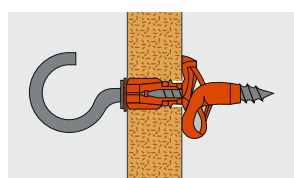
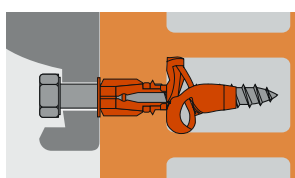
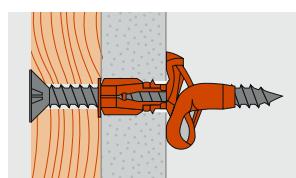
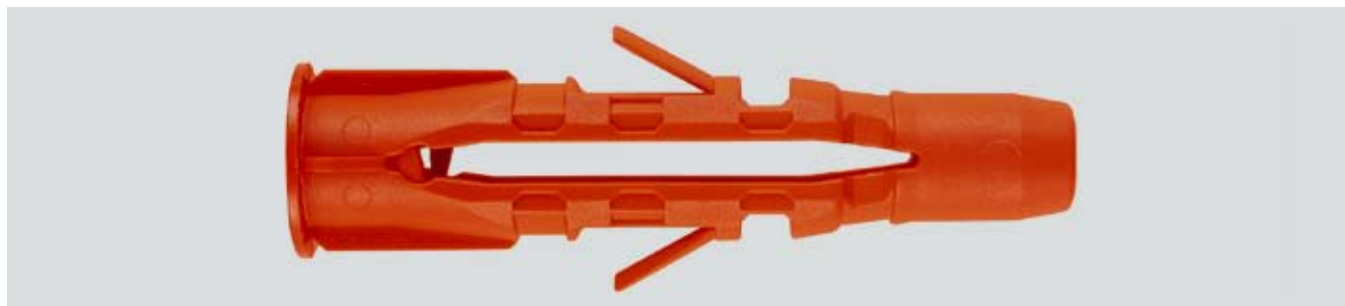
Prevents premature expansion while installing.



Self tensioning

Prevents rotation in the hole.

MU Multi Plug Nylon



MU Multi Plug Nylon

Article code	Plug and drill Ø mm	Length mm	Screwtype Wood/Chip-board Ø mm	Screwtype metric Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1010630	6	35	3-4	M 4	100 ^{3/4}	3600 ³²	
1010640	6	45	3-4	M 4	100 ^{3/4}	3600 ³²	
1010850	8	50	4.5-6	M 6	50 ^{3/4}	1800 ³²	
1011060	10	60	6-8	M 8	25 ^{3/4}	900 ³²	
1011270	12	70	8-10	M 10	20 ^{3/4}	720 ³²	
1011470	14	75	10-12	M 12	10 ^{3/4}	360 ³²	

MU in Maxi-Box

Article code	Plug and drill Ø mm	Length mm	Box contents [FS]	Unit contents	Price per unit
1010631	6	35	100 ^{3/4}	2800	
1010641	6	45	100 ^{3/4}	2800	
1010851	8	50	50 ^{3/4}	1400	
1011061	10	60	25 ^{3/4}	700	
1011271	12	70	20 ^{3/4}	560	
1011471	14	75	10 ^{3/4}	280	

MU in Mini-Box, bulk packed

Article code	Plug and drill Ø mm	Length mm	Unit contents	Price per unit
13800330	6	35	1800	
13800331	6	45	1200	
13800341	8	50	750	
13800351	10	60	300	

MU in outer carton, bulk packed

Article code	Plug and drill Ø mm	Length mm	Outer carton [SK]	Price per 100 pieces
1010635	6	35	7500 ³²	
1010645	6	45	6000 ³²	
1010855	8	50	3500 ³²	
1011065	10	60	1800 ³²	
1011275	12	70	1000 ³²	
1011475	14	75	500 ³²	

Recommended loads in kN (1kN $\triangle$ 100kg)

Size	Concrete C20/25	Perforated Brick	Aerated Concrete	Plaster-board	Chipboard
MU 6	0.6	0.45	0.3	0.15 ¹⁾	0.4 ¹⁾
MU 8	1.1	0.9	0.5	0.18 ¹⁾	0.45 ¹⁾
MU 10	1.8	1.2	0.5	0.2 ¹⁾	0.6 ¹⁾
MU 12	3.0	1.8	1.2		
MU 14	4.0	2.2	1.3		

Reached with max. diameter wood screw / Safety factor 5

¹⁾ Chipboard screw

MU-S / MU-SS with screw



MU-S with countersunk screw Pozi

Article code	Plug and drill Ø mm	Length mm	Screw	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1380087	6	35	3.5x45	2	100 ^{3/4}	1800 ²²	
1380086	6	45	3.5x55	2	50 ^{3/4}	900 ²²	
1380088	8	50	5.0x60	2	50 ^{3/4}	900 ²²	
1380092	10	60	6.0x80	3	25 ^{3/4}	450 ²²	

MU-SS with hexagon screw

Article code	Plug and drill Ø mm	Length mm	Screw	Spanner size	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1380089	10	60	6.0x80	10	25 ^{3/4}	450 ²²	
1380090	12	70	8.0x80	13	10 ^{3/4}	180 ²²	
1380091	14	75	10.0x90	17	5 ^{3/4}	90 ²²	

MU Display

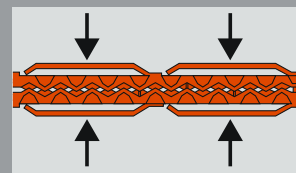
Article code	Description	Display contents	Price per Display
1010007	MU Display	5600	



Combination MU Display:

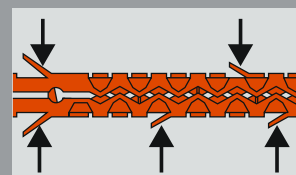
Plug and drill Ø mm	Length mm	Box contents [FS]	Number FS	Tray contents
6	35	100 ^{3/4}	32	3200
8	50	50 ^{3/4}	32	1600
10	60	25 ^{3/4}	32	800

Hollow Brick Plug



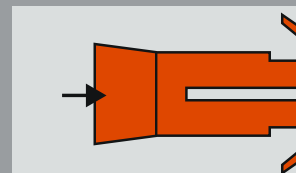
4-times greater rotation resistance

on ML 6 and ML 8.
Prevents rotation in the hole.



5-times greater rotation resistance

on ML 10 and ML 14.
Prevents rotation in the hole.



Conical head

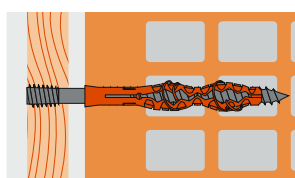
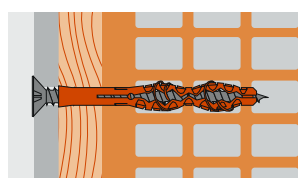
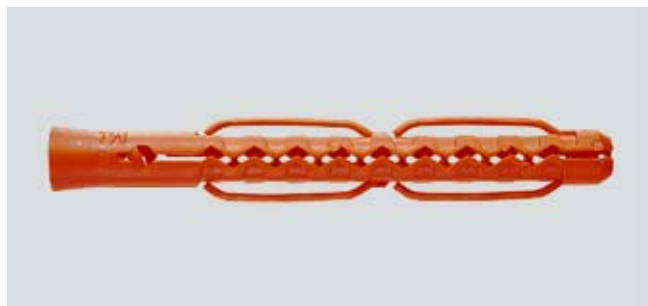
Prevents movement in the hole while fixing.



Special plug end geometry

on ML 6 and ML 8.
Setting of the screw causes a knotting of the plug shanks.

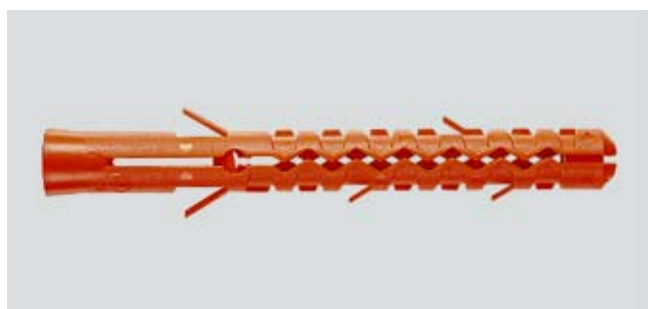
ML Hollow Brick Plug Ø 6/8



ML Hollow Brick Plug Ø 6/8

Article code	Plug and drill Ø mm	Length mm	Screw Ø mm	Screw type metric Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1100606	6	60	3.5-5	M 4	100 ¹¹	2400 ³²	
1100808	8	80	5-6	M 5	100 ³¹	1200 ³²	

ML Hollow Brick Plug Ø 10/14



ML Hollow Brick Plug Ø 10/14

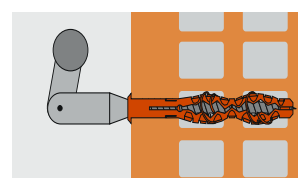
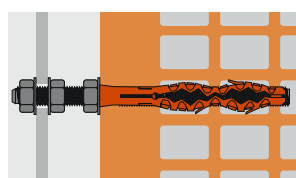
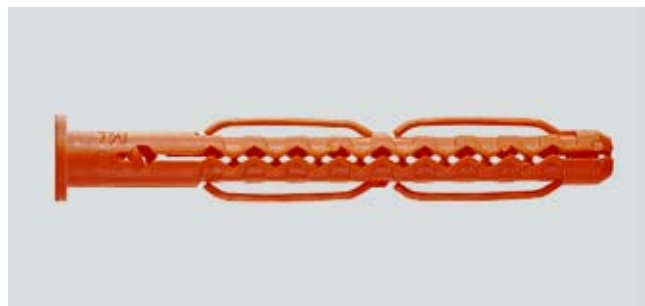
Article code	Plug and drill Ø mm	Length mm	Screw Ø mm	Screw type metric Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1101009	10	90	7	M 6	100 ⁴¹	900 ³²	
1101012	10	120	7	M 6	100 ⁵¹	600 ³²	
1101409	14	90	10	M 10	100 ⁵¹	600 ³²	
1101412	14	120	10	M 10	50 ⁴¹	450 ³²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Perforated Brick	Aerated Concrete
ML 6	0.6	0.5
ML 8	1.3	0.8
ML 10	1.8	1.1
ML 14	2.8	1.8

Important: without hammer drilling in perforated brick and aerated concrete
Safety factor 5 / Reached with max. diameter wood screw

MLK Hollow Brick Plug with collar Ø 8

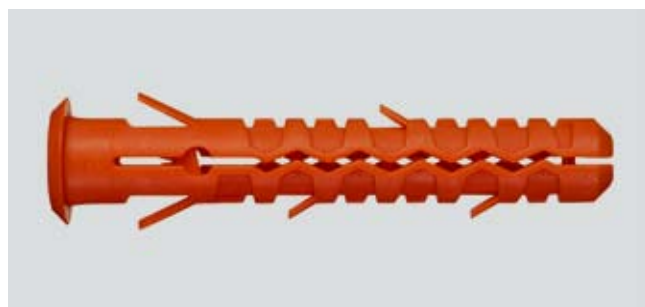


- Controlled assembly due to collar
- For use with anchor rod M10 (MLK 14)
- For use in aerated concrete

MLK Hollow Brick Plug with collar Ø 8

Article code	Plug and drill Ø mm	Length mm	Collar Ø mm	Screw Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1100808K	8	80	12.5	5-6	100 ³¹	1200 ³²	

MLK Hollow Brick Plug with collar Ø 14



MLK Hollow Brick Plug with collar Ø 14

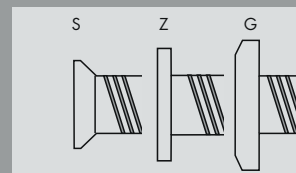
Article code	Plug and drill Ø mm	Length mm	Collar Ø mm	Screw Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1101409K	14	90	20	10/M 10	50 ⁴¹	450 ³²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Perforated Brick	Aerated Concrete
MLK 8	1.3	0.8
MLK 14	2.8	1.8

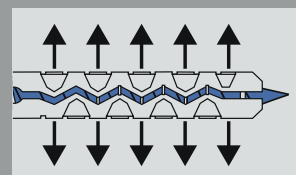
Important: without hammer drilling in perforated brick and aerated concrete
Safety factor 5 / Reached with max. diameter wood screw

Hammer Screw



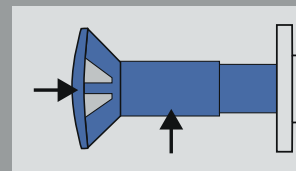
**Available with
3 different styles
of head**

S = countersunk
Z = cylindrical
G = big



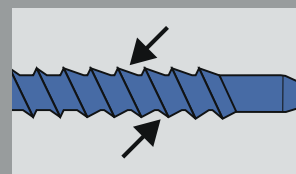
Expansion zone

The long expansion zone guarantees optimum stability.



Reinforced Screwhead / Shock-protection

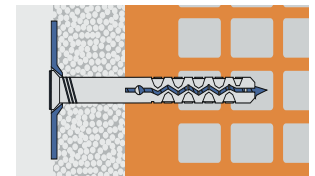
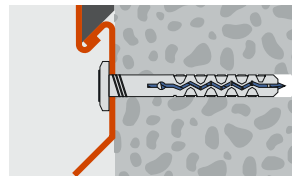
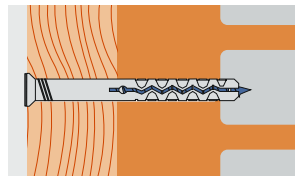
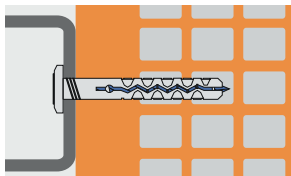
Facilitates high knock-in loads with the added benefit of plug neck grip.



The buttress thread

allows adjustment or dismantling.

MNA Hammer Screw



MNA-S Hammer Screw with countersunk collar

Article code	Plug and drill Ø mm	Length mm	Usable length mm	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1122502S	5	25	2	2	100 11	2400 32	
1122503S	5	30	5	2	100 11	2400 32	
1122504S	5	40	15	2	100 11	2400 32	
1122505S	5	50	25	2	100 11	2400 32	
1122603S	6	35	5	2	100 21	2400 32	
1122604S	6	40	10	2	100 21	1800 32	
1122605S	6	50	20	2	100 21	1800 32	
1122606S	6	60	30	2	100 31	1200 32	
1122607S	6	70	40	2	100 31	1200 32	
1122608S	6	80	50	2	100 31	1200 32	
1122805S	8	50	10	3	100 41	900 32	
1122806S	8	60	20	3	100 41	900 32	
1122808S	8	80	40	3	100 51	600 32	
1122810S	8	100	60	3	100 51	600 32	
1122812S	8	120	80	3	100 51	600 32	
1122814S	8	140	100	3	100 51	600 32	
11229081S	11 10	80	30	3	50 31	600 32	
11229101S	11 10	100	50	3	50 41	450 32	
11229121S	11 10	120	70	3	50 41	450 32	
11229141S	11 10	140	90	3	50 51	300 32	
11229161S	11 10	160	110	3	50 51	300 32	

¹⁾ not pre-assembled

MNA-Z Hammer Screw with cylindrical collar

Article code	Plug and drill Ø mm	Length mm	Usable length mm	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1122502Z	5	25	2	2	100 11	2400 32	
1122503Z	5	30	5	2	100 11	2400 32	
1122504Z	5	40	15	2	100 11	2400 32	
1122505Z	5	50	25	2	100 11	2400 32	
1122603Z	6	35	5	2	100 21	2400 32	
1122604Z	6	40	10	2	100 21	1800 32	
1122605Z	6	50	20	2	100 21	1800 32	
1122606Z	6	60	30	2	100 31	1200 32	
1122607Z	6	70	40	2	100 31	1200 32	
1122608Z	6	80	50	2	100 31	1200 32	
1122805Z	8	50	10	3	100 41	900 32	
1122806Z	8	60	20	3	100 41	900 32	
1122808Z	8	80	40	3	100 51	600 32	
1122810Z	8	100	60	3	100 51	600 32	
1122812Z	8	120	80	3	100 51	600 32	
1122814Z	8	140	100	3	100 51	600 32	

Collar diameter

Size	MNA-S mm	MNA-Z mm	MNA-G mm
MNA 5	7	8	11
MNA 6	9	12	13
MNA 8	12	15	17
MNA 10	13	-	-

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Sandstone
MNA 5	0.35	0.25	0.2
MNA 6	0.5	0.4	0.3
MNA 8	0.6	0.5	0.4
MNA 10	0.8	0.6	0.5

Safety factor 3

MNA-R Hammer Screw with countersunk collar, A2

Article code	Plug and drill Ø mm	Length mm	Usable length mm	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1125503S	5	30	5	2	100 11	2400 32	
1125505S	5	50	25	2	100 11	2400 32	
1125603S	6	35	5	2	100 21	2400 32	
1125604S	6	40	10	2	100 21	1800 32	
1125605S	6	50	20	2	100 21	1800 32	
1125606S	6	60	30	2	100 31	1200 32	
1125607S	6	70	40	2	100 31	1200 32	
1125806S	8	60	20	3	100 41	900 32	
1125808S	8	80	40	3	100 51	600 32	
1125810S	8	100	60	3	100 51	600 32	
1125812S	8	120	80	3	100 51	600 32	
1125814S	8	140	100	3	100 51	600 32	

MNA-R Hammer Screw with cylindrical collar, A2

Article code	Plug and drill Ø mm	Length mm	Usable length mm	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1125503Z	5	30	5	2	100 11	2400 32	
1125505Z	5	50	25	2	100 11	2400 32	
1125603Z	6	35	5	2	100 21	2400 32	
1125604Z	6	40	10	2	100 21	1800 32	
1125605Z	6	50	20	2	100 21	1800 32	
1125606Z	6	60	30	2	100 31	1200 32	
1125607Z	6	70	40	2	100 31	1200 32	
1125806Z	8	60	20	3	100 41	900 32	
1125808Z	8	80	40	3	100 51	600 32	
1125810Z	8	100	60	3	100 51	600 32	
1125812Z	8	120	80	3	100 51	600 32	
1125814Z	8	140	100	3	100 51	600 32	

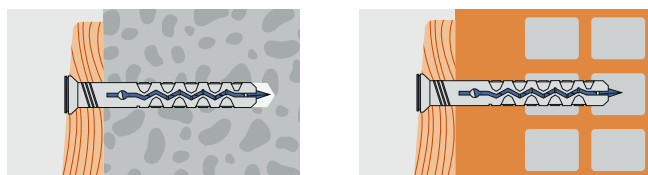
MNA-G Hammer Screw with big collar



MNA-G Hammer Screw with big collar

Article code	Plug and drill Ø mm	Length mm	Usable length mm	PZ	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1122502G	5	25	2	2	100 11	2400 32	
1122503G	5	30	5	2	100 11	2400 32	
1122504G	5	40	15	2	100 11	2400 32	
1122604G	6	40	10	2	100 21	1800 32	
1122805G	8	50	10	3	100 41	900 32	
1122806G	8	60	20	3	100 41	900 32	
1122808G	8	80	40	3	100 51	600 32	
1122810G	8	100	60	3	100 51	600 32	

MNAF for Skirting Board Fixing

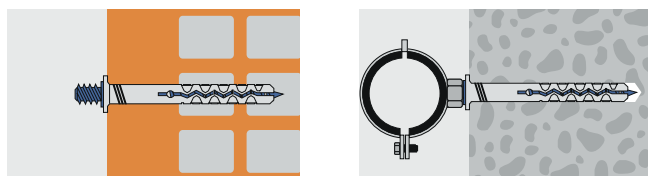


- Coloured nail are resistant to paint chips when hammered
- Detachable pozi-drive-nailhead
- Quick and simple installation

MNAF Hammer Screw for Skirting Board Fixing

Article code	Colour	Plug and drill Ø mm	Length mm	PZ	Box contents FS	Outer carton SK	Price per 100 pieces
11225134	black	5	30	2	100 ¹¹	2400 ³²	
11225135	white	5	30	2	100 ¹¹	2400 ³²	
11225138	d'brown	5	30	2	100 ¹¹	2400 ³²	
11225139	yellow	5	30	2	100 ¹¹	2400 ³²	
11225144	black	5	40	2	100 ¹¹	2400 ³²	
11225145	white	5	40	2	100 ¹¹	2400 ³²	
11225148	d'brown	5	40	2	100 ¹¹	2400 ³²	
11225149	yellow	5	40	2	100 ¹¹	2400 ³²	
11225154	black	5	50	2	100 ¹¹	2400 ³²	
11225155	white	5	50	2	100 ¹¹	2400 ³²	
11225158	d'brown	5	50	2	100 ¹¹	2400 ³²	
11225159	yellow	5	50	2	100 ¹¹	2400 ³²	

MNAm Hammer Screw with connecting metric thread

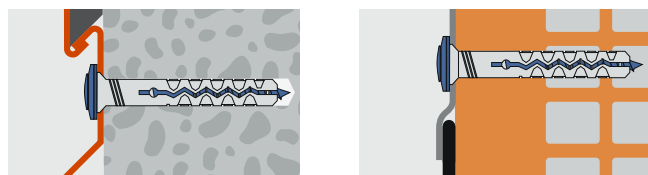


MNAm Hammer Screw with connecting metric thread

Article code	Thread	Plug and drill Ø mm	Length mm	Box contents FS	Outer carton SK	Price per 100 pieces
11226035	M 6	6	35	100 ¹¹	2400 ³²	
11226036	¹¹ F 7	6	35	100 ¹¹	2400 ³²	
11228065	M 8	8	60	100 ⁴¹	900 ³²	

¹¹ not metric

MNAr-N with neoprene washer, A2



- Moulded neoprene-washer
- Safe, reliably and waterproof assembly
- Detachable pozi-drive-nailhead

MNAr-N with neoprene washer, A2

Article code	Description	Plug and drill Ø mm	Length mm	PZ	Box contents FS	Outer carton SK	Price per 100 pieces
11256037	S-collar, A2	6	35	2	100 ²¹	1800 ³²	
11256038	S-collar, A2 coppered	6	35	2	100 ²¹	1800 ³²	

Further dimensions on request

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Sandstone
MNAr-N 6	0.5	0.4	0.3

Safety factor 3

MDB Disc for MNA, Nylon disc / Metal disc



MDB Disc for MNA, Nylon disc / Metal disc

Article code	Disc Ø mm	Hole Ø mm	Box contents FS	Outer carton SK	Price per 100 pieces
1120864 ¹¹	45	5.1	100 ³¹	1200 ³²	
1120865 ¹¹	45	8.5	100 ³¹	1200 ³²	
1120875 ²¹	38	9.0	200 ²¹	3600 ³²	
1120877 ¹¹	60	8.5	100 ⁵¹	600 ³²	
1120878 ¹¹	60	10.5	100 ⁵¹	600 ³²	

¹¹ nylon / ²¹ metal

MFB Skirting Board Fixing



- Woodscrew with mushroom head
- Pozi-drive-screwhead
- Pre-assembled with Mungo Nylon Plug MN 5

MFB Skirting Board Fixing

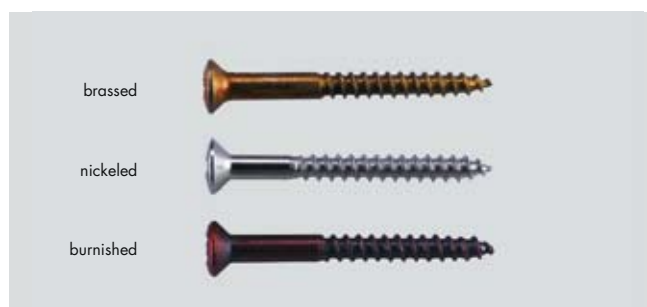
Article code	Description	Drill Ø mm	Length mm	Box contents FS	Outer carton SK	Price per 100 pieces
1410031	brassed	5	25	200 ¹¹	4800 ³²	
1410032	nickeled	5	25	200 ¹¹	4800 ³²	
1410033	burnished	5	25	200 ¹¹	4800 ³²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Sandstone
MFB	0.3	0.25	0.2

Safety factor 3

MFS Skirting Board Screw

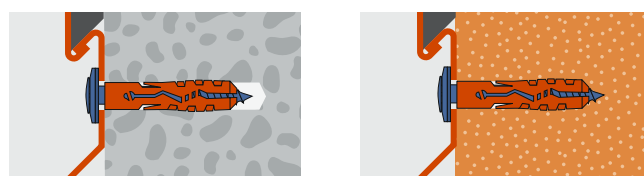


Woodscrew with mushroom head

MFS Skirting Board Screw with Pozi 2

Article code	Description	Ø mm	Length mm	Box contents	Price per 100 pieces
1273535	brassed	3.5	35	200	
1283535	nickeled	3.5	35	200	
1293535	burnished	3.5	35	200	

MFABr Facade Fixing



- Special wood screw complete with sealing- and neoprene washer
- Pan head wood screw with Pozi 2 - or with T20 / slotted head
- Efficient fixing for roof- and wall profiles
- Pre-assembled with Mungo Nylon Plug MN 6

MFABr Facade Fixing

Article code	Description	Ø x Length mm	Box contents FS	Outer carton SK	Price per 100 pieces
1413025	A2, Pozi 2	4.5x35	200 ²¹	3600 ³²	
1413225	A2 coppered, Pozi 2	4.5x35	200 ²¹	3600 ³²	
1413125	A2, T20 / slotted	4.5x35	200 ²¹	3600 ³²	
1413325	A2 coppered, T20 / slotted	4.5x35	200 ²¹	3600 ³²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Sandstone
MFABr	0.35	0.3	0.25

Safety factor 3

MFASr Facade Screw



MFASr Facade Screw with Pozi 2

A2					A2 coppered	
Article code	Ø x Length mm	Box contents FS	Outer carton SK	Price per 100 pieces	Article code	Price per 100 pieces
1413011	4.5x25	200 ¹¹	4800 ³²		1413211	
1413021	4.5x35	200 ¹¹	4800 ³²		1413221	
1413031	4.5x45	200 ²¹	3600 ³²		1413231	
1413041	4.5x65	200 ²¹	3600 ³²		1413241	

MFASr Facade Screw with T20

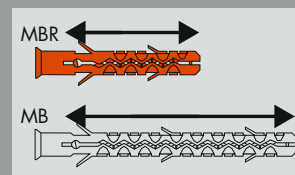
A2					A2 coppered	
Article code	Ø x Length mm	Box contents FS	Outer carton SK	Price per 100 pieces	Article code	Price per 100 pieces
1413121	4.5x35	200 ¹¹	4800 ³²		1413321	
1413131	4.5x45	200 ²¹	3600 ³²		1413331	

Nylon Frame Plug



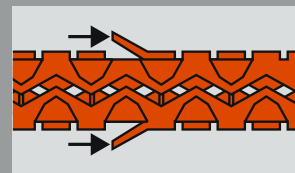
Suitability

Approved and particularly suitable for applications in solid materials.



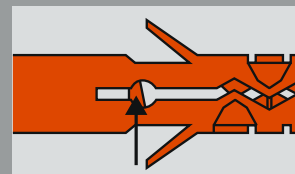
Expansion zone

MBR with normal expansion zone for applications in concrete and solid brick.



Wings

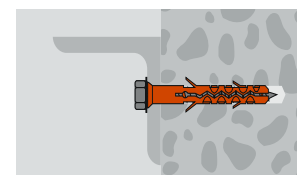
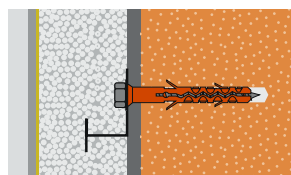
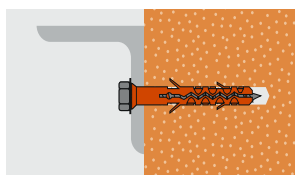
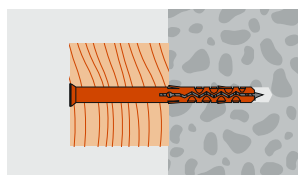
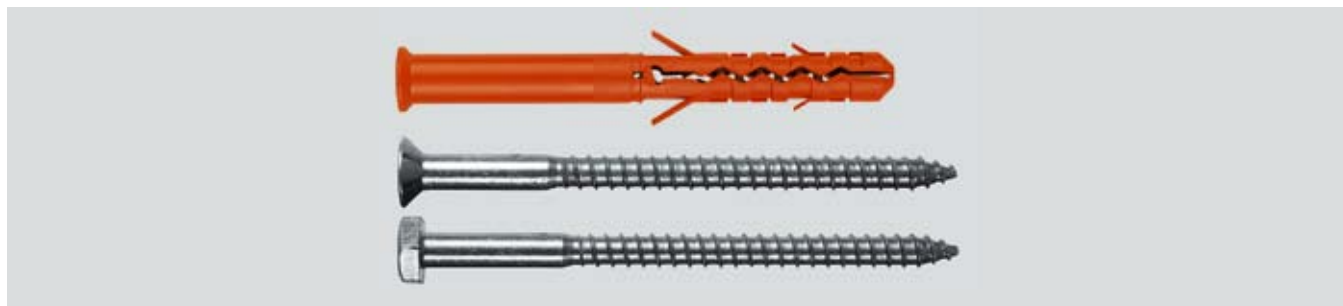
stops the plug rotating in the drill hole.



Knock-in protection

Prevents premature expansion while installing.

MBR-S Nylon Frame Plug with screw for solid materials



MBR-ST Nylon Frame Plug with screw T30¹⁾/T40



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 1122000	8	80	30	6x85	100 ⁴¹	900 ³²	
¹⁾ 1122001	8	100	50	6x105	100 ⁵¹	600 ³²	
¹⁾ 1122002	8	120	70	6x125	100 ⁵¹	600 ³²	
¹⁾ 1122004	8	140	90	6x145	100 ⁶¹	600 ³²	
1122006	10	60	10	7x65	100 ⁵¹	600 ³²	
1122008	10	80	30	7x85	100 ⁵¹	600 ³²	
1122010	10	100	50	7x105	50 ⁴¹	450 ³²	
1122012	10	120	70	7x125	50 ⁵¹	300 ³²	
1122014	10	140	90	7x145	50 ⁵¹	300 ³²	
1122016	10	160	110	7x165	50 ⁵¹	300 ³²	
1122020	10	200	150	7x205	50 ⁶¹	300 ³²	
1122024	10	240	190	7x245	25	-	

MBR-STr Nylon Frame Plug with screw T30¹⁾/T40, A4



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 1125908	8	80	30	6x85	100 ⁴¹	900 ³²	
¹⁾ 1125910	8	100	50	6x105	100 ⁵¹	600 ³²	
¹⁾ 1125912	8	120	70	6x125	100 ⁵¹	600 ³²	
¹⁾ 1125914	8	140	90	6x145	100 ⁶¹	600 ³²	
1137106	10	60	10	7x65	100 ⁵¹	600 ³²	
1137108	10	80	30	7x85	100 ⁵¹	600 ³²	
1137110	10	100	50	7x105	50 ⁴¹	450 ³²	
1137112	10	120	70	7x125	50 ⁵¹	300 ³²	
1137114	10	140	90	7x145	50 ⁵¹	300 ³²	
1137116	10	160	110	7x165	50 ⁵¹	300 ³²	
1137120	10	200	150	7x205	50 ⁶¹	300 ³²	
1137124	10	240	190	7x245	25	-	

MBR-SS Nylon Frame Plug with hexagon screw



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121506	10	60	10	7x65	100 ⁵¹	600 ³²	
1121508	10	80	30	7x85	100 ⁵¹	600 ³²	
1121510	10	100	50	7x105	50 ⁴¹	450 ³²	
1121512	10	120	70	7x125	50 ⁵¹	300 ³²	
1121514	10	140	90	7x145	50 ⁵¹	300 ³²	
1121516	10	160	110	7x165	50 ⁵¹	300 ³²	
1121520	10	200	150	7x205	50 ⁶¹	300 ³²	
1121524	10	240	190	7x245	25	-	

MBR-SSr Nylon Frame Plug with hexagon screw, A4



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1135106	10	60	10	7x65	100 ⁵¹	600 ³²	
1135108	10	80	30	7x85	100 ⁵¹	600 ³²	
1135110	10	100	50	7x105	50 ⁴¹	450 ³²	
1135112	10	120	70	7x125	50 ⁵¹	300 ³²	
1135114	10	140	90	7x145	50 ⁵¹	300 ³²	
1135116	10	160	110	7x165	50 ⁵¹	300 ³²	
1135120	10	200	150	7x205	50 ⁶¹	300 ³²	
1135124	10	240	190	7x245	25	-	

MBR-S Nylon Frame Plug with screw Pozi 3



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
²⁾ 1120906	6	55	25	4x60	100 ²¹	1800 ³²	
1120907	8	60	10	6x65	100 ³¹	1200 ³²	
1120908	8	80	30	6x85	100 ⁴¹	900 ³²	
1120910	8	100	50	6x105	100 ⁵¹	600 ³²	
1120912	8	120	70	6x125	100 ⁵¹	600 ³²	
1120914	8	140	90	6x145	100 ⁶¹	600 ³²	
³⁾ 1121006	10	60	10	7x65	100 ⁵¹	600 ³²	
³⁾ 1121008	10	80	30	7x85	100 ⁵¹	600 ³²	
³⁾ 1121010	10	100	50	7x105	50 ⁴¹	450 ³²	
³⁾ 1121012	10	120	70	7x125	50 ⁵¹	300 ³²	
³⁾ 1121014	10	140	90	7x145	50 ⁵¹	300 ³²	
³⁾ 1121016	10	160	110	7x165	50 ⁵¹	300 ³²	
³⁾ 1121018	10	200	150	7x205	50 ⁶¹	300 ³²	

²⁾ Pozi 2 ³⁾ Not part of the approval

MBR-STf Nylon Frame Plug with screw T40, hot dip galvanised



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
³⁾ 1122210	10	100	50	7x105	50 ⁴¹	450 ³²	
³⁾ 1122212	10	120	70	7x125	50 ⁵¹	300 ³²	
³⁾ 1122214	10	140	90	7x145	50 ⁵¹	300 ³²	
³⁾ 1122216	10	160	110	7x165	50 ⁵¹	300 ³²	

MBR-SSf Nylon Frame Plug with hex. screw, hot dip galvanised



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
³⁾ 1121310	10	100	50	7x105	50 ⁴¹	450 ³²	
³⁾ 1121312	10	120	70	7x125	50 ⁵¹	300 ³²	
³⁾ 1121314	10	140	90	7x145	50 ⁵¹	300 ³²	
³⁾ 1121316	10	160	110	7x165	50 ⁵¹	300 ³²	

³⁾ Not part of the approval

Recommended bending moment

galv. steel	Fz = 0 kN	Fz = 0.5 kN	Fz = 0.8 kN
MBR 8	5.7 Nm	5.4 Nm	
MBR 10	7.9 Nm		7.3 Nm
stainl. steel	Fz = 0 kN	Fz = 0.5 kN	Fz = 0.8 kN
MBR 8	5.3 Nm	5.0 Nm	
MBR 10	7.4 Nm		6.8 Nm

Fz = existing central traction

Recommended tension/shear loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Sandstone	Brick
MBR 6	1.0	0.6	0.8
MBR 8	1.6	1.2	1.4
MBR 10	2.1	1.5	1.6

Values only valid when using Mungo safety screws / Safety factor 3

High Performance Frame Plug



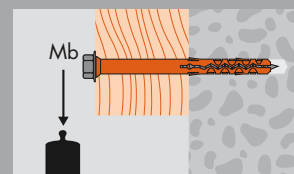
Approved maximum values

within the frame range, allows reduction of the fastening spots in fascards.



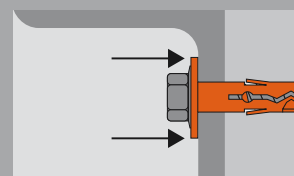
Suitability

Approved for most applications in solid materials and perforated brick, as well as for multiple applications in cracked concrete.



Increased bending moment

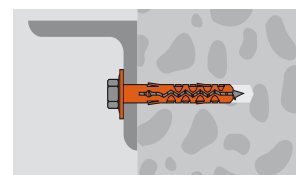
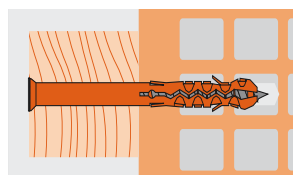
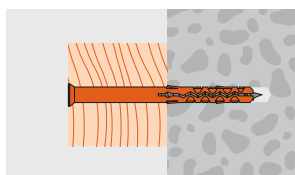
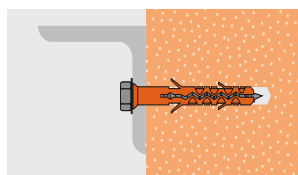
thanks to HT-screw with a larger screw diameter.



Big collar of MBRK

helps to avoid cold transmission and contact corrosion between different materials.

MBR-X High Performance Frame Plug with screw



MBR-XT Nylon Frame Plug with screw T40

Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1122007	10	60	10	7x65	100 ⁵¹	600 ³²	
1122009	10	80	30	7x85	100 ⁵¹	600 ³²	
1122011	10	100	50	7x105	50 ⁴¹	450 ³²	
1122013	10	120	70	7x125	50 ⁵¹	300 ³²	
1122015	10	140	90	7x145	50 ⁵¹	300 ³²	
1122017	10	160	110	7x165	50 ⁵¹	300 ³²	
1122021	10	200	150	7x205	50 ⁵¹	300 ³²	
1122025	10	240	190	7x245	25	-	

MBR-XT^r Nylon Frame Plug with screw T40, A4

Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1137107	10	60	10	7x65	100 ⁵¹	600 ³²	
1137109	10	80	30	7x85	100 ⁵¹	600 ³²	
1137111	10	100	50	7x105	50 ⁴¹	450 ³²	
1137113	10	120	70	7x125	50 ⁵¹	300 ³²	
1137115	10	140	90	7x145	50 ⁵¹	300 ³²	
1137117	10	160	110	7x165	50 ⁵¹	300 ³²	
1137121	10	200	150	7x205	50 ⁵¹	300 ³²	
1137125	10	240	190	7x245	25	-	

MBRK-XTB with collar and hex screw, T40, collar



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1120806	10	60	10	7x65	100 ⁵¹	600 ³²	
1120808	10	80	30	7x85	100 ⁵¹	600 ³²	

MBRK-XTB^r with collar and hex screw, collar, A4



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1131106	10	60	10	7x65	100 ⁵¹	600 ³²	
1131108	10	80	30	7x85	100 ⁵¹	600 ³²	

Recommended bending moment

galv. steel	Fz = 0 kN	Fz = 0.4 kN	Fz = 0.6 kN	Fz = 1.6 kN
MBR-X 10	12.7 Nm	12.2 Nm	12.0 Nm	11.2 Nm
stainl. steel	Fz = 0 kN	Fz = 0.4 kN	Fz = 0.6 kN	Fz = 1.6 kN
MBR-X 10	11.9 Nm	11.4 Nm	11.3 Nm	10.4 Nm

Fz = existing central traction

Recommended tension/shear loads in kN (1kN $\triangle$ 100kg)

Size	Concrete C20/25	Sandstone	Brick
MBR-X 10	3	2	2.2

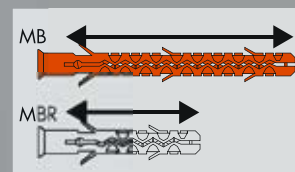
Values only valid when using Mungo safety screws / Safety factor 3

Nylon Frame Plug



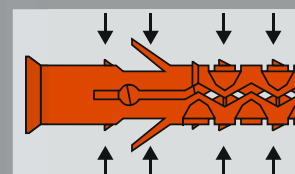
Suitability

Approved and suitable for most applications in perforated brick and aerated concrete.



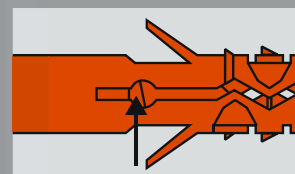
Expansion zone

MB with extended expansion zone for optimum applications in low density materials and hollow brick.



Rotation resistance

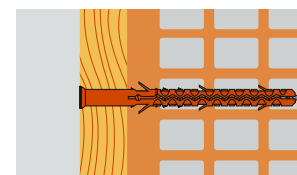
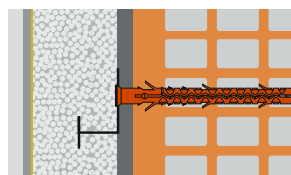
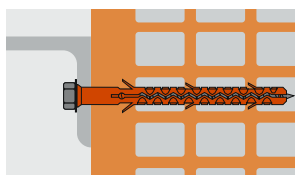
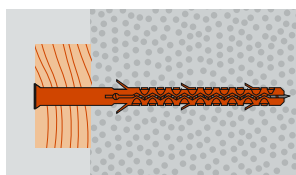
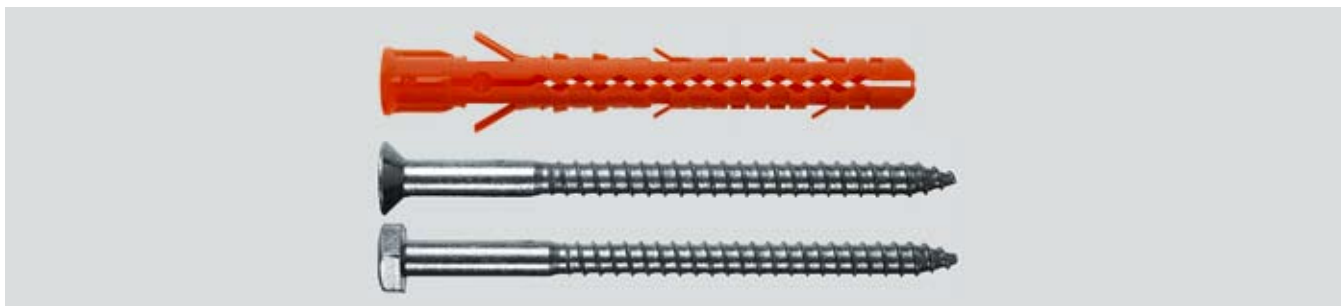
Stops the plug rotating in the drill hole.



Knock-in protection

Prevents premature expansion while installing.

MB-S Nylon Frame Plug with screw for softer materials



MB-ST Nylon Frame Plug with screw T30¹⁾ / T40



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 2) 1122100	8	80	10	6x85	100 41	900 32	
¹⁾ 2) 1122101	8	100	30	6x105	100 51	600 32	
¹⁾ 2) 1122102	8	120	50	6x125	100 51	600 32	
¹⁾ 2) 1122104	8	140	70	6x145	100 51	600 32	
²⁾ 1122108	10	80	10	7x85	100 51	600 32	
1122110	10	100	30	7x105	50 41	450 32	
1122112	10	120	50	7x125	50 51	300 32	
1122114	10	140	70	7x145	50 51	300 32	
1122116	10	160	90	7x165	50 51	300 32	
1122120	10	200	130	7x205	50 51	300 32	
1122124	10	240	170	7x245	25	-	
1122128	10	280	210	7x285	25	-	
1122130	10	300	230	7x305	25	-	

MB-STr Nylon Frame Plug with screw T30¹⁾ / T40, A4



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 2) 1136908	8	80	10	6x85	100 41	900 32	
¹⁾ 2) 1136910	8	100	30	6x105	100 51	600 32	
¹⁾ 2) 1136912	8	120	50	6x125	100 51	600 32	
¹⁾ 2) 1136914	8	140	70	6x145	100 51	600 32	
²⁾ 1137208	10	80	10	7x85	100 51	600 32	
1137210	10	100	30	7x105	50 41	450 32	
1137212	10	120	50	7x125	50 51	300 32	
1137214	10	140	70	7x145	50 51	300 32	
1137216	10	160	90	7x165	50 51	300 32	
1137220	10	200	130	7x205	50 51	300 32	
1137224	10	240	170	7x245	25	-	
1137228	10	280	210	7x285	25	-	
1137230	10	300	230	7x305	25	-	

MB-SS Nylon Frame Plug with hexagon screw



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
²⁾ 1121908	10	80	10	7x85	100 51	600 32	
1121910	10	100	30	7x105	50 41	450 32	
1121912	10	120	50	7x125	50 51	300 32	
1121914	10	140	70	7x145	50 51	300 32	
1121916	10	160	90	7x165	50 51	300 32	
1121920	10	200	130	7x205	50 51	300 32	
1121924	10	240	170	7x245	25	-	
1121928	10	280	210	7x285	25	-	
1121930	10	300	230	7x305	25	-	

MB-SSr Nylon Frame Plug with hexagon screw, A4



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
²⁾ 1135208	10	80	10	7x85	100 51	600 32	
1135210	10	100	30	7x105	50 41	450 32	
1135212	10	120	50	7x125	50 51	300 32	
1135214	10	140	70	7x145	50 51	300 32	
1135216	10	160	90	7x165	50 51	300 32	
1135220	10	200	130	7x205	50 51	300 32	
1135224	10	240	170	7x245	25	-	
1135228	10	280	210	7x285	25	-	
1135230	10	300	230	7x305	25	-	

²⁾ Not part of the approval

MB-S Nylon Frame Plug with screw Pozi 3



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1122300	8	80	10	6x85	100 41	900 32	
1122301	8	100	30	6x105	100 51	600 32	
1122302	8	120	50	6x125	100 51	600 32	
1122304	8	140	70	6x145	100 51	600 32	
²⁾ 1122308	10	80	10	7x85	100 51	600 32	
²⁾ 1122310	10	100	30	7x105	50 41	450 32	
²⁾ 1122312	10	120	50	7x125	50 51	300 32	
²⁾ 1122314	10	140	70	7x145	50 51	300 32	
²⁾ 1122316	10	160	90	7x165	50 51	300 32	
²⁾ 1122320	10	200	130	7x205	50 51	300 32	

²⁾ Not part of the approval

Recommended bending moment

Steel galv.	Fz = 0 kN	Fz = 0.8 kN
MB10	7.9 Nm	7.3 Nm
Stainl. Steel	Fz = 0 kN	Fz = 0.8 kN
MB10	7.4 Nm	6.8 Nm

Fz = existing central traction

Aerated Concrete: Drill-Ø 9 mm, setting depth 90 mm

MB-STf Nylon Frame Plug with screw T40, hot dip galvanised



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
²⁾ 1122410	10	100	50	7x105	50 41	450 32	
²⁾ 1122412	10	120	70	7x125	50 51	300 32	
²⁾ 1122414	10	140	90	7x145	50 51	300 32	
²⁾ 1122416	10	160	110	7x165	50 51	300 32	

MB-SSf Nylon Frame Plug with hex. screw, hot dip galvanised



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
²⁾ 1121410	10	100	50	7x105	50 41	450 32	
²⁾ 1121412	10	120	70	7x125	50 51	300 32	
²⁾ 1121414	10	140	90	7x145	50 51	300 32	
²⁾ 1121416	10	160	110	7x165	50 51	300 32	

²⁾ Not part of the approval

Recommended tension/shear loads in kN (1kN $\triangleq$ 100kg)

Size	Perforated Brick	Aerated Concrete
MB 10	1.6	0.8

Important: without hammer drilling in perforated brick / values only valid when using Mungo safety screws / Safety factor 3

MBR Nylon Frame Plug Ø 6/8 for solid materials



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1142606	6	55	25	100 ¹¹	2400 ³²	
1142806	8	60	10	100 ²¹	1800 ³²	
1142808	8	80	30	100 ³¹	1200 ³²	
1142810	8	100	50	100 ³¹	1200 ³²	
1142812	8	120	70	100 ⁵¹	600 ³²	
1142814	8	140	90	100 ⁵¹	600 ³²	

MBR Nylon Frame Plug Ø 10 for solid materials



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1131006	10	60	10	100 ³¹	1200 ³²	
1131008	10	80	30	100 ⁴¹	900 ³²	
1131010	10	100	50	100 ⁵¹	600 ³²	
1131012	10	120	70	100 ⁵¹	600 ³²	
1131014	10	140	90	100 ⁵¹	600 ³²	
1131016	10	160	110	100 ⁵¹	600 ³²	
1131020	10	200	150	50 ⁴¹	450 ³²	
1131024	10	240	190	50 ⁶¹	300 ³²	

MBRK Nylon Frame Plug Ø 10 with collar for solid materials



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1131007	10	60	10	100 ⁴¹	900 ³²	
1131009	10	80	30	100 ⁴¹	900 ³²	

MB Nylon Frame Plug Ø 8 for softer materials



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121600	8	80	10	100 ³¹	1200 ³²	
1121601	8	100	30	100 ³¹	1200 ³²	
1121602	8	120	50	100 ⁵¹	600 ³²	
1121604	8	140	70	100 ⁵¹	600 ³²	

MB Nylon Frame Plug Ø 10 for softer materials



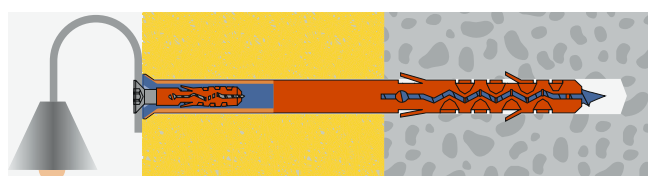
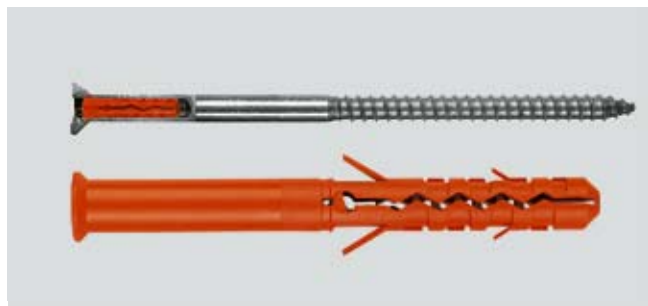
Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121608	10	80	10	100 ⁴¹	900 ³²	
1121610	10	100	30	100 ⁵¹	600 ³²	
1121612	10	120	50	100 ⁵¹	600 ³²	
1121614	10	140	70	100 ⁵¹	600 ³²	
1121616	10	160	90	100 ⁵¹	600 ³²	
1121620	10	200	130	50 ⁴¹	450 ³²	
1121624	10	240	170	50 ⁶¹	300 ³²	
1121628	10	280	210	50	-	
1121630	10	300	230	50	-	

MBK Nylon Frame Plug Ø 10 with collar for softer materials



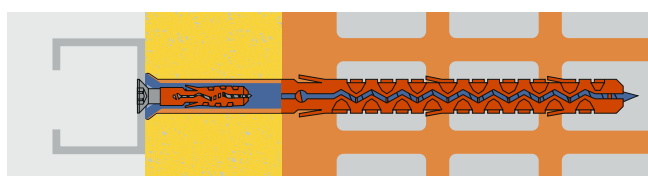
Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121609	10	80	10	100 ⁵¹	600 ³²	
1121611	10	100	30	100 ⁵¹	600 ³²	

MBR-SK Nylon Frame Plug incl. screw with head hole/ MN5



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121208	10	80	30	100 ⁵¹	600 ³²	
1121210	10	100	50	50 ⁴¹	450 ³²	
1121220	10	120	70	50 ⁵¹	300 ³²	
1121240	10	140	90	50 ⁵¹	300 ³²	
1121260	10	160	110	50 ⁵¹	300 ³²	
1121290	10	200	150	50 ⁶¹	300 ³²	
1121294	10	240	190	25	-	

MB-SK Nylon Frame Plug incl. screw with head hole/ MN5



Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121808	10	80	10	100 ⁵¹	600 ³²	
1121810	10	100	30	50 ⁴¹	450 ³²	
1121812	10	120	50	50 ⁵¹	300 ³²	
1121814	10	140	70	50 ⁵¹	300 ³²	
1121816	10	160	90	50 ⁵¹	300 ³²	
1121820	10	200	130	50 ⁵¹	300 ³²	
1121824	10	240	170	25	-	

SR-SK Safety Screw with internal thread M5 / T40



Article code	Ø mm	Length mm	Thread Ø / Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
62916260	7	105	M5/18	100 ³¹	600 ²²	
62916300	7	125	M5/18	100 ⁴¹	300 ¹²	
62916340	7	145	M5/18	100 ⁴¹	300 ¹²	
62916380	7	165	M5/18	100 ⁴¹	300 ¹²	
62916460	7	205	M5/18	100 ⁵¹	300 ²²	
62916570	7	245	M5/18	100 ⁵¹	300 ²²	

SR Safety Screw for MB / MBR



SR-ST Safety Screw T30¹⁾ / T40

Article code	Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 62414181	6	65	100 ²¹	900 ²²	
¹⁾ 62414221	6	85	100 ²¹	900 ²²	
¹⁾ 62414261	6	105	100 ²¹	900 ²²	
¹⁾ 62414301	6	125	100 ³¹	600 ²²	
¹⁾ 62414341	6	145	100 ⁴¹	300 ¹²	
62316181	7	65	100 ²¹	900 ²²	
62316221	7	85	100 ³¹	600 ²²	
62316261	7	105	100 ³¹	600 ²²	
62316301	7	125	100 ⁴¹	300 ¹²	
62316341	7	145	100 ⁴¹	300 ¹²	
62316381	7	165	100 ⁴¹	300 ¹²	
62316461	7	205	100 ⁵¹	300 ²²	
62316571	7	245	100 ⁵¹	300 ²²	
62316651	7	285	50	-	
62316691	7	305	50	-	

¹⁾ T30

SR-S Safety Screw Pozi 3

Article code	Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
62214181	6	65	100 ²¹	900 ²²	
62214221	6	85	100 ²¹	900 ²²	
62214261	6	105	100 ²¹	900 ²²	
62214301	6	125	100 ³¹	600 ²²	
62214341	6	145	100 ⁴¹	300 ¹²	
62216220	7	85	100 ³¹	600 ²²	
62216260	7	105	100 ³¹	600 ²²	
62216300	7	125	100 ⁴¹	300 ¹²	
62216340	7	145	100 ⁴¹	300 ¹²	
62216380	7	165	100 ⁴¹	300 ¹²	
62216461	7	205	100 ⁵¹	300 ²²	

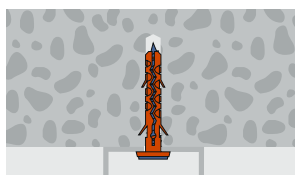
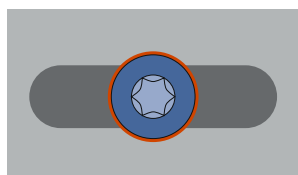
SR-SS Safety Screw hexagon

Article code	Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
61116181	7	65	100 ²¹	900 ²²	
61116221	7	85	100 ³¹	600 ²²	
61116261	7	105	100 ³¹	600 ²²	
61116301	7	125	100 ⁴¹	300 ¹²	
61116341	7	145	100 ⁴¹	300 ¹²	
61116381	7	165	100 ⁴¹	300 ¹²	
61116461	7	205	100 ⁶¹	200 ¹²	
61116571	7	245	100 ⁶¹	200 ¹²	
61116651	7	285	50	-	
61116691	7	305	50	-	

SR-STB Safety Screw hexagon, T40, collar

Article code	Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
61216181	7	65	100 ⁴¹	300 ¹²	
61216221	7	85	100 ⁴¹	300 ¹²	
61216261	7	105	100 ⁶¹	200 ¹²	
61216301	7	125	100 ⁶¹	200 ¹²	
61216341	7	145	100 ⁶¹	200 ¹²	
61216381	7	165	100 ⁶¹	200 ¹²	
61216461	7	205	100 ⁶¹	200 ¹²	
61216571	7	245	100 ⁶¹	200 ¹²	
61216651	7	285	50	-	
61216691	7	305	50	-	

MPD-S Profile Plug



- Minor frost conduction due to large collar
 - Ideal for elongated-hole assembly and fixing of metal substructure
- ① Wide fastening area of screw head avoids distortion of substruct.
② Large, strong anchor head (Ø 17 mm) improves flush setting avoiding surface damage

MPD-S Profile Plug T30

Article code	Plug and drill Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1160805	8	50	2	100 41	900 32	
1160806	8	60	10	100 41	900 32	
1160808	8	80	30	100 51	600 32	
1160810	8	100	50	100 51	600 32	

MPD-Sr Profile Plug A4, T30

1165806	8	60	10	100 41	900 32
1165808	8	80	30	100 51	600 32
1165810	8	100	50	100 51	600 32

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Sandstone	Brick
MPD-S 8	1.6	1.2	1.4

Safety factor 5

AKT End Cap T40

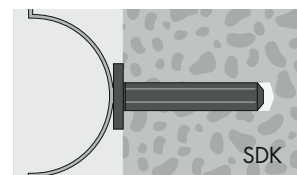
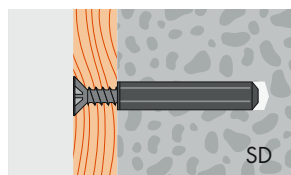


Article code	Colour	RAL	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121024	white	9010	100 1/2	3600 22	
1121033	l'brown	1001	100 1/2	3600 22	
1121044	d'brown	8017	100 1/2	3600 22	
1121029	black	9005	100 1/2	3600 22	

MDB-C Washer for countersunk screw Ø 7 mm

Article code	Outside-Ø mm	Inside-Ø mm	Height mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1102720	19	7	4.5	100 01	2400 22	

SD Sound Insulation Plug



- No sound transference once installed, due to integrated plug
- Sound reduced to **15 dB**
- Integrated MN Nylon Plug made from polyamide 6
- Case manufactured from caoutchouc rubber
- Can be used with most types of wood screws

SD Sound Insulation Plug

Article code	Description	Plug and drill Ø mm	Drilling depth mm	Plug length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1880006	SD 6	10	40	30	100 11	2400 32	
1880008	SD 8	12	50	40	100 21	1800 32	
1880010	SD 10	14	60	50	50 21	900 32	
1880012	SD 12	16	75	60	50 31	600 32	
1880014	SD 14	18	80	70	50 51	300 32	

SDK Sound Insulation Plug with collar



Article code	Description	Plug and drill Ø mm	Drilling depth mm	Plug length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1880106	SDK 6	10	40	30	100 31	1200 32	
1880108	SDK 8	12	50	40	100 51	600 32	
1880110	SDK 10	14	60	50	50 51	300 32	
1880112	SDK 12	16	75	60	25 51	150 32	
1880114	SDK 14	18	80	70	25 51	150 32	

Recommended loads in N (10 N $\triangleq$ 1 kg) and value of sound insulation in dB

Size	Concrete	Brick	Aerated Concrete	Value of sound insulation dB
SD / SDK 6	220	170	60	12.5
SD / SDK 8	420	330	80	10.5
SD / SDK 10	700	560	150	13.5
SD / SDK 12	1100	880	250	15
SD / SDK 14	1600	1280	300	15.5

Safety factor 5/reached with max. diameter wood screw

Setting data

Size	Drill-Ø mm	Length mm	Collar-Ø / thickness mm (SDK)	Drilling depth mm	Screw-Ø mm
SD / SDK 6	10	30	22 / 5	40	3.5 - 5.0
SD / SDK 8	12	40	30 / 5	50	4.5 - 6.0
SD / SDK 10	14	50	34 / 6	60	6.0 - 8.0
SD / SDK 12	16	60	42 / 7	75	8.0 - 10.0
SD / SDK 14	18	70	42 / 7	80	10.0 - 12.0

Screw in depth In order to avoid solid-borne-sound-bridges the screw must not be screwed-in further than the plug depth.

MWTE Sanitary Fixing for Wash Basins



MWTE Sanitary Fixing for Wash Basins

Article code	Set contents	Sets per outer carton	Price per 100 pieces
1420201	MWTE M 6 x 70 2 x MN 8 x 40 2 x SS Ø 6 x 70 2 x flush collar M6 2 x hex-nut M6 2 x washer M6	100	
1420101	MWTE M 10 x 100 2 x MN 14 x 70 2 x SS Ø 10 x 100 2 x flush collar M10 2 x hex-nut M10 2 x big washer M10 in DIN 9021	60	
1420102	MWTE M 10 x 120 2 x MN 14 x 70 2 x SS Ø 10 x 120 2 x flush collar M10 2 x hex-nut M10 2 x big washer M10 in DIN 9021	60	
1420103	MWTE M 10 x 140 2 x MN 14 x 70 2 x SS Ø 10 x 140 2 x flush collar M10 2 x hex-nut M10 2 x big washer M10 in DIN 9021	60	

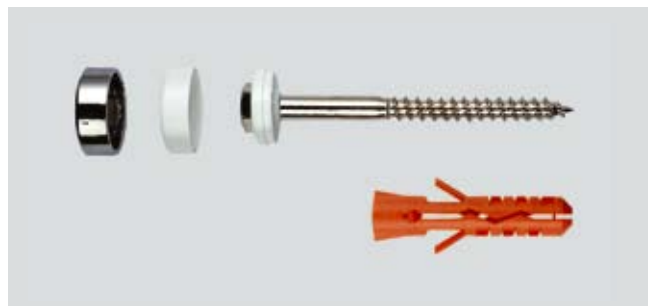
MWT Sanitary Fixing for Wash Basins with flange nut in nylon



MWT Sanitary Fixing for Wash Basins with flange nut in nylon

Article code	Set contents	Sets per outer carton	Price per 100 pieces
1420203	MWT M 8 x 90 2 x MN 10 x 50 2 x SS Ø 8 x 90 2 x flange nut M8	80	
1420204	MWT M 8 x 110 2 x MN 10 x 50 2 x SS Ø 8 x 110 2 x flange nut M8	60	
1420206	MWT M 10 x 100 2 x MN 14 x 70 2 x SS Ø 10 x 100 2 x flange nut M10	60	
1420208	MWT M 10 x 120 2 x MN 14 x 70 2 x SS Ø 10 x 120 2 x flange nut M10	60	
1420210	MWT M 10 x 140 2 x MN 14 x 70 2 x SS Ø 10 x 140 2 x flange nut M10	60	

MWC Sanitary Fixing for WC's



MWC Sanitary Fixing for WC's with MN 8 x 40

Article code	Set contents	Sets per outer carton	Price per 100 pieces
1420302	MWCc 8 x 40 2 x MN 8 x 40 2 x SS Ø 6 x 70 2 x washer 2 x end cap chrome	200	
1420301	MWCw 8 x 40 2 x MN 8 x 40 2 x SS Ø 6 x 70 2 x washer 2 x end cap white	200	

MWC Sanitary Fixing for WC's with MBR 8 x 80



Article code	Set contents	Sets per outer carton	Price per 100 pieces
1420304	MWCc 8 x 80 2 x MBR 8 x 80 2 x SS Ø 6 x 88 2 x washer 2 x end cap chrome	150	
1420303	MWCw 8 x 80 2 x MBR 8 x 80 2 x SS Ø 6 x 88 2 x washer 2 x end cap white	150	

MCE Sanitary Fixing for Boiler

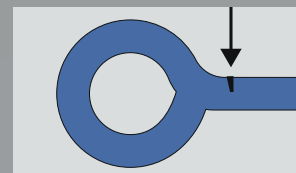


MCE Sanitary Fixing for Boiler

Article code	Set contents	Sets per outer carton	Price per 100 pieces
1420402	MCE M 10 x 120 4 x MN 14 x 70 4 x SS Ø 10 x 120 4 x hex-nut M10 4 x washer M10	60	

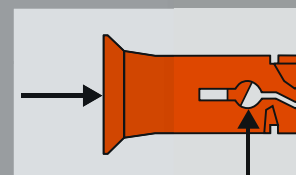
Recommended loads, see MN page 13 and MBR-S page 27

Scaffold Plug



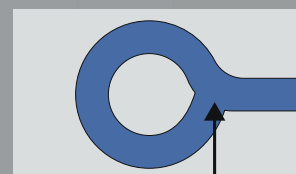
Setting depth marks

for controlled screwing by visual inspection.



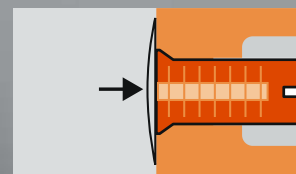
Controlled assembly

due to plug collar and knock-in protection.



Welded screw

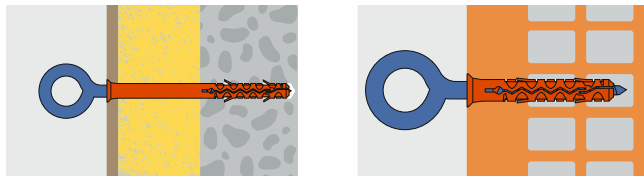
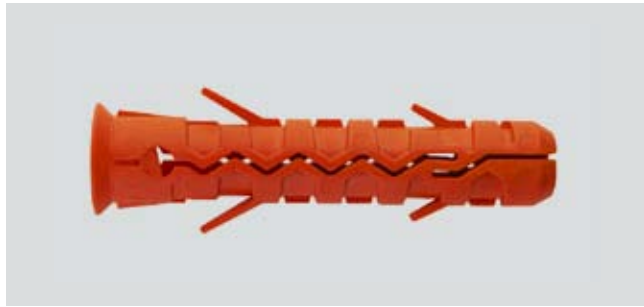
for safe fixing according to DIN 4420.



End cap

for a clean closure after dismantling.

MGD Scaffold Plug



MGD Scaffold Plug

Article code	Drill Ø mm	Length mm	Fit to MGVS Scaffold Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1131407	14	70	90 – 350	50 ³¹	600 ³²	
1131410	14	100	120 – 350	50 ⁴¹	450 ³²	
1131414	14	140	160 – 350	50 ⁵¹	300 ³²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Perforated Brick
MGD 14	5	4.5	1.6

Important: without hammer drill in perforated brick / Safety factor 3

MVS End Cap transparent for scaffold plug



Ø 28 mm

- Clean cover, to screw- or plug, transparent

MVS End Cap transparent for scaffold plug

Article code	Drill Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121090 ¹⁾	10 – 12	40	100 ⁴¹	900 ³²	

¹⁾ Inner plug diameter of the installed plug

MGV Scaffold Screw

RWTUV



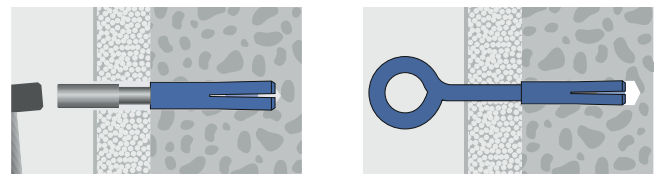
- Ideal fastening in connection with the scaffold plug
- Economical solution for light scaffolds
- Corresponding DIN 4420
- With setting depth marks for correct assembling
- Tension force 26 kN (DIN EN 10002-1: 1991-04)

MGV Scaffold Screw

Article code	Description	Shank Ø mm	Length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1131209	12x90	12	90	15	25 ⁴¹	75 ¹²	
1131212	12x120	12	120	45	25 ⁴¹	75 ¹²	
1131216	12x160	12	160	85	25 ⁵¹	75 ²²	
1131219	12x190	12	190	115	20 ⁵¹	60 ²²	
1131223	12x230	12	230	155	10 ⁶¹	20 ¹²	
1131230	12x300	12	300	225	10	-	
1131235	12x350	12	350	275	10	-	
1131245	12x450	12	450	375	10	-	

Further dimensions on request

MGVm Scaffold Screw with metric thread



Application with drop in anchor

- In connection with drop in anchor ESA M12, corresponding DIN 4420
- Reusable screw
- Fixing of scaffolding

MGVm Scaffold Screw with metric thread

Article code	Description	Shank Ø mm	Length mm	Usable length with ESA mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1131508	M 12/ 80	12	80	65	25 ³¹	150 ²²	
1131510	M 12/100	12	100	85	25 ³¹	150 ²²	
1131512	M 12/120	12	120	105	25 ⁴¹	75 ¹²	

Steel quality 5.8



Throughbolts from our modern swiss manufacturing plant

For more than 30 years, Mungo has gained expertise in distribution and manufacture of throughbolts. With our investment, we have established an important platform into the cold forming techniques, this will enable our company to play an important role in this worldwide market.

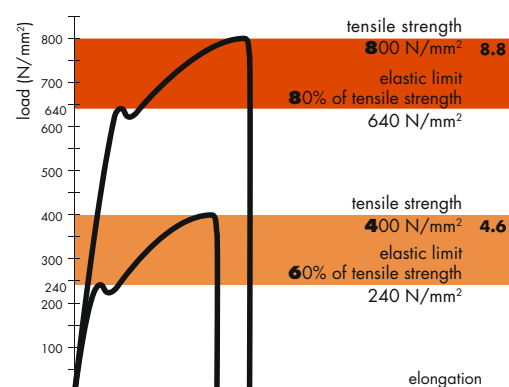
The history of the steel throughbolt

- 1969** Kwik-Bolt: Mungo is the first company in Europe to market the steel throughbolt imported from America
- 1970** Clicker: The first European manufactured steel throughbolt is co-developed and distributed by Mungo
- 1982** MSD steel throughbolt, rolled
- 1997** m3 steel throughbolt, cold formed
- 2003** m2 steel throughbolt, cold formed

Different surfaces in salt spray test

Surfaces	Thickness of coating	Corrosion resistant by the salt spray test
Zinc plated	5µm	24h
Hot dip galvanised	≥40µm	≥150h
Dacromet 500 (DAC)	5µm	240h

Grades of steel



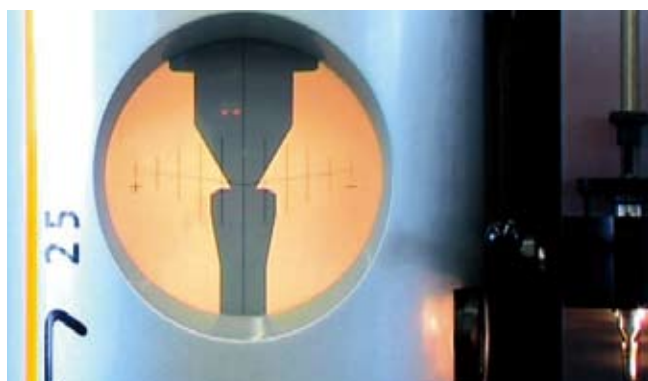


Quality assurance as a core area

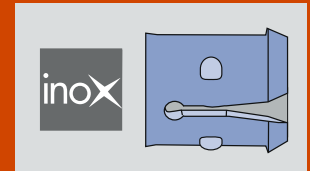
In addition to outside monitoring, in-house test inspection equipment and laboratories ensure the reliability and quality of the products. Optical gauging with analysis in the SPC machine offers a reliable indication of the production process.

Technical support

All those working with Mungo will enjoy the benefit of high quality products and also expert advice from our field sales managers, and our qualified engineers at headquarters.



Throughbolt m2



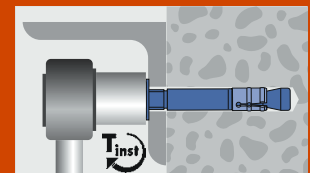
Durable fixing

Clip in stainless steel with zinc plated and stainless steel throughbolts.



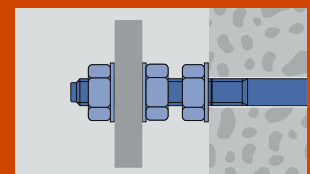
Corrosion resistance

A4 = stainless steel A4
Fvz = hot dip galvanised
Stvz = zinc plated



Assembly security

by applying the prescribed torque when setting.

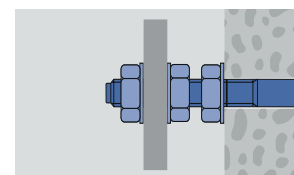
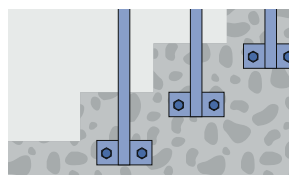
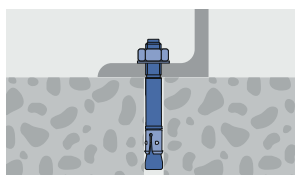
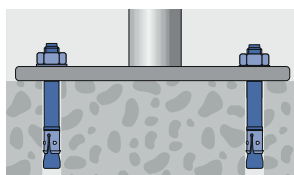


Distance assemblies

The long thread allows distance assemblies.



m2 Throughbolt, assembled



- European Technical Approval Option 7 for uncracked concrete
- Fire proof
- Efficient and time-saving for multiple installations

- The special design of the clip gives a guaranteed hold in the base material
- The long thread allows distance assemblies
- User-friendly push-through fixing

m2 with washer DIN 125A

Article code	Drill $\varnothing$ mm	Length mm	Usable length mm	min. Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 3200605	6	50	5	30	100 21	900 22	
3200606	6	65	10	40	100 21	900 22	
3200608	6	80	25	40	100 21	900 22	
3200609	6	95	40	40	100 21	900 22	
¹⁾ 3200805	8	50	5	27	100 21	900 22	
¹⁾ 3200806	8	60	10	30	100 21	900 22	
3200808	8	80	10	50	100 41	300 12	
3200885	8	85	15	50	100 41	300 12	
3200809	8	95	25	50	100 51	300 22	
3200811	8	115	45	50	100 51	300 22	
3200816	8	165	95	50	50 51	150 22	
¹⁾ 3201006	10	60	5	33	100 41	300 12	
¹⁾ 3201007	10	70	10	35	100 51	300 22	
3201009	10	95	15	58	100 51	300 22	
3201011	10	110	30	58	50 51	150 22	
3201012	10	125	45	58	50 51	150 22	
3201014	10	140	60	58	50 51	150 22	
3201016	10	160	80	58	50 51	150 22	
3201018	10	180	100	58	25 51	75 22	
¹⁾ 3201208	12	80	5	49	50 41	150 12	
3201211	12	110	15	68	50 51	150 22	
3201212	12	125	30	68	50 51	150 22	
3201214	12	145	50	68	50 51	150 22	
3201216	12	165	70	68	50 51	150 22	
3201218	12	185	90	68	50 51	150 22	
¹⁾ 3201609	16	90	5	50	25 51	75 22	
¹⁾ 3201611	16	115	10	70	25 51	75 22	
3201613	16	130	15	80	25 51	75 22	
3201614	16	145	30	80	25 51	75 22	
3201616	16	160	45	80	25 51	75 22	
3201618	16	180	65	80	25 51	75 22	
¹⁾ 1452013	20	130	10	76	20 51	60 22	
1452016	20	160	30	100	20 51	60 22	

¹⁾ Not part of the approval

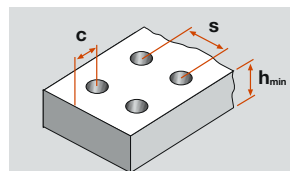
Recommended loads in kN

(1 kN $\triangleq$ 100 kg) in Concrete C20/25

m2	Tension	Shear	Bending moment Nm
M 6	3.6	2.1	5.8
M 8	5.7	3.9	14.3
M 10	7.6	6.2	28.5
M 12	9.9	8.4	46.8
M 16	11.9	15.7	118.6
M 20	19.8	24.5	231.5

The partial safety factors of the resistances as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.

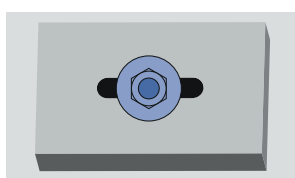
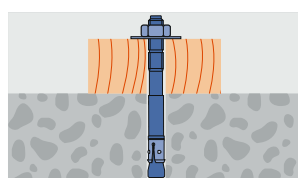
The recommended loads do not apply for reduced setting depths.



Setting data for m2

Thread $\varnothing$	Drill $\varnothing$ mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors/at min. edge distance s_{min}/c	min. edge distance/ at min. dist. betw. anchors c_{min}/s	min. thick- ness of found. h_{min}	Tighten Torque Nm	Spanner size
M 6	6	120	60	40/70	40/80	100	5	10
M 8	8	150	75	50/90	50/100	100	15	13
M 10	10	174	87	60/115	60/120	120	30	17
M 12	12	204	102	110/200	150/210	140	50	19
M 16	16	240	120	120/320	240/240	160	100	24
M 20	20	300	150	200/400	300/350	200	200	30

m2-C with big washer



- European Technical Approval Option 7 for uncracked concrete
- Fire proof
- With a big DIN 9021 washer for fixings with oblong holes and for wooden structures
- Long thread allows distance assemblies
- Usable lengths up to 325mm
- User-friendly push-through fixing

m2-C with big washer DIN 9021

Article code	Drill Ø mm	Length mm	Usable length mm	min. Setting depth mm	Box contents (FS)	Outer carton (SK)	Price per 100 pieces
1) 3210805	8	50	5	27	100 ⁴¹	300 ¹²	
1) 3210806	8	60	10	30	100 ⁴¹	300 ¹²	
3210808	8	80	10	50	100 ⁵¹	300 ²²	
3210816	8	165	95	50	50 ⁵¹	150 ²²	
1) 3211007	10	70	10	35	100 ⁵¹	300 ²²	
3211009	10	95	15	58	50 ⁵¹	150 ²²	
3211016	10	160	80	58	25 ⁵¹	75 ²²	
3211018	10	180	100	58	25 ⁵¹	75 ²²	
1) 1471021	10	210	130	58	25 ⁴¹	75 ¹²	
3211218	12	185	90	68	25 ⁵¹	75 ²²	
1471220	12	200	105	68	25 ⁵¹	75 ²²	
1471222	12	220	125	68	20 ⁵¹	60 ²²	
1471224	12	240	145	68	20 ⁵¹	60 ²²	
1471226	12	260	165	68	20 ⁵¹	40 ¹²	
1471230	12	300	205	68	15	-	
1471236	12	360	265	68	15	-	
1471622	16	220	105	80	10 ⁵¹	30 ²²	
1471626	16	260	145	80	10 ⁵¹	20 ¹²	
1471630	16	300	185	80	5	-	
1471633	16	330	215	80	5	-	
1471644	16	440	325	80	5	-	
1472020	20	200	70	100	10 ⁵¹	30 ²²	
1472027	20	270	140	100	5	-	

1) Not part of the approval

Setting data for m2-C

Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors/at min. edge distance s_{min}/c	min. edge distance/ at min. dist. betw. anchors c_{min}/s	min. thick- ness of found. h_{min}	Tighten Torque Nm	Spanner size
M 8	8	150	75	50/90	50/100	100	15	13
M 10	10	174	87	60/115	60/120	120	30	17
M 12	12	204	102	110/200	150/210	140	50	19
M 16	16	240	120	120/320	240/240	160	100	24
M 20	20	300	150	200/400	300/350	200	200	30

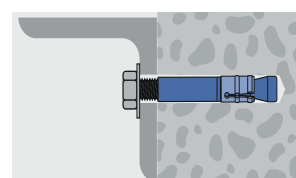
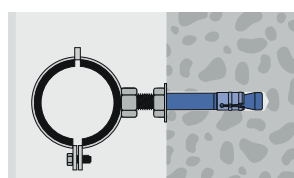
Recommended loads in kN

(1kN Δ 100 kg) in Concrete C20/25

m2-C	Tension	Shear	Bending moment Nm
M 8	5.7	3.9	14.3
M 10	7.6	6.2	28.5
M 12	9.9	8.4	46.8
M 16	11.9	15.7	118.6
M 20	19.8	24.5	231.5

The partial safety factors of the resistances as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.
The recommended loads do not apply for reduced setting depths

m2-I Internally Threaded Bolt



- Suitable for all metric screws and rods in different lengths
- User-friendly prior installation
- For fastening of pipings, ventilation line, consoles
- Fixings are easily removable
- A4 stainless steel version for outdoor use and damp conditions

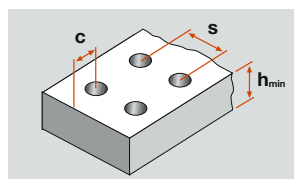
m2-I Internally Threaded Bolt

Article code	Thread Ø and Length mm	Drill Ø mm	Length mm	min. Setting depth mm	Box contents (FS)	Outer carton (SK)	Price per 100 pieces
1450645	M 6/15	8	45	39	100 ²¹	900 ²²	
1450850	M 8/17	10	51	47	100 ²¹	900 ²²	
1451055	M 10/17	12	55	50	100 ⁴¹	300 ¹²	
1451268	M 12/20	16	69	59	50 ⁴¹	150 ¹²	

m2r-I Internally Threaded Bolt, stainless steel A4



Article code	Thread Ø and Length mm	Drill Ø mm	Length mm	min. Setting depth mm	Box contents (FS)	Outer carton (SK)	Price per 100 pieces
14406455	M 6/15	8	45	39	100 ²¹	900 ²²	
14408505	M 8/17	10	51	47	100 ²¹	900 ²²	
14410555	M 10/17	12	55	50	100 ⁴¹	300 ¹²	
14412685	M 12/20	16	69	59	50 ⁴¹	150 ¹²	



Setting data for m2-I

Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors s_{min}	min. edge distance c_{min}	min. thickness of foundation h_{min}	Tighten Torque Nm
M 6	8	117	60	40	50	100	7
M 8	10	141	71	47	60	120	10
M 10	12	150	75	50	63	140	20
M 12	16	177	89	60	75	160	35

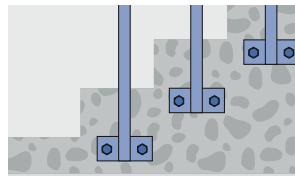
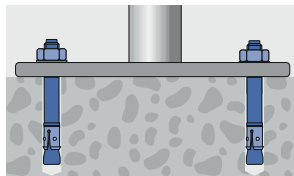
Recommended loads in kN

(1kN Δ 100 kg) in Concrete C20/25

m2-I	Tension
8 (M6)	2.2
10 (M8)	3.0
12 (M10)	3.5
16 (M12)	5.0

Safety factor 3

m2f Throughbolt, hot dip galvanised



- For applications not relevant to approvals
- For outdoor use and damp conditions
- Fire proof
- The long thread allows distance assemblies
- User-friendly push-through fixing

m2f with washer DIN 125A, hot dip galvanised

Article code	Drill Ø mm	Length mm	Usable length mm	min. Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
3400605	6	50	5	30	100/21	900/22	
3400606	6	65	10	40	100/21	900/22	
3400608	6	80	25	40	100/21	900/22	
3400609	6	95	40	40	100/21	900/22	
3400805	8	50	5	27	100/21	900/22	
3400806	8	60	10	30	100/21	900/22	
3400808	8	80	10	50	100/41	300/12	
3400809	8	95	25	50	100/51	300/22	
3400811	8	115	45	50	100/51	300/22	
3401006	10	60	5	33	100/41	300/12	
3401007	10	70	10	35	100/51	300/22	
3401009	10	95	15	58	100/51	300/22	
3401011	10	110	30	58	50/51	150/22	
3401012	10	125	45	58	50/51	150/22	
3401014	10	140	60	58	50/51	150/22	
3401016	10	160	80	58	50/51	150/22	
3401018	10	180	100	58	25/51	75/22	
3401208	12	80	5	49	50/41	150/12	
3401211	12	110	15	68	50/51	150/22	
3401212	12	125	30	68	50/51	150/22	
3401214	12	145	50	68	50/51	150/22	
3401216	12	165	70	68	50/51	150/22	
3401218	12	185	90	68	50/51	150/22	
3401609	16	90	5	50	25/51	75/22	
3401611	16	115	10	70	25/51	75/22	
3401613	16	130	15	80	25/51	75/22	
3401614	16	145	30	80	25/51	75/22	
3401616	16	160	45	80	25/51	75/22	
3401618	16	180	65	80	25/51	75/22	
3402016	20	160	30	100	20/51	60/22	

Setting data for m2f

Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors/at min. edge distance s_{min}/c	min. edge distance/at min. dist. betw. anchors c_{min}/s	min. thickness of found. h_{min}	Tighten Torque Nm	Spanner size
M 6	6	120	60	40/70	40/80	100	5	10
M 8	8	150	75	50/90	50/100	100	15	13
M 10	10	174	87	60/115	60/120	120	30	17
M 12	12	204	102	110/200	150/210	140	50	19
M 16	16	240	120	120/320	240/240	160	100	24
M 20	20	300	150	200/400	300/350	200	200	30

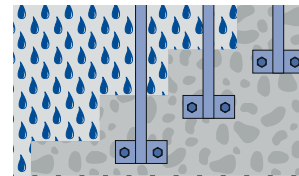
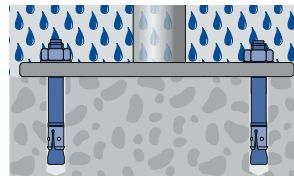
Recommended loads in kN

(1kN Δ 100 kg) in Concrete C20/25

m2f	Tension	Shear	Bending moment Nm
M 6	3.6	2.1	5.8
M 8	5.7	3.9	14.3
M 10	7.6	6.2	28.5
M 12	9.9	8.4	46.8
M 16	11.9	15.7	118.6
M 20	19.8	24.5	231.5

The partial safety factors of the resistances regulated in the zinc plated m2 approval as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.
The recommended loads do not apply for reduced setting depths.

m2r Throughbolt, A4



- European Technical Approval Option 7 for uncracked concrete
- Fire proof
- A4 stainless steel version for outdoor use and damp conditions
- The long thread allows distance assemblies
- User-friendly push-through fixing

m2r with washer DIN 125A, stainless steel A4

Article code	Drill Ø mm	Length mm	Usable length mm	min. Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 3300605	6	50	5	30	100/21	900/22	
3300606	6	65	10	40	100/21	900/22	
3300608	6	80	25	40	100/21	900/22	
3300609	6	95	40	40	100/21	900/22	
¹⁾ 3300805	8	50	5	27	100/21	900/22	
¹⁾ 3300806	8	60	10	30	100/21	900/22	
3300808	8	80	10	50	100/41	300/12	
3300885	8	85	15	50	100/41	300/12	
3300809	8	95	25	50	100/51	300/22	
3300811	8	115	45	50	100/51	300/22	
¹⁾ 3301006	10	60	5	33	100/41	300/12	
¹⁾ 3301007	10	70	10	35	100/51	300/22	
3301009	10	95	15	58	100/51	300/22	
3301011	10	110	30	58	50/51	150/22	
3301012	10	125	45	58	50/51	150/22	
3301014	10	140	60	58	50/51	150/22	
3301016	10	160	80	58	50/51	150/22	
3301018	10	180	100	58	25/51	75/22	
¹⁾ 3301208	12	80	5	49	50/41	150/12	
3301211	12	110	15	68	50/51	150/22	
3301212	12	125	30	68	50/51	150/22	
3301214	12	145	50	68	50/51	150/22	
3301216	12	165	70	68	50/51	150/22	
3301218	12	185	90	68	50/51	150/22	
¹⁾ 3301609	16	90	5	50	25/51	75/22	
¹⁾ 3301611	16	115	10	70	25/51	75/22	
3301613	16	130	15	80	25/51	75/22	
3301614	16	145	30	80	25/51	75/22	
3301616	16	160	45	80	25/51	75/22	
3301618	16	180	65	80	25/51	75/22	
¹⁾ 1442016	20	160	30	100	20/51	60/22	

¹⁾ Not part of the approval

Setting data for m2r

Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors/at min. edge distance s_{min}/c	min. edge distance/at min. dist. betw. anchors c_{min}/s	min. thickness of found. h_{min}	Tighten Torque Nm	Spanner size
M 6	6	120	60	40/70	40/80	100	6.5	10
M 8	8	150	75	50/90	50/100	100	25	13
M 10	10	174	87	60/115	60/120	120	35	17
M 12	12	204	102	110/200	150/210	140	125	19
M 16	16	240	120	120/320	240/240	160	140	24
M 20	20	300	150	200/400	300/350	200	280	30

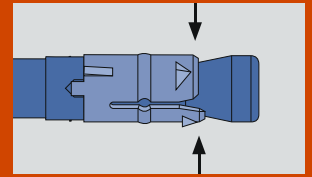
Recommended loads in kN

(1kN Δ 100 kg) in Concrete C20/25

m2r	Tension	Shear	Bending moment Nm
M 6	3.6	3.9	6.4
M 8	5.7	7.1	16.1
M 10	7.6	11.2	32.2
M 12	11.9	16.3	56.4
M 16	15.7	30.3	142.8
M 20	19.8	32.0	125.7

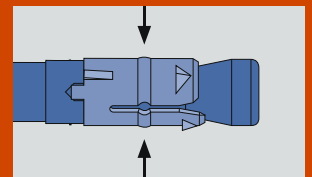
The partial safety factors of the resistances as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.
The recommended loads do not apply for reduced setting depths.

Throughbolt m3



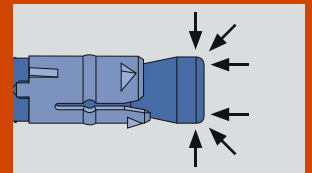
Automatically post-expansion - extended expansion leg

Eccentric expansion prevents anchor failure in cracked concrete.



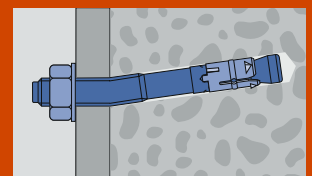
Additional expansion

Provided by the additional expanding ring on the expansion collet.



Ease of installation

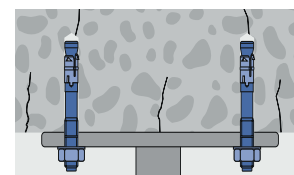
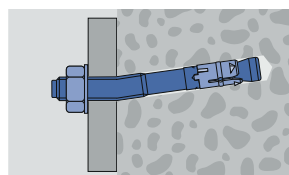
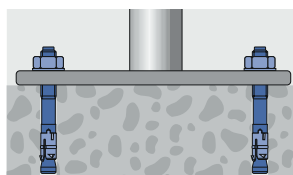
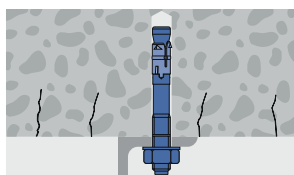
Rounded end, specially engineered expansion collet allows for ease of setting.



Easily adjustable

The high grade steel allows for adjustment without loss of capacity.

m3 Throughbolt, dacromet-coated, assembled



- European Technical Approval Option 1 for uncracked and cracked concrete
- Shock proofed fastening for use in civil defence projects
- Corrosion resistant minimum 240h according to DIN 50021
- User-friendly push-through fixing

m3-C with big washer



- Shock proofed fastening for use in civil defence projects
- Corrosion resistant minimum 240h according to DIN 50021
- With a big DIN 9021 washer for fixings with oblong holes and for wooden structures
- User-friendly push-through fixing

m3 with washer DIN 125A

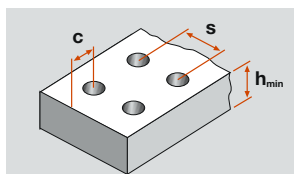
Article code	Drill Ø mm	Length mm	Usable length mm	min. Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
2500805	8	50	5	28	100 31	600 22	
2500806	8	60	10	32	50 21	450 22	
2500808	8	80	15	46	50 31	300 22	
2500809	8	95	30	46	50 31	300 22	
2500811	8	115	50	46	50 41	150 12	
2500816	8	165	100	46	25 41	75 12	
2501006	10	60	5	35	50 31	300 22	
2501007	10	70	10	40	50 41	150 12	
2501009	10	90	10	58	50 41	150 12	
2501011	10	110	30	58	25 41	75 12	
2501013	10	130	50	58	25 41	75 12	
2501018	10	180	100	58	25 41	75 12	
2501208	12	80	5	49	25 31	150 22	
2501211	12	115	20	68	25 41	75 12	
2501212	12	125	30	68	25 41	75 12	
2501214	12	145	50	68	25 51	75 22	
2501216	12	165	70	68	25 51	75 22	
2501218	12	185	90	68	25 51	75 22	
2501611	16	115	10	70	25 51	75 22	
2501612	16	125	10	80	25 51	75 22	
2501614	16	140	25	80	10 41	30 12	
2501616	16	165	50	80	10 41	30 12	
2501618	16	180	65	80	10 41	30 12	

¹⁾ Part of the approval

Recommended loads in kN (1kN $\approx$ 100 kg)

Size	Tension Concrete C20/25	Shear Concrete C20/25	Torque Nm
M 8	5.0	5.5	25
M 10	7.5	7.5	45
M 12	10.5	12.0	60
M 16	15.0	16.0	125

Safety factor 3



Setting data for m3/m3-C

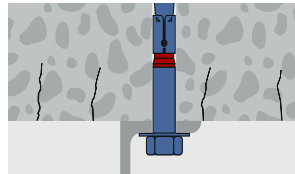
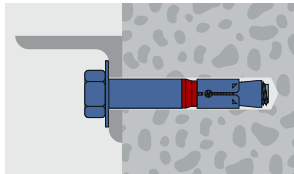
Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors s_min	min. edge distance c_min	min. thick- ness of found. h_min	Spanner size
M 8	8	138	69	90	110	100	13
M 10	10	174	87	120	150	120	17
M 12	12	204	102	140	170	140	19
M 16	16	240	120	165	200	160	24

HL-S Heavy Duty Anchor



M8 – M16

F30 – F120



- European Technical Approval Option 1 for cracked and uncracked concrete
- Fire proof F30–F120
- Approved for use with fixed water sprinkler systems, from M8
- Pre-assembled with hexagon screw
- Collapsible plastic sleeve allows the anchor to tighten down, closing small gaps against the base material
- Controlled expansion
- Fastenings in natural stone without approval possible

HL-S Heavy Duty Anchor with hexagon screw

Article code	Drill Ø / Usable length mm	Drilling depth mm	min. Setting depth mm	Internally thread Ø / length mm	Box contents [FS]	Price per 100 pieces
1221000	10/0	65	50	M 6/60	100 ⁴¹	
1221001	10/10	65	50	M 6/70	50 ³¹	
1221003	10/30	65	50	M 6/90	50 ³¹	
1221005	10/50	65	50	M 6/110	50 ³¹	
1221200	12/0	80	60	M 8/70	50 ³¹	
1221201	12/10	80	60	M 8/80	50 ⁴¹	
1221203	12/30	80	60	M 8/100	25 ³¹	
1221205	12/50	80	60	M 8/120	25 ³¹	
1221500	15/0	95	71	M 10/85	25 ³¹	
1221501	15/15	95	71	M 10/100	25 ³¹	
1221502	15/25	95	71	M 10/110	25 ³¹	
1221504	15/45	95	71	M 10/130	25 ³¹	
1221509	15/95	95	71	M 10/180	25 ⁵¹	
1221800	18/0	105	80	M 12/100	20 ³¹	
1221801	18/10	105	80	M 12/110	20 ³¹	
1221802	18/20	105	80	M 12/120	20 ³¹	
1221804	18/40	105	80	M 12/140	20 ⁵¹	
1221807	18/70	105	80	M 12/170	20 ⁵¹	
1222400	24/0	130	100	M 16/120	10 ³¹	
1222402	24/20	130	100	M 16/140	10 ⁵¹	
1222405	24/50	130	100	M 16/170	10 ⁵¹	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Thread-Ø	Tension	Shear	Bending moment Nm
M 6	7.6	6.9	6.9
M 8	9.5	11.4	17.1
M 10	14.3	17.1	34.3
M 12	16.7	22.9	60.0
M 16	23.8	40.0	152.0

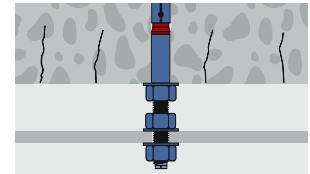
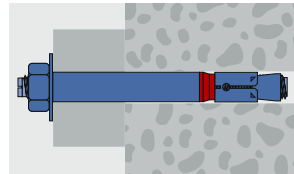
The partial safety factors of the resistances as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.

HL-B Heavy Duty Anchor



M8 – M16

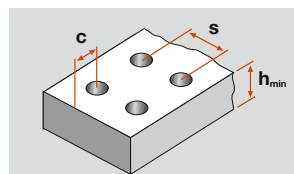
F30 – F120



- European Technical Approval Option 1 for cracked and uncracked concrete
- Fire proof F30–F120
- Approved for use with fixed water sprinkler systems, from M8
- Pre-assembled with threaded bolt and nut
- Collapsible plastic sleeve allows the anchor to tighten down, closing small gaps against the base material
- Controlled expansion
- Fastenings in natural stone without approval possible

HL-B Heavy Duty Anchor with threaded bolt and nut

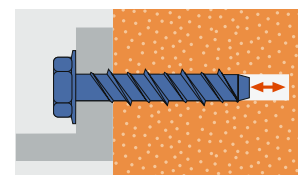
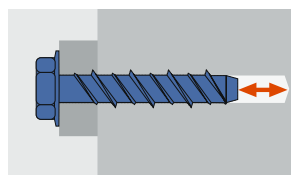
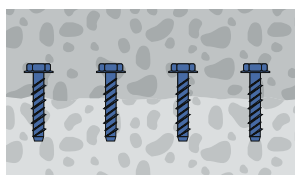
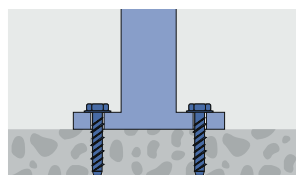
Article code	Drill Ø / Usable length mm	Drilling depth mm	min. Setting depth mm	Internally thread Ø / length mm	Box contents [FS]	Price per 100 pieces
1231000	10/0	65	50	M 6/69	100 ⁴¹	
1231001	10/10	65	50	M 6/79	50 ³¹	
1231003	10/30	65	50	M 6/99	50 ³¹	
1231005	10/50	65	50	M 6/119	50 ³¹	
1231010	10/100	65	50	M 6/169	25 ⁴¹	
1231200	12/0	80	60	M 8/82	50 ³¹	
1231201	12/10	80	60	M 8/92	50 ³¹	
1231203	12/30	80	60	M 8/112	25 ³¹	
1231205	12/50	80	60	M 8/132	25 ³¹	
1231210	12/100	80	60	M 8/182	25 ⁴¹	
1231500	15/0	95	71	M 10/98	25 ³¹	
1231501	15/15	95	71	M 10/113	25 ³¹	
1231502	15/25	95	71	M 10/123	25 ³¹	
1231504	15/45	95	71	M 10/143	25 ³¹	
1231509	15/95	95	71	M 10/193	25 ⁵¹	
1231800	18/0	105	80	M 12/115	20 ³¹	
1231801	18/10	105	80	M 12/125	20 ³¹	
1231802	18/20	105	80	M 12/135	20 ⁴¹	
1231804	18/40	105	80	M 12/155	20 ⁴¹	
1231807	18/70	105	80	M 12/185	20 ⁵¹	
1231810	18/100	105	80	M 12/215	10 ⁴¹	
1232400	24/0	130	100	M 16/141	10 ⁵¹	
1232402	24/20	130	100	M 16/161	10 ⁵¹	
1232405	24/50	130	100	M 16/191	10 ⁵¹	
1232410	24/100	130	100	M 16/241	5 ⁴¹	



Setting data for HL-S/HL-B

Thread-Ø	Drill Ø mm	s distance between anchors mm	c edge distance mm	min. dist. betw. anchors / at min. edge distance s_{min}/c	min. edge distance / at min. dist. betw. anchors c_{min}/s	min. thick- ness of found. h_{min}	Tighten Torque Nm	Spanner size
M 6	10	150	75	50/80	50/100	100	15	10
M 8	12	180	90	60/100	60/120	120	30	13
M 10	15	213	107	70/120	70/175	140	50	17
M 12	18	240	120	80/160	80/200	160	80	19
M 16	24	300	150	100/180	100/220	200	120	24

MUA Concrete Screw



- Easy pivoting, owing to patented thread
- High steel grade of 12.9
- For use in most kinds of building materials
- Resists tension- and shear-loads

- Virtually no expansion pressure, allows small edge and space distances
- Disassembly and reusing of the screw and the drillhole possible
- Also for use with reinforcement
- Fixings in steel construction profiles possible

MUA Concrete Screw

Article code	Drill Ø mm	Length mm	Usable length concrete	Usable length sandstone	Spanner size	Box contents FS	Outer carton SK	Price per 100 pieces
1570860	8	60	20	0	13	100 31	600 22	
1570875	8	75	35	15	13	50 21	450 22	
1570811	8	100	60	40	13	50 21	450 22	
1571075	10	75	25	5	17	50 31	300 22	
1571090	10	90	40	20	17	50 31	300 22	
1571012	10	125	75	55	17	25 31	150 22	
1571016	10	150	100	80	17	25 41	75 12	
1571275	12	75	15	-	19	25 21	225 22	
1571211	12	100	40	15	19	25 21	225 22	
1571212	12	125	65	40	19	25 31	150 22	

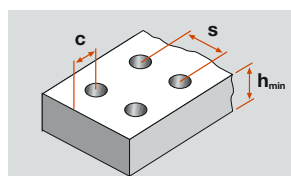
Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Material	min. Setting depth	min. Drilling depth	Tension kN	Shear kN
MUA 8	Concrete C20/25	40	60	3.6	6.3
MUA 8	Sandstone	60	75	1.2	3.6
MUA 10	Concrete C20/25	50	70	4.7	11.5
MUA 10	Sandstone	70	85	1.5	4.2
MUA 12	Concrete C20/25	60	85	6.6	14.9
MUA 12	Sandstone	85	100	1.7	4.6

Safety factor 3

Clearance hole (mm):

MUA8 = 10 / MUA10 = 12 / MUA12 = 14



Setting data for MUA in concrete

Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors s_min	min. edge distance c_min	min. thickness of foundation h_min	Tighten Torque Nm
M 8	8	80	45	25	25	100	40
M 10	10	100	55	30	30	120	50
M 12	12	120	65	35	35	145	60

Setting data for MUA in sandstone

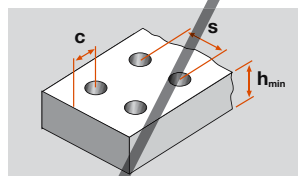
Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors s_min	min. edge distance c_min	min. thickness of foundation h_min	Tighten Torque Nm
M 8	8	120	100	50	60	100	40
M 10	10	140	125	60	75	120	50
M 12	12	160	150	70	90	145	60

MSG Shield Anchor, die-cast**Discontinued articles**

- Force controlled expansion
- For use in solid material
- Assembly detachable
- Anchor sleeve with zinc-aluminum alloy
- Expansion elements are held together by a spring

MSG Shield Anchor, die-cast

Article code	Internally thread Ø	Drill Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1481006	M 6	12	45	50 ¹¹	600 ²²	
1481008	M 8	14	52	50 ²¹	450 ²²	
1481010	M 10	16	58	50 ³¹	300 ²²	
1481012	M 12	20	71	25 ³¹	150 ²²	
1481016	M 16	25	115	10 ²¹	90 ²²	

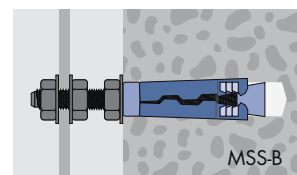
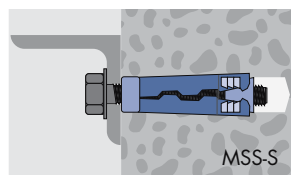
**Recommended loads in kN** (1kN $\triangleq$ 100kg) in Con. C20/25

Size	c distance to edge mm	s distance betw. anchors mm	h _{min} min. thickness of foundation mm	Tension	Torque Nm
M 6	50	60	70	3.4	7
M 8	60	70	80	4.2	15
M 10	70	80	100	6.7	30
M 12	100	110	120	12.5	50
M 16	170	180	160	19.9	120

Safety factor 3

MSS Shield Anchor, steel**Replacement articles****MSS** Shield Anchor, steel

Article code	Internally thread Ø	Drill Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1240604	M 6	12	45	50 ¹¹	600 ²²	
1240805	M 8	14	50	50 ²¹	450 ²²	
1241006	M 10	16	60	50 ³¹	300 ²²	
1241207	M 12	20	75	25 ³¹	150 ²²	
1241611	M 16	25	115	10 ²¹	90 ²²	

MSS-S Shield Anchor, steel**MSS-S** Shield Anchor, steel with hexagon screw

Article code	Thread	Drill Ø mm	Screw length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1250607	M 6	12	70	25	100 ³¹	600 ²²	
1250808	M 8	14	80	25	50 ³¹	300 ²²	
1251007	M 10	16	75	10	25 ¹¹	300 ²²	
1251009	M 10	16	90	25	25 ²¹	225 ²²	
1251011	M 10	16	115	50	25 ²¹	225 ²²	
1251210	M 12	20	105	25	20 ³¹	120 ²²	
1251214	M 12	20	140	60	20 ⁴¹	60 ¹²	
1251615	M 16	25	150	30	10 ⁴¹	30 ¹²	
1251618	M 16	25	180	60	10 ⁴¹	30 ¹²	

MSS-B Shield Anchor, steel**MSS-B** Shield Anchor, steel with threaded bolt and nut

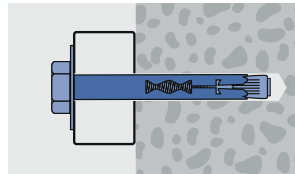
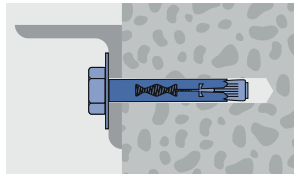
Article code	Thread	Drill Ø mm	Thread length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1260606	M 6	12	65	10	100 ³¹	600 ²²	
1260608	M 6	12	80	25	50 ³¹	300 ²²	
1260809	M 8	14	90	25	50 ³¹	300 ²²	
1260812	M 8	14	125	60	25 ²¹	225 ²²	
1261009	M 10	16	90	15	25 ²¹	225 ²²	
1261010	M 10	16	105	30	25 ²¹	225 ²²	
1261013	M 10	16	135	60	25 ²¹	225 ²²	
1261212	M 12	20	125	30	20 ³¹	120 ²²	
1261217	M 12	20	170	75	20 ⁴¹	60 ¹²	

Recommended loads in kN (1kN $\triangleq$ 100kg) in Con. C20/25

Size	c distance to edge tension mm	c distance to edge shear mm	s distance betw. anchors mm	h _{min} min. thickness of foundation mm	Tension	Shear	Torque Nm
M 6	80	100	120	70	3.3	6.8	6.5
M 8	100	120	150	80	4.8	8.7	15
M 10	120	160	180	100	6.2	13.7	27
M 12	160	180	250	120	9.7	19.9	50
M 16	190	260	290	190	19.0	35.8	120

Safety factor: breakage of concrete 3 / of steel 2.2
Hexagon screw and threaded bolt = Steel grade 8.8

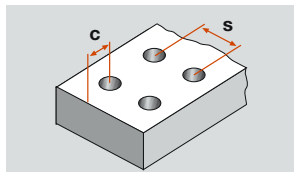
MHA-S Sleeve Anchor



- Pre-assembled with hexagon screw
- Small distances from edge and between anchors
- Controlled expansion
- Reliable distribution of force in the drilled hole

MHA-S Sleeve Anchor with hexagon screw

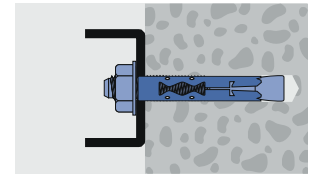
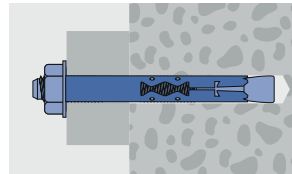
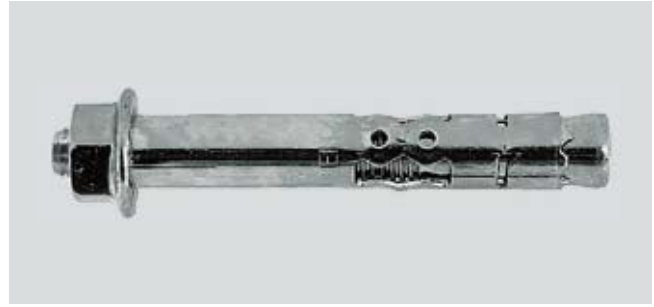
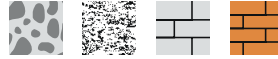
Article code	Drill Ø mm	Length mm	Internally thread Ø	Drilling depth mm	Usable length mm	Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1590804	8	45	M 6	55	5	35	100 ¹¹	1200 ²²	
1590806	8	60	M 6	55	15	35	100 ²¹	900 ²²	
1591006	10	60	M 8	60	15	40	50 ²¹	450 ²²	
1591008	10	80	M 8	60	25	40	50 ³¹	300 ²²	
1591207	12	70	M10	70	15	50	50 ³¹	300 ²²	
1591210	12	100	M10	70	35	50	25 ²¹	225 ²²	



Setting data for MHA-S / MHA-B

Thread-Ø	Drill Ø mm	s distance betw. anchors mm	c distance to edge mm	Tighten Torque Nm	MHA-S Spanner size	MHA-B Spanner size
M 6	8	105	55	8	10	10
M 8	10	120	60	25	13	13
M 10	12	150	75	40	17	15
M 12	16	225	115	50	-	19

MHA-B Sleeve Anchor



- Pre-assembled with threaded bolt and nut
- Small distances from edge and between anchors
- Controlled expansion
- Reliable distribution of force in the drilled hole

MHA-B Sleeve Anchor with threaded bolt and nut

Article code	Drill Ø mm	Length mm	Internally thread Ø	Drilling depth mm	Usable length mm	Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1580804	8	40	M 6	55	5	35	100 ¹¹	1200 ²²	
1580806	8	65	M 6	55	25	35	50 ¹¹	600 ²²	
1581005	10	50	M 8	60	5	40	50 ¹¹	600 ²²	
1581007	10	75	M 8	60	30	40	50 ²¹	450 ²²	
1581009	10	95	M 8	60	50	40	25 ¹¹	300 ²²	
1581207	12	75	M10	70	15	50	25 ¹¹	300 ²²	
1581210	12	100	M10	70	40	50	20 ¹¹	240 ²²	
1581213	12	130	M10	70	70	50	20 ²¹	180 ²²	
1581606	16	65	M12	95	5	75	20 ¹¹	240 ²²	
1581611	16	110	M12	95	25	75	10 ¹¹	120 ²²	
1581614	16	145	M12	95	60	75	20 ⁴¹	60 ¹²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

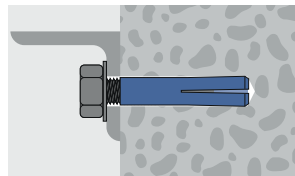
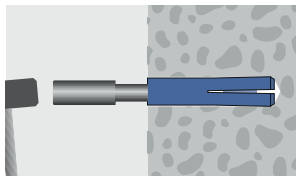
Thread-Ø	Tension in Concrete C20 / 25	Shear in Concrete C20 / 25
M 6	2	1.6
M 8	3	2.9
M 10	5	4.6
M 12	7.5	6.7

Safety factor 3

ESA Drop in Anchor



M8 - M12



- European Technical Approval Option 10 in uncracked concrete
- Use in reinforced or not reinforced concrete of the strength class C20/25
- Fast and easy assembly
- Shallow drilling depth

ESA Drop in Anchor

Article code	Internally thread Ø mm	Thread length mm	Drill Ø mm	Drilling depth mm	Box contents	Outer carton	Price per 100 pieces
1740006	M 6	11	8	33	100	2400	
¹⁾ 1740008	M 8	13	10	33	100	1000	
¹⁾ 1740010	M 10	15	12	44	50	500	
¹⁾ 1740012	M 12	18	15	54	50	400	
²⁾ 1740013	M 12	18	16	54	50	-	
1740016	M 16	23	20	71	25	250	
1740020	M 20	34	25	86	25	50	

¹⁾ Part of the approval ²⁾ For use with diamond drill rigs and saws

ESAr Drop in Anchor, stainless steel A4

Article code	Internally thread Ø mm	Thread length mm	Drill Ø mm	Drilling depth mm	Box contents	Outer carton	Price per 100 pieces
1750006	M 6	11	8	33	100	-	
1750008	M 8	13	10	33	100	1000	
1750010	M 10	15	12	44	50	500	
1750012	M 12	18	15	54	50	400	
1750016	M 16	23	20	71	25	-	

ESAK Drop in anchor with collar



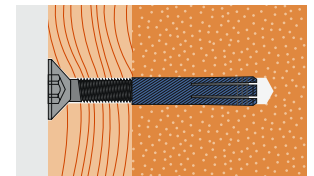
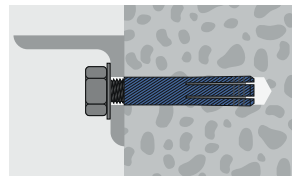
Article code	Internally thread Ø mm	Thread length mm	Drill Ø mm	Drilling depth mm	Box contents	Outer carton	Price per 100 pieces
1740208	M 8	15	10	33	100	2400	
1740210	M 10	17	12	44	50	1200	
1740212	M 12	20	15	54	50	600	
1740216	M 16	30	20	71	25	300	

Recommended loads in kN (1kN $\triangleq$ 100kg) in Con. C20/25

ESA/ESAK	Tension	Shear	Torque Nm
M 6	2	1.5	5
M 8	3.2	3	8
M 10	5.0	4.5	15
M 12	7.0	6.8	35
M 16	9.7	12	80
M 20	16	20	160

Safety factor 3

MMD Brass Anchor

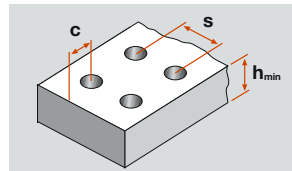


- Shallow drilling depth
- Corrosion-proof
- Heat-resistant

MMD Brass Anchor

Article code	Internally thread Ø mm	Thread length mm	Drill Ø mm	Drilling depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1730004	M 4	11	5	20	100	01	2400
1730005	M 5	14	6	25	100	01	2400
1730006	M 6	15	8	28	100	01	2400
1730008	M 8	18	10	35	100	11	1200
1730010	M 10	22	12	40	100	11	1200
1730012	M 12	21	15	45	50	11	600
1730016	M 16	25	20	53	25	11	300

Recommended loads in kN (1kN $\triangleq$ 100kg)



MMD	c distance to edge mm	s distance betw. anchors mm	h _{min} min. thickness of foundation mm	Concrete C20 / 25	Brick
M 4	30	50	25	0.5	0.4
M 5	35	50	30	0.7	0.55
M 6	40	60	35	0.85	0.7
M 8	45	65	40	1.5	1.2
M 10	50	70	45	2.5	1.6
M 12	55	75	50	3.5	2.0
M 16	65	90	60	3.9	3.25

Safety factor 3

ESA-WZ Setting Tool for ESA

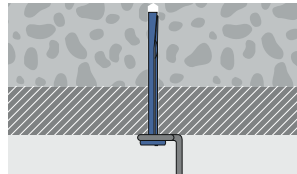
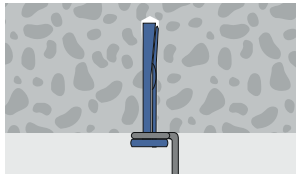


Article code	Size	Price per piece
1770006	M 6	
1770008	M 8	
1770010	M 10	
1770012	M 12	
1770016	M 16	
1770020	M 20	

MAN Ceiling Anchor



F60-F90



- Certified for light weight suspended ceilings according to DIN 18168
- Fire proof F60-F90
- Simple setting process by concise hitting of the supernatant pin

MAN Ceiling Anchor

Article code	Drill Ø mm	Length mm	Drilling depth mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1127064	6	40	40	4.5	100 ¹¹	1200 ²²	
1127067	6	70	40	35	100 ²¹	900 ²²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C25-C55
MAN	0.5

The recommended correspond to the approved loads.

MOA Wire Hanger



MOA Wire Hanger

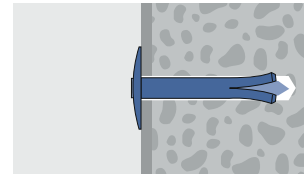
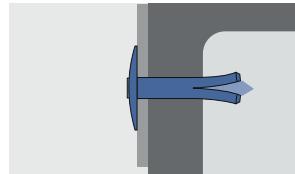
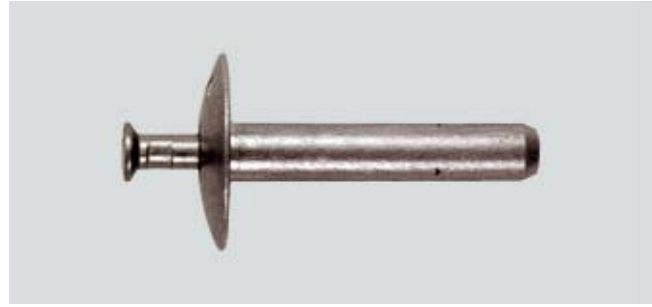
Article code	Drill Ø mm	Length mm	Hole Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1127065	6	50	6	100 ⁰¹	2400 ²²	
1127066	6	60	6	100 ¹¹	1200 ²²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25
MOA	0.5

Safety factor 3

MHN Hammer Nail



- Reliable fixing of cladding and sheet steel profiles
- Easily installed with hammer
- Rivet from aluminium alloy with stainless steel nail

MHN Hammer Nail in aluminium / stainless steel

Article code	Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
5904816	4.8	16	200 ¹¹	4800 ³²	
5904820	4.8	20	200 ¹¹	4800 ³²	
5904825	4.8	26	200 ¹¹	4800 ³²	
5904830	4.8	30	200 ¹¹	2400 ²²	
5904835	4.8	35	200 ³¹	2400 ³²	
5904840	4.8	40	200 ³¹	2400 ³²	
5904845	4.8	46	200 ³¹	2400 ³²	
5904850	4.8	50	200 ³¹	2400 ³²	
5906440	6.4	40	200 ³¹	2400 ³²	
5906450	6.4	50	200 ³¹	2400 ³²	

Data MHN

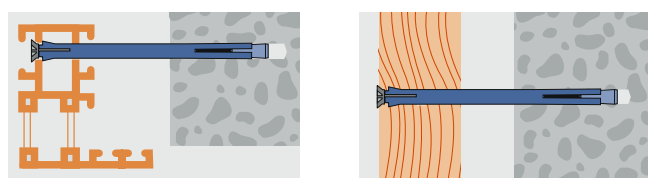
Dimension mm	Drill-Ø mm	Head-Ø mm	Usable length Metal / Metal mm	Usable length Metal / Concrete mm
4.8x16	5	15	8-9	1
4.8x20	5	15	12-13	5
4.8x26	5	15	18-19	11
4.8x30	5	15	22-23	15
4.8x35	5	15	27-28	20
4.8x40	5	15	32-33	25
4.8x46	5	15	38-39	31
4.8x50	5	15	42-43	35
6.4x40	6.5	15	32-33	25
6.4x50	6.5	15	42-43	35

Recommended tension/shear loads in kN (1kN $\triangleq$ 100kg)

Size	Ø mm	Concrete C20/25	Brick
MHN	4.8	0.35	0.35
MHN	6.4	0.4	0.4

Safety factor 3

MMS Metal Frame Anchor, Standard



- The dual expansion allows the frame to retain its gap and shape
- Zinc coated for optimum corrosion prevention
- Fire proof F30- F120
- Expansion cone is incaptavated in sleeve
- Covers assembly in combination with caps

MMS Metal Frame Anchor, Standard

Article code	Drill Ø mm	Length mm	Usable length mm	PZ	Box contents	Price per 100 pieces
1208071	1) 8	70	40	2	100	
1208091	1) 8	90	60	2	100	
1208111	1) 8	110	80	2	100	
1208131	1) 8	130	100	2	100	
1210071	10	70	30	3	100	
1210091	10	90	50	3	100	
1210111	10	110	70	3	100	
1210131	10	130	90	3	100	
1210151	10	150	110	3	100	
1210181	10	180	140	3	100	
1210201	10	200	160	3	100	

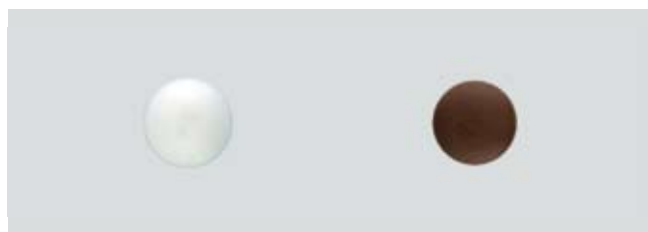
1) Not part of the approval

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25 -C50/60	Brick	Aerated Concrete
MMS 8	0.75	0.5	-
MMS 10	1.0	0.5	0.1

Safety factor 5

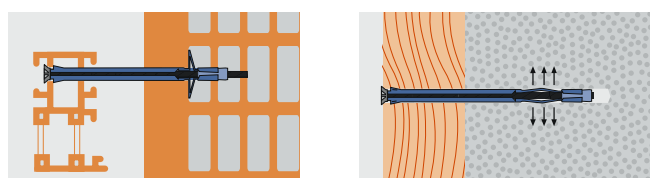
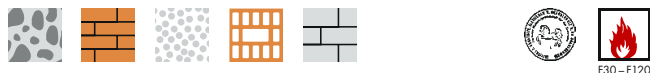
AKG End Cap for MMS Ø 8 mm



AKG End Cap for MMS Ø 8 mm

Article code	Colour	RAL	Ø-mm	Box contents	Outer carton	Price per 100 pieces
1121026	white	9010	8	100 $\frac{1}{2}$	3600 $\frac{22}{22}$	
1121052	d'brown	8017	8	100 $\frac{1}{2}$	3600 $\frac{22}{22}$	

MMM Metal Frame Anchor, Multi



- A good fixing in various base materials is achieved by the cone expansion
- The dual expansion allows the frame to retain its gap and shape
- Zinc coated for optimum corrosion prevention
- Fire proof F30-F120
- Expansion cone is incaptavated in sleeve
- Covers assembly in combination with caps

MMM Metal Frame Anchor, Multi

Article code	Drill Ø mm	Length mm	Usable length mm	PZ	Box contents	Price per 100 pieces
1210112	10	110	45	3	100	
1210132	10	130	65	3	100	
1210152	10	150	85	3	100	
1210182	10	180	115	3	100	
1210202	10	200	135	3	100	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25 -C50/60	Brick	Perforated Brick	Aerated Concrete
MMM 10	0.5	0.4	0.3	0.2

Safety factor 5

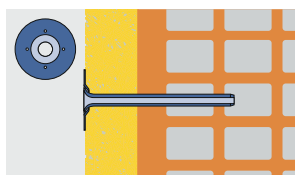
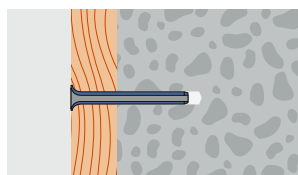
AKC End Cap for MMS / MMM Ø 10 mm



AKC End Cap for MMS / MMM Ø 10 mm

Article code	Article code	Colour	RAL	Ø-mm	Box contents	Outer carton	Price per 100 pieces
1121023	1121028	white	9010	10	100 $\frac{1}{2}$	3600 $\frac{22}{22}$	
1121034	1121036	l'brown	1001	10	100 $\frac{1}{2}$	3600 $\frac{22}{22}$	
1121043	1121053	d'brown	8017	10	100 $\frac{1}{2}$	3600 $\frac{22}{22}$	
1121083	1121086	black	9005	10	100 $\frac{1}{2}$	3600 $\frac{22}{22}$	

MEN Express Nail



- Economical assembling
- No screwing
- Through fixing with the Mungo metal disc, the Express Nail is appropriate for overhead assembling of insulation (non-combustible)

MEN Express Nail

Article code	Drill Ø mm	Length mm	Usable length mm	min. Setting depth mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1125026	5	26	3	23	100 01	2400 22	
1126030	6	30	3	27	100 01	2400 22	
1126060	6	60	30	30	100 11	2400 32	
1126080	6	80	50	30	100 21	1800 32	
1128070	8	70	30	40	100 31	1200 32	
1128090	8	90	50	40	100 31	1200 32	
1128110	8	110	70	40	100 41	900 32	
1128130	8	130	90	40	100 41	900 32	
1128150	8	150	110	40	100 51	600 32	
1128180	8	180	140	40	100 41	900 32	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25	Brick	Perforated Brick
MEN 5	0.3	-	-
MEN 6	0.7	0.5	1)
MEN 8	1	0.8	1)

Safety factor 3 / ¹⁾ The pull-out values should be determined on the bases of the application as they are dependent on the pull-out values in the brick/block

MDB-M Metal Disc



MDB-M Metal Disc

Article code	Disc Ø mm	Hole Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1120867	38	9.0	200 21	3600 32	
1120875 white	38	9.0	200 21	3600 32	
1120860	70	8.5	100 31	1200 32	
1120862	70	10.5	100 31	1200 32	

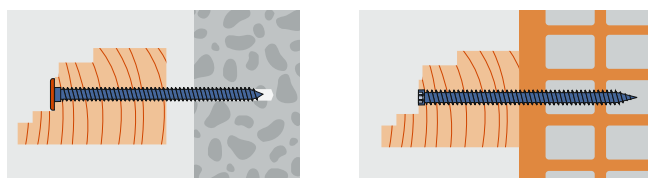
SH-SS Hexagon Screw



SH-SS Hexagon Screw DIN 571 (with rolled thread)

Article code	Screw Ø mm	Screw Length mm	Spanner size	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
61114091	6	25	10	100 01	2400 22	
61114111	6	30	10	100 01	2400 22	
61114121	6	35	10	100 01	2400 22	
61114131	6	40	10	100 11	1200 22	
61114141	6	45	10	100 11	1200 22	
61114151	6	50	10	100 11	1200 22	
61114171	6	60	10	100 11	1200 22	
61114191	6	70	10	100 11	1200 22	
61114211	6	80	10	100 21	900 22	
61114231	6	90	10	100 21	900 22	
61114251	6	100	10	100 21	900 22	
61114291	6	120	10	100 21	900 22	
61118111	8	30	13	100 11	1200 22	
61118131	8	40	13	100 11	1200 22	
61118141	8	45	13	100 21	1200 22	
61118151	8	50	13	100 21	900 22	
61118171	8	60	13	100 21	900 22	
61118191	8	70	13	100 31	600 22	
61118211	8	80	13	50 11	600 22	
61118231	8	90	13	50 11	600 22	
61118251	8	100	13	50 11	600 22	
61118291	8	120	13	50 11	600 22	
61118331	8	140	13	50 21	450 22	
61118371	8	160	13	50 41	150 12	
61118411	8	180	13	50 41	150 12	
61118451	8	200	13	50 41	150 12	
61118581	8	250	13	50 61	100 12	
61118681	8	300	13	50	-	
61122151	10	50	17	50 11	600 22	
61122171	10	60	17	50 11	600 22	
61122191	10	70	17	50 21	450 22	
61122211	10	80	17	50 31	300 22	
61122231	10	90	17	50 31	300 22	
61122251	10	100	17	50 31	300 22	
61122291	10	120	17	50 31	300 22	
61122331	10	140	17	25 21	225 22	
61122351	10	150	17	25 31	150 22	
61122371	10	160	17	25 41	75 12	
61122411	10	180	17	25 41	75 12	
61122451	10	200	17	25 41	75 12	
61122521	10	220	17	25 41	75 12	
61122561	10	240	17	25 41	75 12	
61122601	10	260	17	25 61	50 12	
61122681	10	300	17	25	-	
61122761	10	340	17	25	-	
61126151	12	50	19	25 11	300 22	
61126171	12	60	19	25 11	300 22	
61126191	12	70	19	25 11	300 22	
61126211	12	80	19	25 21	225 22	
61126251	12	100	19	25 21	225 22	
61126291	12	120	19	25 31	225 22	
61126331	12	140	19	25 31	150 22	
61126371	12	160	19	25 41	75 12	
61126411	12	180	19	25 41	75 12	
61126451	12	200	19	25 41	75 12	
61126521	12	220	19	25 41	75 12	
61126561	12	240	19	25 41	75 12	
61126601	12	260	19	25 61	50 12	
61126641	12	280	19	25 61	50 12	
61126681	12	300	19	25	-	
61126721	12	320	19	25	-	
61126761	12	340	19	25	-	
61126801	12	360	19	25	-	

MRS-H Wall Screw Wood



- User-friendly, time-saving assembling
- Less resistance while screwing into base material due to wax-coating
- The stress-free fastening allows small distances from edge and between anchors
- Drilling recommendation in solid materials: $\varnothing$ 6.5mm

MRS-H Head $\varnothing$ 8.3mm, T30

Article code	Screw $\varnothing$ mm	Screw Length mm	Drill $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
5137207	7.5	70	6	100 ²¹	900 ²²	
5137209	7.5	90	6	100 ²¹	900 ²²	
5137211	7.5	110	6	50 ²¹	450 ²²	
5137213	7.5	130	6	50 ²¹	450 ²²	
5137215	7.5	150	6	50 ²¹	450 ²²	
5137218	7.5	180	6	50 ⁴¹	450 ³²	
5137221	7.5	210	6	50 ⁴¹	450 ³²	

Recommended loads in kN (1kN $\triangleq$ 100kg)

	Distance to border	Concrete C20/25	Brick	Perforated Brick ¹⁾	Aerated Concrete
Tension	>30 mm	1.2	0.8	0.2	0.2
Shear	>30 mm	0.8	0.5	0.2	0.1
Shear	>60 mm	1.6	1.2	0.5	0.3
Torque Nm		20	15	10	5
Bending moment Nm		17	17	17	17

¹⁾ Without hammer drill / Safety factor 5

Setting data MRS-U / MRS-H

	Concrete C20/25	Brick	Perforated Brick ¹⁾	Aerated Concrete
Drill- $\varnothing$	6	6	6	without drilling
Drilling depth	40	50	70	without drilling
Setting depth	30	40	60	60
Fixture thickness	Screw length minus setting depth			
Screw length	50 – 210			

¹⁾ Without hammer drill / Safety factor 5

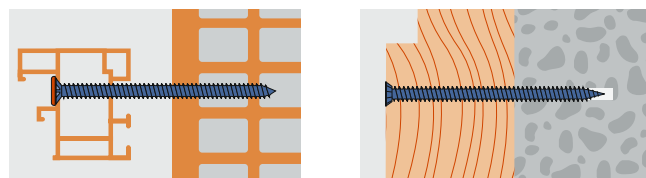
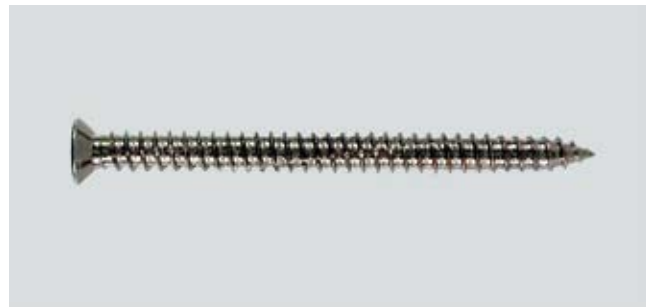
AKT End Cap



AKT End Cap T30 for MRS-U / MRS-H

Article code	Colour	RAL	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121046	white	9010	200 ^{1/2}	7200 ²²	
1121037	l'brown	1001	200 ^{1/2}	7200 ²²	
1121047	d'brown	8017	200 ^{1/2}	7200 ²²	
1121087	black	9005	200 ^{1/2}	7200 ²²	

MRS-U Wall Screw Universal



- User-friendly, time-saving assembling
- Less resistance while screwing into base material due to wax-coating
- The stress-free fastening allows small distances from edge and between anchors
- Drilling recommendation in solid materials: $\varnothing$ 6.5mm

MRS-U Head $\varnothing$ 11mm, T30

Article code	Screw $\varnothing$ mm	Screw Length mm	Drill $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
5137105	7.5	50	6	100 ²¹	900 ²²	
5137107	7.5	70	6	100 ²¹	900 ²²	
5137109	7.5	90	6	100 ⁴¹	900 ³²	
5137111	7.5	110	6	50 ²¹	450 ²²	
5137113	7.5	130	6	50 ²¹	450 ²²	
5137115	7.5	150	6	50 ²¹	450 ²²	
5137118	7.5	180	6	50 ⁴¹	450 ³²	
5137121	7.5	210	6	50 ⁴¹	450 ³²	

MJB Adjusting Screw



- Continuously variable screw for wood under-construction
- Stress-free fastening
- No drilling required

MJB Adjusting Screw T25

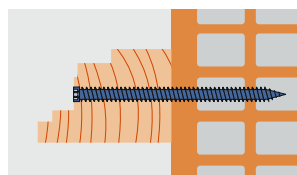
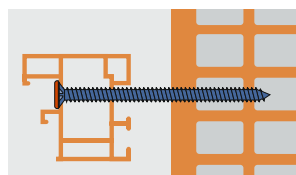
Article code	Screw $\varnothing$ mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
5153060	6	60	100 ¹¹	2400 ³²	
5153070	6	70	100 ¹¹	2400 ³²	
5153080	6	80	100 ²¹	1800 ³²	
5153090	6	90	100 ²¹	1800 ³²	
5153100	6	100	100 ²¹	1800 ³²	
5153110	6	110	100 ³¹	1200 ³²	
5153120	6	120	100 ⁴¹	900 ³²	
5153130	6	130	100 ⁴¹	900 ³²	
5153145	6	145	100 ⁴¹	900 ³²	

incl. 1 Bit

AKT End Cap for MJB, T25

Article code	Colour	RAL	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1121048	white	9010	200 ^{1/2}	7200 ²²	
1121038	l'brown	1001	200 ^{1/2}	7200 ²²	
1121049	d'brown	8017	200 ^{1/2}	7200 ²²	
1121088	black	9005	200 ^{1/2}	7200 ²²	

TR-R / TR-RK Frame Fixing Screw



- Only 6mm pre-drilling required
- Distance assemblies possible
- Window and door frames can be mounted without the use of clamps
- Setting of PVC and wooden windows, mounting of door frames

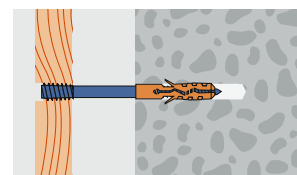
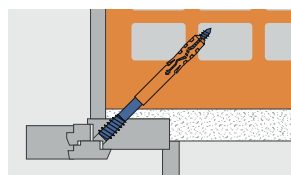
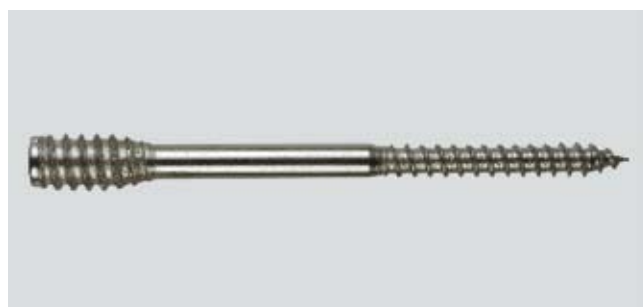
TR-R Frame Fixing Screw Rafix hexagon socket 4 mm (also T25)

Article code	Screw Ø mm	Length mm	Drill Ø mm	Box contents	Outer carton	Price per 100 pieces
5151060	7.5	60	6	50	1200	
5151080	7.5	80	6	50	1200	
5151100	7.5	100	6	50	800	
5151120	7.5	120	6	50	800	
5151150	7.5	150	6	50	800	
5151180	7.5	180	6	50	600	

TR-RK Frame Fixing Screw Rafix-K with collar hexagon socket 4 mm (also T25)

Article code	Screw Ø mm	Length mm	Drill Ø mm	Collar Ø mm	Box contents	Outer carton	Price per 100 pieces
5152040	7.5	40	6	11	50	1200	
5152060	7.5	60	6	11	50	1200	
5152080	7.5	80	6	11	50	1200	
5152100	7.5	100	6	11	50	800	
5152120	7.5	120	6	11	50	800	
5152150	7.5	150	6	11	50	800	
5152170	7.5	170	6	11	50	600	

TR Toproc Spacer Screw



- Assembling of battening without any spacers
- Time saving and easy to handle thanks to the hexagon socket
- Assembling in concrete with nylon plug MN Ø 8 mm or in hollow brick with nylon plug MNL Ø 8 mm

TR Toproc Spacer Screw hexagon socket 4 mm (also T25)

Article code	Screw Ø mm	Length mm	Drill Ø mm	Box contents	Outer carton	Price per 100 pieces
5100060	6	60	8	50	1200	
5100080	6	80	8	50	1200	
5100100	6	100	8	50	800	
5100120	6	120	8	50	800	
5100150	6	150	8	50	800	
5100180	6	180	8	50	600	
5100200	6	200	8	50	600	
5100250	6	250	8	25	—	
5100300	6	300	8	25	—	
5100350	6	350	8	25	—	
5100400	6	400	8	25	—	
5100450	6	450	8	25	—	
5100500	6	500	8	25	—	
5100550	6	550	8	25	—	
5100600	6	600	8	25	—	

TR-B Toproc-Baby Spacer Screw hexagon socket 4 mm (also T25)

Article code	Screw Ø mm	Length mm	Drill Ø mm	Box contents	Outer carton	Price per 100 pieces
5100061	4.5	60	6	100	2400	
5100071	4.5	70	6	100	2400	
5100081	4.5	80	6	100	2400	
5100091	4.5	90	6	100	2400	
5100101	4.5	100	6	100	1600	
5100121	4.5	120	6	100	1600	

TR-BS Toproc-Baby-S Spacer Screw hexagon socket 4 mm (also T25), self-drilling

Article code	Screw Ø mm	Length mm	Drill Ø mm	Box contents	Outer carton	Price per 100 pieces
5100062	4.5	60	—	100	2400	
5100082	4.5	80	—	100	2400	
5100102	4.5	100	—	100	1600	
5100122	4.5	120	—	100	1600	



Chemical fixings with MIT Injection Technique

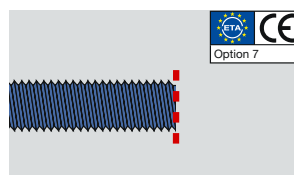
The Mungo injection technique MIT offers a bonded pressure free heavy load fixing. The anchorage is based on the utilization of all the groups „grouting mortar, fixing rods and the concrete reinforcement“ to obtain a perfect bond. Owing to the four different components our program offers a optimum solution for most different applications.

MIT-SE has an European Technical Approval option 7 in combination with MIT-S/Sr, MBZ, MIT-MI and MAZ.



Individual cutting to length of threaded rods in accordance with ETA

MIT-SE to conform to the approval in conjunction with MIT-G threaded rods as follows:



Step 1

Cut the threaded rod²⁾

Steel Qualities:

Zinc plated 5.8/8.8/10.9³⁾

Stainless steel A4-70, A4-80³⁾



Step 2

Marking of the setting depth between 8d and 12d with MIT-DIY.



Step 3

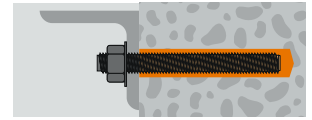
Embossing with identification stamp

¹⁾ see ETA 05/0101 and 05/0102

²⁾ guarantee corrosion protection on plane of section

³⁾ on request

Anchorage in concrete with anchor rod (MIT-SE)



Recommended tension loads (kN) (Anchorage in concrete C20/25 with anchor rod MIT-S, Steel Quality 5.8)
Filling volume (ml) (for the change of mixers and cartridges an according addition has to be calculated))

Anchor rod M	Drill-Ø mm	Setting depth mm	48	56	64	72	80	88	96	100	110	120	128	144	160	192	200	240	288	300	360	432	500	App. Shear load steel 5.8 ¹⁾ kN
6	8	3.0	3.5	4.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	-	-	-	-	-	3.0
		1.3	1.6	1.8	2.0	2.2	2.4	2.7	2.8	3.1	3.3	3.6	4.0	4.4	5.3	5.6	6.7	-	-	-	-	-	-	-
8	10	4.0	4.6	5.3	6.0	6.6	7.6	8.3	8.6	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	-	-	-	5.4
		1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.8	4.2	4.6	4.9	5.5	6.1	7.3	7.6	9.1	10.9	11.4	-	-	-	-	-
10	12	-	5.8	6.6	7.4	8.3	9.1	9.9	11.0	12.1	13.2	14.1	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	-	8.6
		-	2.8	3.1	3.5	3.9	4.3	4.7	4.9	5.4	5.9	6.3	7.1	7.9	9.4	9.8	11.8	14.1	14.7	17.7	21.2	-	-	-
12	14	-	-	8.8	9.9	11.0	12.1	13.2	13.8	15.2	16.5	17.6	19.8	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	12.5
		-	-	3.9	4.4	4.9	5.4	5.9	6.1	6.7	7.4	7.8	8.8	9.8	11.8	12.3	14.7	17.6	18.4	22.1	26.5	30.6	-	-
16	18	-	-	-	-	-	13.6	14.9	15.5	17.1	18.6	19.8	22.3	26.2	31.4	32.7	39.0	39.0	39.0	39.0	39.0	39.0	39.0	23.3
		-	-	-	-	-	7.5	8.1	8.5	9.3	10.2	10.8	12.2	13.6	16.3	16.9	20.3	24.4	25.4	30.5	36.6	42.4	-	-
20	22	-	-	-	-	-	-	-	-	17.1	18.6	19.8	22.3	24.8	29.8	31.7	38.0	45.6	47.5	57.0	60.5	60.5	60.5	36.4
		-	-	-	-	-	-	-	-	12.6	13.8	14.7	16.5	18.4	22.1	23.0	27.6	33.1	34.5	41.4	49.6	57.5	-	-
24	26	-	-	-	-	-	-	-	-	-	-	-	25.4	28.5	31.7	38.0	39.6	46.8	56.2	58.6	70.3	84.3	87.6	52.5
		-	-	-	-	-	-	-	-	-	-	-	19.1	21.5	23.8	28.6	29.8	35.8	42.9	44.7	53.7	64.4	74.5	-
30	35	-	-	-	-	-	-	-	-	-	-	-	-	-	37.5	45.0	46.8	56.2	67.5	70.3	84.3	101.2	117.1	82.9
		-	-	-	-	-	-	-	-	-	-	-	-	-	57.3	68.8	71.7	86.0	103.2	107.5	129.0	154.8	179.2	-
36	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.9	55.1	66.1	79.4	82.7	99.2	119.0	137.8	121.1
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	73.0	76.1	91.3	109.5	114.1	136.9	164.3	190.2	-

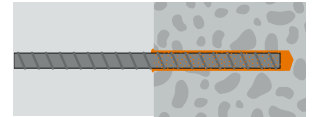
¹⁾ Above loads have to be reduced when using edge-space-distances below the indicated value

²⁾ Shear load without limitation by failure of the building material

The data refer to the correct procedure by which hammer drilling and cleaning produce the dry clean holes required for the setting of the anchors

The orange marked fields show the approved areas of the setting depths
 Material safety factors and safety factor for load $\gamma_f = 1.4$ are included

Anchorage in concrete with reinforcement bars (MIT-SE/MIT-E)



Recommended tension loads (kN) (Anchorage in concrete C20/25 with concrete reinforcement BST 500)
Filling volume (ml) (for the change of mixers and cartridges an according addition has to be calculated))

Concrete reinforcement Ø mm	Drill-Ø mm	Setting depth mm	80	100	120	140	160	180	200	220	240	260	280	300	500	750	1000	1250	1500	Rec. Shear load ¹⁾ kN
8	12	7.9	9.9	11.9	13.9	15.9	17.9	19.8	20.9	20.9	20.9	20.9	20.9	20.9	-	-	-	-	-	7.9
		5.0	6.3	7.5	8.8	10.1	11.3	12.6	13.8	15.1	16.3	17.6	18.8	-	-	-	-	-	-	-
10	14	9.9	12.4	14.9	17.4	19.8	22.3	24.8	27.3	29.8	32.3	32.7	32.7	32.7	32.7	-	-	-	-	12.3
		6.0	7.5	9.0	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	37.7	-	-	-	-	-	-
12	16	13.2	16.5	19.8	23.1	26.4	29.8	33.1	36.4	39.7	43.0	46.3	47.1	47.1	47.1	-	-	-	-	17.8
		7.0	8.8	10.6	12.3	14.1	15.8	17.6	19.4	21.1	22.9	24.6	26.4	44.0	-	-	-	-	-	-
14	18	-	17.8	21.4	24.9	28.5	32.0	35.6	39.2	42.7	46.3	49.8	53.4	64.1	64.1	64.1	-	-	-	24.2
		-	10.1	12.1	14.1	16.1	18.1	20.1	22.1	24.1	26.1	28.1	30.2	50.3	75.4	-	-	-	-	-
16	22	-	18.6	22.3	26.1	29.8	33.5	37.2	40.9	44.7	48.4	52.1	55.8	83.8	83.8	83.8	-	-	-	31.6
		-	17.9	21.5	25.1	28.7	32.2	35.8	39.4	43.0	46.6	50.1	53.7	89.5	134.3	-	-	-	-	-
18	24	-	-	22.6	26.4	30.2	33.9	37.7	41.5	45.2	49.0	52.8	56.5	94.2	106.0	106.0	-	-	-	40.0
		-	-	23.8	27.7	31.7	35.6	39.6	43.5	47.5	51.5	55.4	59.4	99.0	148.4	197.9	-	-	-	-
20	28	-	-	-	26.0	29.8	33.5	37.2	40.9	44.6	48.4	52.1	55.8	93.0	130.9	130.9	-	-	-	49.4
		-	-	-	42.2	48.3	54.3	60.3	66.4	72.4	78.4	84.4	90.5	150.8	226.2	301.6	-	-	-	-
25	35	-	-	-	-	39.6	44.5	49.5	54.4	59.4	64.3	69.3	74.2	123.7	185.6	204.5	204.5	-	-	77.1
		-	-	-	-	75.4	84.8	94.2	103.7	113.1	122.5	131.9	141.4	235.6	353.4	471.2	589.0	-	-	-
28	38	-	-	-	-	-	47.2	52.5	57.7	63.0	68.2	73.5	78.7	131.2	196.9	256.6	256.6	256.6	-	96.8
		-	-	-	-	-	93.3	103.7	114.0	124.4	134.8	145.1	155.5	259.2	388.8	518.4	648.0	777.5	-	-

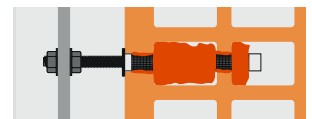
¹⁾ Above loads have to be reduced when using edge-space-distances below the indicated value

²⁾ Shear load without limitation by failure of the building material

The data refer to the correct procedure by which hammer drilling and cleaning produce the dry clean holes required for the setting of the anchors

Following safety factors of resistances are included: extraction and concrete burst $\gamma_{Mp} = 1.8$; steel failure $\gamma_{Ms,N} = 1.32$ and $\gamma_{Ms,V} = 1.5$, as well as the safety factors of the influence of $\gamma_f = 1.4$

Anchorage in perforated brick with MSH Sleeve (MIT-SP/MIT-P)

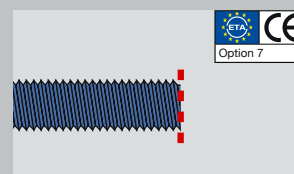


Recommended loads and filling volume for fixings with a sleeve

Anchor rod Ø x l mm	Sleeve mm	Drill-Ø mm	Drilling depth mm	Min. Edge /Space distance mm	Tension load kN	Shear load kN	Filling volume ml
6x70	MSH 9x50	12	55	100	0.6	0.6	4
8x100	MSH 9x50	12	55	100	0.8	0.8	4
8x100	MSH 13x85	16	90	100	0.8	0.8	12
10x110	MSH 13x85	16	90	100	0.8	0.8	12
12x115	MSH 13x85	16	90	100	0.8	0.8	12
16x190	MSH 18x85	20	90	100	0.8	0.8	22

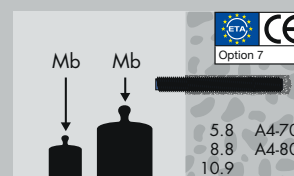
The filling data's are corresponding to the sleeve volumes / safety factor 3

Injection Technique



Threaded rods individually cut

Threaded rods can be cut to length in accordance with the approval.
(see p. 56)



Approved shear loads and bending moment

can be adapted by using different steel qualities (5.8/8.8/10.9/A4-70/A4-80).



MIT program

Four types for most different applications.

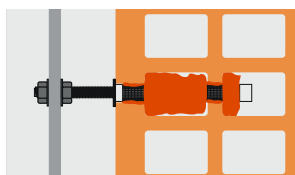
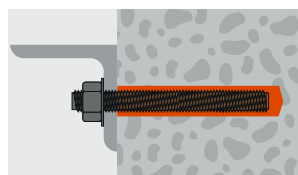


Danger free material

The MIT-SE mortar is produced as danger free material.



MIT-SE Epoxy-Acrylate, Styrene free



- European Technical Approval – Option 7 for uncracked concrete
- Fire Resistance F30 – F120
- Low odour
- Application in damp drillholes
- Colour of mortar: grey

MIT-SE 150 ml Cartridge



Article code	Description	Box contents	Price per piece
1710024	Cartridge incl. 2 mixers	12	

Application with silicone gun

MIT-SE 350 ml Cartridge



Article code	Description	Box contents	Price per piece
1710025	Cartridge incl. 2 mixers	12	

MIT-SE 300 ml Cartridge



Article code	Description	Box contents	Price per piece
1710017	Cartridge incl. 2 mixers	12	

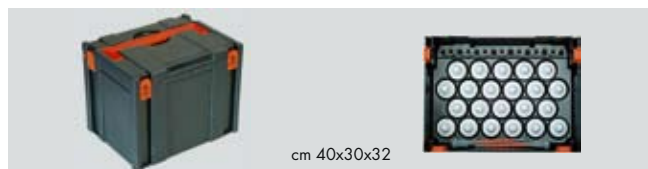
Application with silicone gun

MIT-SE 400 ml Cartridge



Article code	Description	Box contents	Price per piece
1710026	Cartridge incl. 2 mixers	12	

MIT-KE System-case MIT-SE 300 ml



Article code	Description	Price per piece
1710102	22x MIT-SE 300 ml Cartridge incl. 2 mixers 1x System-case IV with cartridge insert	

MIT-BE Maxi-Box MIT-SE 350 ml



Article code	Description	Price per piece
1710117	20x MIT-SE 350 ml Cartridge incl. 2 mixers 1x Maxi-Box	

Working- and hardening times

MIT-SE	0 ÷ 5°C	6 ÷ 10°C	11 ÷ 15°C	16 ÷ 20°C	21 ÷ 25°C	26 ÷ 30°C	31 ÷ 35°C
Working	18 Min.	11 Min.	7 Min.	5 Min.	4 Min.	3 Min.	2 Min.
Hardening	90 Min.	65 Min.	50 Min.	40 Min.	32 Min.	27 Min.	23 Min.

MIT-SP Polyester, Styrene free



- Appropriate for assemblies in perforated brick with sleeve
- Can be used in hardened and dry concrete
- Low odour
- Temperature stability up to 80°C
- Colour of mortar: light grey

MIT-SP 300 ml Cartridge

Article code	Description	Box contents	Price per piece
1710027	Cartridge incl. 2 mixers	12	

Application with silicone gun

MIT-SP 350 ml Cartridge



Article code	Description	Box contents	Price per piece
1710028	Cartridge incl. 2 mixers	12	

MIT-KP System-case MIT-SP 300 ml



cm 40x30x32

Article code	Description	Price per piece
1710108	22x MIT-SP 300 ml Cartridge incl. 2 mixers 1x System-case IV 1x Cartridge insert for System-case IV	

Working- and hardening times

MIT-SP	5 ÷ 10°C	11 ÷ 15°C	16 ÷ 20°C	21 ÷ 25°C	26 ÷ 30°C	31 ÷ 35°C
Working	12 Min.	8 Min.	6 Min.	4 Min.	3 Min.	2 Min.
Hardening	80 Min.	60 Min.	40 Min.	30 Min.	25 Min.	20 Min.

MIT-E Epoxy-Acrylate mortar



- Applicable under water
- Optimum long term behaviour
- Resistant against acid and solvents
- Temperature stability up to 120°C
- Colour of mortar: dark grey

MIT-E 400 ml Cartridge

Article code	Description	Box contents	Price per piece
1710005	Cartridge incl. 2 mixers	12	

MIT-E 825 ml Cartridge



Article code	Description	Box contents	Price per piece
1710011	Cartridge incl. 1 mixer	6	

Application with pneumatic injection gun only

Working- and hardening times

MIT-E	0 ÷ 5°C	6 ÷ 10°C	11 ÷ 15°C	16 ÷ 20°C	21 ÷ 25°C	26 ÷ 30°C	31 ÷ 35°C
Working	18 Min.	11 Min.	7 Min.	5 Min.	4 Min.	3 Min.	2 Min.
Hardening	90 Min.	65 Min.	50 Min.	40 Min.	32 Min.	27 Min.	23 Min.

MIT-PP Pneum. Injection gun for cartridges



Article code	Description	Box contents	Price per piece
1710020	Pneum. injection gun for MIT 400 ①	1	
1710031	Pneum. injection gun for MIT 825 ②	1	

MIT-P Polyester mortar



- Appropriate for assemblies in perforated brick with sleeve
- Can be used in hardened and dry concrete
- Temperature stability up to 80°C
- Colour of mortar: light grey

MIT-P 400 ml Cartridge

Article code	Description	Box contents	Price per piece
1710006	Cartridge incl. 2 mixers	12	

Working- and hardening times

MIT-P	5 ÷ 10°C	11 ÷ 15°C	16 ÷ 20°C	21 ÷ 25°C	26 ÷ 30°C	31 ÷ 35°C
Working	12 Min.	8 Min.	6 Min.	4 Min.	3 Min.	2 Min.
Hardening	80 Min.	60 Min.	40 Min.	30 Min.	25 Min.	20 Min.

MIT-COOL 2-component mortar to -18°C, 400 ml



- Can be used when ground temperature falls to -18°C
- Stress-free and durable fixing
- Colour of mortar: light grey

Article code	Description	Box contents	Price per piece
1710004	Cartridge incl. 2 mixers	12	

Working- and hardening times

MIT-COOL	-18 ÷ -10°C	-9 ÷ -5°C	-4 ÷ 0°C	+1 ÷ +5°C	+6 ÷ +10°C	+11 ÷ +20°C
Working	115 Min.	35 Min.	16 Min.	11 Min.	8 Min.	3 Min.
Hardening	24 h	12 h	180 Min.	120 Min.	60 Min.	30 Min.

MIT-PP Injection gun for cartridges



Article code	Description	Box contents	Price per piece
1710029	Injection gun for MIT 150/300 ①	1	
1710033	Injection gun for MIT 350 ②	1	
1710009	Injection gun for MIT 400 ③	1	

MIT-K System-case Easy-Press for MIT 150/300



Article code	Description	Price per piece
1710201	1x Easy-Press for MIT 150/300 ml 1x Purging Pump 1x Steel Brush 10/80/300 1x Steel Brush 15/80/300 1x Steel Brush 20/80/300 1x System-case II with insert	

MIT-K System-case Easy-Press for MIT 350



Article code	Description	Price per piece
1710202	1x Easy-Press for MIT 350 ml 1x Purging Pump 1x Steel Brush 10/80/300 1x Steel Brush 15/80/300 1x Steel Brush 20/80/300 1x System-case II with insert	

MIT-K System-case Easy-Press for MIT 400



Article code	Description	Price per piece
1710203	1x Easy-Press for MIT 400 ml 1x Purging Pump 1x Steel Brush 10/80/300 1x Steel Brush 15/80/300 1x Steel Brush 20/80/300 1x System-case II with insert	

MIT-PP Easy-Press for cartridges



Article code	Description	Box contents	Price per piece
1710034	Easy-Press for MIT 150/300 ①	1	
1710035	Easy-Press for MIT 350 ②	1	
1710036	Easy-Press for MIT 400 ③	1	

MIT Accessories

MIT-G Threaded Rod



- Threaded rods are straight cut both sides and allow the nut to run on either side

MIT-G Threaded Rod, galvanised, 4.6, 1m

Article code	Thread $\varnothing$ and length mm	Box contents	Price per piece
7460510	M 5/1000	1	
7460610	M 6/1000	1	
7460810	M 8/1000	1	
7461010	M 10/1000	1	
7461210	M 12/1000	1	
7461610	M 16/1000	1	
7462010	M 20/1000	1	
7462410	M 24/1000	1	
7463010	M 30/1000	1	
7463610	M 36/1000	1	

Steel quality 4.6

MIT-G Threaded Rod, galvanised, 5.8, 1m

Article code	Thread $\varnothing$ and length mm	Box contents	Price per piece
7580510	M 5/1000	1	
7580610	M 6/1000	1	
7580810	M 8/1000	1	
7581010	M 10/1000	1	
7581210	M 12/1000	1	
7581610	M 16/1000	1	
7582010	M 20/1000	1	
7582410	M 24/1000	1	
7583010	M 30/1000	1	

Steel quality 5.8

MIT-G Threaded Rod, galvanised, 8.8, 1m

Article code	Thread $\varnothing$ and length mm	Box contents	Price per piece
7880510	M 5/1000	1	
7880610	M 6/1000	1	
7880810	M 8/1000	1	
7881010	M 10/1000	1	
7881210	M 12/1000	1	
7881610	M 16/1000	1	
7882010	M 20/1000	1	
7882410	M 24/1000	1	
7883010	M 30/1000	1	

Steel quality 8.8

MIT-Gr Threaded Rod, stainless steel A4-70, 1m

Article code	Thread $\varnothing$ and length mm	Box contents	Price per piece
7040510	M 5/1000	1	
7040610	M 6/1000	1	
7040810	M 8/1000	1	
7041010	M 10/1000	1	
7041210	M 12/1000	1	
7041610	M 16/1000	1	
7042010	M 20/1000	1	
7042410	M 24/1000	1	
7043010	M 30/1000	1	

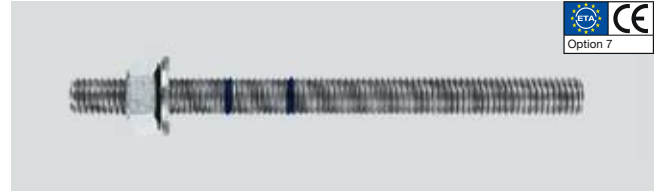
Steel quality A4-70

MIT-DIY Do it yourself ETA-Set



Article code	Description	Price per piece
7401000	1x Template 3x Embossing 1x Permanent Marker	

MIT-S Anchor Rod



MIT-S Anchor Rod, galvanised, 5.8

Article code	Thread $\varnothing$ and length mm	Drill- $\varnothing$ Concrete mm	Setting depth 1 = (8d) mm	Max. Usable length 1	Setting depth 2 = (12d) mm	Max. Usable length 2	Box contents	Price per piece
1) 1720607	M6x70	8	48	15	—	—	10	
1720811	M8x110	10	64	38	96	6	10	
1720813	M8x130	10	64	58	96	26	10	
1720815	M8x150	10	64	78	96	46	10	
1720817	M8x170	10	64	98	96	66	10	
1721011	M10x110	12	80	20	—	—	10	
1721013	M10x130	12	80	40	—	—	10	
1721015	M10x150	12	80	60	120	20	10	
1721017	M10x170	12	80	80	120	40	10	
1721213	M12x130	14	96	21	144	—	10	
1721217	M12x170	14	96	61	144	13	10	
1721221	M12x210	14	96	101	144	53	10	
1721226	M12x260	14	96	151	144	103	10	
1721618	M16x180	18	128	36	—	—	10	
1721622	M16x220	18	128	76	192	12	10	
1721626	M16x260	18	128	116	192	52	10	
1721633	M16x330	18	128	186	192	122	10	
1722027	M20x270	22	160	91	240	11	5	
1722030	M20x300	22	160	121	240	41	5	
1722432	M24x320	26	192	105	288	9	5	
1722436	M24x360	26	192	145	288	49	5	

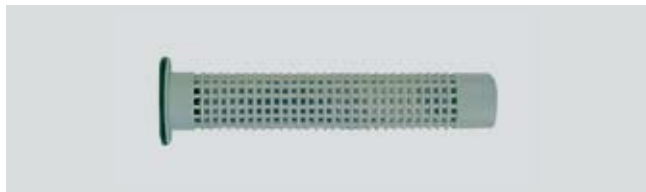
1) Not part of the approval
Steel quality 5.8

MIT-Sr Anchor Rod, stainless steel A4-70

Article code	Thread $\varnothing$ and length mm	Drill- $\varnothing$ Concrete mm	Setting depth 1 = (8d) mm	Max. Usable length 1	Setting depth 2 = (12d) mm	Max. Usable length 2	Box contents	Price per piece
1730811	M8x110	10	64	38	96	6	10	
1730813	M8x130	10	64	58	96	26	10	
1730815	M8x150	10	64	78	96	46	10	
1730817	M8x170	10	64	98	96	66	10	
1731011	M10x110	12	80	20	—	—	10	
1731013	M10x130	12	80	40	—	—	10	
1731015	M10x150	12	80	60	120	20	10	
1731017	M10x170	12	80	80	120	40	10	
1731213	M12x130	14	96	21	144	—	10	
1731217	M12x170	14	96	61	144	13	10	
1731221	M12x210	14	96	101	144	53	10	
1731226	M12x260	14	96	151	144	103	10	
1731618	M16x180	18	128	36	—	—	10	
1731622	M16x220	18	128	76	192	12	10	
1731626	M16x260	18	128	116	192	52	10	
1731633	M16x330	18	128	186	192	122	10	
1732027	M20x270	22	160	91	240	11	5	
1732030	M20x300	22	160	121	240	41	5	
1732432	M24x320	26	192	105	288	9	5	
1732436	M24x360	26	192	145	288	49	5	

Steel quality A4-70

MSH Sleeve



Article code	MSH Ø and length mm	for Thread	Drill Ø mm	Box contents	Price per piece
1710141	9 x 50	≤ M 8	12	10	
1710142	13 x 85	≤ M 12	16	10	
1710143	13 x 130	≤ M 12	16	10	
1710144	18 x 85	≤ M 16	20	10	

MSM Metal Sleeve (1m)



Article code	MSH Ø and length mm	for Thread	Drill Ø mm	Box contents	Price per piece
1710151	11x1000	≤ M 8	12	1	
1710152	15x1000	≤ M 12	16	1	
1710153	20x1000	≤ M 16	22	1	

MBZ Steel Brush to MIT-SE 150 ml, 300 ml, 350 ml, 400 ml



Article code	Drilling hole Ø mm	Total length mm	Box contents	Price per piece
¹⁾ 1690020	10/12	270	1	
¹⁾ 1690021	14/18	270	1	
¹⁾ 1690022	22/26	270	1	

¹⁾ Part of the approval

MBP Steel Brush



Article code	Drilling hole Ø mm	Total length mm	Box contents	Price per piece
1690018	10	300	1	
1690014	12	300	1	
1690015	15	300	1	
1690016	20	300	1	
1690017	25	300	1	
1690019	30	300	1	

Brush extension on request

MIT-ZK Centre Cone

Article code	Thread	Box contents	Price per piece
1710070	M 8	10	
1710071	M 10	10	
1710072	M 12	10	
1710073	M 16	10	
1710074	M 20	10	

MIT-DY Dywidag-Anchor



Article code	Description	Box contents	Price per piece
1710040	Anchor sleeve, aluminium	100	
1710041	Anchor sleeve, stainless steel A2	100	
1710045	Insert anchor, stainless steel A2	100	

MIGH Anchor sleeve with internal thread



Article code	Internally thread	Length mm	Drill Ø concrete mm	Drill Ø perf. brick with MSH mm	Box contents	Price per piece
1710060	M 6	48	10	12	10	
1710061	M 8	80	14	16	10	
1710062	M 10	80	16	20	10	
1710063	M 12	80	18	20	10	

MAZ Purging Pump for MIT-SE 150 ml, 300 ml, 350 ml, 400 ml



Article code	Box contents	Price per piece
¹⁾ 1690011	1	

¹⁾ Part of the approval

MAP Purging Pump



Article code	Box contents	Price per piece
1690002	1	

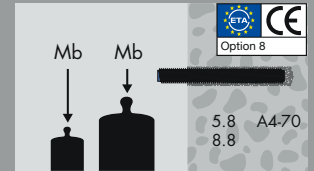
MIT-MI Mixer for cartridges



Article code	Description	Box contents	Price per piece
¹⁾ 1710014	Mixer for cartridge 150/300/350/400/825	1	
1710016	Extension piece 1m	1	

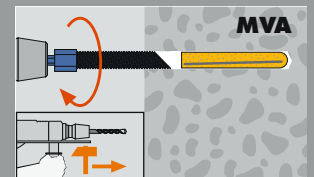
¹⁾ Part of the approval

Resin and Hammer Capsule



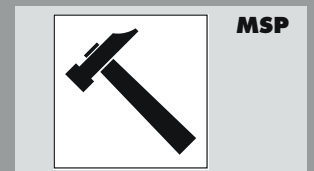
Approved bending moment

can be adapted by using different steel qualities (5.8/8.8/A4-70).



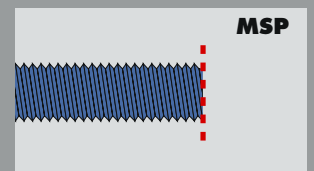
Anchor setting

subject to spinning of rod under percussion.
MVA Resin Capsule



Drive in with hammer only

MSP Hammer Capsule

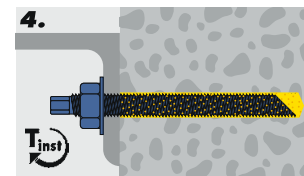
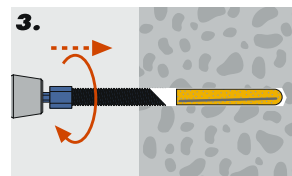
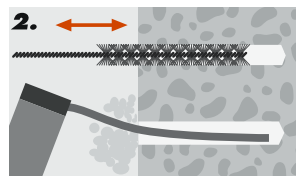
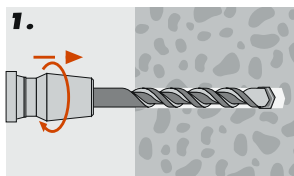


No sharpening of rod required

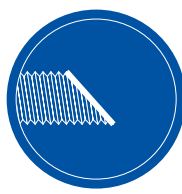
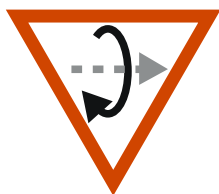
MSP Hammer Capsule



MVA Resin Capsule



- European Technical Approval Option 8 for uncracked concrete
- Possible to set under water
- Applications in Concrete C20/25 up to C50/60
- High loads with low edge and axial spacing
- Temperature range: -40°C up to +80°C acute
-40°C up to +50°C long term



MVA Resin Capsule

Article code	Capsule Ø / length mm	Drilling hole Ø mm	Drilling depth mm	Box contents	Outer carton	Price per piece
¹⁾ 1600008	8/80	10	80	10	500	
²⁾ 1610010	10/80	12	90	10	500	
²⁾ 1610012	12/95	14	110	10	200	
²⁾ 1610014	14/95	16	120	10	200	
²⁾ 1610016	16/95	18	125	10	200	
²⁾ 1602211	20/135	24	140	6	60	
²⁾ 1610020	20/175	25	170	6	60	
²⁾ 1610024	24/210	28	210	6	60	
¹⁾ 1602825	30/265	35	280	6	30	

¹⁾ German Institute of Construction Technic approved with MVA-S, MVA-Sr

²⁾ European Technical Approval with MVA-S, MVA-Sr / Possible to set under water

Recommended hardening times to full loading

30°C and more	= 10 min.
20°C to 30°C	= 20 min.
5°C to 20°C	= 1 h
-5°C to 5°C	= 5 h

Recommended loads in kN, galv. 5.8

(1kN $\triangleq$ 100kg) in Concrete C20 / 25

Size	Tension	Shear	Bending moment Nm
M 8	4.0	4.0	10.7
M 10	7.9	8.6	21.1
M 12	9.9	12.0	37.1
M 14	12.7	16.4	51.8
M 16	15.9	22.3	94.9
M 20	23.8	34.9	185.7
M20/135	21.1	34.9	185.7
M 24	29.8	50.3	320.6
M 30	60.0	60.0	642.0

The partial safety factors of the resistances as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.

Recommended loads in kN, stainless steel A4-70

(1kN $\triangleq$ 100kg) in Concrete C20 / 25

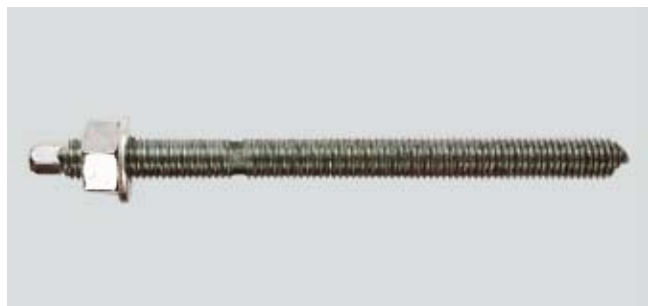
Size	Tension	Shear	Bending moment Nm
M 8	4.0	4.0	12.1
M 10	7.9	9.2	29.1
M 12	9.9	13.7	49.9
M 14	12.7	18.4	58.1
M 16	15.9	25.2	126.8
M 20	23.8	39.4	247.7
M20/135	21.1	39.4	247.7
M 24	29.8	56.8	428.1
M 30	60.0	60.0	402.0

The partial safety factors of the resistances as well as a partial safety factor of the effect of $\gamma_F = 1.4$ are considered.

Setting data for MVA-S/MVA-Sr

Thread Ø	Drill Ø mm	s distance betw. anchors mm	c edge distance mm	min. dist. betw. anchors s_{min}	min. edge distance c_{min}	min. thickness of found. t_{min}	Tighten Torque Nm	Spanner size
M 8	10	200	100	80	40	130	6	10
M 10	12	180	90	45	45	120	12	17
M 12	14	220	110	55	55	140	20	19
M 14	16	240	120	60	60	150	30	22
M 16	18	250	125	65	65	160	45	24
M 20	25	280	140	70	70	180	100	30
M20/135	25	340	170	85	85	220	100	30
M 24	28	420	210	105	105	260	150	36
M 30	35	700	350	280	140	330	300	46

MVA-S Anchor Rod, zinc plated



- M8 – M16 with ext. hex. socket
- Anchor Rod with 45° end
- Including nut and washer
- Each box of Anchor Rods incl. a setting tool (M8 – M16)

MVA-S Anchor Rod, zinc plated

Article code	Thread	Length mm	Usable length mm	Box contents	Price per piece
1650008	M 8	110	15	10	
1651508	M 8	150	55	10	
1650010	M 10	130	20	10	
1651710	M 10	170	65	10	
1650012	M 12	160	30	10	
1652212	M 12	220	90	10	
1652612	M 12	260	130	10	
1653012	M 12	300	170	10	
1650014	M 14	170	40	10	
1650016	M 16	190	40	10	
1652316	M 16	230	80	10	
1652616	M 16	260	110	10	
1653016	M 16	300	150	10	
1652020	M 20	230	40	1	
1652026	M 20	260	70	1	
1652430	M 24	300	65	1	
1653038	M 30	380	70	1	

Steel quality 5.8 / Hot dip galvanised on request

MVA-Sr Anchor Rod, stainless steel A4



Article code	Thread	Length mm	Usable length mm	Box contents	Price per piece
1660008	M 8	110	15	10	
1661508	M 8	150	55	10	
1660010	M 10	130	20	10	
1661710	M 10	170	65	10	
1660012	M 12	160	30	10	
1662212	M 12	220	90	10	
1662612	M 12	260	130	10	
1663012	M 12	300	170	10	
1660016	M 16	190	40	10	
1662316	M 16	230	80	10	
1662616	M 16	260	110	10	
1663016	M 16	300	150	10	
1662020	M 20	230	40	1	
1662026	M 20	260	70	1	
1662430	M 24	300	65	1	
1663038	M 30	380	70	1	

Steel quality A4-70

MVA-WZ Setting Tool for rods without drive



Article code	for thread Ø mm	Price per piece	Article code	for thread Ø mm	Price per piece
1665008	M 8		1665016	M 16	
1665010	M 10		1665020	M 20	
1665012	M 12		1665024	M 24	
1665014	M 14		1665030	M 30	

MVA-I Anchor Sleeve with internal thread



MVA-I Anchor Sleeve with internal thread

Article code	Internally thread	Capsule Ø mm	Drilling Ø and depth mm	min./max screw in mm	Setting Torque Nm	Box contents (FS)	Price per piece
1670008	M 8	MVA 12	15/90	12/30	6	10 01	
1670010	M 10	MVA 16	18/90	15/35	12	10 01	
1670012	M 12	MVA 16	22/90	18/40	20	10 21	
1670016	M 16	MVA 20	28/125	24/40	45	10 21	
1670020	M 20	MVA 24	35/180	40/60	100	10 51	

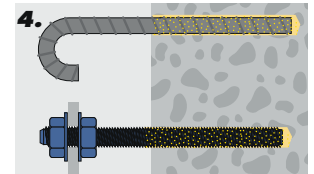
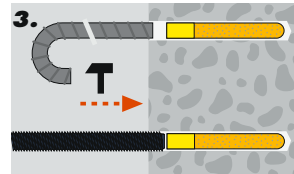
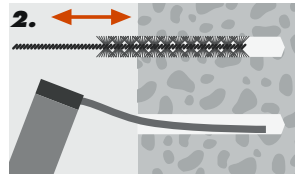
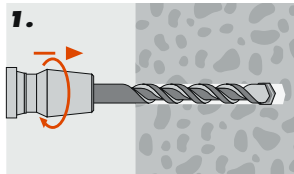
Steel quality 5.8 / Stainless steel A4 on request

MVA-M Stud Connector, zinc plated DIN 6334



Article code	Thread	Length mm	Spanner size	Box contents (FS)	Price per 100 pieces
1824006	M 6	18	10	100 01	
1824008	M 8	24	13	100 11	
1824010	M 10	30	17	50 11	
1824012	M 12	36	19	50 21	
1824016	M 16	48	24	25 31	

MSP Hammer Capsule



Recommended hardening times to full loading

20°C and more	= 1 h
10°C to 20°C	= 2 h
0°C to 10°C	= 5 h
-5°C to 0°C	= 10 h

MSP Hammer Capsule

Article code	Capsule Ø mm	Length mm	Box contents	Outer carton	Price per piece
1620008	8	80	10	500	
1620010	10	90	10	500	
1620012	12	95	10	200	
1620016	16	95	10	200	
1620021	20	125	6	60	
1620020	20	175	6	60	
1620024	24	210	6	60	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Concrete: C20/25, Reinforcing bar: Bst 500

Reinforcing bars

Bar Ø	Capsule Ø/ length	Drill Ø/ drilling depth 1 Capsule	Drill Ø/ drilling depth 2 Capsules	1 Capsule Tension	2 Capsules Tension
8	8/80	10 /80	10/160	6.7	12.6
10	10/90	13/100	13/200	10.9	19.6
12	12/95	15/110	15/220	13.8	27.6
14	16/95	18/125	18/250	18.8	37.7
16	16/95	20/125	20/250	20.9	41.9
20	20/125	25/150	25/300	31.4	62.8
20	20/175	25/200	25/400	41.9	78.5
25	24/210	30/250	30/500	62.8	120.6

Safety factor 3 (breakage of concrete) / 2.2 (breakage of steel)

Recommended loads in kN (1kN $\triangleq$ 100kg)

Concrete: C20/25, Anchor rod steel: 5.8

Anchor rods

Anchor rod M	Capsule Ø/ length	Drill Ø/ drilling depth 1 Capsule	Drill Ø/ drilling depth 2 Capsules	Shear	Bending moment Nm	1 Capsule Tension	2 Capsules Tension
8	8/80	10 /80	10/160	5.4	10.7	6.7	8.3
10	10/90	12/100	12/200	8.6	21.1	10.0	13.2
12	12/95	14/110	14/220	12	37.1	12.9	19.2
16	16/95	18/125	18/250	22.3	94.9	18.8	35.7
20	20/125	25/150	25/300	34.9	185.7	31.4	55.7
20	20/175	25/200	25/400	34.9	185.7	41.9	55.7
24	24/210	28/240	28/480	50.3	320.6	56.3	80.2

Safety factor 3 (Breakage of concrete) / 2.2 (Breakage of steel)

Setting data for MSP with Anchor rods

Thread Ø	Drill Ø mm	1 Capsule s distan. betw. anchors mm	1 Capsule c edge distance mm	1 Capsule min. dist. betw.anchors s _{min}	1 Capsule min. edge distance c _{min}	min. thick- ness of found. h _{min}	Tighten Torque Nm	Spanner size
8	10	160	80	80	40	110	6	10
10	12	200	100	100	50	130	12	17
12	14	220	110	110	55	140	20	19
16	18	250	125	125	65	160	45	24
20	25	300	150	150	75	200	100	30
20	25	400	200	200	100	260	100	30
24	28	480	240	240	120	320	150	36

- Just hammer in
- Time-saving, three times faster than other systems
- Permits assembly with most kinds of reinforcing bars
- High solids content through glass and silica

MAP Purging Pump



MAP Purging Pump

Article code	Box contents	Price per piece
1690002	1	

MBP Steel Brush



MBP Steel Brush

Article code	Drill Ø mm	Length mm	Box contents	Price per piece
1690018	10	300	1	
1690014	12	300	1	
1690015	15	300	1	
1690016	20	300	1	
1690017	25	300	1	
1690019	30	300	1	

PU-Foam



Two-component system (MPU-2K)

Extremely rapid-hardening, reduces the processing time to 15 minutes.



Excellent resistance

to common soils acids and soil bacteria.



Flame resistant B1 (DIN 4102)

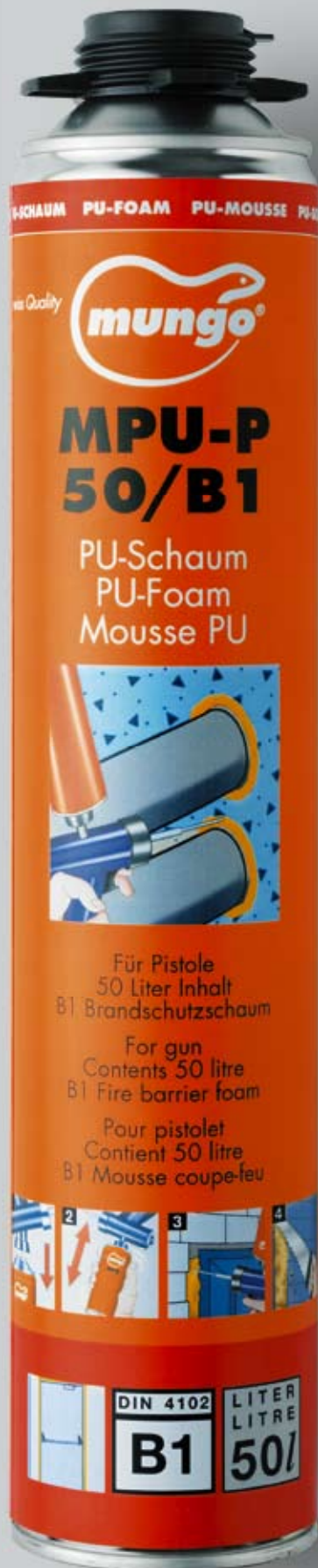
Special formula for high fire resistance.

LITER
LITRE

65l

Contents 65 litre max.

Very high foam yield up to 65 litre, free foaming.



MPU-P 50 PU-Foam, for gun



- For gun, contents 50 litre
- Short curing time
- Stable adhesion without volume reduction
- Thermal and acoustic insulations
- Low water absorption
- Ozone-friendly propellants, CFC and HCFC-free

MPU-P 50 PU-Foam, for gun

Article code	Description	Contents ml	Box contents	Price per piece
1713511	For gun	750	12	

MPU-P 65 PU-Foam, for gun



- For gun, contents 65 litre
- Excellent adhesion
- Short curing time
- Stable adhesion without volume reduction
- Thermal and acoustic insulations
- Low water absorption
- Ozone-friendly propellants, CFC and HCFC-free

MPU-P 65 PU-Foam, for gun

Article code	Description	Contents ml	Box contents	Price per piece
1713516	For gun	750	12	

MPU-P 50/B1 Fire Barrier Foam



- For gun, contents 50 litre
- B1 fire rating (DIN 4102)
- Short curing time
- Stable adhesion without volume reduction
- Low water absorption
- Ozone-friendly propellants, CFC and HCFC-free

MPU-P 50/B1 Fire Barrier Foam, B1, for gun

Article code	Description	Contents ml	Box contents	Price per piece
1713504	B1 / For gun	750	12	

MPU-M 50 PU-Foam, manual



- Manual, contents 50 litre
- Short curing time
- Stable adhesion without volume reduction
- Thermal and acoustic insulations
- Low water absorption
- Ozone-friendly propellants, CFC and HCFC-free

MPU-M 50 PU-Foam, manual

Article code	Description	Contents ml	Box contents	Price per piece
1713510	Manual	750	12	

MPU-2K 2-Component PU-Foam



- Manual, contents 12 litre
- Quick-cure formula, cutting can be started after just 15 min.
- Curing is not dependant on ambient moisture or surface dampening
- High form stability
- B2 fire rating (DIN 4102)
- Ozone-friendly propellants, CFC and HCFC-free

MPU-2K 2-Component PU-Foam, B2, manual

Article code	Description	Contents ml	Box contents	Price per piece
1713503	B2 / Manual	400	12	

MPU-P 50/BR PU-Foam for concrete rings



- For gun, contents 50 litre
- B2 fire rating (DIN 4102)
- Resistant to common soils acids and soil bacteria
- Excellent adhesion of concrete
- Low water absorption
- Ozone-friendly propellants, CFC and HCFC-free

MPU-P 50/BR PU-Foam for concrete rings, B2, for gun

Article code	Description	Contents ml	Box contents	Price per piece
1713505	B2 / For gun	750	12	

MRM-PU Cleaner



- For PU-Foam and dispensing gun
- Ozone-friendly propellants, CFC and HCFC-free

MRM-PU Cleaner

Article code	Description	Contents ml	Box contents	Price per piece
1713521	For PU-Foam/gun	500	12	

Hardening- and Working times

Product	Tack-free time Min.	Cutting time Min.	Full cure time h
MPU-P 50	6 – 9	40 – 45	24
MPU-M 50	6 – 9	40 – 45	24
MPU-P 65	6 – 9	40 – 45	24
MPU-2K	4 – 6	15	4
MPU-P 50 B1	6 – 9	25 – 35	24
MPU-P 50 BR	10 – 14	30 – 40	24

At a temperature +23°C and humidity of 50% (30mm line)

MPP Application gun



- Stainless steel shut off needle encased inside a brass valve
- Due to the special form of the gun point, you are able to attach extension pieces, which enable you to extend greater distances into the base materials
- The flow of liquid can be controlled using the adjusting screw
- The shut off valve, as well as the inside of the applicator is teflon coated, allowing the flow of the material to completely disperse without sticking to the sides
- Teflon coating gives the applicator a longer life span

MPP-M Metal gun

Article code	Description	Box contents	Price per piece
1713522	For PU-Foam	1	



MPP-K Nylon/Metal gun

Article code	Description	Box contents	Price per piece
1713523	For PU-Foam	1	

MSI-NP Neutral Silicone, fungus-inhibiting



- Universal mounting, neutral interactive (alkoxy)
- Fungus-inhibiting
- Non-corrosive
- UV resistant, weather proof and non-ageing
- With adhesion promoter
- Not paintable

MSI-NP Neutral Silicone, fungus-inhibiting

Article code	Colour	Contents ml	Box contents	Price per piece
1712531	transparent	310	24	
1712532	white	310	24	

MSI-S Sanitary Silicone, fungus-inhibiting



- For sealing in sanitary and wet conditions
- Fungus-inhibiting, acetic interlacing (acetate)
- UV resistant, weather proof and non-ageing
- With adhesion promoter
- Not paintable

MSI-S Sanitary Silicone, fungus-inhibiting

Article code	Colour	Contents ml	Box contents	Price per piece
1712521	white	310	24	

MMK-A Acrylic Adhesive



- Replaces nails and screws
- High viscosity
- The sealant hardens by means of water evaporation

MMK-A Acrylic Adhesive

Article code	Colour	Contents ml	Box contents	Price per piece
1712570	white	310	12	

MSI-N Neutral Silicone



- Universal mounting, neutral interactive (alkoxy)
- Non-corrosive
- UV resistant, weather proof and non-ageing
- With adhesion promoter
- Not paintable

MSI-N Neutral Silicone

Article code	Colour	Contents ml	Box contents	Price per piece
1712533	grey	310	24	
1712534	dark brown	310	24	

MDA Acrylic Sealant



- Paintable, on acrylic dispersion base
- UV resistant, weather proof and non-ageing
- Suitable for filling cracks both inside and outside
- The sealant hardens by means of water evaporation

MDA Acrylic Sealant

Article code	Colour	Contents ml	Box contents	Price per piece
1712562	white	310	24	

MMK-P Polyurethane Adhesive



- Hardening under influence of atmospheric humidity
- High level of adhesion
- For most kinds of building materials
- After hardening paintable and grindable

MMK-P Polyurethane Adhesive

Article code	Colour	Contents ml	Box contents	Price per piece
1712571	cream	310	12	



The clever fastener for insulating materials

Our new thermal plug range fulfills the substantial requirements of fastening insulating material panels: Both rational function and excellent fixing security. With different heads and numerous dimensions, the patented system offers the tailor made solutions for fastening insulating material of all kinds.

- No additional screws or nails necessary
- No corrosion danger
- No cold bridges
- Temperature resistance from -40°C up to $+80^{\circ}\text{C}$

Plug drawings are avoided

The MTD thermal plug is the efficient system for countersunk fixing of insulation boards. The components, made for a quick and easy assembly, allows countersunk applications with heat insulation boards coated with fine plaster layer. No sanding and filling are necessary, since the cap forms an even surface with the insulating material. Therefore marks and plaster cracks are avoided.

The assembly in only 2 steps

- ① Drill hole with enclosed rose countersunk
- ② Push in the thermal plug with cap — that's it!



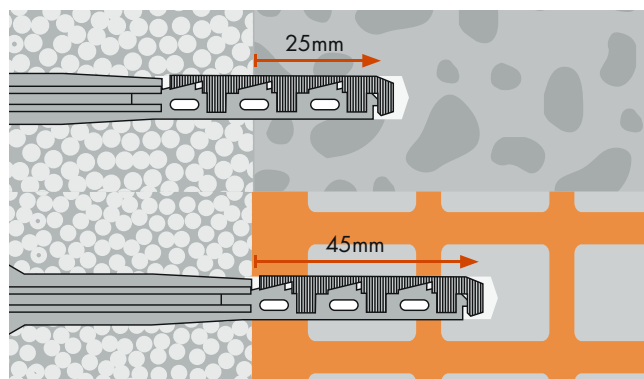
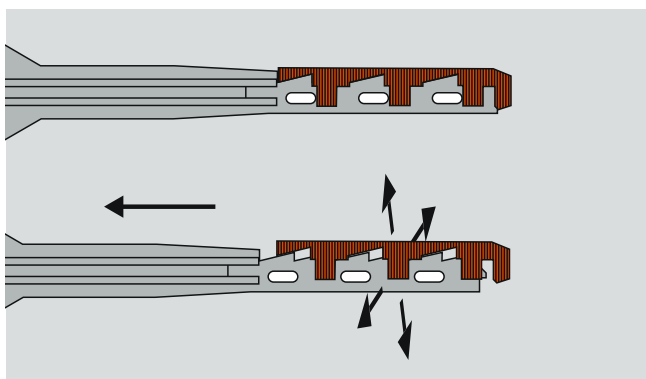


Increased assembly security

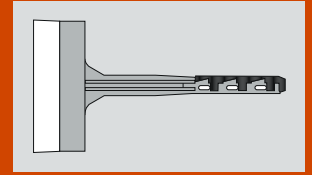
The isometric spread cones within the patented spreading zone provides a high anchorage security. By tensioning, the thermal plugs embody themselves in firm and unstable building materials. Any movement of the insulating material plate is thus avoided.

Time saving

Owing to the minimum setting depth of 25 mm in solid building materials and 45 mm in hollow brick the new plugs make for a more effective and time saving application when drilling and fixing the plug in the different building materials.

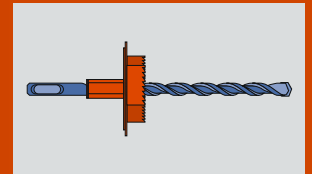


Thermal Plug



MTD

For the fixings of heat insulation material systems with finery layer.



MSF

The countersunk holesaw consists of hard PVC with a gauge.



MTS

The star shaped plug is particularly suitable for soft insulating materials.

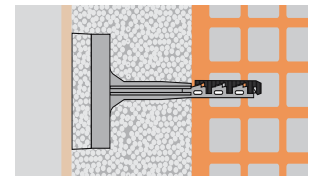
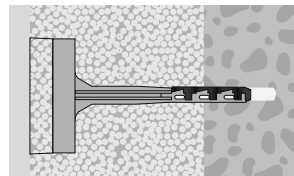
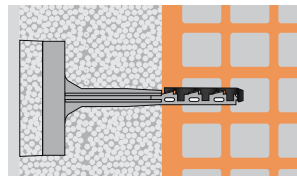
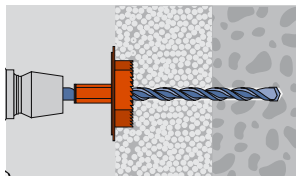
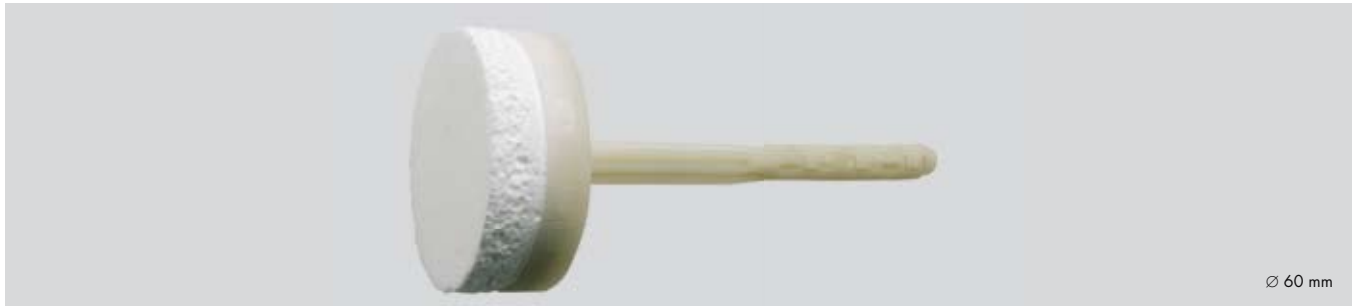


MTP

The mushroom-shaped plug is suitable for pressure resistant insulating materials.



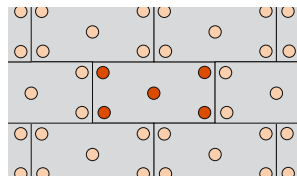
MTD Thermal Plug



- Quick and easy assembly in only two steps
- Optimally co-ordinated system components consisting of MTD, MSF, MTR
- Particularly suitable for fixings of pressure resistant insulation boards e.g. polystyrene
- No afterworking of the front surface necessarily owing to MTR disc

Installation

1. Drill hole with enclosed rose countersunk
2. Push in the thermal plug with cap — that's it!



MTD Thermal Plug

Article code	Drill Ø mm	Length mm	Insulation thickness perforated brick mm	Insulation thickness concrete mm	Box contents SK	Price per 100 pieces
1180810	8	105	- 60	- 80	250 64	
1180812	8	125	- 80	- 100	200 64	
1180814	8	145	- 100	- 120	150 64	
1180816	8	165	- 120	- 140	150 64	
1180818	8	185	- 140	- 160	150 64	
1180820	8	205	- 160	- 180	150 64	
1180822	8	225	- 180	- 200	100 64	
1180824	8	245	- 200	- 220	100 64	

Setting depth: Concrete 25 mm
Perforated brick 45 mm

Incl. setting tool with SDS-Plus and MTR discs

MTR Cap



Article code	Ø mm	Thickness mm	Colour	Box contents SK	Price per 100 pieces
1180860	60	18.5	white	200 32	

- Working with insulation material thicknesses up to 220 mm is possible due to the special development of the expansion parts
- Particularly developed spread part for a durable fixing in most kinds of building materials
- High-quality, impact resistant material
- No plug drawing in the front surface
- Small setting depth: 25 mm in concrete, 45 mm in hollow brick

MSF Rose Countersunk



Article code	Drill Ø mm	Length mm	Fit to MTD	Box contents	Price per piece
1180840	8	210	8x105	1	
1180841	8	230	8x125	1	
1180842	8	250	8x145	1	
1180843	8	270	8x165	1	
1180844	8	300	8x185	1	
1180845	8	320	8x205	1	
1180846	8	340	8x225	1	
1180847	8	360	8x245	1	

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20 / 25	Perforated brick
MTD	0.35	0.35

Safety factor 3

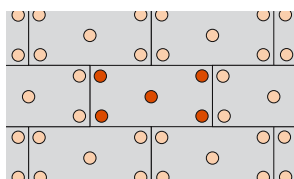
MTS Thermal Star



- Large star shaped plug head (Ø 90mm) ideal for soft insulation boards
- The black plug colour is particularly suitable for the fastening fronts behind-ventilated insulation boards
- Small setting depth: 25 mm in concrete, 45 mm in hollow brick
- Working with insulation material thicknesses up to 220 mm is possible due to the special development of the expansion parts
- High-quality impact resistant Material
- The economical fastening for insulating boards without additional drive of a spreading nail
- Stable against influences of the weather

Installation

1. Drill hole
2. Set plug
3. MTS pushes in flush to the insulating material surface



MTS Thermal Star

Article code	Drill Ø mm	Length mm	Ins. thickness perforated brick mm	Ins. thickness concrete mm	Box contents [SK]	Price per 100 pieces
1180910	8	105	- 60	- 80	200 64	
1180912	8	125	- 80	- 100	200 64	
1180914	8	145	- 100	- 120	150 64	
1180916	8	165	- 120	- 140	150 64	
1180918	8	185	- 140	- 160	100 64	
1180920	8	205	- 160	- 180	100 64	
1180922	8	225	- 180	- 200	100 64	
1180924	8	245	- 200	- 220	100 64	

Setting depth: Concrete 25 mm
Perforated brick 45 mm

Recommended loads in kN (1kN $\triangle$ 100kg)

Size	Concrete C20/25	Perforated brick
MTS	0.35	0.35

Safety factor 3

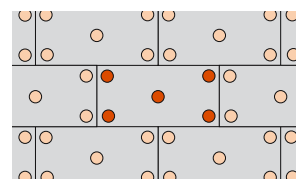
MTP Thermal Mushroom



- Large mushroom shaped plug head (Ø 60mm) ideal for hard insulation boards
- The black plug colour is particularly suitable for the fastening fronts behind-ventilated insulation boards
- Small setting depth: 25 mm in concrete, 45 mm in hollow brick
- Working with insulation material thicknesses up to 220 mm is possible due to the special development of the expansion parts
- High-quality impact resistant Material
- The economical fastening for insulating boards without additional drive of a spreading nail
- Stable against influences of the weather

Installation

1. Drill hole
2. Set plug
3. MTP pushes in flush to the insulating material surface



MTP Thermal Mushroom

Article code	Drill Ø mm	Length mm	Ins. thickness perforated brick mm	Ins. thickness concrete mm	Box contents [SK]	Price per 100 pieces
1181010	8	105	- 60	- 80	200 32	
1181012	8	125	- 80	- 100	150 32	
1181014	8	145	- 100	- 120	250 64	
1181016	8	165	- 120	- 140	250 64	
1181018	8	185	- 140	- 160	200 64	
1181020	8	205	- 160	- 180	200 64	
1181022	8	225	- 180	- 200	200 64	
1181024	8	245	- 200	- 220	200 64	

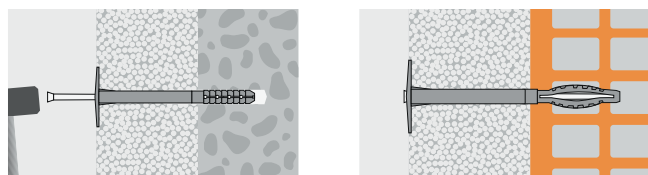
Setting depth: Concrete 25 mm
Perforated brick 45 mm

Recommended loads in kN (1kN $\triangle$ 100kg)

Size	Concrete C20/25	Perforated brick
MTP	0.35	0.35

Safety factor 3

MDD Insulation Fixing with plastic nail



- With glass-fibre reinforced plastic pin
- For general purpose use in hard and soft insulation pads
- Resistant in meteorological conditions
- Resistant to cold and heat

Installation

1. Drilling
2. Set Plug until head lies flush on insulation surface
3. Drive-in the plastic nail

MDD Insulation Fixing with plastic nail

Article code	Drill Ø mm	Length mm	Ins. thickness perforated brick mm	Ins. thickness concrete mm	Box contents	Price per 100 pieces
1180607	10	70	- 30	- 40	250	
1180609	10	90	- 50	- 60	250	
1180611	10	110	- 70	- 80	250	
1180613	10	130	- 90	- 100	250	
1180615	10	150	- 110	- 120	250	
1180618	10	180	- 140	- 150	250	
1180621	10	210	- 170	- 180	200	

Setting depth: Concrete 30 mm
Perforated brick 40 mm

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20 / 25	Aerated concrete	Perforated brick
MDD	0.25	0.15	0.2

Safety factor 3

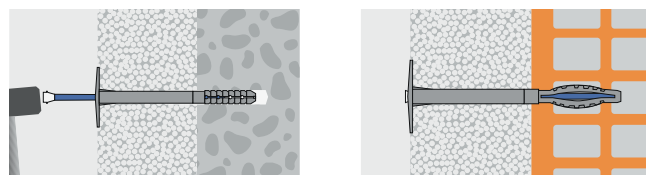
MDD-VS Disc Ø 90 mm to MDD



MDD-VS Disc Ø 90 mm to MDD

Article code	Ø mm	Box contents	Price per 100 pieces
1180600	90	250	

MDD-S Insulation Fixing with steel nail



- No thermal bridges, steel nail encased in plastic, corrosion resistant
- Taking-up high bending moments (e.g. with mineral cotton and cork insulation)
- Unproblematic handling of insulation thickness up to 210 mm
- Sight controlling of recommended handling through white-inked expansion pin

Installation

1. Drilling
2. Set Plug until head lies flush on insulation surface
3. Drive-in the steel nail

MDD-S Insulation Fixing with steel nail

Article code	Drill Ø mm	Length mm	Ins. thickness perforated brick mm	Ins. thickness concrete mm	Box contents	Price per 100 pieces
1180707	10	70	- 30	- 40	250	
1180709	10	90	- 50	- 60	250	
1180711	10	110	- 70	- 80	250	
1180713	10	130	- 90	- 100	250	
1180715	10	150	- 110	- 120	200	
1180718	10	180	- 140	- 150	150	
1180721	10	210	- 170	- 180	150	
1180724	10	240	- 200	- 210	100	

Setting depth: Concrete 30 mm
Perforated brick 40 mm

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20 / 25	Aerated concrete	Perforated brick
MDD-S	0.3	0.15	0.2

Safety factor 3

MDD-WZ Setting tool for MDD-S

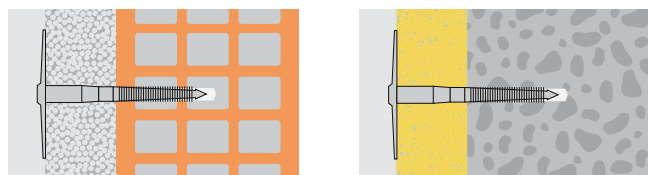
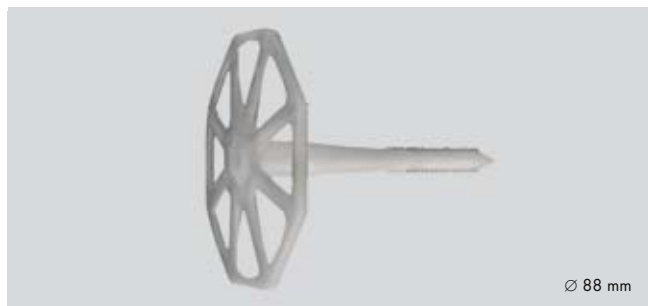


- Makes an adjustment of the plug possible

MDD-WZ Setting tool for MDD-S

Article code	Description	Price per piece
1180700	Setting tool for the assembly of MDD-S	

MIS for Lightweight Panel



- Star shaped large head for soft insulation materials
- No reduction of insulation level
- Appropriate for insulation
- Material is shock resistant
- Do not use for overhead fixings
- Reduced assembling time, without screws and nails

MIS Insulation Fixing for Lightweight Panel

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Outer carton [SK]	Price per 100 pieces
1150001	8	75	- 45	- 35	250	64
1150002	8	95	- 65	- 55	250	64
1150003	8	115	- 85	- 75	250	64
1150004	8	135	- 105	- 95	200	64
1150005	8	155	- 125	- 115	200	64
¹⁾ 1150018	8	180	- 150	- 140	100	
¹⁾ 1150020	8	200	- 170	- 160	100	

¹⁾ in black, Ø 60 mm

MIS-GP in industrial carton

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Outer carton	Price per 100 pieces
1150101	8	75	- 45	- 35	700	
1150102	8	95	- 65	- 55	650	
1150103	8	115	- 85	- 75	600	
1150104	8	135	- 105	- 95	550	
1150105	8	155	- 125	- 115	500	

Setting depth: Concrete 30 mm
Perforated brick 40 mm

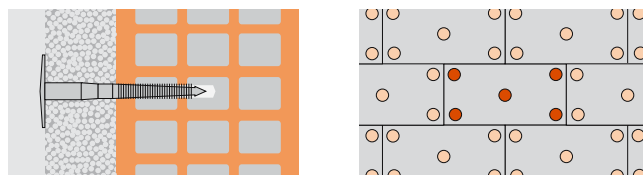
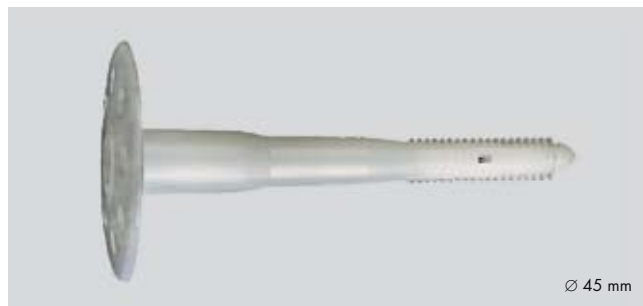
MID Insulation Plug to MIS and MIP in perforated brick



MID Insulation Plug to MIS and MIP in perforated brick

Article code	Drill Ø mm	Length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1041260	12	60	100	1200	32

MIP for Mineral Wool Type



- Best adhesive power of the plaster
- Suitable for insulating boards up to a weight of 70 kg/m³
- No reduction of insulation level
- Recommended number of pieces: 4 to 7/m²
- Material is shock resistant
- Reduced assembling time, without screws and nails

MIP Insulation Fixing for Mineral Wool Type

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Outer carton [SK]	Price per 100 pieces
1180001	8	70	- 40	- 30	250	32
1180002	8	90	- 60	- 50	250	32
1180003	8	105	- 75	- 65	250	32
1180004	8	125	- 95	- 85	250	32
1180005	8	155	- 125	- 115	250	32

MIP-GP in industrial carton

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Outer carton	Price per 100 pieces
1180101	8	70	- 40	- 30	3000	
1180102	8	90	- 60	- 50	2500	
1180103	8	105	- 75	- 65	2000	
1180104	8	125	- 95	- 85	1800	
1180105	8	155	- 125	- 115	1400	

Setting depth: Concrete 30 mm
Perforated brick 40 mm

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25, Brick	Perforated Brick, Aerated Concrete
MIS/MIP	0.2	0.1

Safety factor 3

MIDS Metal Insulation Nail



- Applications of soft and pressure resistant insulating material for example mineral wool, glass wool, wood-wool building slab
- Fire proof F120
- A2 version for applications in damp areas and outside
- In combination with MDB caps for soft insulating material

MIDS Metal Insulation Nail

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Box contents	Price per 100 pieces
1180501	8	80	- 50	- 40	250	
1180502	8	110	- 80	- 70	250	
1180503	8	140	- 110	- 100	250	
1180504	8	170	- 140	- 130	250	
1180505	8	200	- 170	- 160	250	
Setting depth:		Concrete	30 mm			
		Perforated brick	40 mm			

MIDSr Metal Insulation Nail, A2

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Box contents	Price per 100 pieces
1180511	8	80	- 50	- 40	250	
1180512	8	110	- 80	- 70	250	
1180513	8	140	- 110	- 100	250	
1180514	8	170	- 140	- 130	250	
1180515	8	200	- 170	- 160	250	
Setting depth:		Concrete	30 mm			
		Perforated brick	40 mm			

Recommended loads in kN (1kN $\triangleq$ 100kg)

Size	Concrete C20/25, Brick	Perforated Brick, Aerated Concrete
MIDS/MIDSr	0.3	0.1

Safety factor 3

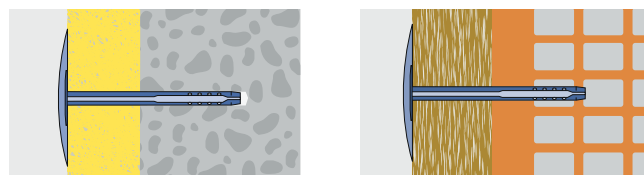
MDB Metal Disc for soft insulation



MDB Metal Disc for soft insulation

Article code	Description	Disc Ø mm	Hole Ø mm	Box contents [SK]	Price per 100 pieces
1120874	MDB	80	14.5	250	22
1120876	MDB	80	14.5	250	22

MIDS-K Metal Insulation Nail



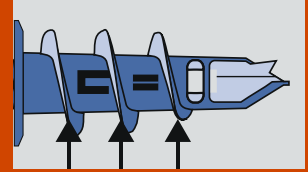
- Applications of soft and pressure resistant insulating material for example mineral wool, glass wool, wood-wool building slab
- Cap reduces cooling/warming transmission
- Fire proof

MIDS-K Metal Insulation Nail with head protection cap

Article code	Drill Ø mm	Length mm	Ins. thickness concrete mm	Ins. thickness perforated brick mm	Box contents	Price per 100 pieces
1180521	8	80	- 50	- 40	125	
1180522	8	110	- 80	- 70	125	
1180523	8	140	- 110	- 100	125	
1180524	8	170	- 140	- 130	125	
1180525	8	200	- 170	- 160	125	
Setting depth:		Concrete	30 mm			
		Perforated brick	40 mm			

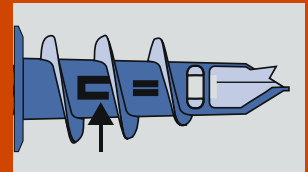
A2 on request

Jet Plug/Fiber Jet



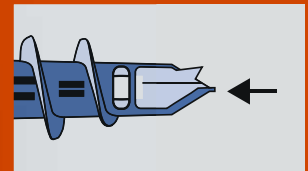
Thin cutting thread

cuts itself positively into the soft building material.



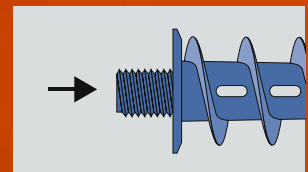
Back twist lock

permits the disassembly of screws without the movement of the plug.



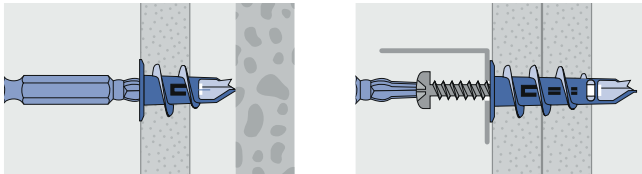
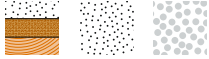
The brad point

ensures an easy setting and drilling in the plate.



Metric thread

MJP Jet Plug metal



- For single, double drywall, plasterboard and gypsum fibre board

MJP39 Jet Plug 39mm

Article code	Length mm	Screw $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1801012	39	4.0 – 4.5/M4	100	2400	
18010122	39	4.0 – 4.5/M4	bulk packed	2000	

MJP32 Jet Plug 32mm



- For single, double drywall, plasterboard, gypsum fibre board and reduced cavities

Article code	Length mm	Screw $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1801022	32	4.0 – 4.5/M4	100	2400	
18010222	32	4.0 – 4.5/M4	bulk packed	3000	

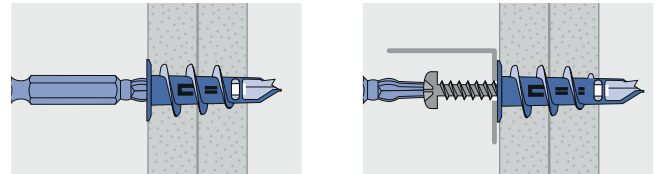
MJP25 Jet Plug 25mm



- For single plasterboard and reduced cavities where the point breaks off

Article code	Length mm	Screw $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1801042	25	4.0 – 4.5/M4	100	2400	

MJP-S Jet Plug metal with screw



- For single, double drywall, plasterboard and gypsum fibre board

MJP39-S Jet Plug 39mm with pan head screw Pozi 2

Article code	Length mm	Screw $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
18010124	39	4.5x30	100	1800	

MJP32-S Jet Plug 32mm with pan head screw Pozi 2



- For single, double drywall, plasterboard and gypsum fibre board

Article code	Length mm	Screw $\varnothing$ mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
18010224	32	4.5x30	100	2400	

Recommended loads in N (10N $\triangleq$ 1kg)

Plasterboard d = 12.5 mm	Aerated Concrete	Gypsum 6 mm pre-drilling	Gypsum fibre board
100	100	¹⁾ 220	150

Safety factor 3 / ¹⁾ Only MJP 39

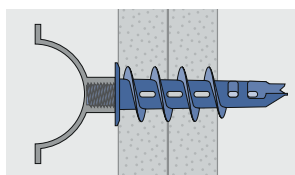
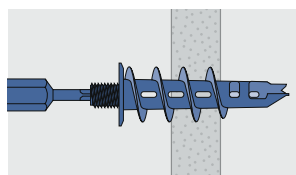
BIT for MJP / MJPm / MFJ



- Easy guidance for Fiber Jet / Jet Plug insertion
- Double-functional, fits both screw and Fiber Jet

Article code	Description	Price per piece
4001201L	Duo-bit for MJP / MFJ, Pozi 2	
4001202L	SQ-bit for MJPm	

MJPm with metric thread



MJPm Jet Plug with metric thread

Article code	Length mm	Thread	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
¹⁾ 1801312	39	M6	100 ¹¹	2400 ³²	
¹⁾ 1801313	39	F7	100 ¹¹	2400 ³²	
¹⁾ 1801314	39	M8	100 ¹¹	2400 ³²	
¹⁾ 1801315	39	1/4"	100 ¹¹	2400 ³²	

¹⁾ incl. 1 SQ-Bit

MJP-KO Jet Plug Basic Kit



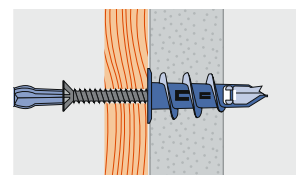
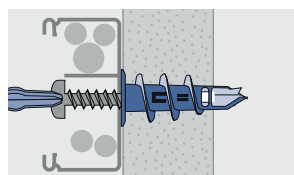
Article code	Content	Price per piece
1801091	MJP 14x39 300 Pan head screw 4.5x30 mm 100 Countersunk screw 4.5x50 mm 100 Eye hook screw 50 Hook bolt screw 50 Corner screw 50 Masonry drill Ø 6 mm 1 Bit hand-grip 1 Duo-bit 1	

MJP-BX Jet Plug Dispenser



Article code	Description	Dispenser contents	Price per Dispenser
18010133	MJP39-S	20 bags: (each 50 MJP + 50 screws 4.5x30)	
18010121	MJP39	20 bags: (each 50 MJP incl. 1 Duo-Bit)	

MFJ Fiber Jet polyamide



- Electrical insulated
- For single plasterboards

MFJ32 Fiber Jet 32 mm

Article code	Length mm	Screw Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1801112	32	4.0 – 4.5/M4	100 ¹⁴	3600 ³²	
1801127	32	in Maxi-Box	100 ¹⁴	2800	

MFJ32-S Fiber Jet 32 mm with pan head screw Pozi 2



- Electrical insulated
- For single plasterboards

Article code	Length mm	Screw Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1801124	32	4.5x30	100 ¹⁴	2400 ³²	

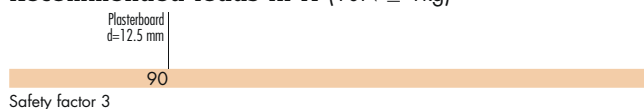
MFJ25 Fiber Jet 25 mm



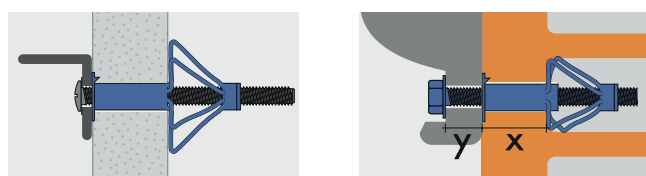
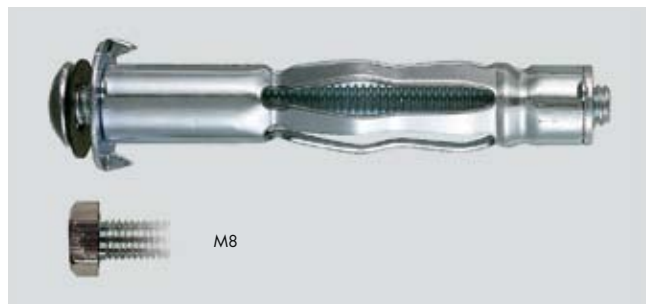
- Electrical insulated
- For single plasterboards and reduced cavities

Article code	Length mm	Screw Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1801142	25	4.0 – 4.5/M4	100 ¹⁴	3600 ³²	

Recommended loads in N (10N $\triangleq$ 1kg)



MHD-S Cavity Wall Anchor



- Controlled, quick and simple installation with the setting tool
- Anchor fully assembled
- Combined screw setting recess to accept all types of screw bits
- Used to DIN 18183 standards
- Collar ensures a tight fit in base material
- For sheet construction and hollow brick

MHD-S Cavity Wall Anchor

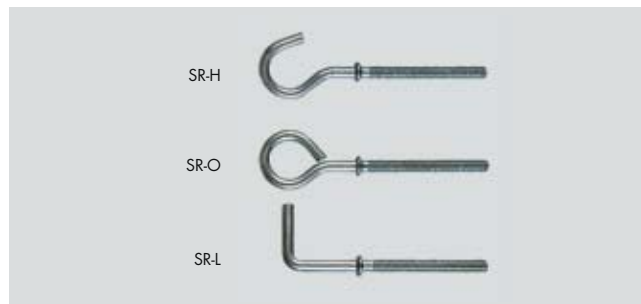
Article code	Screw $\varnothing$ length mm	Drill $\varnothing$ mm	Usable length [X] mm	max. fixture thickness [Y] mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1870140	M4x25	8	0-5	12	100 01	2400 22	
1870141	M4x40	8	5-14	16	100 11	1200 22	
1870142	M4x52	8	3-20	23	100 11	1200 22	
1870143	M4x52	8	18-26	16	100 11	1200 22	
1870144	M4x65	8	32-40	16	100 21	900 22	
1870161	M5x45	10	6-12	20	100 11	1200 22	
1870162	M5x58	10	3-16	24	100 21	900 22	
1870163	M5x71	10	14-32	24	100 31	600 22	
1870164	M5x88	10	32-45	26	100 41	300 12	
1870181	M6x45	12	6-12	16	100 21	900 22	
1870182	M6x58	12	3-16	24	100 31	600 22	
1870183	M6x71	12	14-32	26	100 41	300 12	
1870184	M6x88	12	32-45	26	100 51	300 22	
1870191	M8x45	12	6-13	20	100 31	600 22	
1870192	M8x60	12	3-16	25	100 41	300 12	
1870193	M8x70	12	16-32	25	100 41	300 12	
1870194	M8x90	12	32-45	30	100 51	300 22	

MHD without screw
for SR-H, SR-O, SR-L and threaded rod



Article code	Screw $\varnothing$ length mm	Usable length mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1870040	M4x25	5	100 01	2400 22	
1870041	M4x40	14	100 11	1200 22	
1870042	M4x52	20	100 11	1200 22	
1870043	M4x52	26	100 11	1200 22	
1870044	M4x65	40	100 21	900 22	
1870061	M5x45	12	100 11	1200 22	
1870062	M5x58	16	100 21	900 22	
1870063	M5x71	32	100 31	600 22	
1870064	M5x88	45	100 41	300 12	
1870081	M6x45	12	100 21	900 22	
1870082	M6x58	16	100 31	600 22	
1870083	M6x71	32	100 41	300 12	
1870084	M6x88	45	100 51	300 22	
1870091	M8x45	13	100 31	600 22	
1870092	M8x60	16	100 41	300 12	
1870093	M8x70	32	100 41	300 12	
1870094	M8x90	45	100 51	300 22	

SR Hook Bolt, Eye Hook, Corner Screw



Article code	Description	Dimension mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1871542	SR-H Hook Bolt, zinc plated	M4x38	100 11	1200 22	
1871553	SR-H Hook Bolt, zinc plated	M5x45	100 11	1200 22	
1871554	SR-H Hook Bolt, zinc plated	M5x58	100 21	900 22	
1871556	SR-H Hook Bolt, zinc plated	M5x71	100 31	600 22	
1871563	SR-H Hook Bolt, zinc plated	M6x40	100 21	900 22	
1871566	SR-H Hook Bolt, zinc plated	M6x60	100 31	600 22	
1871342	SR-O Eye Hook, zinc plated	M4x38	100 11	1200 22	
1871353	SR-O Eye Hook, zinc plated	M5x45	100 21	900 22	
1871354	SR-O Eye Hook, zinc plated	M5x58	100 31	600 22	
1871356	SR-O Eye Hook, zinc plated	M5x71	100 31	600 22	
1871363	SR-O Eye Hook, zinc plated	M6x40	100 21	900 22	
1871366	SR-O Eye Hook, zinc plated	M6x60	100 31	600 22	
1871442	SR-L Corner Screw, zinc plated	M4x38	100 11	1200 22	
1871453	SR-L Corner Screw, zinc plated	M5x45	100 11	1200 22	
1871454	SR-L Corner Screw, zinc plated	M5x58	100 21	900 22	
1871463	SR-L Corner Screw, zinc plated	M6x40	100 21	900 22	
1871466	SR-L Corner Screw, zinc plated	M6x60	100 31	600 22	

MHD-WZ Setting tool for MHD-S



Article code	Description	Box contents	Price per piece
1870502	Setting tool	M4-M6	1
1870503	Setting tool	M4-M6 strong	1
1870504	Setting tool	M4-M8	1

MHD-KO Cavity Wall Anchor, Basic Kit



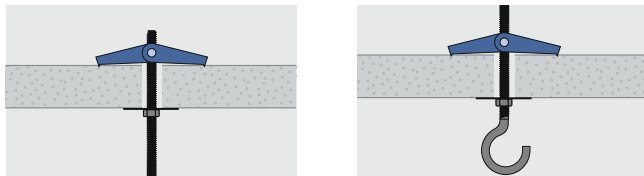
Article code	Content	Price per piece
1870011	MHD-S M4/40	100
	MHD-S M4/52	80
	MHD-S M5/58	50
	MHD-S M5/71	50
	MHD-S M6/58	50
	MHD-S M6/71	50
	Setting tool 502	1

Recommended loads in N (10N $\triangle$ 1kg)

Size	Plasterboard d=12.5 mm	Chipboard d=13 mm	Cement fiber board d=12 mm
M 4	150	200	350
M 5	180	250	400
M 6	200	280	420
M 8	200	300	450

Safety factor 3

MF Cavity Toggle



- Fire resistant
- Easy assembly
- Small hollow wall thickness
- With threaded rod (MF-M) or hook (MF-H)

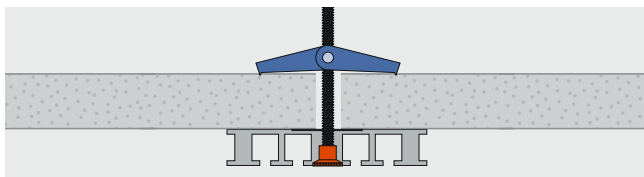
MF-M Cavity Toggle with threaded rod

Article code	Description	Drill $\varnothing$ mm	Usable length mm	Cavity depth min. mm	Length of threaded rod mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1825320	MF-M 3	11	50	35	85	100 ³¹	600 ²²	
1825410	MF-M 4	14	50	35	90	50 ³¹	300 ²²	
1825510	MF-M 5	16	60	46	100	25 ³¹	150 ²²	
1825610	MF-M 6	16	60	46	100	25 ³¹	150 ²²	
1825910	MF-M 10	30	150	90	180	10 ³¹	30 ²²	

MF-H Cavity Toggle with hook

Article code	Description	Drill $\varnothing$ mm	Usable length mm	Cavity depth min. mm	Length of threaded rod mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1825340	MF-H 3	11	30	35	70	50 ³¹	300 ²²	
1825430	MF-H 4	14	30	35	70	50 ³¹	300 ²²	
1825530	MF-H 5	16	30	46	70	25 ³¹	150 ²²	
1825630	MF-H 6	16	50	46	90	25 ³¹	150 ²²	

MF-MM Cavity Toggle



With brass slotted sleeve washer for curtain rail fixings

MF-MM Cavity Toggle

Article code	Description	Drill $\varnothing$ mm	Usable length mm	Cavity depth min. mm	Length of threaded rod mm	Box contents [FS]	Price per 100 pieces
1825330	MF-M3M	11	50	35	85	100 ³¹	
1825420	MF-M4M	14	50	35	90	50 ³¹	

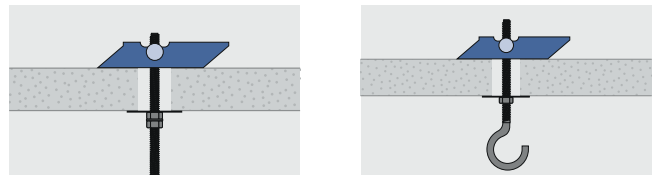
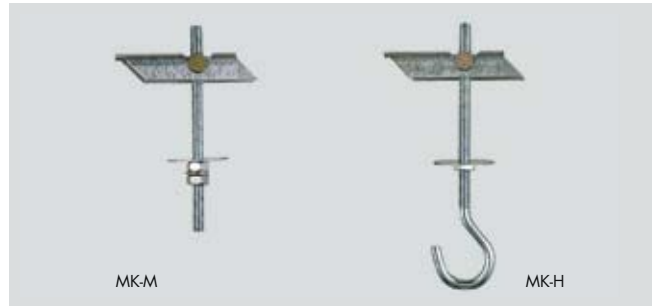
Recommended loads in N (10N $\triangleq$ 1kg)

Size	¹⁾ Plasterboard d=12.5 mm	¹⁾ Chipboard d=13 mm	¹⁾ Cement fiber board d=12 mm	²⁾ MF-H (Hook)
MF-M 3	160	300	330	25
MF-M 4	200	350	570	75
MF-M 5	220	380	620	200
MF-M 6	240	410	680	250

¹⁾ Values are dependent on base materials / Safety factor at least 4

²⁾ Hook-deformation / Safety factor 4

MK Cavity Toggle



- Fire resistant
- For heavy suspended loaded rod
- Hollow wall thickness of 70mm needed
- With threaded rod (MK-M) or hook (MK-H)
- A large expansion area for soft base materials

MK-M Cavity Toggle with threaded rod

Article code	Description	Drill $\varnothing$ mm	Usable length mm	Cavity depth min. mm	Length of threaded rod mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1826510	MK-M 5	15	50	70	100	50 ³¹	150 ²²	
1826610	MK-M 6	18	60	70	100	50 ³¹	150 ²²	
1826810	MK-M 8	20	50	70	100	50 ³¹	150 ²²	
1826910	MK-M 10	30	100	100	170	10 ³¹	30 ²²	

MK-H Cavity Toggle with hook

Article code	Description	Drill $\varnothing$ mm	Usable length mm	Cavity depth min. mm	Length of threaded rod mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1826520	MK-H 5	15	30	70	70	50 ³¹	150 ²²	
1826620	MK-H 6	18	50	70	90	50 ³¹	150 ²²	
1826820	MK-H 8	20	25	70	90	25 ³¹	75 ²²	

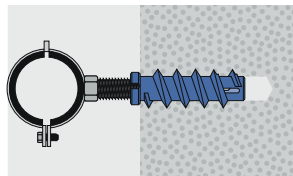
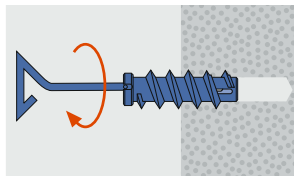
Recommended loads in N (10N $\triangleq$ 1kg)

Size	¹⁾ Plasterboard d=12.5 mm	¹⁾ Chipboard d=13 mm	¹⁾ Cement fiber board d=12 mm	²⁾ MK-H (Hook)
MK-M 5	230	400	650	200
MK-M 6	250	450	700	250
MK-M 8	300	500	750	350
MK-M 10	-	770	920	-

¹⁾ Values are dependent on base materials / Safety factor at least 4

²⁾ Hook-deformation / Safety factor 4

TD Taro-Anchor



- Stress free fixing
- Close edge distance
- Electrical insulated
- Can be fixed with enclosed setting tool

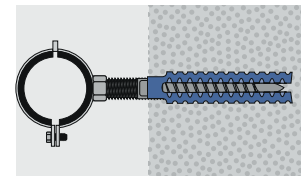
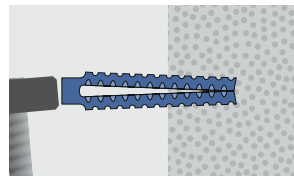
TD Taro-Anchor

Article code	Drill Ø mm	Length mm	Screw	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1800044	8	40	M4	100 ¹¹	2400 ³²	
1800066	10	45	M6	100 ³¹	1200 ³²	
1800088	13	60	M8	100 ⁵¹	600 ³²	

Recommended loads in N (10N $\triangleq$ 1kg)

	Tension	M4	M6	M8	Shear	M4	M6	M8
Plasterboard	100	130	280	120	250	280		
Aerated concrete	100	180	400	120	280	280		

MEF Easy-Fix



- Fixing of pipe systems, water- and gas conduits
- Hammer-in directly into aerated concrete without pre-drilling
- For use with wood-, self-tapping and hexagon screws
- Fire-proof

MEF Easy-Fix

Article code	Drill Ø and length mm	Screw Ø mm	Box contents [FS]	Outer carton [SK]	Price per 100 pieces
1127074	6/32	5-6	100 ⁰¹	2400 ²²	
1127075	8/38	6-8	100 ¹¹	1200 ²²	
1127076	8/60	6-8	100 ³¹	600 ²²	
1127077	10/60	8-10	100 ³¹	600 ²²	

Recommended loads in N (10N $\triangleq$ 1kg)

Size	Drill Ø	Aerated Concrete	Concrete C20/25	Perforated Brick
6/32	7-9	220	420	370
8/38	10-12	400	720	520
8/60	10-12	470	970	550
10/60	12-14	520	1200	620

¹⁾ Separate drill Ø needed to overcome the resistance in the various building materials.
The harder the material, the larger the drill Ø. / Safety factor 3



New drill bit generation

jet-trac
turbo

High drilling capacity, fast drilling progress and enormous heatproof quality are the convincing advantages of the new jet-trac turbo drill bit with SDS plus shank for safe locking in the drill chuck. Ideally for demanding use particularly in the fastening world. Suitable for all common SDS type drilling hammers.

Improved shank design for optimal transfer of energy

Produced from top quality European steel





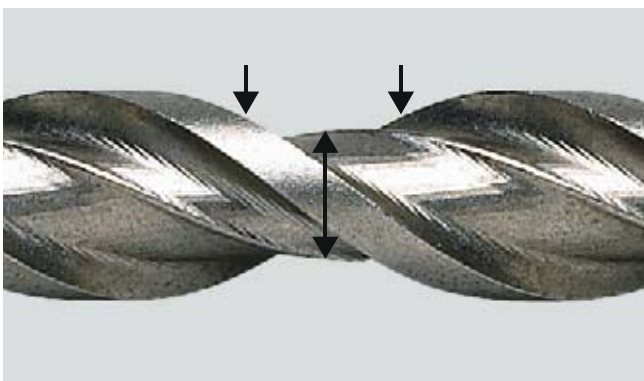
Optimised helix angle flute maximizes both vol and energy

Extra groove increases material removal

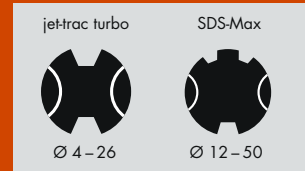
Large radius „X“ Section for maximum material removal

Diag cutting edge, aggressive rake and varying relief angle for high speed drilling

Flat and fully supported head for long life and to maximize support and speed

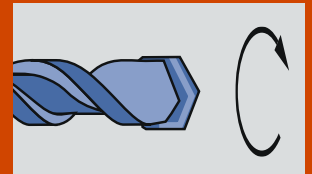


Drill Bit / Chisel



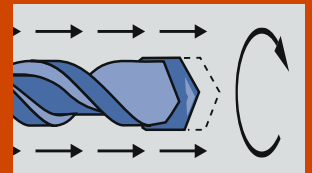
Drill bit jet-trac turbo/SDS-Max

for all rotary-hammers with SDS-PLUS tool-holders.



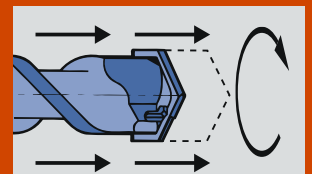
Rotary drilling

MAB Allmat Drill Bit



Impact drilling

Profi Drill Bit
MAB Allmat Drill Bit



Hammer drilling

jet-trac turbo Drill Bit
SDS-Max Drill Bit



jet-trac turbo Drill Bit



Article code	Ø mm	Length mm	Usable length mm	Price per piece
2018041	4	110	50	
2018051	5	110	50	
2018053	5	160	100	
2018056	5	310	230	
2018058	5.5	160	100	
2018061	6	110	50	
2018062	6	160	100	
2018063	6	210	150	
2018064	6	260	200	
2018066	6.5	160	100	
2018067	6.5	210	150	
2018068	6.5	260	200	
2018069	6.5	310	250	
2018071	7	160	100	
2018072	7	210	150	
2018081	8	110	50	
2018082	8	160	100	
2018083	8	210	150	
2018084	8	260	200	
2018085	8	310	250	
2018087	8	460	400	
2018091	9	160	100	
2018101	10	110	50	
2018102	10	160	100	
2018103	10	210	150	
2018104	10	260	200	
2018105	10	310	250	
2018106	10	450	400	
2018107	10	600	550	
2018110	11	160	100	
2018111	11	210	150	
2018121	12	160	100	
2018122	12	210	150	
2018123	12	260	200	
2018124	12	310	250	
2018126	12	450	400	
2018127	12	600	550	
2018129	12	1000	950	
2018132	13	160	100	
2018141	14	160	100	
2018142	14	210	150	
2018143	14	260	200	
2018144	14	310	250	
2018146	14	450	400	
2018147	14	600	550	
2018149	14	1000	950	
2018151	15	160	100	
2018154	15	260	200	
2018161	16	160	100	
2018162	16	210	150	
2018163	16	260	200	
2018166	16	310	250	
2018164	16	450	400	
2018165	16	600	550	
2018168	16	1000	950	
2018180	18	200	150	
2018181	18	250	200	
2018183	18	300	250	
2018185	18	450	400	
2018187	18	600	550	
2018189	18	1000	950	
2018200	20	200	150	
2018201	20	250	200	
2018202	20	300	250	
2018203	20	450	400	
2018206	20	600	550	
2018208	20	1000	950	
2018221	22	250	200	
2018222	22	450	400	
2018226	22	600	550	
2018228	22	1000	950	
2018241	24	250	200	
2018245	24	450	400	
2018251	25	250	200	
2018252	25	450	400	
2018262	26	450	400	
2018263	26	600	500	

jet-trac turbo Drill Bit in Quadro-Box



jet-trac turbo Drill Bit in Quadro-Box

Article code	jet-trac dimension	Box contents	Price per piece
2018801	5.0x110	10	
2018803	5.0x160	10	
2018809	6.0x110	10	
2018810	6.0x160	10	
2018819	8.0x110	10	
2018820	8.0x160	10	
2018821	8.0x210	10	
2018829	10.0x160	10	
2018830	10.0x210	10	
2018831	10.0x260	10	
2018839	12.0x160	10	
2018840	12.0x210	10	
2018841	12.0x260	10	
2018850	14.0x160	5	
2018851	14.0x210	5	
2018852	14.0x260	5	
2018861	16.0x160	5	
2018862	16.0x210	5	
2018863	16.0x260	5	

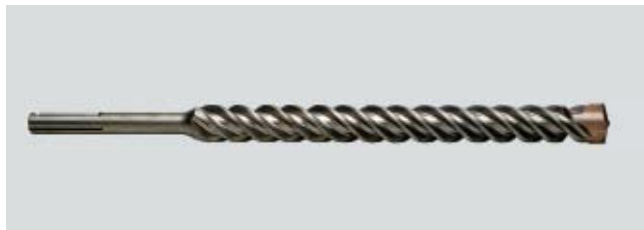
jet-trac turbo Drill Bit in Multi Package



jet-trac turbo Drill Bit in Multi Package

Article code	Ø mm	Length mm	Package contents	Price per piece
2018902	5	110	50 ¹¹	
2018903	5	160	50 ⁴¹	
2018905	6	110	50 ¹¹	
2018906	6	160	50 ⁴¹	
2018907	6	210	50 ⁴¹	
2018909	8	110	50 ¹¹	
2018910	8	160	50 ⁴¹	
2018911	8	210	50 ⁴¹	
2018922	8	260	50 ⁶¹	
2018915	10	160	50 ⁴¹	
2018916	10	210	50 ⁴¹	
2018917	10	260	50 ⁶¹	
2018926	12	160	25 ⁴¹	
2018920	12	210	25 ⁴¹	

SDS-Max Drill Bit

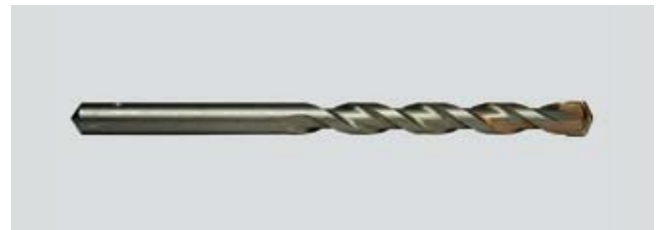


SDS-Max Drill Bit

Article code	Ø mm	Length mm	Usable length mm	Price per piece
¹⁾ 2051220	12	340	200	
¹⁾ 2051240	12	540	400	
¹⁾ 2051255	12	670	550	
¹⁾ 2051420	14	340	200	
¹⁾ 2051440	14	540	400	
¹⁾ 2051520	15	340	200	
¹⁾ 2051540	15	540	400	
2051620	16	340	200	
2051640	16	540	400	
2051820	18	340	200	
2051840	18	540	400	
2052020	20	340	200	
2052040	20	540	400	
2052080	20	920	800	
2052220	22	340	200	
2052240	22	540	400	
2052280	22	920	800	
2052420	24	340	200	
2052440	24	540	400	
2052520	25	340	200	
2052540	25	540	400	
2052580	25	920	800	
2052825	28	380	250	
2052845	28	570	450	
2052855	28	670	550	
2053025	30	380	250	
2053045	30	570	450	
2053225	32	380	250	
2053245	32	570	450	
2053280	32	920	800	
2053525	35	380	250	
2053545	35	570	450	
2053555	35	670	550	
2053825	38	380	250	
2053845	38	570	450	
2054025	40	380	250	
2054045	40	570	400	
2054080	40	920	800	
2054545	45	570	450	
2055045	50	570	450	

¹⁾ 2-cutters

Profi Drill Bit



Profi Drill Bit

Article code	Ø mm	Length mm	Usable length mm	Price per piece
2030301	3	70	40	
2030401	4	75	40	
2030501	5	85	50	
2030502	5	150	90	
2030551	5.5	85	50	
2030552	5.5	150	90	
2030601	6	100	60	
2030602	6	150	90	
2030651	6.5	100	60	
2030652	6.5	150	90	
2030653	6.5	400	350	
2030701	7	100	60	
2030702	7	150	90	
2030801	8	120	80	
2030802	8	200	150	
2030803	8	400	350	
2030901	9	120	80	
2031001	10	120	80	
2031002	10	200	150	
2031003	10	300	250	
2031004	10	400	350	
2031101	11	150	90	
2031201	12	150	90	
2031202	12	200	150	
2031301	13	150	90	
2031401	14	150	90	
2031402	14	300	250	
2031501	15	160	100	
2031601	16	160	100	
2031801	18	160	100	
2032001	20	160	100	
2032002	20	400	350	
2032201	22	400	350	

MAB Allmat Drill Bit



- Particularly suitable for setting nylon plugs in hollow brick
- Easy drilling also in smooth and hard surfaces

MAB Allmat Drill Bit

Article code	Ø mm	Length mm	Usable length mm	Price per piece
2020401	4	85	45	
2020501	5	95	50	
2020502	5	150	110	
2020601	6	100	60	
2020602	6	150	110	
2020801	8	120	80	
2020802	8	200	135	
2021001	10	120	80	
2021002	10	200	135	

MPM SDS-Plus Chisel



MPM SDS-Plus Chisel

Article code	Description	Length mm	Width mm	Price per piece
4200001	Point Chisel	250	-	
4200002	Flat Chisel	250	20	
4200003	Spade Chisel	250	40	
4200004	Hollow Chisel	250	22	
4200016	Tile Chisel	250	40	

MXM SDS-Max Chisel



MXM SDS-Max Chisel

Article code	Description	Length mm	Width mm	Price per piece
4200011	Point Chisel	280	-	
4200012	Point Chisel	400	-	
4200013	Point Chisel	600	-	
4200061	Flat Chisel	280	25	
4200062	Flat Chisel	400	25	
4200063	Flat Chisel	600	25	
4200064	Spade Chisel	400	50	
4200065	Spade Chisel	300	80	
4200066	Spade Chisel	350	115	



MXM SDS-Max Chisel

Article code	Description	Length mm	Width mm	Price per piece
4200008	Channel Chisel	300	32	
4200009	Wing Chisel	380	35	
4200014	Slotting Chisel	300	32	
4200015	Seam tool	300	10	
4200005	Hollow Chisel	300	26	

MHK Hammer Core Bit with Ratio thread



- Ratio thread
- Double drill speed (in mm/min.) compared to conventional core bits
- Equipped with new carbide cutting edge geometry

MHK Hammer Core Bit with Ratio thread

Article code	Ø mm	Length mm	Number of teeth	Price per piece
2012040	40	105	6	
2012050	50	105	6	
2012066	65	105	6	
2012080	80	105	8	
2012090	90	105	8	
2012100	100	105	10	
2012125	125	105	12	
2012150	150	105	15	

MZB Centre Drill Ratio



MZB Centre Drill Ratio

Article code	Description	Price per piece
4201011	Centre drill	

MKR Adapter Ratio



MKR Adapter Ratio

Article code	Description	Length mm	Price per piece
4201001	SDS-Plus	108	
4201002	SDS-Max	186	
4201003	Keyed shaft	180	

MVR Elongation Ratio

Article code	Description	Length mm	Price per piece
4201021	Elongation 320/280		

HSS Drill DIN 338



HSS Drill DIN 338

Article code	Ø mm	Length mm	Box contents	Price per piece
2070102	1.0	34	10	
2070152	1.5	40	10	
2070202	2.0	49	10	
2070222	2.2	53	10	
2070252	2.5	57	10	
2070282	2.8	61	10	
2070302	3.0	61	10	
2070322	3.2	65	10	
2070332	3.3	65	10	
2070352	3.5	70	10	
2070382	3.8	75	10	
2070402	4.0	75	10	
2070412	4.1	75	10	
2070422	4.2	75	10	
2070432	4.3	80	10	
2070452	4.5	80	10	
2070482	4.8	86	10	
2070492	4.9	86	10	
2070502	5.0	86	10	
2070512	5.1	86	10	
2070522	5.2	86	10	
2070552	5.5	93	10	
2070582	5.8	93	10	
2070602	6.0	93	10	
2070622	6.2	101	10	
2070652	6.5	101	10	
2070682	6.8	109	10	
2070702	7.0	109	10	
2070752	7.5	109	10	
2070802	8.0	117	10	
2070852	8.5	117	10	
2070902	9.0	125	10	
2070952	9.5	125	10	
2071002	10.0	133	10	
2071052	10.5	133	5	
2071102	11.0	142	5	
2071152	11.5	142	5	
2071202	12.0	151	5	
2071252	12.5	151	5	
2071302	13.0	151	5	
2071352	13.5	160	5	
2071402	14.0	160	5	
2071452	14.5	169	5	
2071502	15.0	169	5	
2071602	16.0	178	5	
2071652	16.5	184	5	
2071702	17.0	184	5	
2071802	18.0	191	5	
2071852	18.5	198	5	
2071902	19.0	198	5	

HSS-D Drill, double sided



HSS-D drill, double sided, ground

Article code	Ø mm	Length mm	Flute length mm	Price per piece
2022632	3.2	49	11	
2022633	3.3	49	11	
2022635	3.5	52	14	
2022641	4.1	55	14	
2022642	4.2	55	14	
2022648	4.8	62	17	
2022650	5.0	62	17	
2022652	5.2	62	17	

HSS-BX DIN 338 in metal container



HSS-BX DIN 338 in metal container

Article code	Pieces per set	Ø mm	Price per set
2079001	19	1 – 10 à 0.5	
2079002	25	1 – 13 à 0.5	

BIT Screwdriver



BIT Pozidrive

Article code	Article code	Article code	Article code	Length mm	Price per piece	Price per piece
PZ 1	PZ 2	PZ 3	PZ 4		PZ 1 / 2 / 3	PZ 4
4001005	4001006	4001007	4001008	25		
4001055	4001056	4001057	4001058	50		
4001105	4001106	4001107	-	70		



BIT Phillips

Article code	Article code	Article code	Article code	Length mm	Price per piece	Price per piece
PH 1	PH 2	PH 3	PH 4		PH 1 / 2 / 3	PH 4
4001001	4001002	4001003	4001004	25		
4001051	4001052	4001053	4001054	50		
4001101	4001102	4001103	-	70		



BIT Torx

Article code	Article code	Article code	Article code	Length mm	Price per piece
T10	T15	T20	T25		
4001032	4001033	4001034	4001035	25	
4001042	4001043	4001044	4001045	50	
4001132	4001133	4001134	4001135	70	

Article code	Article code	Article code	Length mm	Price per piece
T27	T30	T40		
4001036	4001037	4001038	25	
4001046	4001047	4001048	50	
4001136	4001137	4001138	70	

BIT Screwdriver



BIT Slotted

Article code	Article code	Article code	Article code	Article code	Article code	Length mm	Price per piece
0.5x3.0	0.6x3.5	0.8x4.0	1.0x5.5	1.2x6.5	1.6x8.0		
-	4001009	4001010	-	4001011	4001012	25	
4001059	4001060	4001061	4001062	4001063	4001064	50	

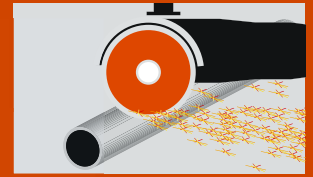
MMH Magnetic support



MMH Magnetic support

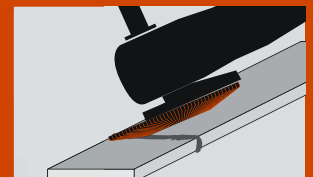
Article code	Description	Price per piece
4001013	Adapter 1/4" / 1/4"	
4001016	Adapter SDS-Plus 1/4"	

Cutting disc



Rough cutting

TRS Cutting-off disc



Finishing

FRS Flap disc



Diamond cutting

DS 500 Diamond blade
DS 1000 General purpose
cutting disc
DD 500 Diamond blade



Grinding and polishing

TDS Diamond grinding disc

TRS Cutting-off Disc steel/inox



- Cutting-off discs ultra thin
- Steel / stainless steel
- Easy and comfortable cutting
- Long wheel life
- Burr-free cutting result
- Made of precious corundum
- Free of iron, sulphur and chlorine

Article code	Dimension mm	Shape	Box contents	Price per piece
2302111	115x1.0x22	form 41	25	
2302121	125x1.0x22	form 41	25	
2302184	180x1.6x22	form 41	25	
2302185	230x1.9x22	form 41	25	

TRS Cutting-off Disc steel



- Steel
- General purpose applications
- For an optimal ratio between cutting performance and disc life
- Made of normal corundum

Article code	Dimension mm	Shape	Box contents	Price per piece
2302112	115x2.5x22	form 41	25	
2302122	125x2.5x22	form 41	25	
2302232	230x3.0x22	form 41	25	

FRS Flap Disc



- For metal, stone, wood and plastics
- Made of zirconium grit with fibreglass backing and zirconium flaps for deburring, dressing, rust removal, edge dressing, surface dressing, welds. For fine and rough finishing. Highest material removal, longest service life and constant performance. Low noise and vibration.

Article code	Dimension mm	Shape	Box contents	Price per piece
2309540	115x22/Grit 40	angled	10	
2309560	115x22/Grit 60	angled	10	
2309580	115x22/Grit 80	angled	10	
2309640	125x22/Grit 40	angled	10	
2309660	125x22/Grit 60	angled	10	
2309680	125x22/Grit 80	angled	10	

DS 500 Diamond Blade



- Laser welded diamond blade, segmented
- Concrete and reinforced concrete, concrete joints, concrete roof tiles, clay tiles and tubes, red bricks, exposed aggregates concrete

Article code	Dimension mm	Width of layer in mm	Height of layer in mm	Box contents	Price per piece
2305112	115x22	2.0	7	1	
2305122	125x22	2.0	7	1	
2305232	230x22	2.4	7	1	

DS 1000 General Purpose Cutting Disc



- Laser welded diamond blade, segmented
- Versatility: For a wider range of materials, from reinforced concrete and building materials to asphalt, though granite and steel (not recommended for steel parts thicker than 5mm)
- Smooth cut without vibrations, long life time, good cutting speed
- Steel center cooling thanks to special holes

Article code	Dimension mm	Width of layer in mm	Height of layer in mm	Box contents	Price per piece
2309532	230x22	2.5	8	1	

DD 500 Diamond Blade



- Sintered diamond blade, continuous rim for clean cut
- Wall and floor tiles, marble, glazed ceramic products
- With bronze bond for professional applications

Article code	Dimension mm	Width of layer in mm	Height of layer in mm	Box contents	Price per piece
2308112	115x22	1.6	5	1	

TDS Diamond Grinding Disc



- For surface treatment of concrete, natural and artificial stone, cement tiles
- Dry and wet

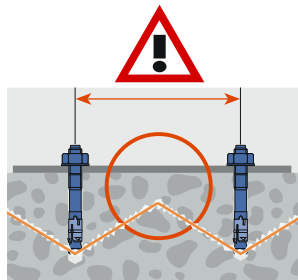
Article code	Ø mm	Shape	Box contents	Price per piece
2309510	100	rough	1	
2309530	100	double	1	
2309531	125	double	1	

Dictionary Fastening Technique

1

Spacing distance

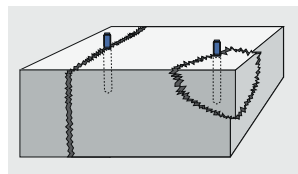
Consideration to the minimum distances required when setting groups of fixings to avoid failure of the building material. A factor of 3 times the setting depth must be used to achieve maximum loads.



2

Edge distance

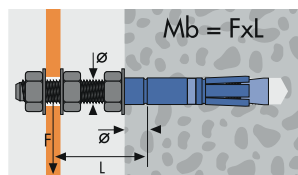
Consideration to the minimum edge distances to avoid failure of the building material.



3

Bending moment M

For some applications anchors are subjected to bending moments. For example at a space assembly fixing.



4

Screw types



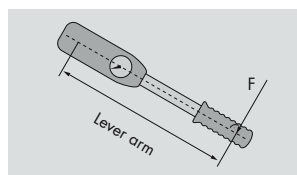
- ① Hexagon
- ② PZ2/3
- ③ T30/40
- ④ Hexagon, T40, collar

5

Torque

The anchor should be set using the recommended torque settings.

Force x Lever arm, measured at fulcrum, Nm = Newton Meter



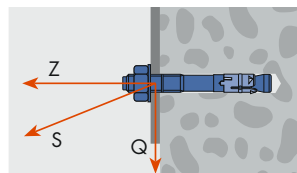
Installation moment

When the anchor is set using the correct torque a guaranteed fixing can be achieved.

6

Load directions

Tension (Z), Shear (Q), Combined (S)



7

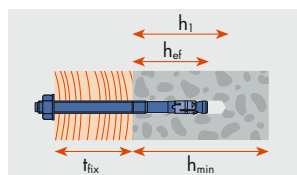
Force

The force is indicated in Kilo-Newton (kN) / Newton (N)

1 kN = 1000 N = 100 dN $\approx$ 100 kg
10 N = 1 dN $\approx$ 1 kg

8

Setting data



hef: Setting depth
h1: Drilling depth
hmin: Thickness of foundation
tfix: Usable length

9

Breaking load

Failure of fixing (Pt. 15)

10

Recommended loads

The indicated loads are index values for mainly permanent loads, wherein an adequate safety factor is considered. For changing loads the suggested loads have to be reduced upon the recognizable danger. The load was achieved under optimum laboratory conditions without any influence of edge and spacing distances.

11

Load classification

Static loads



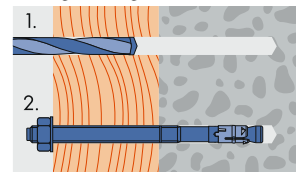
Dynamic loads



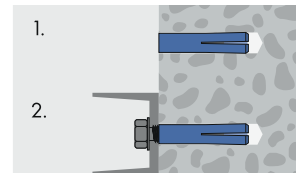
12

Methods of application

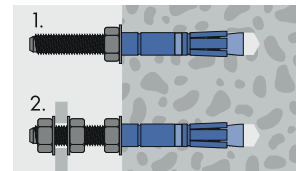
through fixing



pre-assembly fixing



Distance fixing



13

Drilling process

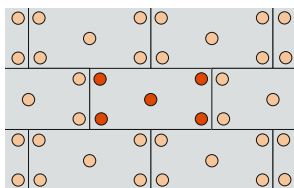
– **Rotary drilling** with wood drills and carbide drills: Drilling without percussion. Application: wood, plywood, particle board, wood fiberboard, gypsum plasterboard, fibercementboard, aerated concrete, perforated brick.

– **Percussion drilling** with carbide drills: Drilling at high speed with fast, short actions. Application: brickwork made of solid blocks.

– **Hammer drilling** with SDS-drills: Drilling at low speed with slow, strong actions. Application: concrete and natural stone.

14

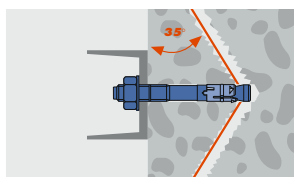
Setting order of insulation fixings



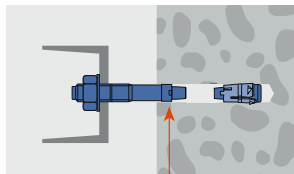
15

Modes of failure

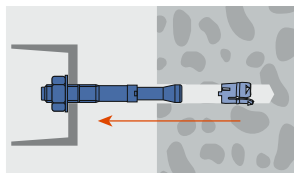
Concrete failure



Steel failure



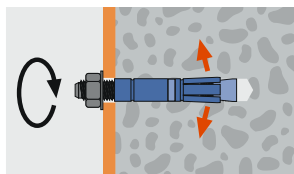
Anchor failure



16

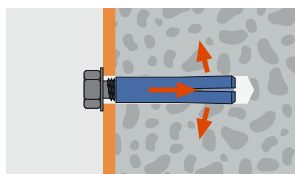
Different anchors types

Torque controlled expansion anchors
(e.g. m2, m3, HL)



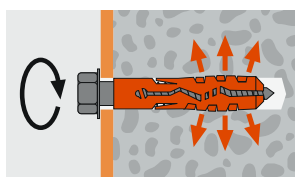
Expansion achieved by application of torque.

Hammer set expansion anchor
(e.g. ESA)



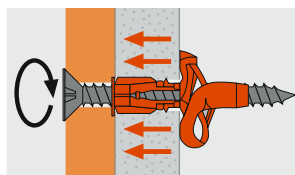
Expansion is achieved by hammering a cone in the body of the anchor.

Nylon plug (e.g. MN, MQ, MU, MNA, ML, MB, MBR, MDD)



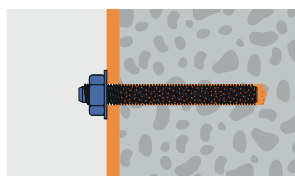
Performance is achieved by the introduction of an expansion component which is screwed or driven into the anchor body. The anchor body is thus firmly blocked against the sides of the drilled hole.

Cavity wall anchor
(e.g. MU, MHD-S)



The head of the plug is pushed down onto the base material with the screw, and the anchor body is drawn against the interior of the base material by deformation.

Resin Capsule
(z.B. MIT, MVA, MSP)



The anchor consists of a fixing element (male or female stud) and a synthetic-based mortar. Manufactured from 2 components, hardener and resin which when mixed together create the chemical reaction,

which hardens to create the fixing by bonding to the base material.

Adhesive anchors do not generate stress in the building material.

17

Minimum setting depth

The indicated setting depths h_{ef} are minimum setting depth and may not be under-run. Non-bearing layers as plaster, flagstones, insulating materials etc. do not rank among setting depths.

18

Fire protection



F90

Assemblies, for which demands of fire-proof duration are required, mungo offers a considerable range of metal-anchors. (marked with sign above)

Mungo frame fixings
MB-S / MBR-S / MBR-X

These nylon plugs – in connection with mungo Safety Screws – are approved for fire-resistance F90!

MB-S / MBR-S / MBR-X are permitted for assemblies of curtain walls without any restriction. The expansion part in the building material remains fire-resistant at least for 90 minutes.

19

Corrosion protection



Anchors made from **galvanic zinc coated steel** are used for fixings of fixtures in closed rooms, with the exception of steeping tanks. The thickness of the zinc coating is 5 microns. In steeping tanks and outdoors mainly in industrial atmosphere and sea proximity fixings should be used made from stainless steel **A4 (1.4401 or 1.4571)**.

Special coating:
Stud anchor m3 is provided with a highly corrosion-resistant **Dacromet-coating**.

20

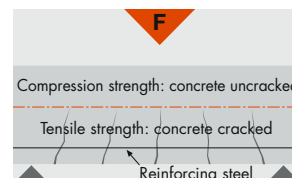
Facade fixing

To calculate the number of anchors required to carry the weight of the facade.

1. Calculate the number of anchors required for wind loads.
2. Calculate the number of anchors required to carry the weight of the facade.
3. The larger value from 1 and 2 give the required number of anchors.

21

Concrete uncracked / cracked





Modular packing system - we fit to each other

The majority of our products are packed in only 9 different folding boxes.

You can find an overview of the possible combinations on the folding page in the catalogue, all packing quantities are coded accordingly so that the dimensions and quantities can easily be determined.

The advantages are as follows:

- Optimised appearance by uniform boxes
- Larger stability due to new construction
- Co-ordinated packing on all our products
- Folding boxes are always compatible with at least two larger outer cartons



