

fischer 

Retail Product Catalogue

Excellence Through Innovation
and Reliability...



A BRAND AND ITS PROMISE
TO PERFORM



Marc-Sven Mengis

Chairman of the Management Board
of the fischer group of Companies

Dear Partner,

There are many trends affecting the fixings industry: the growing number of construction materials, the joining of different materials, increasing requirements for design and execution, and digitalisation. As one of the world's leading specialists in fixing systems, we set the direction and shape the market. In the process, we provide you with the best and most cost-effective solutions for your fixing projects, quickly and flexibly. We are also a reliable partner for you when it comes to individual requests and customised solutions.

Our product portfolio includes chemical systems, steel anchors and plastic fixings. We also provide a wide range of screws, drill bits, adhesives, sealants, foams and product ranges tailored to specific applications, such as facade and thermal insulation systems, or the installation of sanitary, heating, ventilation and electrical systems. We attach high value to quality, safety and easy installation.

Our goal is to be the best in our respective industries with regard to both our products and our services. With our own national subsidiaries, sales partners, qualified sales representatives and engineers providing technical advice, we have a particularly dense network for providing individual consultation and support throughout the world. We are also amongst the pioneers in the industry in the digital environment and provide modern software tools, such as the design and construction software FIXPERIENCE and the Product Finder apps for end users and pros.

Our comprehensive range of training courses enables us to keep you up to date with regards to fixing solutions and regulations – at the fischer AKADEMIE, in more than 70 competence centers throughout Germany, on site at the user's premises, and in other various locations in Germany and Europe with the help of the fischer Tour Truck.

We hope you enjoy discovering and using our products.

Marc-Sven Mengis
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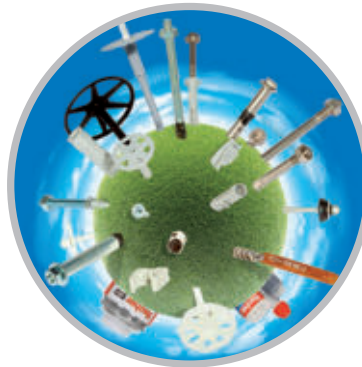


fischer HQ, Germany

For over 70 years, fischer has garnered a widespread reputation for designing, engineering and building innovative fixing solutions. Since the company was established in 1948, it has been driven by a constant will to change and strive for better solutions through innovation. With 49 subsidiaries across 37 countries, production units in 7 countries, over 5,200 employees and 1,500 industrial property international rights, fischer group of companies is currently considered one of the most innovative companies worldwide.

Facts & Figures

- **Turnover**
887 Million Euros
(end of 2020)
- **Production**
10 production units
across 7 countries
- **Intellectual Property Rights**
Over 1,500
- **Workforce**
5,200+ worldwide
(end of 2020)
- **250+ regional**
(end of 2020)
- **Export**
To over 9 countries
in Middle East & Africa
- **Regional Presence**
Over 12 local offices and
warehouses spread across
the region



Products

We offer a wide range of fastening solutions from the fields of chemical resins, steel and nylon, covering a very broad spectrum of applications in the construction industry with our outstanding product range. All of these are based on our know-how and experience gained over 70 years in the anchoring technology.



Design Software

Our new modular design software suite FIXPERIENCE offers the ability to create quick and reliable designs along with the best processing comfort. The relevant design standards (ETAG 001 and EC2, as well as EC1, EC3 and EC5), national application documents and an extensive choice of all conventional load and measurement units make the software highly suitable for international use.

With a constant will to grow, fischer has constantly been expanding its horizons in the Middle East and African markets. Today, the Middle East operations, fischer MEA is headquartered in the United Arab Emirates has offices in Saudi Arabia, Bahrain, Kuwait, Oman, Ethiopia.

Kenya, Tanzania and Pakistan with deep footprints in all major projects and trade line businesses across these regions.



fischer Middle East & Africa, JAFZA, UAE



Research & Development

We have our own research and development teams for chemical resins, steel and nylon. This allows our own research results, market trends and customer requirements to be quickly embraced and converted into market-ready products. In addition to the capability and quality of our products, safety and quick installation is also a vital aspect. This pays off by saving you time, money and labour.



Production

fischer is a globally oriented company with its own development and production, providing its products and services to private and professional customers around the world. As a certified DIN EN ISO 9001 company and through the fischer Process System (FPS), we continuously optimise our processes and adapt flexibly to customer requirements, ensuring highly consistent level of quality. The production locations are in Argentina, Brazil, China, Germany (Waldachtal, Horb, Emmendingen, Denzlingen), Italy, the Czech Republic and the USA.



Customer Advice

Our technical support service provides cost-effective and legally compliant advices to all queries relating to fastening systems. fischer provides a range of services that you can access including installation demos, pull-out tests, individual designs, comparative calculations and the development of specialised solutions. Our dedicated engineers around the world support you with their concentrated fastening expertise and we're happy to give you advice at our fischer Academy, at your office or even at the project site.

Fixing Systems



The fixing systems is the core area and also the largest business field for fischer. With more than 14,000 articles, we offer an extensive range of fixing solutions with standard products, project based solutions and specialised customer-specific developments, we orient ourselves to the requirements of our customers and as a result, we are one of the few globally leading providers of fixing solutions in the construction industry.

Automotive Systems

fischer Automotive Systems, which was initiated in 1982 specialises in the manufacture of internal cabin components such as air vents, cup holders, storage compartments and other multi-functional dashboard accessories for top automotive brands worldwide.



fischertechnik



fischertechnik, initiated in 1965 is a specialised toys division which is well known worldwide for their robotics and DIY kits. They are also commonly utilised in schools and universities for nurturing the curiosity and creativity among children of all age groups. Another well-known concept of fischertechnik has been the fischer TiP, an ecological & creative material made from potato starch, making it extremely safe and fun for children.

fischer Consulting

fischer Consulting with the know-how of the fischer process system, offers its clients the opportunity to create lean and efficient processes. The system focuses on avoiding any kind of waste in the processes. Both for medium sized companies and for international conglomerates, fischer Consulting provides local support for continuous improvement.



LNT Automation



LNT was taken over by fischer Group of Companies in 2016, thereby expanding their activities in the field of electronic devices. This new division of fischer develops and manufactures custom electronic solutions. LNT also deals with development, production and distribution of custom and so-called capacitive touch systems such as multi-touch solutions made of glass, the corresponding controllers and other electronic components all in-house.



fischer Trade Specialist is a widely known division under fischer Innovative Solutions that deals through two types of sales channels: Trade Specialists & Do-It-Yourself (DIY). fischer's Trade Specialist's assortment of products include nylon/steel anchors, chemical fixings, abrasives, drill bits, sealants, foams, adhesives, zinc sprays and more.

Under the DIY section, fischer offers a wide assortment of blister cards for nylon, mechanical, chemical and cavity fixing range of products.

Anchors

fischer Trade Division offers all types of anchors like nylon, mechanical and chemical including S-Plug, FWA, FWB, GM, EAN, RM, FTR to their customers. We offer the complete concept of fixing solutions covering all the applications for all types of base materials.

Screws

fischer offers a wide range of screws for the entire wood segment including chipboard screws, partially and fully threaded screws for constructive wood applications and special screws e.g. for decking. The Power-Fast technology stands for fischer's own combination of properties which makes these screws the best choice. Fast to process, safe to use and gentle on the material.

Foams and Sealants

fischer offers impressive construction chemical products such as 1K and 2K polyurethane foams for filling cavities and insulating window and door frames. fischer sealants are ideally suited to connect the joints through expansion. This guarantees long-lasting joints with antifungal properties to ensure a clean look over the long term.

Adhesives and Zinc Spray

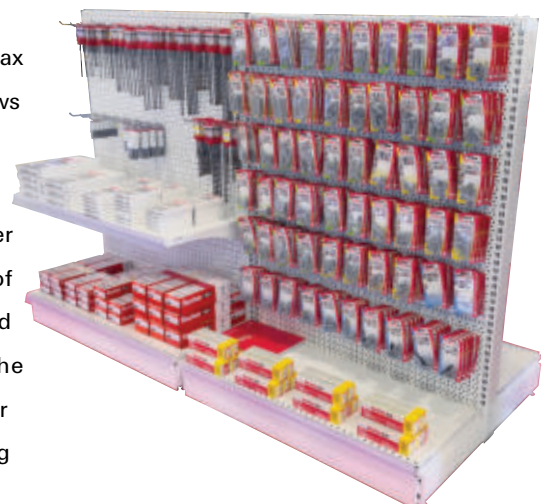
fischer offers a wide range of flexible adhesives for numerous applications for indoor and outdoor use. fischer's highly innovative products allow for vibration dampening and stress compensating connections for even the most demanding applications. Our Express Cement is a clever solution with its ready-made cement mixture from the injection cartridge for repairs to joints and damaged areas. Likewise, fischer's zinc spray is also well known for its ability to protect the metal from corrosion in the long term.

Drill Bits and Chisels

fischer offers three different types of drill bits - HSS Drill Bits for metal, SDS+ & Max and Chisels for concrete. fischer's highly advanced engineering expertise allows these products a long life and are safe to use.

Abrasives

fischer also offers a wide range of grinding and cutting discs that last longer and enable you to work quickly with less effort. The successful combination of a long life and good performance enables effortless cutting. fischer's diamond grinding heads are the ideal choice for hard surfaces such as granite. The continuous turbo grinding ring produces fine grinding results suitable for quick grinding on thick concrete layers. fischer's flap disc provides outstanding finish on metal and stainless products.



Introduction

A note from Mr. Marc-Sven Mengis	3
This is fischer - Brief Introduction	4
fischer - World of Innovation	6
fischer Trade Division	7

High Performance Mechanical Fixing

Drop-in Anchor EA-N	12
Rock Fixing Anchor GM	14
Wedge Anchor FWA	16
Shield Anchor FWB	18

Chemical Fixing

Resin Capsule RM II with Threaded Rod FTR	21
Universal Chemical FIS VS 300 T	24
Polyester Injection Mortar FIS P Plus	29
Epoxy Mortar FIS EB	32
Cleaning Accessories	35

Foams, Sealants and Zinc Sprays

Antifungal General Purpose - Silicone DMS	37
Antifungal General Purpose Silicone DMS, Premium	39
PU Foam Spray (B3)	41
PU Foam Spray (B3) - Economical	42
Zinc Alu Spray	43
Zinc Spray Bright Grade	44

General Fixing

DUOPOWER	46
Nylon Toggle DUOTEC	48
Nylon S Plug	51
Hammerfix N	53

Cavity Fixing

Plasterboard Fixing DUOBLADE	56
Shortest Nylon Plug GK	58
Advanced Plasterboard Fixing GKM	60
Metal Cavity Fixing HM	62

Insulation Fixing

Insulation Fixing DIPK	65
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Sanitary Fixing

Sanitary Fixing WB 5N	68
Sanitary Fixing WB2	69

Drill Bits

SDS Plus Drill Bit II Pointer - Economical	71
Chisel - SDS Plus & Max	73
High Speed Steel Drill Bits - HSS	74

Abrasives

fischer Abrasives - General Information	76
Metal Grinding Disc	77
Metal Cutting Disc	78
Metal Cutting Disc for Chop Saw Machines	79
Ultra-Thin Stainless-Steel Cutting Disc	80
Flap Disc - Aluminium Oxide	81
Flap Disc - Zirconia Inox	82

Powder Actuated Tools - P.A.T

Power Drive F35	84
Power Drive F35 - Spare Parts	85
P.A.T - Annexure	86

Approvals & Certifications	87
Innovative Design Software Suite	88
Services Beyond Products	88
Seminars & Training	89

fischer Worldwide Presence

Worldwide Presence	90
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Drop-In Anchor in Zinc-Plated Steel Suitable for Hammerset Installation



Pipe Supports



Guard Rails

ADVANTAGES

- Hammer-set anchor with internal thread for prepositioned installation.
- Suitable for all screws or studs with metric threads.
- The EMS machine setting tool allows for effortless installation, particularly in the case of series installations.
- Surface-flush anchoring allows the attached item to be removed and refitted several times.

APPLICATIONS

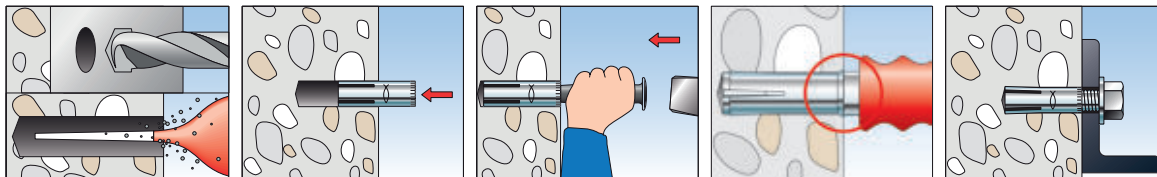
- Pipelines and ventilation ducts
- Shuttering props
- Air conditioner devices
- Diamond core drilled holes
- Cable conduits and wires
- Gratings
- Steel constructions
- Machines
- Sprinkler systems
- Consoles

BUILDING MATERIALS

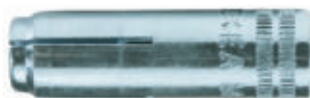


Concrete

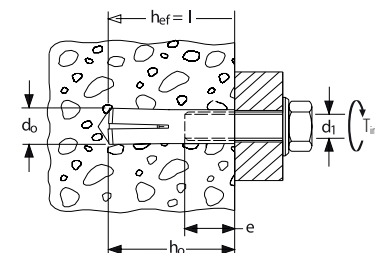
INSTALLATION - PRE-POSITIONED



TECHNICAL DATA



Drop-in anchor EA-N



Item	Art-No.	Thread d_1 M (mm)	Nominal drill-Ø d_0 (mm)	Min. drill depth at prior insertion mode h_0 (mm)	Min. anchorage depth h_{ef} (mm)	Min. bolt penetration e_1 (mm)	Max. bolt penetration e_2 (mm)	Total length l (mm)	Installation torque T_{inst} (Nm)	Related setting tool (mm)	Qty. per box (pcs)
Zinc-plated steel											
EA M6 N	535962	6	8	25	25	6	12	25	4	504573 EA-ST 6	100
EA M8 N	535963	8	10	30	30	8	13	30	8	504576 EA-ST 8	100
EA M10 N	535964	10	12	40	40	10	17	40	15	504584 EA-ST 10	50
EA M12 N	535965	12	15	50	50	12	22	50	35	504585 EA-ST 12	50
EA M16 N	535966	16	20	65	65	16	27	65	60	504586 EA-ST 16	25
EA M20 N	535967	20	25	80	80	20	34	80	120	504587 EA-ST 20	25

ACCESORIES



Setting tool **EA-ST**

Item	Art-No.	Fits (mm)	Sales Unit (pcs)
EA-ST 6	504573⁽¹⁾	EA M6 N	1
EA-ST 8	504576⁽¹⁾	EA M8 N	1
EA-ST 10	504584⁽¹⁾	EA M10 N	1
EA-ST 12	504585⁽¹⁾	EA M12 N	1
EA-ST 16	504586⁽¹⁾	EA M16 N	1
EA-ST 20	504587⁽¹⁾	EA M20 N	1

(1) Without embossing tool

LOADS

Design ²⁾and recommended ¹⁾resistance for a single anchor.

Anchor size			EA M6 N	EA M8 N	EA M10 N	EA M12 N	EA M16 N	EA M20 N
Recommended Tensile Load C20/25	N _{rec}	(kN)	1.5	2.1	3.3	4.8	7	9.5
Design Tensile Load C20/25	N _{rec}	(kN)	2.1	2.9	4.6	6.7	9.8	13.3
Maximum Torque	T _{int}	(Nm)	4	8	15	35	60	120

(1)The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of L= 1,4 are considered.

(2)The required safety factor for material is considered.

Design ²⁾and Recommended Resistance ¹⁾For Multiple Fixings with Large Spacing & Edge Distances

Anchor size			EA M6 N	EA M8 N	EA M10 N	EA M12 N
Recommended Tensile Load C20/25	N _{rec}	(kN)	0.5	0.5	0.5	0.5
Design Tensile Load C20/25	N _{rec}	(kN)	0.7	0.7	0.7	0.7
Maximum Torque	T _{int}	(Nm)	4	8	15	35

(1)The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of L= 1,4 are considered.

(2)The required safety factor for material is considered.

Cast Iron Anchor for Pre-Positoned Installation



Beam Fixing



Base Plates

ADVANTAGES

- The cast iron shields are shaped specifically to provide maximum grip even on rock and natural stone.
- The four part expansion sleeve allows to achieve high loads and to reduce the influence of the drill hole quality.
- The particularly strong sleeve allows for secure fixings even on low quality concrete, solid masonry and compact materials.
- The harmonic steel spring maximizes expansion and prevents anchor rotation into the drill hole.

APPLICATIONS

- Beam fixing
- Base Plates
- Railings
- Stay wires
- Steel constructions

BUILDING MATERIALS



Concrete



Rock

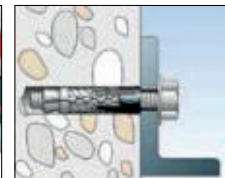
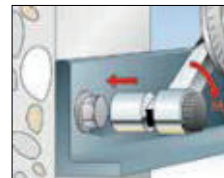
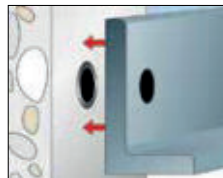
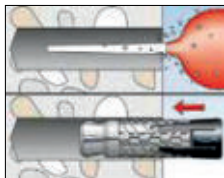


Natural Stone
with dense structure



Solid Block

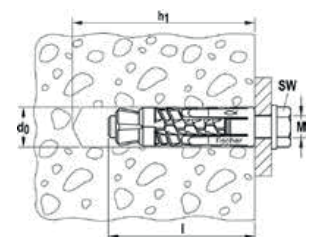
INSTALLATION - PRE-POSITIONED



TECHNICAL DATA



Rock anchor GM



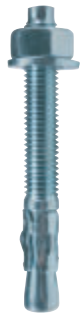
Item	Art.No.	Drill hole diameter d_0 (mm)	Min. drill hole depth h_1 (mm)	Anchor length l (mm)	Min. bolt penetration M (mm)	Min. bolt penetration l_{Emin} (mm)	Qty. per box (pcs)
GM 6	500901	12	60	47	M6	47	50
GM 8	500902	15	70	50	M8	50	50
GM 10	500903	18	80	60	M10	60	25
GM 12	500904	22	100	75	M12	75	20
GM 16	500905	30	130	102	M16	102	10
GM 20	500906	36	170	135	M20	135	5

LOADS

		Non-cracked concrete ²⁾					
Type		GM M6	GM M8	GM M10	GM M12	GM M16	GM M20
Effective anchorage depth	h_{ef} (mm)	47	50	60	75	102	135
Min. member thickness	h_{min} (mm)	100	100	100	125	175	230
Installation torque	T_{inst} (Nm)	10	25	45	75	120	230
Recommended load ¹⁾	F_{rec} (kN)	4.0	4.7	5.9	8.4	13.4	20.7
Min. spacing	s_{min} (mm)	80	80	80	125	170	230
Min. edge distance	c_{min} (mm)	50	50	50	80	105	140

Rock fixing anchor GM - Highest recommended loads for single anchor¹⁾ in non-cracked normal concrete (concrete compression zone) of strength C/20/25²⁾

Wedge Anchor (Bolt Anchor) in Zinc-Plated Steel and Sheradised Steel with A2 Clip



FWA
Zinc-plated



FWA
Sheradised



Column Bases



Stormwater Overflow Tank Manholes

ADVANTAGES

- Anchor bolt for push-through installation.
- When the hexagon nut is tightened, the cone bolt is pulled into the expansion clip and expands it against the wall of the hole.
- Thread diameter ranges from 6mm to 24mm.
- Comes in two variations - Zinc-plated version for indoor and Sheradised version for temporary outdoor applications.

APPLICATIONS

- Column bases
- Stormwater overflow tank manholes
- Ladders
- Steel constructions
- Guard rails
- Consoles
- Cable conduits
- Staircases
- Gates
- Facades

BUILDING MATERIALS

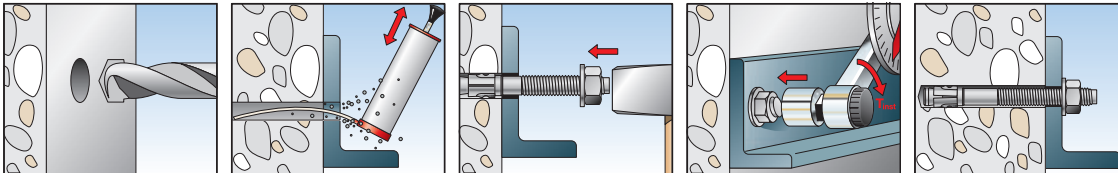


Concrete

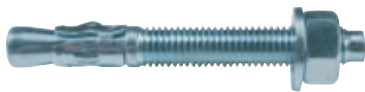


Natural Stone
with dense structure

INSTALLATION - PUSH THROUGH



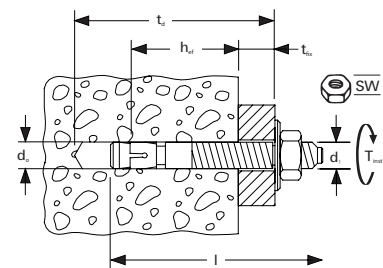
TECHNICAL DATA



Bolt Anchor - FWA Zinc-plated



Bolt Anchor - FWA Sheradised



Item	Art-No.	Thread d_1 M (mm)	Nominal drill-Ø d_0 (mm)	Max. fixing thickness t_{fix} (mm)	Min. fixing thickness t_{fix} (mm)	Min. anchorage depth h_{ef} (mm)	Max. anchorage depth h_{ef} (mm)	Min. drill depth at push-through mode t_f (mm)	Total length l (mm)	Width across flat SW (mm)	Installation torque T_{inst} (Nm)	Sales unit (pcs)
FWA bolt anchor zinc-plated												
FWA 6 x 40	45536	6	6	3	-	25	-	40	40	10	7.5	100
FWA 6 x 55	45582	6	6	15	5	25	35	55	55	10	7.5	100
FWA 6 x 70	45598	6	6	30	20	25	35	70	70	10	7.5	100
FWA 6 x 120	502920	6	6	80	60	25	35	120	120	10	7.5	50
FWA 8 x 50	45644	8	8	5	-	25	-	50	50	13	15	50
FWA 8 x 60	502893	8	8	15	-	25	-	60	60	13	15	50
FWA 8 x 65	45788	8	8	20	5	25	40	65	65	13	15	50
FWA 8 x 80	45789	8	8	35	20	25	40	80	80	13	15	50
FWA 8 x 95	45790	8	8	50	35	25	40	95	95	13	15	50
FWA 8 x 120	45791	8	8	75	60	25	40	120	120	13	15	50
FWA 10 x 60	502894	10	10	5	-	30	-	60	60	17	30	50

TECHNICAL DATA

Item	Art-No.	Thread M d ₁ (mm)	Nominal drill-Ø d ₀ (mm)	Max. fixing thickness t _{fix} (mm)	Min. fixing thickness t _{fix} (mm)	Min. anchorage depth h _{ef} (mm)	Min. anchorage depth h _{ef} (mm)	Min. drill depth at push-through mode t _d (mm)	Total length l (mm)	Width across flat SW (mm)	Installation torque T _{inst} (Nm)	Sales unit (pcs)
FWA bolt anchor zinc-plated												
FWA 10 x 65	45645	10	10	10	-	30	-	65	65	17	30	50
FWA 10 x 80	45792	10	10	25	5	30	50	80	80	17	30	50
FWA 10 x 95	45793	10	10	40	20	30	50	95	95	17	30	50
FWA 10 x 115	45794	10	10	60	40	30	50	115	115	17	30	25
FWA 10 x 130	45646	10	10	75	55	30	50	130	130	17	30	25
FWA 10 x 140	503367	10	10	85	65	30	50	140	140	17	30	25
FWA 10 x 160	503368	10	10	105	85	30	50	160	160	17	30	25
FWA 10 x 180	503369	10	10	115	105	30	50	180	180	17	30	25
FWA 10 x 200	503370	10	10	135	115	30	50	200	200	17	30	25
FWA 12 x 80	45647	12	12	10	-	40	-	80	80	19	50	25
FWA 12 x 100	45648	12	12	30	10	40	60	100	100	19	50	25
FWA 12 x 120	45795	12	12	50	30	40	60	120	120	19	50	25
FWA 12 x 150	45796	12	12	80	60	40	60	150	150	19	50	25
FWA 12 x 160	503371	12	12	90	70	40	60	160	160	19	50	25
FWA 12 x 180	503372	12	12	110	90	40	60	180	180	19	50	25
FWA 12 x 200	503373	12	12	130	110	40	60	200	200	19	50	25
FWA 12 x 220	503374	12	12	150	130	40	60	220	220	19	50	25
FWA 12 x 240	503377	12	12	170	150	40	60	240	240	19	50	25
FWA 16 x 105	45649	16	16	15	-	50	-	95	105	24	100	20
FWA 16 x 125	502921	16	16	35	5	50	80	115	125	24	100	20
FWA 16 x 140	45798	16	16	50	20	50	80	130	140	24	100	10
FWA 16 x 180	45799	16	16	90	60	50	80	170	180	24	100	10
FWA 16 x 200	503379	16	16	110	80	50	80	190	200	24	100	10
FWA 16 x 240	503380	16	16	150	120	50	80	230	240	24	100	10
FWA 16 x 300	503381	16	16	190	160	50	80	290	300	24	100	10
FWA 20 x 160	45800	20	20	40	20	80	100	150	160	30	200	10
FWA 20 x 200	503382	20	20	80	60	80	100	190	200	30	200	10
FWA 20 x 220	56133	20	20	100	80	80	100	210	220	30	200	10
FWA 20 x 240	503383	20	20	120	100	80	100	230	240	30	200	10
FWA 20 x 300	503387	20	20	160	140	80	100	290	300	30	200	10
FWA bolt anchor sheradised steel with A2 clip												
FWA 8 x 65 shrd	502922	8	8	20	5	25	40	65	65	13	15	50
FWA 8 x 80 shrd	502923	8	8	35	20	25	40	80	80	13	15	50
FWA 8 x 95 shrd	502924	8	8	50	35	25	40	95	95	13	15	50
FWA 8 x 120 shrd	502925	8	8	75	60	25	40	120	120	13	15	50
FWA 10 x 80 shrd	502926	10	10	25	5	30	50	80	80	17	30	50
FWA 10 x 95 shrd	502927	10	10	40	20	30	50	95	95	17	30	50
FWA 10 x 115 shrd	502928	10	10	60	40	30	50	115	115	17	30	25
FWA 10 x 130 shrd	502929	10	10	75	55	30	50	130	130	17	30	25
FWA 12 x 80 shrd	502972	12	12	10	-	40	-	80	80	19	50	25
FWA 12 x 100 shrd	502973	12	12	30	10	40	60	100	100	19	50	25
FWA 12 x 120 shrd	502974	12	12	50	30	40	60	120	120	19	50	25
FWA 12 x 150 shrd	502975	12	12	80	60	40	60	150	150	19	50	25
FWA 16 x 105 shrd	502976	16	16	15	-	50	-	95	105	24	100	20
FWA 16 x 125 shrd	502977	16	16	35	5	50	80	115	125	24	100	20
FWA 16 x 140 shrd	502978	16	16	50	20	50	80	130	140	24	100	10
FWA 16 x 180 shrd	502979	16	16	90	60	50	80	170	180	24	100	10
FWA 20 x 160 shrd	502980	20	20	40	20	80	100	150	160	30	200	10

LOADS

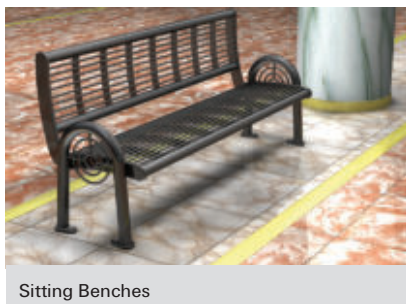
Bolt anchor FWA in zinc-plated and sheradised steel - Recommended loads for single anchor in non-cracked normal concrete¹⁾

Type		FWA M6	FWA M6	FWA M8	FWA M8	FWA M8	FWA M10	FWA M10	FWA M10	FWA M12	FWA M12	FWA M12	FWA M16	FWA M16	FWA M16	FWA M20	FWA M20
		gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd	gvz & shrd
Effective anchorage depth	$h_{ef} \geq$ (mm)	25	35	25	30	40	30	40	50	40	50	60	50	65	80	80	100
Drill hole diameter	d ₀ (mm)	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20
Recommended loads N _{rec} and V _{rec}																	
Tensile	N _{rec} (kN)	1.3	2.1	1.4	1.8	2.8	1.8	2.8	3.8	3.2	4.4	5.8	4.4	6.2	8.5	9.7	13.5
Shear	V _{rec} (kN)	1.3	2.1	1.4	1.8	2.8	1.8	2.8	3.8	3.2	4.4	5.8	4.4	6.2	8.5	9.7	13.5
Recommended bending moment	M _{rec} (Nm)	1.4	1.4	3.5	3.5	3.5	6.9	6.9	6.9	13.2	13.2	13.2	31.3	31.3	31.3	72.2	72.2
Component dimensions, min. spacings and edge distances																	
Min. edge distance	c _{min} (mm)	40	50	40	45	60	45	60	75	60	75	90	75	100	120	120	150
Min. spacing	s _{min} (mm)	80	100	80	90	120	90	120	150	120	150	180	150	200	240	240	300
Min. structural component thickness	h _{min} (mm)	100	100	100	100	100	100	100	100	100	100	120	100	130	160	160	200
Clearance hole in the fixture to be attached ²⁾	d _f (mm)	7	7	9	9	9	12	12	12	14	14	14	18	18	18	22	22

(1) All load values apply for non-cracked concrete C20/25 without any edge and spacing influences. Recommended loads with material safety factor Y_M and safety factor Y_F = 1.4 are included. * Preferred embedment depth

(2) Values are only suitable for pre-positioned installation mode. Using push-through installation, an additional 1mm has to be added.

Segmented steel Shield Anchor - The Widely Accepted Traditional Fixing



Sitting Benches



Bicycle Racks

ADVANTAGES

- Segmented steel shield anchor with internal thread for pre-positioned installations.
- The internal metric thread makes it versatile for bolts with various head types.
- When the screw or hexagon nut is tightened, the cone is pulled into the expansion shields and pushes them against the wall of the hole.
- Three piece shield allows for an even distribution of load.
- Surface-flush fixing allows the attached items to be removed.
- Zinc-plated steel version for indoor applications.

APPLICATIONS

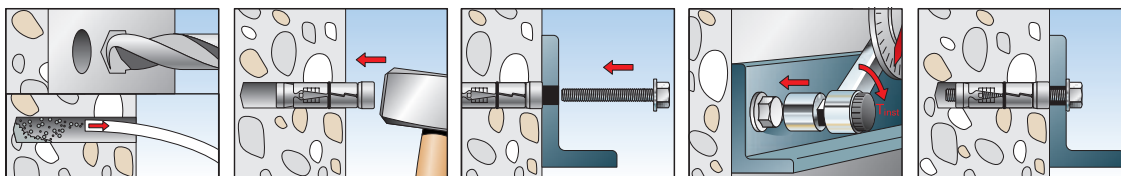
- Sitting benches
- Bicycle racks
- Waste bins

BUILDING MATERIALS



Concrete

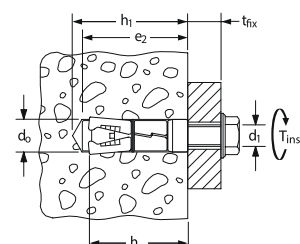
INSTALLATION - PRE-POSITIONED



TECHNICAL DATA



Shield Anchor - FWB zinc-plated



Item	Art-No.	Thread M d_1 (mm)	Nominal drill-Ø d_0 (mm)	Total length l (mm)	Min. drill depth at push-through mode h_1 (mm)	Min. anchorage depth h_{ef} (mm)	Min. bolt penetration e_2 (mm)	Installation torque T_{inst} (Nm)	Sales unit (pcs)
Shield anchor only									
FWB M6 S	44963	6	12	45	50	35	40	5	25
FWB M8 S	44964	8	14	50	60	40	45	15	25
FWB M10 S	44965	10	16	60	70	50	55	30	25
FWB M12 S	44966	12	20	75	85	60	70	50	25
FWB M16 S	44967	16	25	115	130	95	105	100	10
FWB M20 S	44970	20	32	130	150	110	120	200	10

LOADS

fischer Internal-threaded expansion anchor FWB zinc plated steel

Highest recommended loads¹⁾ for a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25.

Type		FWB M6 S	FWB M8 S	FWB M10 S	FWB M12 S	FWB M16 S	FWB M20 S
Effective anchorage depth	$h_{ef} \geq$ (mm)	35	40	50	60	95	110
Drill hole depth	$h_1 \geq$ (mm)	50	60	70	85	130	150
Recommended tensile load ²⁾	F_{tEC} (kN)	0.5	1.0	2.0	3.0	4.0	4.0
Component dimensions, min. spacings and edge distances							
Min. edge distance ³⁾	c_{min} (mm)	55	60	75	90	145	165
Min. spacing ³⁾	s_{min} (mm)	110	120	150	180	290	330
Min. member thickness	h_{min} (mm)	100	100	100	120	190	220
Nominal drill hole diameter	d_o (mm)	12	14	16	20	25	32
Clearance hole in the fixture to be attached ¹⁾	$d_f \leq$ (mm)	7	9	12	14	18	22
Installation Torque	T_{inst} (Nm)	5	15	30	50	100	200

(1) Required safety factors are considered.
(2) Recommended loads valid for tensile load.
(3) Minimum possible axial spacings resp. edge distance.



The Bonded Anchor for Cracked Concrete and Standard Threaded Rods Without Drill Hole Cleaning



High-Bay Warehouses



Collision Protection

ADVANTAGES

- Approved for both cracked and non-cracked concrete from class C20/25 to C50/60.
- The pre-portioned resin capsule is especially economical for individual applications and overhead installations.
- No drill-hole cleaning is required, even for applications in cracked concrete.
- The wide range of approved steel types allows for use in all corrosion-resistant classes and offers the best possible application safety.
- The extensive range of FTR from M8-M24 opens up a wide range of applications and therefore offers great flexibility.
- Usable under a wide range of conditions (Wet/Dry Concrete, Flooded Hole).
- An application temperature ranging between -15°C to +40°C.

APPLICATIONS

- High-bay warehouses
- Collision protection
- Rail fixing
- Facade structures

APPROVALS



BUILDING MATERIALS

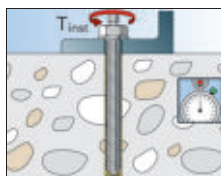
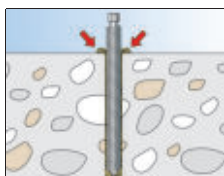
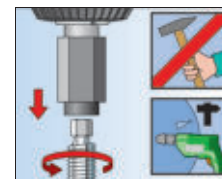
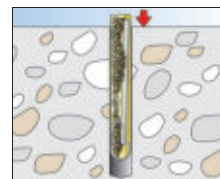
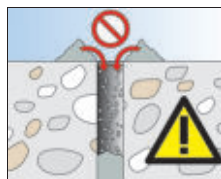
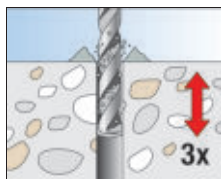
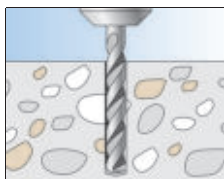


Concrete



Natural Stone
with dense structure

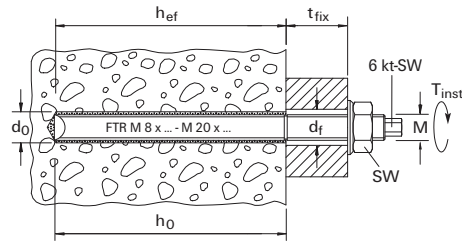
INSTALLATION - PRE-POSITIONED



TECHNICAL DATA



Resin capsule RM II



Item	Art-No.	Drill hole diameter d_0 (mm)	Min. drill hole depth h_1 (mm)	Effective anchoring depth h_{ef} (mm)	Fits	Sales unit (pcs)
RM II 8	539796	10	80	80	FTR M 8	10
RM II 10	539797	12	90	90	FTR M10	10
RM II 12	539798	14	110	110	FTR M12	10
RM II 14	539799	16	120	120	- / -	-
RM II 16	539800	18	125	125	FTR M 16	10
RM II 16 E	539801	18	190	190	FTR M16	10
RM II 20/22	539802	25	170	170	FTR M 20	10
RM II 24	539803	28	210	210	FTR M 24	5

CURING TIME

Temperature at anchoring base	Min. Curing time
-5° C to -1° C	10 hrs
± 0° C to +5° C	45 mins
+6° C to +10° C	30 mins
+11° C to +20° C	20 mins
+21° C to +30° C	5 mins
> +30° C	3 mins

*In wet concrete and flooded holes the curing time has to be doubled.

LOADS

Resin anchor RM II capsule

Highest permissible load for a single anchor¹⁾ in concrete C20/25^{4) 6)}

For the design, the complete approval ETA - 16/0340 has to be considered.

Item	Effective anchorage depth h_{ef} (mm)	Minimum member thickness h_{min} (mm)	Installation torque T_{inst} (Nm)	Min spacing S_{min} ²⁾ (mm)	Min edge distance C_{min} ²⁾ (mm)	Cracked concrete				Non-cracked concrete			
						Design tensile load V_d (kN)	Design shear load N_d (kN)	Permissible tensile load N_{perm} ³⁾ (kN)	Permissible shear load N_{perm} ³⁾ (kN)	Design tensile load V_d (kN)	Design shear load V_d (kN)	Permissible tensile load N_{perm} ³⁾ (kN)	Permissible shear load N_{perm} ³⁾ (kN)
RM II 8	80	110	10	40	40	-	-	-	-	11.8	7.1	8.4	5.1
RM II 12	90	120	20	45	45	5.5	12.0	3.9	8.6	16.5	12.0	11.8	8.6
RM II 16	110	140	40	55	55	8.1	16.8	5.8	12.0	24.2	16.8	17.3	12.0
RM II 20	125	161	60	65	65	12.2	29.3	8.7	20.9	36.7	31.2	26.2	22.3
RM II 24	170	220	120	85	85	20.7	48.9	14.8	34.9	62.2	48.9	44.4	34.9
	210	266	150	105	105	30.8	71.3	22.0	50.9	85.4	71.3	61.0	50.9

(1) The partial safety factors for material resistance as regulated in the approval for load actions of $\gamma_c = 1.4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1.5 \times h_{ef}$.

(2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.

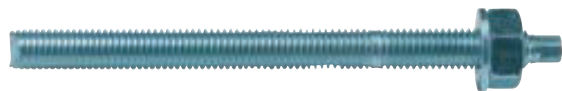
(3) For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

(4) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

(5) The given loads are valid for glass capsule RM II for fixations in dry and humid concrete for temperatures in the substrate up to 72° C (resp. short term up to 120° C).

(6) Drill method hammer drilling. For further allowable drill methods and application conditions see approval.

Threaded Rod FTR (Steel Quality 5.8) with Pitched Area and Hexagonal Installation Drive In Zinc-Plated and Hot-Dipped Galvanized Steel



FTR - Zinc-plated steel



FTR - Hot-dipped galvanized steel

ADVANTAGES

- FTR threaded rod can be used with fischer injection mortar or 2 component resin capsule RM II
- The resin adheres to the entire surface of the threaded rod, bonding it to the wall of the drilled hole.
- For pre-positioned installation.
- Carbon steel grade 5.8
- FTR threaded rods are supplied with an easy-to-use hexagonal installation drive and a setting tool included in each package.
- Available thread diameter options ranging from 8 mm to 24 mm.
- Zinc-plated steel version for indoor use.
- Hot-dipped galvanized version for temporary outdoor fixings.

TECHNICAL DATA

Item	Art-No.	Thread d ₁ (mm)	Nominal drill d ₀ (mm)	Total length d ₀ (mm)	Min. anchorage depth h _{ef} (mm)	Max. fixing thickness t _{fix} (mm)	Min. drill depth prior to insertion mode h ₀ (mm)	Width across flat SW (mm)	Installation torque T _{inst} (Nm)	Related capsule	Qty. per box (pcs)
Zinc-plated steel											
FTR M8 x 110	45809	8	10	110	80	16	80	13	10	539796 RM II 8	10
FTR M10 x 130	45810	10	12	130	90	22	90	17	20	539797 RM II 10	10
FTR M10 x 165	52248	10	12	165	90	57	90	17	20	539797 RM II 10	10
FTR M12 x 160	45812	12	14	160	110	30	110	19	40	539798 RM II 12	10
FTR M12 x 220	52255	12	14	220	110	90	110	19	40	539798 RM II 12	10
FTR M16 x 165	519121	16	18	165	125	20	125	24	60	539800 RM II 16	10
FTR M16 x 190	45813	16	18	190	125	38	125	24	60	539800 RM II 16	10
FTR M16 x 250	52256	16	18	250	125	98	125	24	60	539800 RM II 16	10
FTR M20 x 260	45814	20	25	260	170	70	170	30	120	539802 RM II 20/22	5
FTR M22 x 255	52257	22	28	255	170	40	170	30	135	539802 RM II 20/22	5
FTR M24 x 300	45815	24	28	300	210	65	210	36	150	539803 RM II 24	5
FTR M24 x 350	502750	24	28	350	210	115	210	36	150	539803 RM II 24	5
Hot-dipped galvanized											
FTR M8 x110 hgd	502914	8	10	110	80	16	80	13	10	539796 RM II 8	10
FTR M10 x 130 hgd	502915	10	12	130	90	22	90	17	20	539797 RM II 10	10
FTR M12 x 160 hgd	502916	12	14	160	110	30	110	19	40	539798 RM II 12	10
FTR M16 x 190 hgd	502917	16	18	190	125	38	125	24	60	539800 RM II 16	10
FTR M20 x 260 hgd	502918	20	25	260	170	70	170	30	120	539802 RM II 20/22	10
FTR M24 x 300 hgd	502919	24	28	300	210	65	210	36	150	539803 RM II 24	5

SETTING TOOL & ACCESSORIES

Setting tool with SDS adapter

For simple installation of bonded anchors for example resin anchor R, Highbond anchor FHB II



Item	Art-No.	Fits	Sales unit (pcs)
RA-SDS	062420	Adapter suitable to fit set screw	1

Accessories Drill hole cleaning please follow page no 35

The Universal Injection Mortar for Fixing in Cracked Concrete, Aerated Blocks and Masonry



ADVANTAGES

- FIS VS 300 T is the most universally applicable injection mortar (comprised of vinylester resin and cement) on the market.
- Styrene-free, quick-setting, high-performance hybrid mortar for highest loads in almost all building materials.
- FIS VS 300 T with its delayed hardening is suitable especially during the warmer months.
- FIS VS 300 T can be used by normal sealant guns.

APPLICATIONS

- Rebar connections
- Air conditioning supports
- Glass shelving

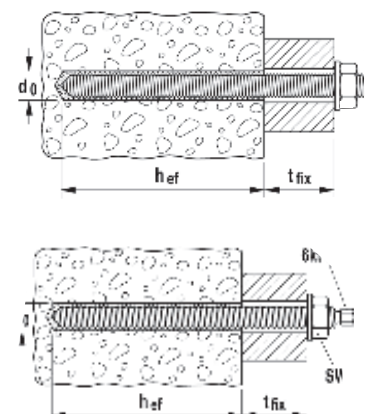
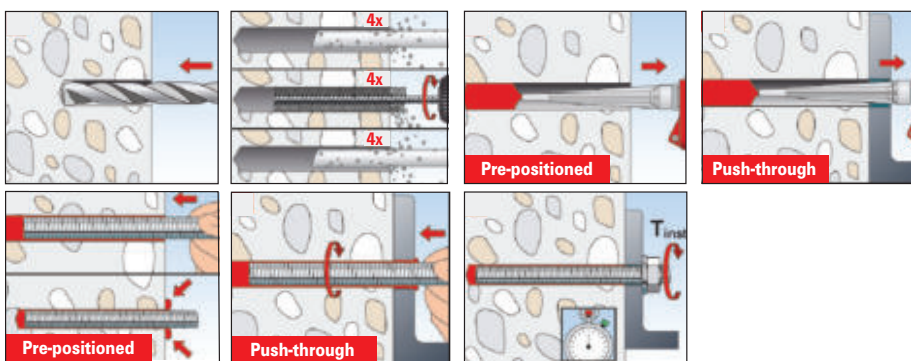
APPROVALS



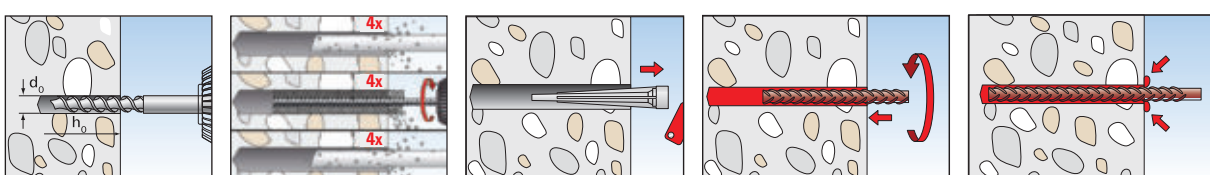
BUILDING MATERIALS



INSTALLATION - PRE & PUSH THROUGH WITH THREADED ROD



INSTALLATION - PRE-POSITIONED WITH REBAR



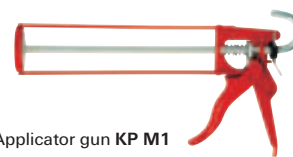
TECHNICAL DATA



Injection mortar FIS VS 300 T



Static mixer FIS MR Plus



Applicator gun KP M1

Item	Art-No.	Languages on the cartridge	Adapted for	Contents	Sales unit (pcs)
FIS VS 300 T	093180	D, GB, F, NL, E, P	-	1 cartridge 300 ml, 1 x FIS MR Plus	12
FIS MR Plus	096448	-	FIS VS 300 T, FIS EB, FIS P Plus	10 static mixer	10
KP M1	53115	-	FIS V 300, FIS P Plus 300, DMS Silicone	1 applicator gun	1

CURING TIME

Cartridge temperature (mortar)	Gelling time	Temperature at anchoring base	Curing time
		± 0° C - + 5° C	6 hrs.
+ 5° C - + 10° C	20 mins.	+ 5° C - + 10° C	3 hrs.
+ 10° C - + 20° C	10 mins.	+ 10° C - + 20° C	2 min.
+ 20° C - + 30° C	6 mins.	+ 20° C - + 30° C	60 mins.
+ 30° C - + 40° C	4 mins.	+ 30° C - + 40° C	30 mins.

*The above times apply from the moment of contact between resin and hardener in the static mixer.

*For installation, the cartridge temperature must be at least +5° C. For longer installation times, i.e. when interruptions occur in work, the mixer should be replaced.

DRILL HOLE DIAMETER

FIS VS 300 T with threaded rod

		M8	M10	M12	M16	M20	M24	M27	M30
Anchor type									
Drill hole diameter	d ₀ (mm)	10	12	14	18	24	28	28	35

FIS VS 300 T with rebar

		T8	T10	T12	T14	T16	T20	T25	T28
Anchor type									
Drill hole diameter	d ₀ (mm)	10/12	12/14	14/16	18	20	25	30	35

LOADS

Injection mortar FIS VS 300 T

Loads for a single anchor in concrete ^{1) 2) 3) 4) 5) 6) 7) 8) 9)}

For the design the complete approval ETA - 02/0024 has to be considered.

Design Resistance ¹⁾

Rod diameter h _{ef} (mm) Quality	Dia 6 60				Dia 8 80				Dia 10 100				Dia 12 120				Dia 16 160				Dia 20 200			
	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar
Non-cracked concrete																								
Tension C20/25 N _{rd} (kN)	6.6	6.7	6.7	-	12.6	14.7	13.7	14.7	19.3	23.0	21.7	23.0	28.6	33.1	31.5	33.1	52.3	53.6	53.6	53.6	79.5	79.5	79.5	79.5
Tension C50/60 N _{rd} (kN)	6.6	8.5	7.5	-	12.6	18.5	13.7	18.1	19.3	29.0	21.7	28.0	28.6	41.8	31.5	40.8	52.3	67.5	58.7	67.5	82.0	100.2	91.7	100.2
Shear ≥ C25/25	4.0	6.4	4.5	-	7.2	11.7	8.2	10.1	12.0	18.5	13.0	15.8	16.8	26.9	18.9	22.8	31.2	50.2	35.2	40.5	48.8	78.4	54.9	63.5
Cracked concrete																								
Tension C20/25 N _{rd} (kN)	-	-	-	-	-	-	-	-	12.5	12.5	12.5	6.2	18.0	18.0	18.0	15.0	32.1	32.1	32.1	26.8	46.0	46.0	46.0	37.6
Tension C50/60 N _{rd} (kN)	-	-	-	-	-	-	-	-	15.8	15.8	15.8	7.9	22.8	22.8	22.8	19.0	40.5	40.5	40.5	33.7	58.0	58.0	58.0	47.5
Shear ≥ C25/25	-	-	-	-	-	-	-	-	12.0	18.5	13.0	12.5	16.8	26.9	18.9	22.8	31.2	50.2	35.2	40.6	48.8	78.3	54.9	63.5

Rod diameter h _{ef} (mm) Quality	Dia 24 240				Dia 25 250	Dia 27 270				Dia 28 280	Dia 30 300		
	5.8	8.8	A4-70	Rebar	Rebar	5.8	8.8	A4-70	Rebar	Rebar	5.8	8.8	A4-70
Non-cracked concrete													
Tension C20/25 N _{rd} (kN)	108.5	108.5	108.5	-	117.8	129.7	129.7	129.7	-	139.5	160.2	160.2	160.2
Tension C50/60 N _{rd} (kN)	118.0	136.8	132.1	-	148.4	153.3	163.5	163.5	-	175.6	187.3	201.8	201.8
Shear ≥ C25/25	71.2	112.9	79.1	-	99.3	92.0	146.8	102.9	-	124.5	112.8	179.5	125.8
Cracked concrete													
Tension C20/25 N _{rd} (kN)	54.2	54.2	54.2	-	52.3	61.0	61.0	61.0	-	65.6	75.3	75.3	75.8
Tension C50/60 N _{rd} (kN)	68.3	68.3	68.3	-	65.9	76.9	76.9	76.9	-	82.7	95.0	95.0	95.0
Shear ≥ C25/25	71.2	108.5	79.1	-	99.3	92.0	122.1	102.9	-	124.5	112.8	150.7	125.8

LOADS
Recommended Resistance²⁾

Rod diameter h_{ef} (mm) Quality	Dia 6 60				Dia 8 80				Dia 10 100				Dia 12 120				Dia 16 160				Dia 20 200			
	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar
Non-cracked concrete																								
Tension C20/25 Nrd (kN)	4.7	4.8	4.8	-	9.0	10.5	9.8	10.5	13.8	16.5	15.5	16.4	20.4	23.6	22.5	23.6	37.4	38.3	38.3	38.3	56.8	56.8	56.8	56.8
Tension C50/60 Nrd (kN)	4.7	6.1	5.4	-	9.0	13.2	9.8	12.9	13.8	20.7	15.5	20.2	20.4	29.9	22.5	29.1	37.4	48.2	41.9	48.2	58.6	71.6	65.5	71.6
Shear $\geq$ C25/25	2.9	4.6	3.2	-	5.1	8.4	5.9	7.2	8.6	13.2	9.3	11.3	12.0	19.2	13.5	16.3	22.3	35.9	25.2	28.9	34.9	56.0	39.2	45.4
Cracked concrete																								
Tension C20/25 Nrd (kN)	-	-	-	-	-	-	-	-	8.9	8.9	8.9	4.4	12.9	12.9	12.9	10.7	22.9	22.9	22.9	19.1	32.9	32.9	32.9	26.9
Tension C50/60 Nrd (kN)	-	-	-	-	-	-	-	-	11.3	11.3	11.3	5.6	16.3	16.3	16.3	13.6	28.9	28.9	28.9	24.1	41.4	41.4	41.4	33.9
Shear $\geq$ C25/25	-	-	-	-	-	-	-	-	8.6	13.2	9.3	8.9	12.0	19.2	13.5	16.3	22.3	35.9	25.1	29.0	34.9	55.9	39.2	45.4

Rod diameter h_{ef} (mm) Quality	Dia 24 240				Dia 25 250	Dia 27 270				Dia 28 280	Dia 30 300		
	5.8	8.8	A4-70	Rebar	Rebar	5.8	8.8	A4-70	Rebar	Rebar	5.8	8.8	A4-70
Non-cracked concrete													
Tension C20/25 Nrd (kN)	77.5	77.5	77.5	-	84.1	92.6	92.6	92.6	-	99.6	114.4	114.4	114.4
Tension C50/60 Nrd (kN)	84.3	97.7	94.4	-	106.0	109.5	109.5	116.8	-	125.4	133.8	144.1	144.1
Shear $\geq$ C25/25	50.9	80.6	56.5	-	70.9	65.7	65.7	104.9	-	88.9	80.6	128.2	89.9
Cracked concrete													
Tension C20/25 Nrd (kN)	38.7	38.7	38.7	-	37.4	43.6	43.6	43.6	-	46.9	53.8	53.8	53.8
Tension C50/60 Nrd (kN)	48.8	48.8	48.8	-	47.1	54.9	54.9	54.9	-	59.1	67.9	67.9	67.9
Shear $\geq$ C25/25	50.9	77.5	56.5	-	70.9	65.7	65.7	87.2	-	88.9	80.6	107.6	89.9

(1) The partial safety factors for material resistance as regulated in the approval.

(2) Partial safety factor for load $\gamma_L = 1.4$ are considered for recommended load capacities.

(3) Minimum possible axial spacings resp. edge distance while reducing the permissible load/design load.

(4) For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

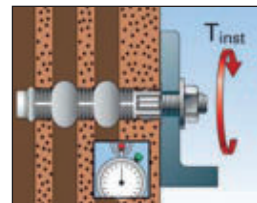
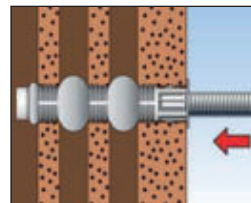
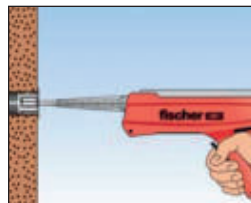
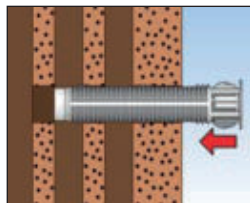
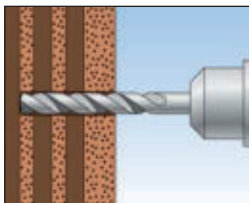
(5) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

(6) The given loads are valid for use in dry and humid concrete for temperatures in the substrate up to +50°C (resp. short term up to 80°C) and best possible drillhole cleaning according approval.

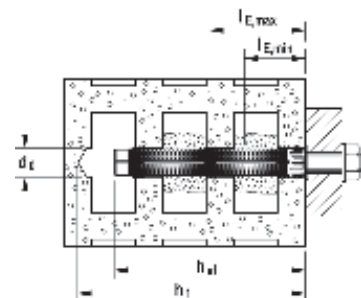
(7) Rebar grade used for above calculation is $F_Y = 460$ N/mm².

(8) The above loads use for embedment depth = 10 x dia.

(9) Embedment depth can be reduced or increased to get desired loads as per approval.

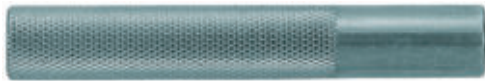
INSTALLATION - PRE-POSITIONED

TECHNICAL DATA


Injection anchor sleeve **FIS H K**

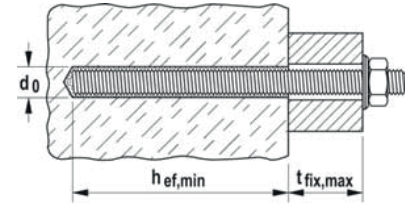


Item	Art.No.	Drill hole diameter d_o (mm)	Drill hole depth acc. ETA (mm)	Effect. anchorage depth h_{ef} (mm)	Match	Fill quantity per sleeve	Sales unit (pcs)
FIS H 12 x 50 K	041900	12	55	50	FIS A M6-M8	5	50
FIS H 12 x 85 K	041901	12	90	85	FIS A M6-M8	10	50
FIS H 16 x 85 K	041902	16	90	85	FIS A M8-M10, FIS E M6-M8	12	50
FIS H 16 x 130 K	041903	16	135	130	FIS A M8-M10	15	20
FIS H 20 x 85 K	041904	20	90	85	FIS A M12-M16, FIS E M10-M12	15	20
FIS H 20 x 130 K	046703	20	135	130	FIS A M12-M16	25	20
FIS H 20 x 200 K	046704	20	205	200	FIS A M12-M16	40	20

TECHNICAL DATA



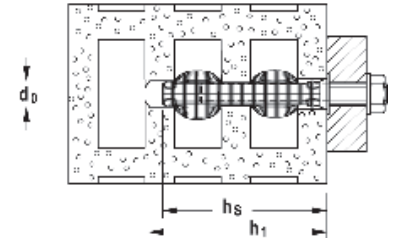
Internal threaded sockets **FIS E**



	Zinc-plated steel	Drill hole diameter in perforated brick masonry	Effect. anchoring depth	Min. bolt penetration	Max. bolt penetration	Suitable injection anchor sleeve	Sales unit
	Art-No.	d_0 (mm)	h_{ef} (mm)	$l_{E,min}$ (mm)	$l_{E,max}$ (mm)		(pcs)
Item	gvz						
FIS E 11 x 85 M6	043631	16	85	6	60	FIS H 16 x 85 K	10
		20				FIS H 20 x 85 K	
FIS E 11 x 85 M8	043632	16	85	8	60	FIS H 16 x 85 K	10
		20				FIS H 20 x 85 K	
FIS E 15 x 85 M10	043633	20	85	10	60	FIS H 20 x 85 K	10
FIS E 15 x 85 M12	043634	20	85	12	60	FIS H 20 x 85 K	10



Injection anchor sleeve with net **FIS H N**



		Drill hole diameter	Min. drill hole depth	Min. anchorage depth anchor	Filling quantity per sleeve	Fits	Sales unit
	Art-No.	d_0 (mm)	h_1 (mm)	h_V (mm)	(scale units)		(pcs)
Item							
FIS H 16 x 85 N	050470	16	95	90	15	Ø8/M8	20
FIS H 18 x 85 N	050472	18	95	90	17	Ø10/M10	20
FIS H 20 x 85 N	050474	20	95	90	18	Ø12/M12	20



Injection anchor sleeve, 1m length **FIS H L**

		Drill hole diameter	Total length	Match	Fill quantity per 10cm	Sales unit
	Art-No.	d_0 (mm)	l (mm)			(pcs)
Item						
FIS H 12 x 1000 L	050598	12	1000	Ø6 / M 6 - Ø8 / M 8	17	10
FIS H 16 x 1000 L	050599	16	1000	Ø10/M10 / Ø12/M12	14	10
FIS H 22 x 1000 L	045301	22	1000	Ø12/M12 - Ø16/M16	20	6
FIS H 30 x 1000 L	000645	30	1000	Ø16/M16 - Ø22/M22	26	4

LOADS

Injection system FIS V, FIS VS and FIS VW with threaded rod FIS A⁵⁾ and anchor sleeve FIS H K

Highest permissible loads^{(1) (6)} for a single anchor in perforated brick masonry for pre-positioned installation.

For the design, the complete approval ETA-10/0383 has to be considered.

Type	Compressive brick strength f_b (N/mm ²)	Min. effective anchorage depth ²⁾ $h_{ef,min}$ (mm)	Brick type naming acc. DIN	Installation torque T_{inst} (Nm)	Perforated brick masonry			
					Permissible tensile load ³⁾ N_{perm} (mm)	Permissible shear load ³⁾ V_{perm} (mm)	Min. spacing ²⁾ s_{min} (mm)	Min. edge distance ²⁾ c_{min} (mm)
Vertically perforated brick Hlz								
M8 / M10	8	110	Hlz	2.0	0.57	0.57	80	100
M12 / M16	8	110	Hlz	2.0	0.43	0.57	80	120
M8 / M10	10	110	Hlz	2.0	0.71	0.43	80	100
M12 / M16	10	110	Hlz	2.0	1.00	0.43	80	120
M8 / M10	12	110 ⁷⁾	Hlz	2.0	0.57	0.57	80	100
M12 / M16	12	110	Hlz	2.0	1.00	0.57	80	120
M8 / M10	28	85	Hlz	2.0	1.00	1.71	100	240
M12 / M16	28	110	Hlz	2.0	–	–	–	–
Perforated sand-lime brick KSL								
M8 / M10	12	85	KSL	2.0	0.71	1.29	80	100
M12 / M16	12	110	KSL	2.0	0.86	1.29	80	120
M8 / M10	20	85	KSL	2.0	1.00	1.71	80	100
M12 / M16	20	110	KSL	2.0	1.29	1.71	80	120
Hollow block of lightweight aggregate concrete Hbl								
M8 / M10	6	110	Hbl	2.0	0.34	0.71	80	100
M12 / M16	6	110	Hbl	2.0	0.34	0.71	80	120

(1) The required partial safety factor for material resistance as well as a partial safety factor for load actions of $\gamma_t = 1.4$ are considered.

(2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.

(3) For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups), see approval.

(4) GVZ, A4 and C

(5) The given loads are valid for fixations in dry and wet masonry for temperatures in the substrate up to +50° C (resp. short term up to 80° C) and best possible drill hole cleaning as per approval.

*The max. anchorage depth in correspondence with the relevant anchor sleeve FIS H K (see technical data).

*For bricks with certain hole patterns, 85 mm is possible. Please refer approval.

LOADS

Injection system FIS V, FIS VS and FIS VW with threaded rod FIS A⁵⁾ resp. internal threaded socket FIS E⁵⁾ and anchor sleeve FIS H K

Highest permissible loads^{(1) (6)} for a single anchor in perforated brick masonry for pre-positioned installation.

For the design, the complete approval Z-2.1.3-1824 has to be considered.

Type	Compressive brick strength f _b (N/mm ²)	Effective anchorage depth ²⁾ h _{ef} (mm)	Brick type naming acc. DIN	Installation torque T _{inst} (Nm)	Perforated brick masonry			
					Permissible tensile load ³⁾ N _{perm} (mm)	Permissible shear load ³⁾ V _{perm} (mm)	Min. spacing ²⁾ s _{min} (a _{min}) (mm)	Min. edge distance ²⁾ c _{min} (a _e) (mm)
Vertically perforated brick Hlz								
M6 / M16	4	85	Hlz	2.0	0.30	0.60	50	50
M6 / M16	6	85	Hlz	2.0	0.40	0.80	50	50
M6 / M16	12	85	Hlz	2.0	0.80	1.00	50	50
Perforated sand-lime brick KSL								
M6 / M16	4	85	KSL	2.0	0.40	0.60	50	50
M6 / M16	6	85	KSL	2.0	0.60	0.80	50	50
M6 / M16	12	85	KSL	2.0	0.80	1.40	50	50
Hollow block of lightweight aggregate concrete Hbl								
M6 / M16	2	85	Hbl	2.0	0.30	0.50	50	200
M6 / M16	4	85	Hbl	2.0	0.60	0.80	50	200
Hollow block of normal concrete Hbn								
M6 / M16	4	85	Hbn	2.0	0.60	0.80	50	200
Light weight aggregate concrete TGL								
M8 / M16	–	85	TGL	2.0	2.00 ⁶⁾	–	50	50

(1) Required safety factors are reconsidered.

(2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.

(3) Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) refer approval.

(4) GVZ and A4. For FIS E screw with grade 5.8 resp. A4-70

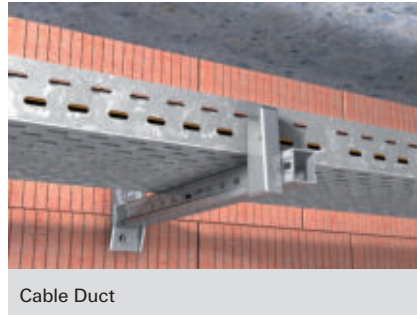
(5) The given loads are valid for fixations in dry and wet masonry for temperatures in the substrate up to +50° C (resp. short term up to 80° C) and best possible drill hole cleaning as per approval.

*Anchorage depths apply for FIS A and FIS E (M6 - M12).

*The given values apply for rotary drilling (without impact). The thickness of the outer web of the KSL has to be min. 30 mm (old bricks).

*For M8 and M10 the highest permissible load is 1.3 kN.

The Approved Injection Mortar for Anchorings in Masonry and Non-Cracked Concrete.



ADVANTAGES

- With FIS P Plus, anchoring in masonry and non-cracked concrete, for which approval is relevant, can be realised in a particularly economical manner.
- FIS P Plus 300 T can be used with stable, standard silicone injection dispensers. No special equipment is required. As a result, procurement costs can be reduced on the basis of polyester resin.

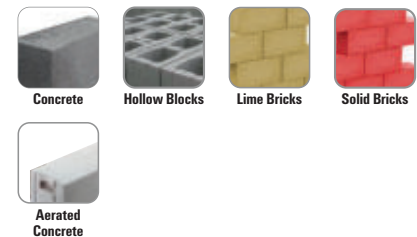
APPLICATIONS

- Cable ducts
- Air-conditioning supports
- Awnings and more

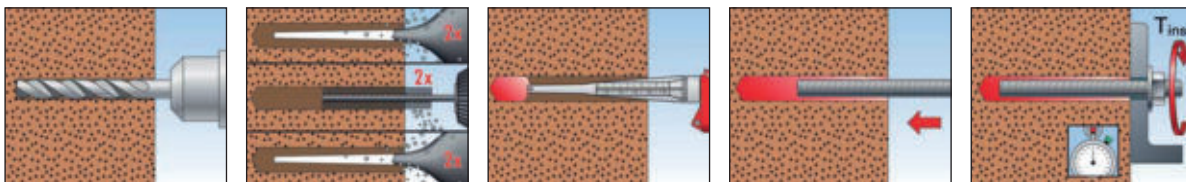
APPROVALS



BUILDING MATERIALS



INSTALLATION - PRE-POSITIONED



TECHNICAL DATA



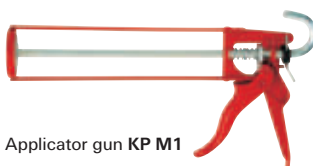
Injection mortar FIS P Plus 300 T



Injection mortar FIS P Plus 380 C



Static mixer FIS MR Plus



Applicator gun KP M1



Applicator gun FIS AC

Item	Art-No.	Languages on the cartridge	Scale Unit	Adapted for	Contents	Sales unit (pcs)
FIS P Plus 300 T	523226	GB, E, P	150	-	1 cartridge 300 ml, 1 x FIS MR Plus	12
FIS P Plus 380 C	522178	GB, E, P	190	-	1 cartridge 380 ml, 1 x FIS MR Plus	12
FIS MR Plus	545853	-	-	FIS VS 300 T, FIS EB, FIS P Plus	10 static mixer	10
FIS AC	096497	-	-	FIS P Plus 380 C	1 applicator gun	1
KP M1	53115	-	-	FIS V 300, FIS P Plus 300, DMS Silicone	1 applicator gun	1

CURING TIME

Cartridge temperature (mortar)	Gelling time	Temperature at anchoring base	Curing time
± 0° C - + 5° C	13 mins.	± 0° C - + 5° C	3 hrs.
+ 5° C - + 10° C	9 mins.	+ 5° C - + 10° C	90 min.
+ 10° C - + 20° C	5 mins.	+ 10° C - + 20° C	60 mins.
+ 20° C - + 30° C	4 mins.	+ 20° C - + 30° C	45 mins.
+ 30° C - + 40° C	2 mins.	+ 30° C - + 40° C	35 mins.

*The above times apply from the moment of contact between resin and hardener in the static mixer.
*In wet concrete or water filled holes, the curing times must be doubled.
*For longer installation times, i.e. when interruptions occur in work, the mixer should be replaced.

LOADS

Injection system FIS P Plus: Injection resin with Threaded rod FIS A

zinc plated steel 5.8 / zinc plated steel 8.8 / stainless steel A4-70 / high corrosion resistant steel C-70 ²⁾

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) ^{1) 3) 4) 5)}										Minimum spacings while reducing the load	
Type	Material fixing element	Min. member thickness	Effective anchorage depth	Maximum torque moment	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
		h_{min} [mm]	h_{ef} [mm]	T_{max} [Nm]	$N_{perm}^{6)}$ [kN]	$V_{perm}^{6)}$ [kN]	Max. tension load c [mm]	Max. shear load c [mm]	Max. Load s_{cr} [mm]	$s_{min}^{7)}$ [mm]	$c_{min}^{7)}$ [mm]
FIS A M 8	5.8	100	60	10	4,7	5,1	75	70	180	40	40
		110	80		6,2				240		
		190	160		9,0		50	65	480		
	8.8	100	60		4,7	8,6	75	130	180		
		110	80		6,2				115		
		190	160		12,4			95	480		
	A4-70	100	60		4,7	6,0		85	180		
		110	80		6,2				240		
		190	160		9,9	55	75	480			
	C-70	100	60		4,7	7,4	75	110	180		
		110	80		6,2			100	240		
		190	160		12,4			85	480		
FIS A M 10	5.8	100	60	20	5,8	8,6	90	125	180	45	45
		120	90		8,8		95	105	270		
		230	200		13,8		60	90	600		
	8.8	100	60		5,8	11,7	90	175	180		
		120	90		8,8	13,1	95	170	270		
		230	200		19,4			125	600		
	A4-70	100	60		5,8	9,2	90	135	180		
		120	90		8,8		95	110	270		
		230	200		15,7		70	95	600		
	C-70	100	60		5,8	11,4	90	170	180		
		120	90		8,8		95	145	270		
		230	200		19,4			115	600		
FIS A M 12	5.8	100	70	40	8,2	12,0	105	175	210	55	55
		140	110		12,8		115	130	330		
		270	240		20,5		75	110	720		
	8.8	100	70		8,2	16,3	105	245	210		
		140	110		12,8	19,4	115	230	330		
		270	240		28,0			160	720		
	A4-70	100	70		8,2	13,7	105	200	210		
		140	110		12,8		115	155	330		
		270	240		22,5		85	125	720		
	C-70	100	70		8,2	16,3	105	245	210		
		140	110		12,8	17,1	115	200	330		
		270	240		28,0			145	720		
FIS A M 16	5.8	120	80	60	12,4	22,3	120	305	240	65	65
		170	125		19,4		150	235	375		
		360	320		37,6		105	165	960		
	8.8	120	80		12,4	24,9	120	345	240		
		170	125		19,4	36,0	150	405	375		
		360	320		49,8			235	960		
	A4-70	120	80		12,4	24,9	120	345	240		
		170	125		19,4	25,2	150	270	375		
		360	320		42,0			180	960		
	C-70	120	80		12,4	24,9	120	345	240		
		170	125		19,4	31,4		350	375		
		360	320		49,8	150	215	960			

LOADS

Injection system FIS P Plus: Injection resin with threaded rod FTR and FIS A

zinc plated steel 5.8 / zinc plated steel 8.8 / stainless steel A4-70 / high corrosion resistant steel C-70

Type	Material fixing element	Min. member thickness h_{min} [mm]	Effective anchorage depth h_{ef} [mm]	Maximum installation torque T_{max} [Nm]	Permissible tension load $N_{perm}^{6)}$ [kN]	Design tension load $N_{Rd}^{6,9)}$ [kN]	Permissible shear load $V_{perm}^{6)}$ [kN]	Design shear load $V_{Rd}^{6,9)}$ [kN]	Max. tension load C [mm]	Max. shear load C [mm]	Required spacing Max. load s_{cr} [mm]	While reducing the load	
												Min. spacing $s_{min}^{7)}$ [mm]	Min. edge distance $c_{min}^{7)}$ [mm]
FIS A M 20	5.8	140	90	120	16.2	22.7	32.3	45.22	135	400	270	85	85
		220	170		30.5	42.7	34.9	48.86	180	300	510		
		450	400		58.6	82.0			140	215	1200		
	8.8	140	90		16.2	22.7	32.3	45.22	135	400	270		
		220	170		30.5	42.7	56.0	78.4	180	525	510		
		450	400		71.8	100.5			320	1200	1200		
	A4-70	140	90		16.2	22.7	32.3	45.22	135	400	270		
		220	170		30.5	42.7	39.4	55.16	180	350	510		
		450	400		65.7	92.0			160	240	1200		
	C-70	140	90		16.2	22.7	32.3	45.22	135	400	270		
		220	170		30.5	42.7	49.1	68.74	180	455	510		
		450	400		71.8	100.5			285	1200	1200		
FIS A M 24	5.8	160	96	150	20.7	29.0	41.4	57.96	150	490	290	105	105
		270	210		45.2	63.3	50.9	71.26	225	390	630		
		540	480		84.3	118.0			165	275	1440		
	8.8	160	96		20.7	29.0	41.4	57.96	150	490	290		
		270	210		45.2	63.3	80.6	112.84	225	675	630		
		540	480		103.4	144.8			215	420	1440		
	A4-70	160	96		20.7	29.0	41.4	57.96	150	490	290		
		270	210		45.2	63.3	56.8	79.52	225	445	630		
		540	480		94.3	132.0			195	300	1440		
	C-70	160	96		20.7	29.0	41.4	57.96	150	490	290		
		270	210		45.2	63.3	70.9	99.26	225	580	630		
		540	480		103.4	144.8			215	355	1440		

For the design the complete assessment ETA-18/0383 has to be considered. ⁸⁾

¹⁾ The partial safety factors for material resistance as regulated in the ETA-18/0383 as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1.5 \cdot h_{ef}$. Accurate data see ETA-18/0383

²⁾ Also valid for threaded rod RGM in the same property class.

³⁾ The given loads are valid for injection mortar for fixations in dry and humid concrete for temperatures in the substrate up to 50 °C (resp. short term up to 80 °C. For drill hole cleaning see ETA-18/0383.

⁴⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

⁵⁾ Drill method hammer drilling. For further allowable application conditions see ETA-18/0383.

⁶⁾ For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.

The Basic Epoxy Mortar for Applications in Concrete



Steel Structure



Rebar Connections

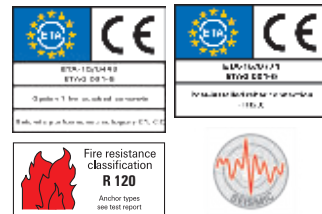
ADVANTAGES

- FIS EB is approved for use in cracked concrete and for rebar applications and achieves a good performance in these applications which enables an economical use of injection mortar.
- Variable anchorage depths from 4xd to 20xd allow for ideal adaptation to the load to be applied.
- FIS EB can be used in various conditions (dry/wet concrete, flooded hole), thus working in almost all situations on the building site and making it a safe and reliable system.

APPLICATIONS

- Heavy steel constructions
- Post-installed rebar connections
- Consoles
- Silo installations
- Tall shelving and more

APPROVALS

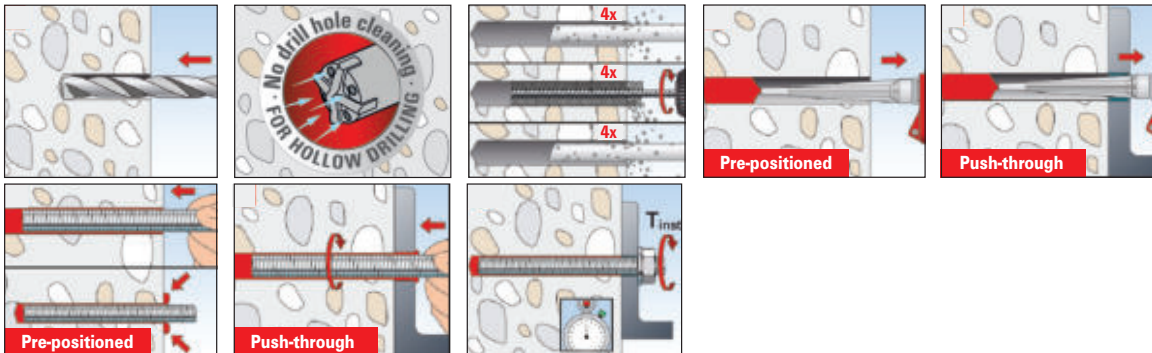


BUILDING MATERIALS

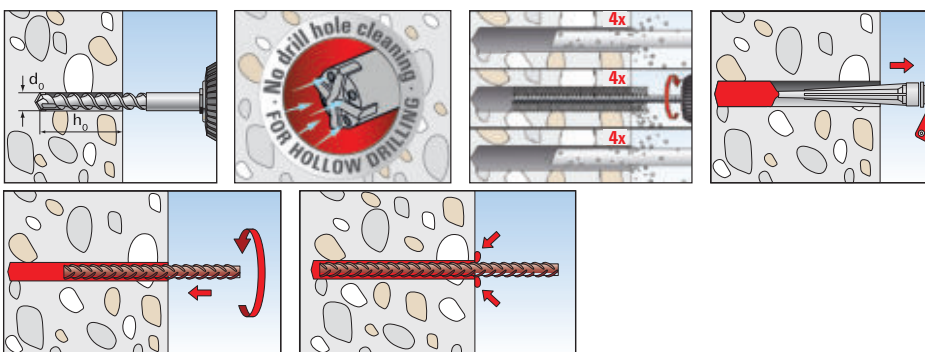


Concrete

INSTALLATION - PRE & PUSH THROUGH WITH THREADED ROD



INSTALLATION - PRE-POSITIONED WITH REBAR



TECHNICAL DATA



Epoxy mortar - FIS EB 390 S



Static mixer FIS MR Plus



Applicator gun FIS AM

Item	Art-No.	Languages on the cartridge	Scale Unit	Adapted for	Contents	Sales unit (pcs)
FIS EB 390 S in bucket	543652	EN, ES, PT	180	-	20 cartridges 390 ml, 20 x FIS MR Plus	1
FIS MR Plus	545853	-	-	FIS VS 300 T, FIS EB, FIS P Plus	10 static mixer	10
FIS AM	533749	-	-	FIS EB	1 applicator gun	1

CURING TIME

Cartridge temperature (mortar)	Gelling time	Temperature at anchoring base	Curing time
+ 5° C - + 10° C	2 hrs.	+ 5° C - + 10° C	45 hrs.
+ 10° C - + 20° C	30 mins.	+ 10° C - + 20° C	22 hrs.
+ 20° C - + 30° C	14 mins.	+ 20° C - + 30° C	12 hrs.
≥ 30° C	7 mins.	≥ 30° C	6 hrs.

*The above times apply from the moment of contact between resin and hardener in the static mixer.

*For installation, the cartridge temperature must be at least +5° C. For longer installation times, i.e. when interruptions occur in work, the mixer should be replaced.

*In wet concrete or flooded holes, the curing time must be doubled.

LOADS

Epoxy mortar FIS EB

Loads for a single anchor in concrete^{1) 2) 5) 8) 9)}

For the design the complete approval ETA - 15/0440 has to be considered.

Design Resistance¹⁾

Rod diameter h _{ef} (mm)	Dia 8 80				Dia 10 100				Dia 12 120				Dia 14 140				Dia 16 160				Dia 18 180	Dia 20 200				
Anchor type	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	Rebar	5.8	8.8	A4-70	Rebar	
Drill diameter (mm)	12				14				14				16				18				20		24		25	
Torque (Nm)					20				40				50				60				-		-		120	
Non-cracked Concrete																										
Tension C20/25 N _{rd} (kN)	12.7	14.7	13.7	14.7	19.3	20.9	20.9	20.9	28.7	30.1	30.1	30.1	36.9	36.9	36.9	36.9	48.2	48.2	48.2	48.2	61.0	67.0	67.0	67.0	67.0	
Tension C50/60 N _{rd} (kN)	12.7	16.1	13.7	16.1	19.3	22.8	21.7	22.8	28.7	32.9	31.6	32.9	38.7	40.2	40.2	40.2	52.6	52.6	52.6	52.6	66.5	73.0	73.0	73.0	73.0	
Shear ≥ C25/25	7.2	12.0	8.3	10.1	12.0	18.4	12.8	15.8	16.8	27.2	19.2	22.8	23.2	36.8	25.6	31.2	31.2	50.4	35.2	40.7	51.5	48.8	78.4	55.1	63.6	
Cracked Concrete																										
Tension C20/25 N _{rd} (kN)	6.7	6.7	6.7	6.7	10.5	10.5	10.5	10.5	15.1	15.1	15.1	15.1	20.5	20.5	20.5	20.5	21.4	21.4	21.4	21.4	27.1	33.5	33.5	33.5	33.5	
Tension C50/60 N _{rd} (kN)	7.3	7.3	7.3	7.3	11.4	11.4	11.4	11.4	16.4	16.4	16.4	16.4	22.4	22.4	22.4	22.4	23.4	23.4	23.4	23.4	29.6	36.5	36.5	36.5	36.5	
Shear ≥ C25/25	7.2	12.0	8.3	10.1	12.0	18.4	12.8	15.8	16.8	27.2	19.2	22.8	23.2	36.8	25.6	31.2	31.2	50.4	35.2	40.7	51.5	48.8	78.4	55.1	63.6	

Rod diameter h _{ef} (mm)	Dia 22 220				Dia 24 240				Dia 25 250	Dia 26 260	Dia 27 270				Dia 28 280	Dia 30 300				Dia 32 320	Dia 34 340	Dia 36 360	Dia 40 400		
Anchor type	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	Rebar	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	Rebar		
Drill diameter (mm)	25				28				30	30	35	30				35	35				40		40	45	55
Torque (Nm)	135				150				-	-	-	200				-	300				-		-	-	-
Non-cracked concrete																									
Tension C20/25 N _{rd} (kN)	67.5	67.5	67.5	67.5	80.4	80.4	80.4	80.4	80.4	87.2	88.4	95.4	95.4	95.4	102.6	117.8	117.8	117.8	117.8	134.0	151.2	169.6	195.4		
Tension C50/60 N _{rd} (kN)	73.6	73.6	73.6	73.6	87.6	87.6	87.6	87.6	87.6	87.6	95.1	96.4	104.0	104.0	104.0	111.8	128.3	128.3	128.3	128.3	146.0	164.9	184.8	213.0	
Shear ≥ C25/25	60.8	97.0	68.0	76.9	71.2	112.8	79.5	91.6	99.4	107.5	92.0	147.2	103.2	124.7	112.8	180.0	126.3	143.1	162.7	183.8	206.0	254.4	254.4		
Cracked concrete																									
Tension C20/25 N _{rd} (kN)	42.2	42.2	42.2	42.2	50.2	50.2	50.2	50.2	50.2	54.5	59.0	63.6	63.6	63.3	68.4	78.5	78.5	78.5	78.5	78.5	62.5	70.6	79.1	97.7	
Tension C50/60 N _{rd} (kN)	46.0	46.0	46.0	46.0	54.8	54.8	54.8	54.8	54.8	54.8	59.4	64.3	69.3	69.3	69.3	74.5	85.6	85.6	85.6	85.6	85.6	68.1	76.9	86.2	106.5
Shear ≥ C25/25	60.8	97.0	68.0	76.9	71.2	112.8	79.5	91.6	99.4	107.5	92.0	147.2	103.2	124.7	112.8	180.0	126.3	143.1	162.7	183.8	206.0	254.4	254.4		

(1) The partial safety factors for material resistance as regulated in the approval.

(2) Partial safety factor for load $\gamma_s = 1.4$ are considered for recommended load capacities.

(3) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

(4) The above loads use for embedment depth = 10 x dia.

(5) Embedment depth can be reduced or increased to get desired loads as per approval.

*Minimum possible axial spacings resp. edge distance while reducing the permissible load/design load.

*For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

*The given loads are valid in dry and humid concrete for temperatures in the substrate up to +50° C (resp. short term up to 72° C) and best possible cleaning according approval.

LOADS

Epoxy mortar FIS EB

Loads for a single anchor in concrete ^{1) 2) 5) 8) 9)}

For the design the complete approval ETA - 15/0440 has to be considered.

Recommended Resistance ²⁾

Rod diameter h _{ef} Quality (mm)	Dia 8 80				Dia 10 100				Dia 12 120				Dia 14 140				Dia 16 160				Dia 18 180	Dia 20 200							
	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	Rebar	5.8	8.8	A4-70	Rebar				
Drill diameter (mm)	12				14				14				16				16				18				20	25	24		25
Torque (Nm)	10		-		20		-		40		-		50		-		60		-		-	120		-					
Non-cracked concrete																													
Tension C20/25 N _{rd} (kN)	9.1	10.5	9.8	10.5	13.8	15.0	15.0	15.0	20.5	21.5	21.5	21.5	26.4	26.4	26.4	26.4	34.5	34.5	34.5	34.5	43.6	47.8	47.8	47.8	47.8				
Tension C50/60 N _{rd} (kN)	9.1	11.5	9.8	11.5	13.8	16.3	15.5	16.3	20.5	23.5	22.5	23.5	27.6	28.7	28.7	28.7	37.6	37.6	37.6	37.6	47.5	52.2	52.2	52.2	52.2				
Shear ≥ C25/25	5.1	8.6	6.0	7.2	8.6	13.2	9.3	11.3	12.0	19.4	13.7	16.3	16.6	26.3	18.3	22.3	22.3	36.0	25.1	29.1	36.8	34.9	56.0	39.4	45.4				
Cracked concrete																													
Tension C20/25 N _{rd} (kN)	4.8	4.8	4.8	4.8	7.5	7.5	7.5	7.5	10.8	10.8	10.8	10.8	14.7	14.7	14.7	14.7	15.3	15.3	15.3	15.3	19.4	23.9	23.9	23.9	23.9				
Tension C50/60 N _{rd} (kN)	5.2	5.2	5.2	5.2	8.1	8.1	8.1	8.1	11.7	11.7	11.7	11.7	16.0	16.0	16.0	16.0	16.7	16.7	16.7	16.7	21.1	26.1	26.1	26.1	26.1				
Shear ≥ C25/25	5.1	8.6	6.0	7.2	8.6	13.2	9.2	11.3	12.0	19.4	13.7	16.3	16.6	26.3	18.3	22.3	22.3	36.0	25.1	29.1	36.8	34.9	56.0	39.4	45.4				

Rod diameter h _{ef} Quality (mm)	Dia 22 220				Dia 24 240				Dia 25 250	Dia 26 260	Dia 27 270			Dia 28 280	Dia 30 300				Dia 32 320	Dia 34 340	Dia 36 360	Dia 40 400	
	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	Rebar	Rebar	5.8	8.8	A4-70	Rebar	5.8	8.8	A4-70	Rebar	Rebar	Rebar	Rebar	Rebar	
Drill diameter (mm)	25				28				30	30	30			35	35				40	40	40	45	55
Torque (Nm)	135				150				-	-	200			-	300				-	-	-	-	-
Non-cracked concrete																							
Tension C20/25 N _{rd} (kN)	48.2	48.2	48.2	48.2	57.4	57.4	57.4	57.4	62.3	63.2	68.1	68.1	68.1	73.3	84.1	84.1	84.1	84.1	95.7	108.0	121.1	139.6	
Tension C50/60 N _{rd} (kN)	52.6	52.6	52.6	52.6	62.6	62.6	62.6	62.6	67.9	68.9	74.3	74.3	74.3	79.9	91.7	91.7	91.7	91.7	104.3	117.8	132.0	152.1	
Shear ≥ C25/25	43.4	69.3	48.6	55.0	50.9	80.6	56.8	65.4	71.0	76.8	65.7	105.1	73.7	89.1	80.6	128.6	90.2	102.2	116.2	131.3	147.2	181.7	
Cracked concrete																							
Tension C20/25 N _{rd} (kN)	30.2	30.2	30.2	30.2	35.9	35.9	35.9	35.9	38.9	42.1	45.4	45.4	45.4	48.8	56.1	56.1	56.1	56.1	56.1	44.7	50.4	56.5	69.8
Tension C50/60 N _{rd} (kN)	32.9	32.9	32.9	32.9	39.1	39.1	39.1	39.1	39.1	42.4	45.9	49.5	49.5	49.5	53.2	61.1	61.1	61.1	61.1	48.7	55.0	61.6	76.1
Shear ≥ C25/25	43.4	69.3	48.6	55.0	50.9	80.6	56.8	65.4	71.0	76.8	65.7	105.1	73.7	89.1	80.6	128.6	90.2	102.2	116.2	131.3	147.2	181.7	

(1) The partial safety factors for material resistance as regulated in the approval.

(2) Partial safety factor for load $\gamma = 1.4$ are considered for recommended load capacities.

(3) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

(4) The above loads use for embedment depth = 10 x dia.

(5) Embedment depth can be reduced or increased to get desired loads as per approval.

*Minimum possible axial spacings resp. edge distance while reducing the permissible load/design load.

*For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

*The given loads are valid in dry and humid concrete for temperatures in the substrate up to +50° C (resp. short term up to 72° C) and best possible cleaning according approval.



Blow-out pump **AB G**

Item	Art-No.	Applicable for	Sales unit (pcs)
AB G big blow-out pump	089300	FIS VS, FIS EB, FIS P, FIS P Plus	1



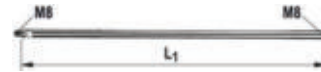
Cleaning brush with thread M8



Cleaning brush **BS** for concrete



SDS-Adapter M8



Brush extension

Item	Art-No.	Colour	Applicable for	Length (mm)	Sales unit (pcs)
Brush for drill-Ø 12 mm	001490	White	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 14 mm	001491	Blue	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 16 mm	001492	Red	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 18 mm	001493	Yellow	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 20 mm	001494	Green	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 25 mm	001495	Black	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 30 mm	090063	Grey	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 35 mm	090071	Brown	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 40 mm	505061	-	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 45 mm	506254	-	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
Brush for drill-Ø 55 mm	505062	-	FIS VS, FIS EB, FIS P, FIS P Plus	180	1
FIS brush extension	508791	-	FIS VS, FIS EB, FIS P, FIS P Plus	420	1
SDC Chuck with internal thread M 8	530332	-	FIS VS, FIS EB, FIS P, FIS P Plus	180	1

Item	Art-No.	Length L1 (mm)	Length L2 (mm)	Brush diameter (mm)	For drill diameter (mm)	Sales unit (pcs)
BS Ø 8	078177	120	50	9	8	1
BS Ø 10	078178	120	50	11	10	1
BS Ø 12	078179	150	80	13	12	1
BS Ø 14	078180	250	80	16	14	1
BS Ø 16 / 18	078181	250	80	20	16 / 18	1
BS Ø 20 / 22	052277	180	80	25	20 / 22	1
BS Ø 24	078182	300	100	26	24	1
BS Ø 25	097806	300	100	27	25	1
FIS brush extension	508791	410	-	-	-	1
Compressed air nozzle D16-D19	511957	-	-	-	-	2
Compressed air nozzle D20-D25	511958 ⁽¹⁾	-	-	-	-	2

(1) Delivery time on request.



The General Purpose Silicone with an Acetate Base for Internal and External Applications



Bathroom



Kitchen Sink Connection Joints

ADVANTAGES

- Thanks to the practical elasticity of over 25%, DMS is ideally suited for connection joints with expansion guaranteeing long-lasting jointing.
- The fungicidal properties ensure a clean look over the long term.
- The high resistance offered by DMS towards UV, weathering and ageing means it can be effectively used for both indoor and outdoor.
- DMS offers a very good hold over smooth surfaces, thus preventing damp spots from forming in the substrate.

APPLICATIONS

- Bathrooms, showers and toilets
- Connection joints to sinks
- Wash Basins
- Expansion joints between tiles
- Joints between timber and tiles
- Seal welds for display cabinets and glass blocks

BUILDING MATERIALS

- Stainless steel
- Anodised layer
- Epoxy
- Tiles
- Glazed surfaces
- Glass
- H-PVC
- Ceramics
- Painted wood
- Polyester

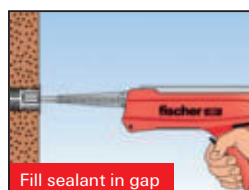
METHOD OF APPLICATION



Clean surface

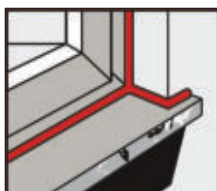


Prepare surface



Fill sealant in gap

SEALANT APPLICATIONS



TECHNICAL DATA



Antifungal General Purpose DMS

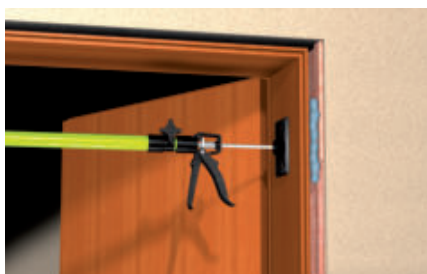


Applicator gun KPM1

Item	Art-No.	Colour	Contents (ml)
DMS TP (EN/FR/AR)	040385	Transparent	280
DMS W (EN/FR/AR)	040386	White	280
DMS GR (EN/FR/AR)	040389	Grey	280
DMS SW (EN/FR/AR)	504413	Black	280

Item	Art-No.	Adapted for	Sales Unit (pcs)
KPM1 applicator gun	53115	DMS and DMS Premium	1

General-Purpose Premium Silicone for Indoor and Outdoor Applications with Antifungal and Antibacterial Properties



Door Frame Gaps



Aluminum and Glass Standard Glazing

ADVANTAGES

- Single component sealant with antifungal and antibacterial properties.
- Suitable for all common construction and glazing applications.
- Offers excellent adhesion to a variety of non-porous substrates such as glass, glazed ceramic tiles and aluminum.
- Long lasting and offers excellent resistance to weathering, moisture, ozone and UV.

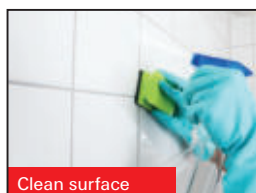
APPLICATIONS

- Tile and expansion joints
- Glazing applications
- Sanitary fixings
- Kitchen cabinets and wardrobe joints
- Curtain wall fixings
- Draught fixings
- Door and window joints
- Windshield fixing
- Metal to metal joints, duct work & sealing in A/C systems

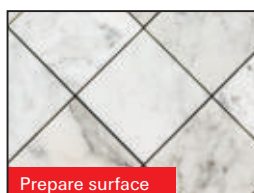
BUILDING MATERIALS

- Stainless Steel
- Metal
- Tiles
- Glass
- H-PVC
- Ceramics
- Glazed Surfaces
- Timber
- Anodised layer
- Painted wood

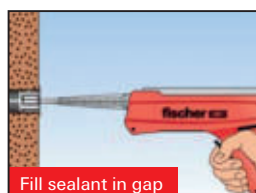
METHOD OF APPLICATION



Clean surface

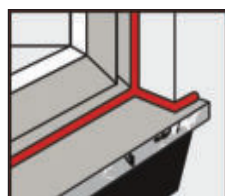


Prepare surface

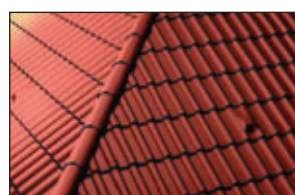
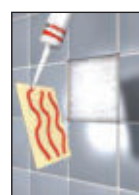
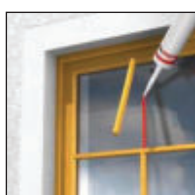


Fill sealant in gap

SEALANT APPLICATIONS



BONDING APPLICATIONS



TECHNICAL DATA



Antifungal general purpose
silicone **DMS Premium**



Applicator gun **KPM1**

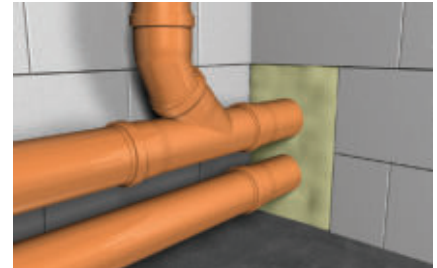
Item	Art-No.	Colour	Contents (ml)	Qty per box (pcs)
DMS Premium White 280ml	548473	White	280	24
DMS Premium Clear 280ml	548474	Clear	280	24
DMS Premium Grey 280ml	548475	Grey	280	24
DMS Premium Beige 280ml	548476	Beige	280	24
DMS Premium Black 280ml	548472	Black	280	24

Item	Art-No.	Adapted for	Sales Unit (pcs)
KPM1 applicator gun	53115	DMS and DMS Premium	1

The B3 High-Quality PU Foam Spray



Window Connection Joints



Pipe Penetrations

ADVANTAGES

- fischer's PU foam spray foam gives a **yield of upto 45 litres.**
- The rapid installation foam has been approved as watertight by an external inspection and is suitable for use in wet conditions, thus fulfilling the requirements of a well-foam.
- The low level of foam expansion during curing period avoids reworking and thus guarantees a simple and time saving application.
- The ergonomic handle design sits perfectly in the hand and is easy to use.

APPLICATIONS

- Insulating and filling window connection joints around window
- Filling pipe penetrations
- Insulating and filling in roofing work and dry construction
- Insulating and filling finished elements, wall connections, wall penetrations and cavities
- Ventilation ducts

BUILDING MATERIALS

- Concrete
- Anodised layer
- Gypsum plasterboard
- Wood
- Sand-lime brick
- Plastics (except PE, PP, teflon and silicone)
- Masonry
- Metals with priming coat
- Plaster

TECHNICAL DATA



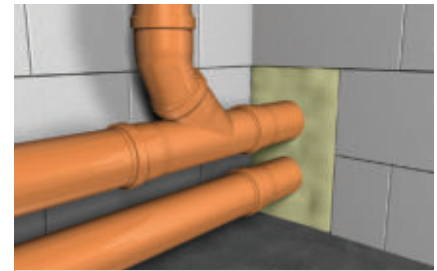
PU Foam B3

Item	Art-No.	Content per can (ml)	Max. foam yield (free foaming) (l)	Sales unit (pcs)
fischer PUP 1 / 750 B3	098011	750	45	12

The Economical and High-Quality B3 PU Foam Spray



Window Connection Joints



Pipe Penetrations

ADVANTAGES

- fischer's PU foam spray foam gives a **yield of upto 45 litres.**
- The rapid installation foam has been approved as watertight by an external inspection and is suitable for use in wet conditions, thus fulfilling the requirements of a well-foam.
- The low level of foam expansion during curing period avoids reworking and thus guarantees a simple and time saving application.
- The ergonomic handle design sits perfectly in the hand and is easy to use.

APPLICATIONS

- Insulating and filling window connection joints around window
- Insulating and filling pipe penetrations
- Insulating and filling in roofing work and dry construction
- Insulating and filling finished elements, wall connections, wall penetrations and cavities
- Ventilation ducts

BUILDING MATERIALS

- Concrete
- Anodised layer
- Gypsum plasterboard
- Wood
- Sand-lime brick
- Plastics (except PE, PP, teflon and silicone)
- Masonry
- Metals with priming coat
- Plaster

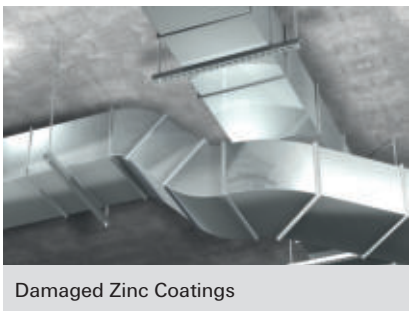
TECHNICAL DATA



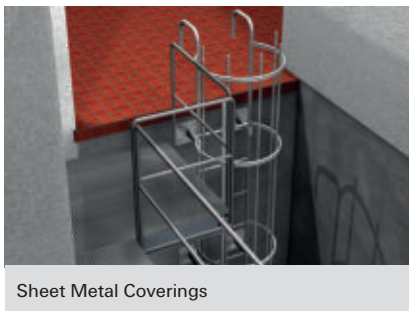
PU Foam Spray B3 - Economical

Item	Art-No.	Content per can (ml)	Max. foam yield (free foaming) (l)	Sales unit (pcs)
fischer PU 1 / 750 B3	553300	750	45	12

Ideal for Repairing Damaged Zinc Coatings Using Colour Matching Corrosion Protection



Damaged Zinc Coatings



Sheet Metal Coverings

ADVANTAGES

- Zinc Alu Spray represents a subtle repair substitute to damaged hot-dip galvanised areas.
- Excellent holding properties on blank metal, guaranteeing a lasting connection to the base material.
- The fast-drying Zinc Alu Spray guarantees good weather-proof corrosion protection and as such, is suitable for use both indoor and outdoor.

APPLICATIONS

- Repairing damaged zinc coatings
- Sheet metal coverings
- Metal constructions
- Guard rails
- Drilled and cutting points
- Climate control and ventilation systems
- For post-galvanising and repairing damaged areas of galvanised parts drilling and cutting points and welded joints

SUITABLE ON

- All iron and steel surfaces
- Hot-dip galvanised surfaces following drilling, ironwork or welding
- Non-ferrous heavy metal

TECHNICAL DATA



Zinc Alu Spray

Item	Art-No.	Content per can (ml)	Sales unit (pcs)
FTC-ZA (EN/FR/ES/PT)	509241	400	12

The Bright Colour Matches Newly Galvanised Metals and the Flake Technology Ensures High Heat Resistant Corrosion Protection



Welding Joints, Drill Points & Cut Edges



Conductive Interlayer for Spot Welding

ADVANTAGES

- Salt spray tested in line with DIN EN ISO 9227 with zero corrosion even after 300 hours.
- The colour "Bright Grade" has been perfectly adapted to match hot-dip galvanization. This acts as an optical colour compensator.
- The innovative metal flakes form a highly resistant protective layer even against extreme weather conditions.
- Guarantees a long lasting coat on blank metal surfaces.
- It guarantees a lasting connection to the base material.

APPLICATIONS

- Corrosion protection for all metals that require it.
- Conductive interlayer for spot weldings
- For HVAC Systems
- Post-galvanising and repairing damaged galvanized sections
- Coating of drilling/cutting points and welding joints

SUITABLE ON

- All iron and steel surfaces
- Hot-dip galvanised surfaces following drilling, ironwork or welding
- Non-ferrous heavy metal
- Blank laminations

TECHNICAL DATA



Zinc spray bright grade FTC-ZB

Item	Art.No.	Content per can (ml)	Sales unit (pcs)
FTC-ZB (EN/FR/ES/PT)	537223	400	12



The Duo of Power and Intelligence



Installation of TV Consoles



Fixing of Shelves & Racks

ADVANTAGES

- Two component materials for top load values and intelligent functioning (expansion, folding, knotting), depending on building material - solid, perforated or panel material.
- Great feedback (feel-good-factor) of the plug. You can feel exactly when the plug is installed perfectly.
- The narrow plug rim prevents slipping into the drill hole.
- The serrated anti-rotation feature interlock in the building material prevents rotation in the drill hole during installation.

APPLICATIONS

- TV consoles
- Shelves
- Lighting
- Mirror cabinets
- Letter boxes
- Pictures
- Fixing blinds
- Curtain rails
- Wash basin fixings

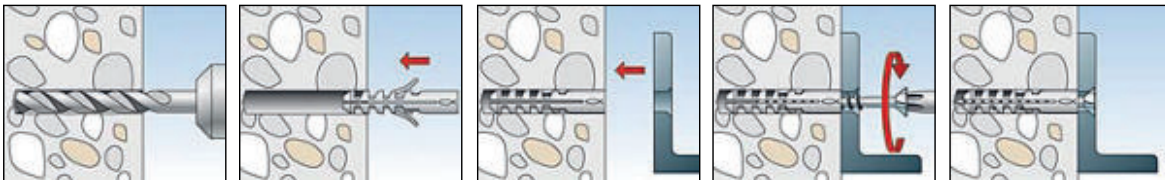
BUILDING MATERIALS



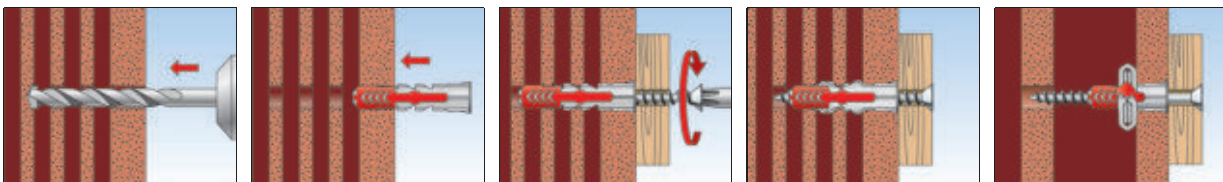
APPROVALS



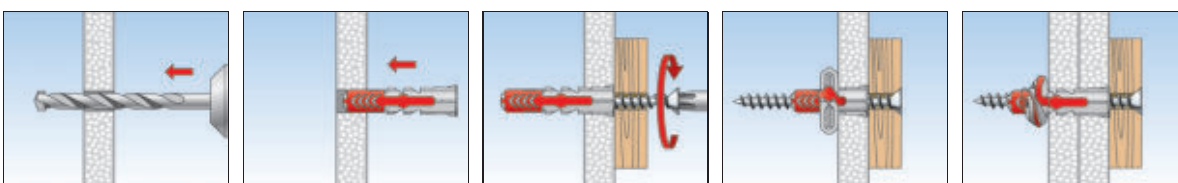
INSTALLATION - PRE-POSITIONED IN SOLID MATERIAL



INSTALLATION - PRE-POSITIONED IN HOLLOW BUILDING MATERIALS



INSTALLATION - PRE-POSITIONED IN PANEL BUILDING MATERIALS



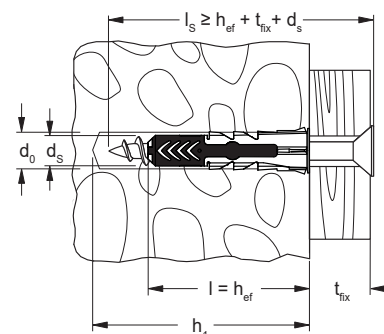
TECHNICAL DATA



DUOPOWER



DUOPOWER with greater anchorage depth



Item	Art.-No.	Art.-No.	Drill hole diameter d_0 (mm)	Min. drill-hole depth h_1 (mm)	Min. panel thickness d_p (mm)	Min. bolt penetration $l_{e,min}$ (mm)	Anchor length l (mm)	Wood and chipboard screws $d_s / d_s \times l_s$ (mm)	Drive	Max fixture thickness T_{fix} (mm)	Sales unit (pcs)
	without screw	with screw									
DUOPOWER 5 x 25	555005	-	5	35	12.5	29	25	3 - 4	-	-	100
DUOPOWER 6 x 30	555006	-	6	40	12.5	35	30	4 - 5	-	-	100
DUOPOWER 6 x 50	538240	-	6	60	12.5	55	50	4 - 5	-	-	100
DUOPOWER 8 x 40	555008	-	8	50	12.5	46	40	4.5 - 6	-	-	100
DUOPOWER 8 x 65	538241	-	8	75	2 x 12.5	71	65	4.5 - 6	-	-	50
DUOPOWER 10 x 50	555010	-	10	70	12.5	58	50	6 - 8	-	-	50
DUOPOWER 10 x 80	538242	-	10	100	-	88	80	6 - 8	-	-	25
DUOPOWER 12 x 60	538243	-	12	80	-	70	60	8 - 10	-	-	25
DUOPOWER 14 x 70	538244	-	14	90	-	82	70	10 - 12	-	-	20
DUOPOWER 5 x 25 S	-	555105	5	40	12.5	29	25	4 x 35	PZ2	6	50
DUOPOWER 6 x 30 S	-	555106	6	45	12.5	35	30	4.5 x 40	PZ2	5	50
DUOPOWER 6 x 50 S	-	538245	6	75	12.5	55	50	4.5 x 70	PZ2	15	50
DUOPOWER 8 x 40 S	-	555108	8	65	12.5	45	40	5 x 60	PZ2	15	50
DUOPOWER 8 x 65 S	-	538246	8	85	2 x 12.5	70	65	5 x 80	PZ2	10	25
DUOPOWER 10 x 50 S	-	555110	10	74	12.5	57	50	7 x 69	SW 13 / TX 40	13	25
DUOPOWER 10 x 80 S	-	538247	10	112	-	87	80	7 x 107	SW 13	20	10
DUOPOWER 12 x 60 S	-	538248	12	85	-	68	60	8 x 80	SW 13	12	10
DUOPOWER 14 x 70 S	-	538249	14	100	-	80	70	10 x 95	SW 17	15	8

LOADS

Highest recommended loads¹⁾ for a single anchor.

The given loads are valid for wood screws with the specified diameter.

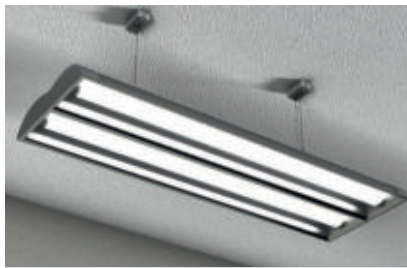
Type	DUOPOWER									
	5 x 25	6 x 30	6 x 50	8 x 40	8 x 65	10 x 50	10 x 80	12 x 60	14 x 70	
Wood screw diameter $\emptyset$ (mm)	4	5	5	6	6	8	8	10	12	
Min. edge distance concrete C_{min} (mm)	30	35	35	50	50	65	65	80	100	
Recommended loads in the respective base material $F_{rec}^{2)}$ (kN)										
Concrete $\geq C20 / 25$	0.40	0.95	1.65	1.10	2.30	2.15	4.20	3.30	5.30	
Solid brick $\geq Mz 12$ (kN)	0.30	0.50	0.55	0.62	0.69	1.20	1.45	1.30	1.35	
Solid sand-lime brick $\geq KS 12$ (kN)	0.50	1.00	1.60	1.25	2.25	2.20	3.85	2.80	4.50	
Aerated concrete $\geq PB 2, PP 2 (G 2)$ (kN)	0.05	0.10	0.15	0.10	0.16	0.20	0.30	0.24	0.35	
Aerated concrete $\geq PB 4, PP 4 (G 4)$ (kN)	0.25	0.38	0.55	0.42	0.60	0.60	1.10	1.00	1.45	
Vertically perforated brick $\geq Hlz 12$ ($\rho \geq 0.9 \text{ kg/dm}^3$) (kN)	0.13	0.15	0.17	0.25	0.40	0.25	0.40	0.35	0.40	
Perforated sand-lime brick $\geq KSL 12$ ($\rho \geq 1.6 \text{ kg/dm}^3$) (kN)	0.40	0.60	0.60	0.70	1.00	0.70	2.00	0.75	1.50	
Gypsum block ($\rho \geq 0.9 \text{ kg/dm}^3$) (kN)	0.10	0.18	0.37	0.25	0.50	0.35	0.65	0.50	0.50	
Gypsum fibreboard 12.5 mm (kN)	0.24	0.33	0.35	0.35	-	0.50	-	-	-	
Gypsum plasterboard 12.5 mm (kN)	0.12	0.15	0.15	0.15	-	0.15	-	-	-	
Gypsum plasterboard 2 x 12.5 mm (kN)	0.13	0.15	0.24	0.20	0.32	0.30	-	-	-	
Mattone Forato Typ F8 (kN)	0.30	0.30	-	0.25	-	0.25	-	-	-	
Tramezza Doppio UNI 19 (kN)	0.15	0.15	0.23	0.15	0.30	0.20	0.52	0.35	0.35	
Sepa Parpaing (kN)	0.30	0.45	0.25 ³⁾	0.45	0.45 ³⁾	0.45	0.45 ³⁾	0.60 ³⁾	0.60 ³⁾	

(1) Required safety factors are considered.

(2) The load data are valid for tension, shear and combined tension and shear load.

(3) Load determination on plastered wall.

Easy to Install Nylon Toggle for High Loads in All Panel Building Materials



Installation of Cabinets



Fixing of Shelves & Racks

ADVANTAGES

- Flexible screw mount allows for the use of screws and hooks with different thread shapes.
- Glass fibre-reinforced plastics and a metal skeleton insert (fischer DUOTEC 12) allow the toggle to handle heavy tensile and transverse loads in all panel building materials.
- Soft grey nylon contact surface distributes the load over the panel surface, thereby minimising weakening of the supporting building material.
- Standard drill hole diameters and short tilting element for easy installation in narrow cavities, including cavities with insulation.
- White flush sleeve with snap function allows the plug to be pre-installed quickly and securely in the drill hole.
- With scale on the grip strap (fischer DUOTEC 12) for determining the required screw length (scale value + 20 mm).

APPLICATIONS

- TV consoles
- Shelves
- Lighting
- Mirror cabinets
- Letter boxes
- Pictures
- Fixing blinds
- Curtain rails
- Wash basin fixings

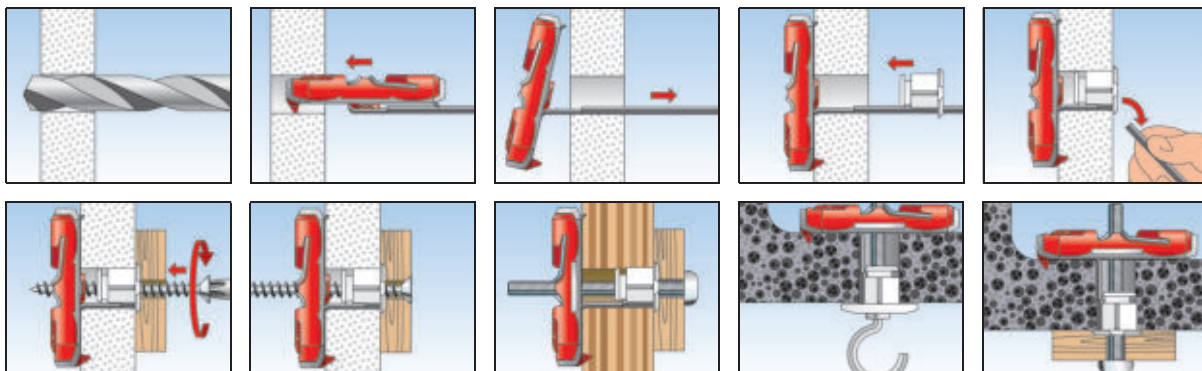
BUILDING MATERIALS



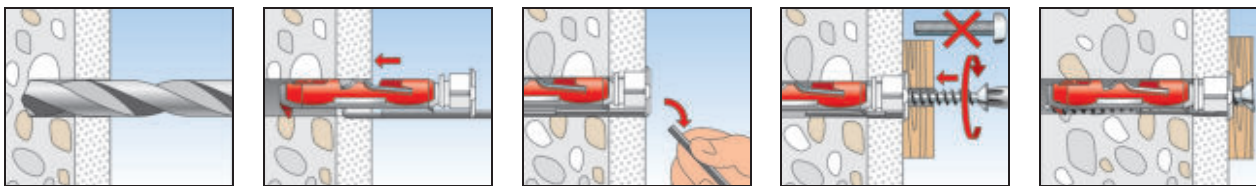
APPROVALS



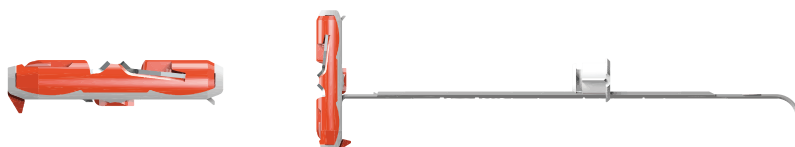
INSTALLATION - PRE-POSITIONED IN PLASTERBOARD AND CAVITY FIXINGS



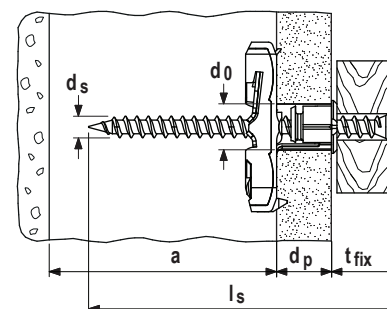
INSTALLATION - PRE-POSITIONED IN SOLID MATERIALS



TECHNICAL DATA BOARD MATERIAL



Nylon toggle **DUOTEC**



Item	Art-No:	Drill hole diameter d_o (mm)	Min. panel thickness d_p (mm)	Max. panel thickness d_p (mm)	Min. cavity depth a (mm)	Screw diameter d_s (mm)	Screw length l_s (mm)	Sales unit (pcs)
DUOTEC 10	537258	10	9.5	55	40	4.5 - 5.0	$\geq d_p + t_{fix} + 20$	50
DUOTEC 10 S	537259 ¹⁾	10	9.5	55	40	5.0	70	25
DUOTEC 10 S PH	539025 ²⁾	10	9.5	55	40	5.0	70	25
DUOTEC 12	542796	12	12	55	50	5.0 - 6.0 / M6	$\geq d_p + t_{fix} + 20$	10
DUOTEC 12 S PH M	542797 ^{2) 3)}	12	12	55	50	M6	55	10
DUOTEC 12 RH	542798 ⁴⁾	12	12	55	50	5.5	70	10

(1) DUOTEC S - with chipboard screw countersunk head

(2) DUOTEC S PH - with chipboard screw panhead

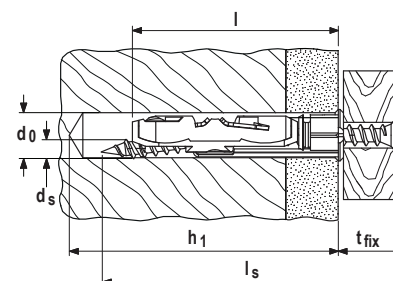
(3) fischer DUOTEC S PH - with machine screw panhead

(4) fischer DUOTEC RH - with screw with round hook

TECHNICAL DATA SOLID MATERIAL



Nylon toggle **DUOTEC**



Item	Art-No:	Drill hole diameter d_o (mm)	Min. drill hole depth h_1 (mm)	Screw diameter d_s (mm)	Min. screw length (mm)	Anchor length l (mm)	Max. fixture thickness t_{fix} (mm)	Sales unit (pcs)
DUOTEC 10	537258	10	$l_s - t_{fix} + 10$	4.5 - 5.0	$t_{fix} + 55$	50	$l_s - 55$	50
DUOTEC 10 S	537259 ¹⁾	10	65	5.0	70	50	15	25
DUOTEC 10 S PH	539025 ²⁾	10	65	5.0	70	50	15	25
DUOTEC 12	542796	12	$l_s - t_{fix} + 10$	5.0 - 6.0	$t_{fix} + 65$	60	$l_s - 65$	10
DUOTEC 12 RH	542798 ³⁾	12	75	5.5	55	60	-	10

(1) DUOTEC S - with chipboard screw countersunk head

(2) DUOTEC S PH - with chipboard screw panhead

(3) DUOTEC RH - with screw with round hook

LOADS

Recommended loads¹⁾ ⁴⁾for a single anchor.

Type	fischer Duotec 10				fischer Duotec 12			
	Chipboard screw		Metrical screw	fischer hook	Chipboard screw		Metrical screw	fischer hook
Screw diameter (mm)	4.5	5	5	5	5	6	6	5.5
Recommended loads in the respective base material $F_{rec}^{2)}$ for a span in the construction b = 625 mm								
Gypsum plasterboard 9.5 mm (kN)	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Gypsum plasterboard 12.5 mm (kN)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Gypsum plasterboard 2 x 12.5 mm (kN)	0.43	0.43	0.43	0.30 ³⁾	0.43	0.43	0.43	0.43
Gypsum fiberboard 12.5 mm (kN)	0.51	0.51	0.51	0.30 ³⁾	0.51	0.51	0.51	0.50 ³⁾
Chipboard 16 mm (kN)	0.71	0.71	0.71	0.30 ³⁾	0.75	0.80	0.80	0.50 ³⁾
OSB-Board 18 mm (kN)	0.75	0.75	0.75	0.30 ³⁾	0.75	1.30	1.20	0.50 ³⁾
Recommended loads in the respective base material $F_{rec}^{2)}$ for a span in the construction b = 120 mm								
Gypsum plasterboard 9.5 mm (kN)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Gypsum plasterboard 12.5 mm (kN)	0.36	0.36	0.36	0.30 ³⁾	0.36	0.36	0.36	0.20
Gypsum plasterboard 2 x 12.5 mm (kN)	0.59	0.59	0.59	0.30 ³⁾	0.70	0.80	0.80	0.50 ³⁾
Gypsum fiberboard 12.5 mm (kN)	0.75	0.75	0.75	0.30 ³⁾	0.80	1.10	1.10	0.50 ³⁾
Chipboard 16 mm (kN)	0.75	0.75	0.75	0.30 ³⁾	0.80	1.40	1.30	0.50 ³⁾
OSB-Board 18 mm (kN)	0.75	0.75	0.75	0.30 ³⁾	0.80	1.50	1.40	0.50 ³⁾
Recommended loads in solid building materials $F_{rec}^{2)}$								
Concrete $\geq C20/25$ (kN)	0.45	0.75	–	0.30 ³⁾	0.40	0.75	–	0.30
Wood – (kN)	0.30	0.75	–	0.30 ³⁾	0.20	0.65	–	0.30
Recommended loads in the respective base material $F_{rec}^{2)}$								
Hollow block of lightweight aggregate concrete 'Sepa Parpaing' $f_b \geq 8 \text{ N/mm}^2$ (kN)	–	–	–	–	0.65	1.00	1.00	0.50 ³⁾
Pre-stressed hollow-core concrete slabs (kN)	–	–	–	–	1.00	1.40	1.30	0.50 ³⁾
Hollow block of lightweight aggregate concrete Hbl acc. EN 771-3 $f_b \geq 2 \text{ N/mm}^2$ (kN)	–	–	–	–	0.90	1.00	1.00	0.50 ³⁾

(1) Required safety factors are considered.

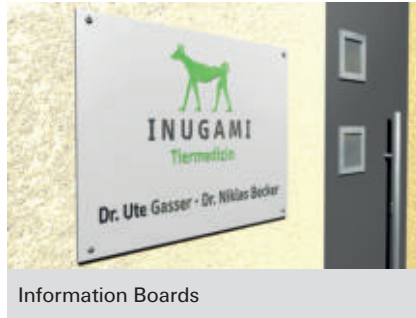
(2) Valid for tensile load, shear load and oblique load under any angle.

(3) Bending of the hook is decisive. Only for tension load.

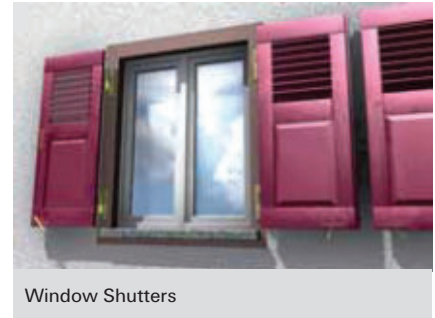
(4) The recommended loads are reference values and depending to the building material and the workmanship.

*The values are only valid for the given screw diameter.

The Installation Friendly Nylon Plug with 2-way Expansion



Information Boards



Window Shutters

ADVANTAGES

- The rimless plug sleeve allows for the plug to be set as deep as required below the plaster to the bearing substrate to achieve the maximum load-bearing capacity.
- As the plug only expands in two directions, it is possible to direct the expansion forces parallel to the edge of the building material by turning the plug allowing for smaller edge distances.
- The slim-line plug geometry makes it easy to push the plug into the drill hole for fast and simple installations.
- The anti-rotation lock prevents the plug from rotating in the drill hole, thus guaranteeing a high level of installation safety.

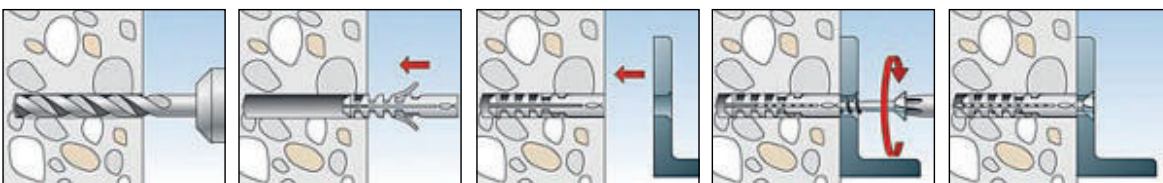
APPLICATIONS

- Information boards
- Folding window shutters
- Cross meter
- Skirting
- Light shelves
- Letter boxes
- Motion detectors
- Curtain rails
- Electrical installations
- Mirror cabinets

BUILDING MATERIALS



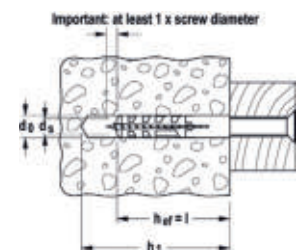
INSTALLATION - PRE-POSITIONED



TECHNICAL DATA



Nylon plug S Plug



Item	Art-No.	Drill hole diameter d_0 (mm)	Anchor length l (mm)	Min. drill hole depth h_1 (mm)	Wood & chip-board screws d_s (mm)	Qty. per box (pcs)
S 4	050104	4	20	25	2 - 3	200
S 5	050105	5	25	35	3 - 4	100
S 6	050106	6	30	40	4 - 5	100
S 8	050108	8	40	55	4.5 - 5	100

TECHNICAL DATA

Item	Art-No.	Drill hole diameter d_0 (mm)	Anchor length l (mm)	Min. drill hole depth h_1 (mm)	Wood & chip-board screws d_s (mm)	Qty. per box (pcs)
S 10	050110	10	50	70	6 - 8	50
S 12	050112	12	60	80	8 - 10	25
S 14	050114	14	75	90	10 - 12	20
S 16	050116	16	80	100	12 (1/2")	10
S 20	050120	20	90	120	16	5

LOADS

Highest recommended loads¹⁾ for a single anchor.

The given loads are valid for woodscrews with the specified diameter.

Type		S4	S5	S6	S8	S10	S12	S14	S16	S20
Screw diameter	$\varnothing$ (mm)	3	4	5	6	8	10	12	12	16
Min. edge distance in concrete	c_{min} (mm)	20	25	30	40	50	60	70	80	100
Recommended loads in the respective base materials F_{res}²⁾										
Concrete	$\geq C20/25$ (kN)	0.16	0.28	0.40	0.60	1.10	1.50	1.85	2.26	3.88
Solid brick	$\geq Mz 12$ (kN)	0.14	0.24	0.28	0.50	– ³⁾	– ³⁾	– ³⁾	– ³⁾	– ³⁾
Solid sand-lime brick	$\geq KS 12$ (kN)	0.14	0.24	0.28	0.55	– ³⁾	– ³⁾	– ³⁾	– ³⁾	– ³⁾
Aerated concrete	$\geq PB4, PP4 (G4)$ (kN)	–	–	0.05	0.07	0.16	0.28	0.40	– ³⁾	– ³⁾
Plaster wall	(kN)	–	–	–	0.15	0.23	0.37	0.60	– ³⁾	– ³⁾

(1) Includes the safety factor 7

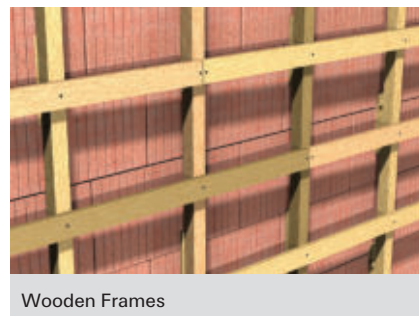
(2) Valid for tensile load, shear load and oblique load under any angle.

(3) Due to the failure of the substrate varies too much, no reproducible values can be given.

Hammer-In Plug for a Simple, Fast, Simple and Economical Installation



Cable Ducts



Wooden Frames

ADVANTAGES

- The rapid hammerset installation reduces the amount of time required and allows for an economic series installation.
- The integrated hammer-in stop prevents the plug from expanding prematurely (jamming), thus enabling a problem free installation
- Together with the cross-slot recess, the thread of the nail allows the screw to be removed, thus allowing for subsequent dismantling.
- The wide range of diameters, usage lengths and head shapes provide the correct plug for every fixing.

APPROVALS



BUILDING MATERIALS



Concrete



Natural Stone
With Dense Structure



Lime Bricks

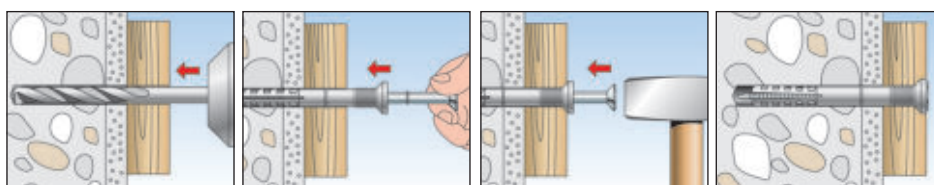


Solid Bricks



Solid Blocks
Light Weight Concrete

INSTALLATION - PUSH THROUGH



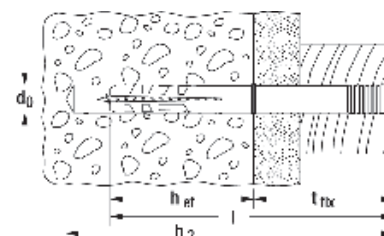
TECHNICAL DATA



Hammerfix **N-S** with nail, pre-assembled



Hammerfix **N-S A2** with stainless steel A2 nail, pre-assembled



	Zinc-plated steel	Stainless steel A2	Drill hole diameter	Effect. anchorage depth	Anchor length	Min. drill hole depth for through fixings	Max. fixture thickness	Drive	Sales unit
	Art.-No.	Art.-No.	d_0 [mm]	h_{ef} [mm]	l [mm]	h_2 [mm]	t_{fix} [mm]		[pcs]
Items	GVZ	A2							
N 5 x 30/5 S (100)	050395²⁾	050370	5	25	30	45	5	PZ2	100
N 5 x 40/15 S (100)	050351	—	5	25	40	55	15	PZ2	100
N 5 x 50/25 S (100)	050352	—	5	25	50	65	25	PZ2	100
N 6 x 40/10 S (50)	050354	050372	6	30	40	55	10	PZ2	50
N 6 x 40/10 S (100)	048788	—	6	30	40	55	10	PZ2	100
N 6 x 40/10 S (200)	513834²⁾	—	6	30	40	55	10	PZ2	200

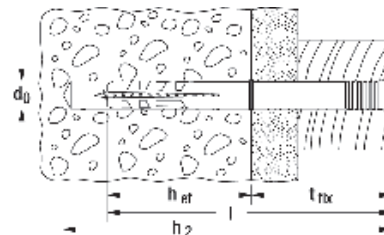
TECHNICAL DATA



Hammerfix N-S with nail, pre-assembled



Hammerfix N-S A2 with stainless steel A2 nail, pre-assembled



	Zinc-plated steel	Stainless steel A2	Drill hole diameter	Effect. anchorage depth	Anchor length	Min. drill hole depth for through fixings	Max. fixture thickness	Drive	Sales unit
	Art.-No.	Art.-No.	d_0 [mm]	h_{ef} [mm]	l [mm]	h_2 [mm]	t_{fix} [mm]		[pcs]
Item	gvz	A2							
N 6 x 60/30 S (100)	048789	—	6	30	60	75	30	PZ2	100
N 6 x 60/30 S (200)	513835 ²⁾	—	6	30	60	75	30	PZ2	200
N 6 x 80/50 S (50)	050353	—	6	30	80	95	50	PZ2	50
N 6 x 80/50 S (100)	048790	—	6	30	80	95	50	PZ2	100
N 6 x 80/50 S (200)	513836 ²⁾	—	6	30	80	95	50	PZ2	200
N 8 x 60/20 S (50)	050356	050374	8	40	60	75	20	PZ3	50
N 8 x 60/20 S (100)	048791	—	8	40	60	75	20	PZ3	100
N 8 x 80/40 S (50)	050358	050375	8	40	80	95	40	PZ3	50
N 8 x 80/40 S (100)	048792	—	8	40	80	95	40	PZ3	100
N 8 x 100/60 S (50)	050357	050376	8	40	100	115	60	PZ3	50
N 8 x 100/60 S (100)	048793	—	8	40	100	115	60	PZ3	100
N 8 x 120/80 S (50)	050359	—	8	40	120	135	80	PZ3	50
N 8 x 120/80 S (100)	048794	—	8	40	120	135	80	PZ3	100
N 10 x 100/50 S (50)	050346 ¹⁾	—	10	50	100	115	50	PZ3	50
N 10 x 135/85 S (50)	050347 ¹⁾	—	10	50	135	150	85	PZ3	50
N 10 x 160/110 S (50)	050348 ¹⁾	—	10	50	160	175	110	PZ3	50
N 10 x 230/180 S (50)	050335 ¹⁾	—	10	50	230	245	180	PZ3	50

¹⁾ not pre-assembled

²⁾ also specially suitable for fischer pipe clips FC, see chapter electrical fixings.

LOADS

Hammerfix N

Highest recommended loads¹⁾ for a single anchor

The given loads are valid for screw nails with the specified diameter.

Type		N5	N6 ³⁾	N8	N10
Screw nail diameter	$\emptyset$ [mm]	3,5	4	5	7
Recommended loads in the respective base material F_{rec} ²⁾					
Concrete	$\geq$ C20/25 [kN]	0,20	0,25	0,27	0,33
Solid brick	$\geq$ Mz 12 [kN]	0,14	0,18	0,24	0,30
Solid sand-lime brick	$\geq$ KS 12 [kN]	0,18	0,22	0,24	0,33
Solid brick of lightweight aggregate concrete	$\geq$ V 4 [kN]	0,05	0,12	0,15	0,16
Aerated concrete	$\geq$ PB 2 [kN]	0,03	0,04	0,05	0,10
Aerated concrete	$\geq$ PB 4 [kN]	0,07	0,10	0,13	0,16

¹⁾ Required safety factors are considered.

²⁾ Valid for tensile load, shear load and oblique load under any angle.

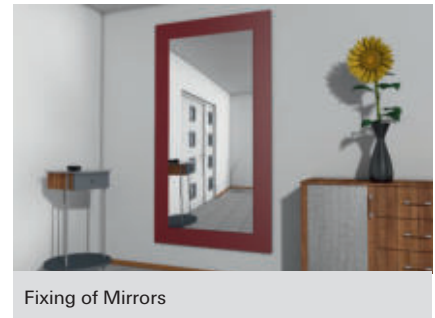
³⁾ The values have to be reduced by 50% for N 6 x 40/7 P K.



The Self-Drilling Plasterboard Plug for Fast and Easy Installation



Installation of Smoke Detectors



Fixing of Mirrors

ADVANTAGES

- An innovative product of the fischer DUO-Line with intelligent combinations for more power and more intelligence.
- The self-drilling fischer DUOBLADE allows fast and easy installation in gypsum plasterboard and gypsum fibreboard.
- The black metal tip guarantees simple and safe installation.
- High torque when anchor is installed for the feel-good factor and an optimum feeling when setting.
- PZ 2 drive - same drive for plug and screw.

APPLICATIONS

- Smoke detectors
- Mirrors
- Curtain rods
- Blinds
- Lamps
- Pictures and more

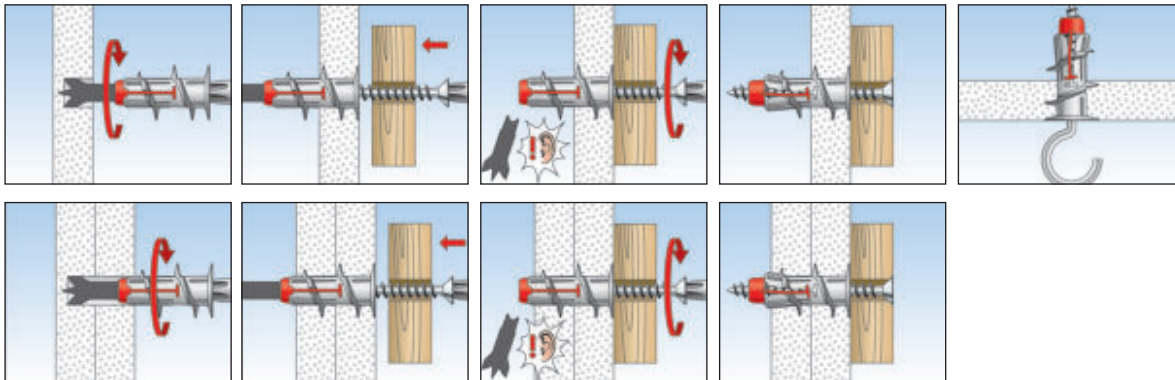
BUILDING MATERIALS



APPROVALS



INSTALLATION



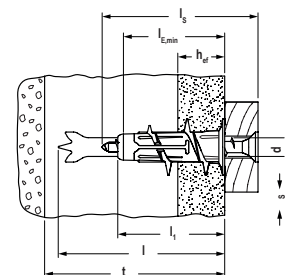
TECHNICAL DATA



DUOBLADE



DUOBLADE S



Item	Art.-NO.	Min. thickness to first supporting layer d_s (mm)	Min. drill hole depth l (mm)	Anchor length l_1 (mm)	Screw h_{ef} (mm)	Max. panel thickness $l_{E,Min}$ (mm)	Max. fixture thickness $d_s / d_s \times l_s$ (mm)	Sales unit (pcs)	Sales unit (pcs)
DUOBLADE	545675	50	44	29	9.5 - 25	28	4 - 5	-	50
DUOBLADE S	545676 ¹⁾	50	44	29	9.5 - 25	28	4.5 x 40	PZ2	25

1) With chipboard screw countersunk head.

LOADS

Plasterboard fixing DUOBLADE
Highest recommended loads¹⁾ for a single anchor.
The given loads are valid for chipboard screws with the specified diameters.

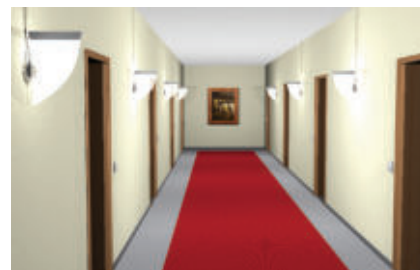
Type		DUOBLADE
Chipboard screw	Ø (mm)	4.5 - 5.0
Recommended loads in the respective base material F _{rec} ²⁾		
Gypsum plasterboard	9.5 mm (kN)	0.08
Gypsum plasterboard	12.5 mm (kN)	0.10
Gypsum plasterboard (eg. Knauf Diamant board or Rigips Die Harte)	12.5 mm (kN)	0.18
Gypsum plasterboard	2 x 12.5 mm (kN)	0.20
Light weight cement board	12.5 mm (kN)	0.08
Gypsum fibreboard	12.5 mm (kN)	0.34

(1) Required safety factors are considered.
(2) Valid for tensile load, shear load and oblique load under any angle.

The Fastest Installation in Gypsum Plasterboard Fixing



Photo Frames Fixing



Installation of Wall Lamps

ADVANTAGES

- The sharp, self-tapping thread of the GK enables a secure, positive fit fixing. This achieves a high load-bearing capacity.
- The short fixing length means that only a small amount of space is required behind the board. As a result, the GK can also be used in the case of unknown board thickness and cavity depth.
- The cross-drive recess in the head of the fixing means that the GK can also be screwed out like a screw without a setting tool.
- The GK can be used with the most wide-ranging screws, hooks and eye screws. This allows for a broad range of applications.

APPLICATIONS

- Photo frames
- Wall lamps
- Fitting accessories
- Shelf fixing
- Electrical installations
- Series installations and more

APPROVALS

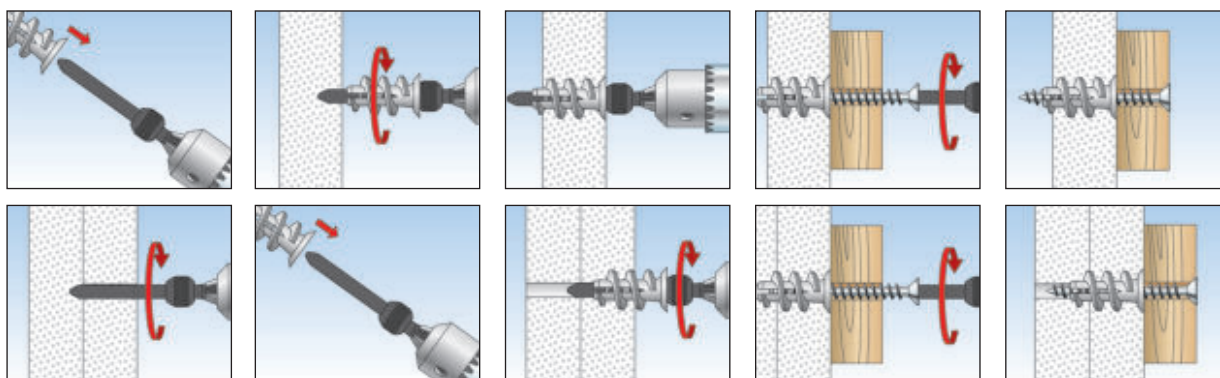


BUILDING MATERIALS



Gypsum & Plaster board

INSTALLATION



TECHNICAL DATA



Item	Art-No.	Anchor length l (mm)	Max. thickness to first supporting layer t (mm)	Min. fixture thickness t _{fix} (mm)	Screw ds x ls (mm)	Actuation	Sales unit (pcs)
GK	052389 ¹⁾	22	25	–	4.5 - 5.0 x LS	–	100
GKS	052390 ²⁾	22	25	13	4.5 x 35	PZ2	50
GKW	052393	–	–	–	–	–	10

(1) Min. screw length = length of plug 22 mm + thickness of building component.
(2) Supplied with plasterboard screw.

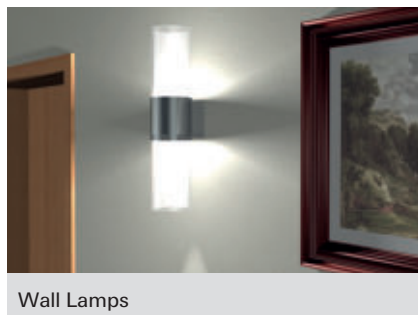
LOADS

Recommended loads¹⁾ for a single anchor. The given loads are valid for chipboard screws with the specified diameters.

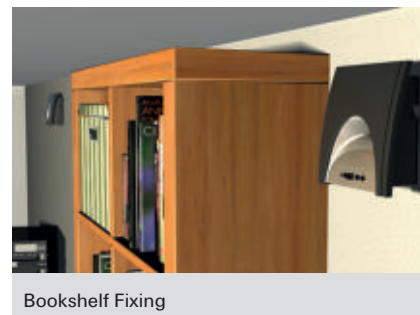
Type	Ø (mm)	GK
Chipboard screw		4.0 - 5.0
Recommended loads in the respective base material F _{rec} ²⁾		
Gypsum plasterboard	9.5 mm (kN)	0.07
Gypsum plasterboard	12.5 mm (kN)	0.08
Gypsum plasterboard	2 x 12.5 mm (kN)	0.11

(1) Required safety factors are considered
(2) Valid for tensile load, shear load and oblique load under any angle.

The Self-Tapping Metal Fixing for Gypsum Plasterboard and Gypsum Fibreboard Fixing



Wall Lamps



Bookshelf Fixing

ADVANTAGES

- Due to its material properties, the GKM can be used in gypsum plasterboard and gypsum fibreboard, and can be used with the most wide-ranging screws, hooks and eyescrews. This allows for a broad range of applications.
- The sharp, self-tapping thread enables a secure, positive fit fixing. This achieves a high load-bearing capacity.
- The cross drive recess means that a standard screwdriver or bit can be used. **No special setting tool is required.**
- The short fixing length means that only a small amount of space is required behind the board. As a result, the GKM can also be used in the case of unknown board thickness and cavity

APPLICATIONS

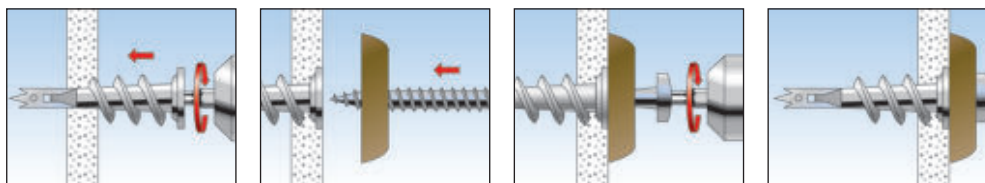
- Wall lamps
- Fitting accessories for furnitures
- Electrical installations
- Photo frames and more

BUILDING MATERIALS



Gypsum & Plaster board

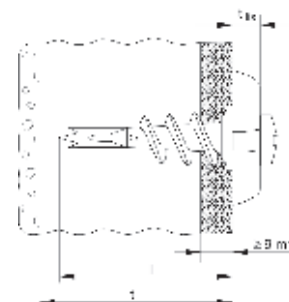
INSTALLATION



TECHNICAL DATA



Plasterboard fixing metal GKM



Item	Art-No.	Anchor length l (mm)	Max. thickness to first supporting layer t (mm)	Min. fixture thickness t _{fix} (mm)	Screw ds x ls (mm)	Actuation	Sales unit (pcs)
GKM	024556	31	35	-	4.5 - 5.0 x LS	-	100
GKM 12 ¹⁾	040432	31	35	12	4.5 x 35	PZ2	100
GKM 27 ²⁾	040434	31	35	27	4.5 x 50	PZ2	100

(1) Supplied with plasterboard screws panhead.

(2) Supplied with plasterboard screws countersunk head.

LOADS

Recommended loads¹⁾ for a single anchor. The given loads are valid for chipboard screws with the specified diameters.

Type		GKM
Chipboard screw	Ø (mm)	4.0 - 5.0
Recommended loads in the respective base material F_{rec}²⁾		
Gypsum plasterboard	9.5 mm (kN)	0.07
Gypsum plasterboard	12.5 mm (kN)	0.08
Gypsum plasterboard	2 x 12.5 mm (kN)	0.11

(1) Required safety factors are considered.

(2) Valid for tensile load, shear load and oblique load under any angle

The Versatile Metal Cavity Fixing with Metric Screws



Curtain Rails



Shelves

ADVANTAGES

- Due to the extensive range, the HM is suitable for board building materials with a thickness of 3-50 mm and thus suitable for a number of different applications.
- The metric internal thread allows the attachment to be removed and refitted several times, thus offering the best possible flexibility.
- The HM's expanding arms ensure a large supporting surface, thus allowing a high load-bearing capacity.
- The claws around the edge of the fixing penetrate the board building material, preventing the fixing from rotating, thus ensuring a secure installation.

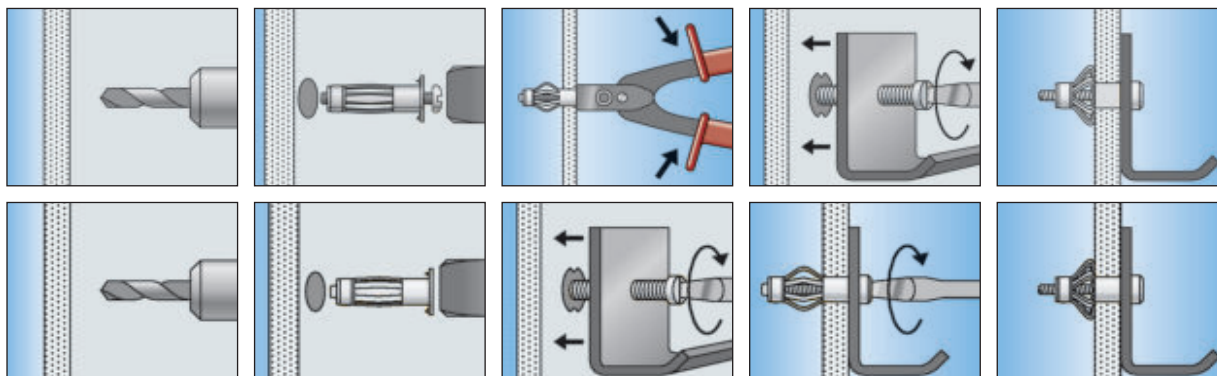
APPLICATIONS

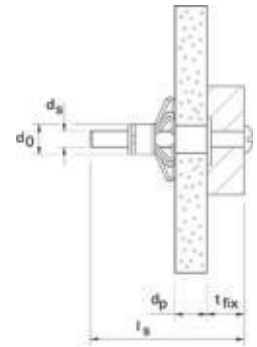
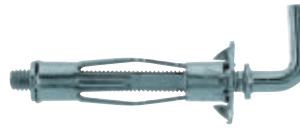
- Curtain rails
- Shelves
- Cabinets and more

BUILDING MATERIALS

- Gypsum plasterboard and gypsum fibreboards
- Cavity floor slabs
- Light building boards made of wood wool
- Chipboard
- Plywood boards

INSTALLATION







The Cost-Effective Drive Anchor with Plastic Nail for Fixing the Insulation and Mineral Wool



Polystyrene Boards



Insulating Materials in Rear Ventilated Facades

ADVANTAGES

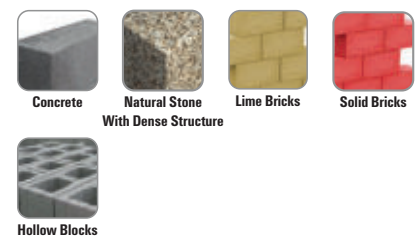
- The glass-fibre reinforced plastic nail (GRP nail) reduces the heat transmission and prevents marks on the plaster surface.
- The simple hammer-set installation allows for a quick installation process and thus reduces workload.
- The well-proven design with low anchorage depth reduces the amount of drilling required, thus achieving a high level of efficiency.
- The DIPK can be used universally in rear ventilated curtain facades, as well as in plaster facades.

APPLICATIONS

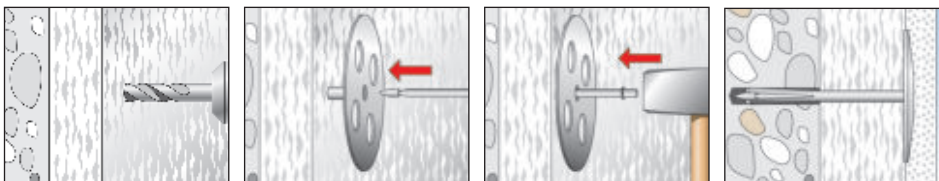
To fix pressure resistant insulating materials in facades, such as:

- Polystyrene boards
- Insulating materials in rear ventilated facades
- Wool
- Cork boards and coir matting
- PU panels

BUILDING MATERIALS



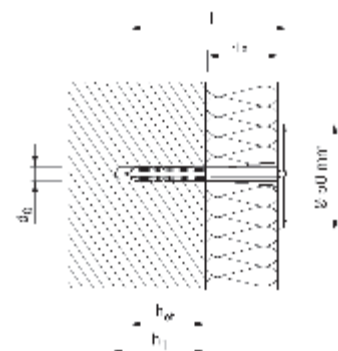
INSTALLATION



TECHNICAL DATA



Render fixing DIPK



Item	Art-No.	Drill hole diameter d_0 (mm)	Usable length t_{fix} (mm)	Min. drill hole depth h_1 (mm)	Effect. anchoring depth h_{ef} (mm)	Nail length (mm)	Fixing length l (mm)	Sales unit (pcs)
DIPK 8/20-40	041865	8	20 - 40	40	30	77	70	200
DIPK 8/40-60	041866	8	40 - 60	40	30	97	90	200
DIPK 8/60-80	041867	8	60 - 80	40	30	117	110	200

TECHNICAL DATA

Item	Art.No.	Drill hole diameter d_0 (mm)	Usable length t_{fix} (mm)	Min. drill hole depth h_1 (mm)	Effect. anchoring depth h_{ef} (mm)	Nail length (mm)	Fixing length l (mm)	Sales unit (pcs)
DIPK 8/80-100	041868	8	80 - 100	40	30	137	130	200
DIPK 8/100-120	041869	8	110 - 120	40	30	157	150	200
DIPK 10/10-30	043966	10	10 - 30	40	30	67	60	200
DIPK 10/40-60	043967	10	40 - 60	40	30	97	90	200
DIPK 10/60-80	043968	10	60 - 80	40	30	117	110	200
DIPK 10/80-100	043969	10	80 - 100	40	30	137	130	200
DIPK 10/100-120	043970	10	110 - 120	40	30	157	150	200
DIPK 10/120-140	043971 ⁽¹⁾	10	120 - 140	40	30	117	170	200
DIPK 10/140-160	043972 ⁽¹⁾	10	140 - 160	40	30	137	190	200

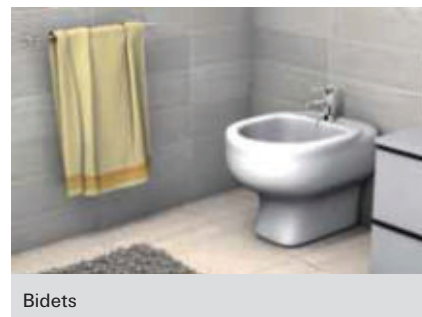
(1) Installation with setting tool, included in each package.



Complete Fixing Sets for Free-Standing Toilets and Bidets



Free-Standing Toilets



Bidets

ADVANTAGES

- Complete fixing sets including brass screws allow for quick and easy installation.
- A pronounced rim prevents contact between the screw and ceramics, thus ensuring nothing gets damaged during fixing.
- The WB 5N's assembly bracket with pre-drilled rows of holes allow for a flexible fixing with two directions.
- The WB 5N is also suitable for fixing ceramic shelves and mirrors, allowing it to be used for a wide range of applications.

APPLICATIONS

- Free-standing toilets
- Bidets
- Ceramic shelves
- Mirrors

BUILDING MATERIALS



Concrete



Natural Stone
With Dense Structure



Solid Bricks

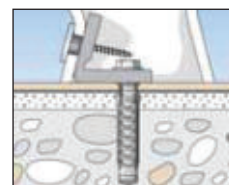
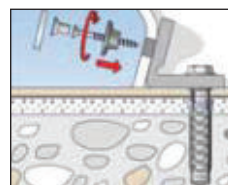
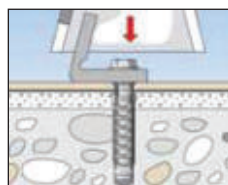
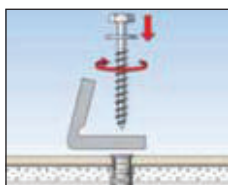
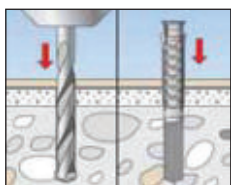


Lime Bricks



Solid Block
Light Weight Concrete

INSTALLATION



TECHNICAL DATA



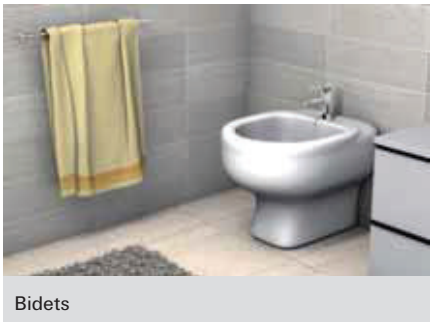
WC fixing **WB 5N**

Item	Art-No.	Contents	Sales unit (pcs)
WB5N	018652	2 x S plugs, UX 10, 2 x screws 7x65 zinc-plated, 2 nylon angles, 2 x washers 8mm, 2 x screws A2 stainless steel, 2 x flanged sleeves, 2 x chrome cover caps	50

Vertical Fixings for Floor-Mounted Toilets and Bidets with Vertical Holes



Free-Standing Toilets



Bidets

ADVANTAGES

- A pronounced rim prevents contact between the screw and the ceramics, thus ensuring nothing gets damaged during fixing.
- Corrosion resistant materials.

APPLICATIONS

- Free-standing toilets
- Bidets
- Ceramic shelves
- Mirrors

BUILDING MATERIALS



Concrete



Natural Stone
With Dense
Structure

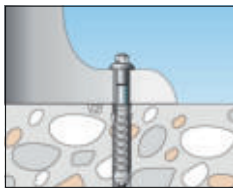
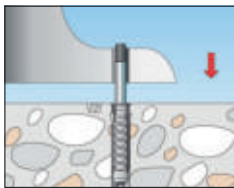
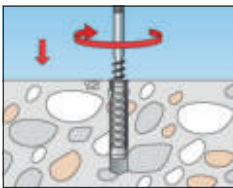
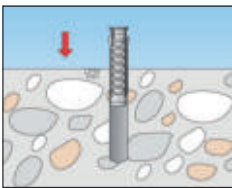
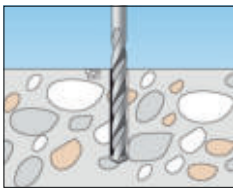


Solid Blocks
Light Weight
Concrete



Solid Bricks

INSTALLATION



TECHNICAL DATA



Stainless steel **WB2**

Item	Art-No.	Sales diameter (mm)	Drill hole depth (mm)	Ceramic hole diameter (mm)	Ceramic thickness (mm)	Contents	Sales unit (pack)
WB2 stainless steel	501004	8	55	8.5+12	25	4 x SX 8 plugs, 4 x 7x32 stainless steel screws, 4 x blind brass nickel-plated nuts, 4 x nylon bushes in one polybag	50



The Most Economical Two-Flute Cutter - The SDS Plus Range of Drill Bits for Concrete



Faster Drilling Dust Removal



Fits All SDS Plus Hammers

ADVANTAGES

- Allows for faster drilling dust removal.
- SDS Plus Economical offers consistent quality and reliable performance.
- fischer SDS Plus Economical's shank perfectly fits in all SDS plus hammers.

TECHNICAL DATA



Drill bit SDS Plus II Pointer - Economical

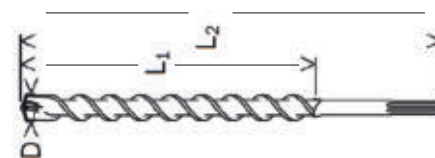
BUILDING MATERIALS



Concrete



Masonry

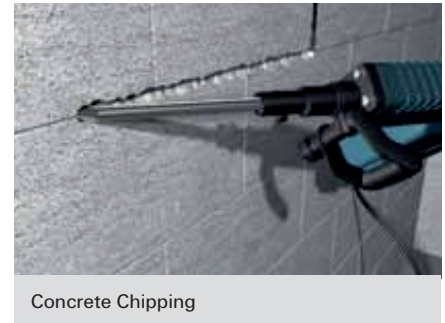
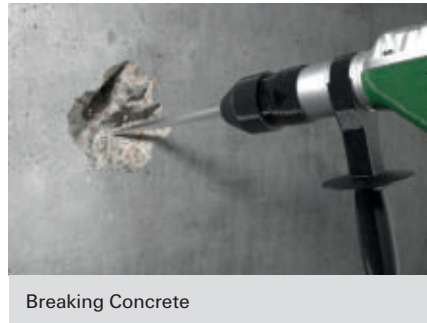


	Art-No.	Drill hole diameter d_0 (mm)	Working length L_1 (mm)	Total length L_2 (mm)	Type of packaging	Contents (pcs)	Sales unit (pcs)
Pointer EC 4/50/110	546812	4	50	110	Polybag	1	1
Pointer EC 5/50/110	546813	5	50	110	Polybag	1	1
Pointer EC 5/100/160	546814	5	100	160	Polybag	1	1
Pointer EC 5.5/50/110	546815	5.5	50	110	Polybag	1	1
Pointer EC 5.5/100/160	546816	5.5	100	160	Polybag	1	1
Pointer EC 6/50/110	546817	6	50	110	Polybag	1	1
Pointer EC 6/100/160	546818	6	100	160	Polybag	1	1
Pointer EC 6/150/210	546819	6	150	210	Polybag	1	1
Pointer EC 6.5/50/110	546820	6.5	50	110	Polybag	1	1
Pointer EC 6.5/100/160	546821	6.5	100	160	Polybag	1	1
Pointer EC 6.5/150/210	546822	6.5	150	210	Polybag	1	1
Pointer EC 7/50/110	546823	7	50	110	Polybag	1	1
Pointer EC 7/100/160	546824	7	100	160	Polybag	1	1
Pointer EC 8/50/110	546825	8	50	110	Polybag	1	1
Pointer EC 8/100/160	546826	8	100	160	Polybag	1	1
Pointer EC 8/150/210	546827	8	150	210	Polybag	1	1
Pointer EC 8/200/260	546828	8	200	260	Polybag	1	1
Pointer EC 8/400/460	546829	8	400	460	Polybag	1	1
Pointer EC 9/100/160	546830	9	100	160	Polybag	1	1
Pointer EC 9/150/210	546831	9	150	210	Polybag	1	1
Pointer EC 10/50/110	546832	10	50	110	Polybag	1	1
Pointer EC 10/100/160	546833	10	100	160	Polybag	1	1
Pointer EC 10/150/210	546834	10	150	210	Polybag	1	1
Pointer EC 10/200/260	546836	10	200	260	Polybag	1	1
Pointer EC 10/250/310	546837	10	250	310	Polybag	1	1
Pointer EC 10/400/450	546838	10	400	450	Polybag	1	1

TECHNICAL DATA

Item	Art-No.	Drill hole diameter d_0 (mm)	Working length L_1 (mm)	Total length L_2 (mm)	Type of packaging	Contents (pcs)	Sales unit (pcs)
Pointer EC 11/100/160	546839	11	100	160	Polybag	1	1
Pointer EC 12/100/160	546840	12	100	160	Polybag	1	1
Pointer EC 12/150/210	546843	12	150	210	Polybag	1	1
Pointer EC 12/200/260	546844	12	200	260	Polybag	1	1
Pointer EC 12/400/460	546845	12	400	460	Polybag	1	1
Pointer EC 13/100/160	546846	13	100	160	Polybag	1	1
Pointer EC 14/100/160	546848	14	100	160	Polybag	1	1
Pointer EC 14/150/210	546849	14	150	210	Polybag	1	1
Pointer EC 14/200/260	546850	14	200	260	Polybag	1	1
Pointer EC 14/400/450	546851	14	400	450	Polybag	1	1
Pointer EC 14/550/600	546852	14	550	600	Polybag	1	1
Pointer EC 15/100/160	546853	15	100	160	Polybag	1	1
Pointer EC 15/200/260	546854	15	200	260	Polybag	1	1
Pointer EC 16/100/160	546855	16	100	160	Polybag	1	1
Pointer EC 16/150/210	546856	16	150	210	Polybag	1	1
Pointer EC 16/250/310	546857	16	200	310	Polybag	1	1
Pointer EC 16/400/450	546858	16	400	450	Polybag	1	1
Pointer EC 17/150/210	546859	17	150	210	Polybag	1	1
Pointer EC 18/150/200	546860	18	150	200	Polybag	1	1
Pointer EC 18/250/300	546861	18	250	300	Polybag	1	1
Pointer EC 18/400/450	546862	18	400	450	Polybag	1	1
Pointer EC 19/150/200	546863	19	150	200	Polybag	1	1
Pointer EC 20/150/200	546864	20	150	200	Polybag	1	1
Pointer EC 20/250/300	546865	20	250	300	Polybag	1	1
Pointer EC 20/400/450	546866	20	400	450	Polybag	1	1
Pointer EC 22/200/250	546867	22	200	250	Polybag	1	1
Pointer EC 22/400/450	546868	22	400	450	Polybag	1	1
Pointer EC 25/200/250	546869	25	200	250	Polybag	1	1
Pointer EC 25/400/450	546870	25	400	450	Polybag	1	1
Pointer EC 26/250/300	546871	26	250	300	Polybag	1	1
Pointer EC 28/400/450	546872	28	400	450	Polybag	1	1
Pointer EC 30/400/450	546873	30	400	450	Polybag	1	1

High-Performance Chisels with SDS Plus and SDS Max Drill Shank.



ADVANTAGES

- The SDS Plus and SDS Max drill shanks for the chisels allow for use with professional hammer drilling machines and ensure a reliable and efficient transfer of force.
- The use of high quality hardened steel with surface protection increases the life of the tools.
- The high oscillation endurance allows for high work comfort and contributes to delivering clean results.

BUILDING MATERIALS



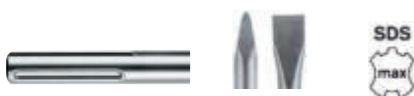
TECHNICAL DATA



Chisel Pointed/Flat - SDS Plus

Item	Art-No.	Type	Length L (mm)	Width B (mm)	Contents (pcs)	Sales unit (pcs)
SDS Plus - Chisel pointed 250	504277	Pointed	250	-	1	1
SDS Plus - Chisel flat 20/250	504278	Flat	250	20	1	1

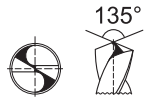
TECHNICAL DATA



Chisel Pointed/Flat - SDS Max

Item	Art-No.	Type	Length L (mm)	Width B (mm)	Contents (pcs)	Sales unit (pcs)
SDS Max - Chisel pointed 400	504282	Pointed	400	-	1	1
SDS Max - Chisel pointed 600	504283	Pointed	600	-	1	1
SDS Max - Chisel flat 25/400	504286	Flat	400	25	1	1
SDS Max - Chisel flat 25/600	504287	Flat	600	25	1	1

Metal Drill Bits HSS-G with Fully Grounded Split Point - Basic Plus, DIN 338



TOLERANCE H8
MATERIAL HSS
POINT GRINDING SPLIT POINT
POINT ANGLE 135° FROM
POINT THINNING Ø 3.0 MM
SURFACE DIN 1412,
FORM C
BRIGHT



Efficient Chip Removal



Fast and Efficient Drilling

ADVANTAGES

- Made of robust HSS steel and in accordance with DIN 338.
- Robust drill bit with high break resistance.
- Precision ground from solid stock for long service life and high precision.
- Split point for optimum centring and little feed force effort.
- 135° tip angle for quick drilling progress.
- Optimum chip removal through type N

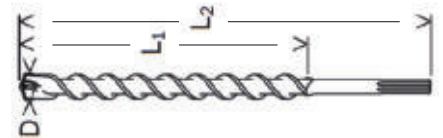
TECHNICAL DATA



High Speed Steel Drill bit - HSS-G

BUILDING MATERIALS

- Steel alloys
- Cast iron
- Sintered iron
- Graphite
- Bronze
- Tempered cast iron
- Bronze iron and
- Hard plastic



Item	Art-No.	Drill hole diameter d_0 (mm)	Working length L_1 (mm)	Total length L_2 (mm)	Type of packaging	Contents (pcs)	Sales unit (pcs)
HSS-G 1.5/18/40	539200	1.5	18	40	Plastic box	10	1
HSS-G 2.0/24/49	539201	2.0	24	49	Plastic box	10	1
HSS-G 2.5/30/57	539202	2.5	30	57	Plastic box	10	1
HSS-G 3.0/33/61	539203	3.0	33	61	Plastic box	10	1
HSS-G 3.5/39/70	539204	3.5	39	70	Plastic box	10	1
HSS-G 4.0/43/75	539205	4.0	43	75	Plastic box	10	1
HSS-G 4.5/47/80	539206	4.5	47	80	Plastic box	10	1
HSS-G 5.0/52/86	539207	5.0	52	86	Plastic box	10	1
HSS-G 5.5/57/93	539208	5.5	57	93	Plastic box	10	1
HSS-G 6.0/57/93	539209	6.0	57	93	Plastic box	10	1
HSS-G 6.5/63/101	539210	6.5	63	101	Plastic box	10	1
HSS-G 7.0/69/109	539211	7.0	69	109	Plastic box	10	1
HSS-G 7.5/69/109	539212	7.5	69	109	Plastic box	10	1
HSS-G 8.0/75/117	539213	8.0	75	117	Plastic box	10	1
HSS-G 8.5/75/117	539214	8.5	75	117	Plastic box	5	1
HSS-G 9.0/81/125	539215	9.0	81	125	Plastic box	5	1
HSS-G 9.5/81/125	539216	9.5	81	125	Plastic box	5	1
HSS-G 10.0/87/133	539217	10.0	87	133	Plastic box	5	1
HSS-G 10.5/87/133	539218	10.5	87	133	Plastic box	5	1
HSS-G 11.0/94/142	539219	11.0	94	142	Plastic box	5	1
HSS-G 11.5/94/142	539220	11.5	94	142	Plastic box	5	1
HSS-G 12.0/101/151	539221	12.0	101	151	Plastic box	5	1
HSS-G 12.5/101/151	539222	12.5	101	151	Plastic box	5	1
HSS-G 13.0/101/151	539223	13.0	101	151	Plastic box	5	1



Glass Fiber - Safety Guarantee

Glass Fiber – Safety Guarantee

Features

Most regular cloth / fabric, due to automatic weaving of reinforcement, competitor do not have weave

Resin coated glass fiber, in house fischer process

Match of resins, resin of fiber glass coating matches perfectly with abrasive bond resin
controlled weight / m², glass fiber weight per m² is permanently controlled

Benefits

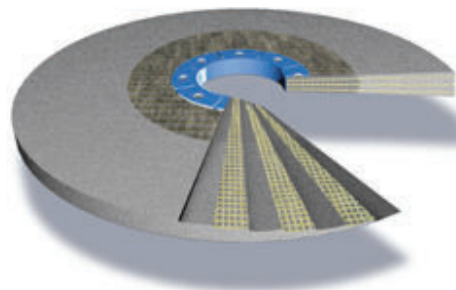
Plain / even glass reinforcement layers avoid imbalance

Highest safety against breakage

Regular wear profile of wheels

No chipping off (of large abrasive grain parts)

Consistent performance, reliability



Product Application Chart

	Product category	Grinding Applications											Cutting applications - job type									
		Surface grinding	Chamfering	Weld removal	Back-gauging	Burr removal	Beveling	Surface conditioning	V-grinding	Edge grinding	SS grinding	Fettling	General fabrication	Rectangular pipe	Solid bar	Round pipe	Channel	Angle	Plate	Tor steel	MS sheet	SS sheet
Grinding	9" DCD	●	●	●	●	●	●	●	●	●		●										
	7" DCD	●	●	●	●	●	●	●	●	●			●									
	4.5" DCD	●	●	●		●	●	●		●			●									
	4" DCD	●		●		●		●		●			●									
Cutting	4" UTW																				●	●
	4.5" UTW																				●	●
	9" COW													●	●	●	●	●	●			
	7" COW																●	●	●			
	4.5" COW																●	●	●			
	4" COW																●	●	●			
	Chopsaw													●	●	●	●	●	●	●		

DCB - Depressed Centre Disc

UTW - Ultra Thin Wheel

COW - Cutt Off Wheel

Recommended Safety Norms for all Cutting & Grinding Wheels



Wear protective goggles



Wear dust mask



Wear ear protectors



Wear protective gloves



Wear protective shoes



Protect yourself



Remove plug from socket

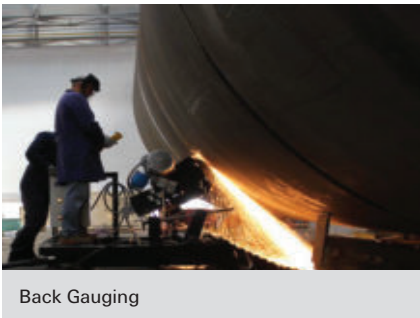


Cordless tool
(Independent of mains supply)



Important information

Metal Grinding Disc for Small and Large Angle Grinders



Back Gauging



Edge Grinding



Available standard sizes 4", 4.5", 5", 7", and 9". 6 mm thickness

ADVANTAGES

- Up to 35% higher dust removal rate as compared to others in the same class.
- A unique product design with specially engineered grain and bond system with a coarse and fine grit size combination system.
- Revolutionary design with light weight and unmatched grinding efficiency.
- The new construction and design enables it to cover a wide range of applications like back gauging, V grooving and light foundry.
- Promises a uniform finish with improved productivity and machine life.

APPLICATIONS

- Back guaging
- Edge grinding

TECHNICAL DATA



Metal grinding disc

Item	Art-No.	PAK/Pcs relation	EAN code (PAK)	PAK in inner carton (KAR)
Metal grinding disc 100/6/22.23 mm (4" x 1/4" x 7/8")	539051	1	4048962267570	15
Metal grinding disc 115/6/22.23 mm (4.5" x 1/4" x 7/8")	539052	1	4048962267587	10
Metal grinding disc 125/6/22.23 mm (5" x 1/4" x 7/8")	539053	1	4048962267594	40
Metal grinding disc 180/6/22.23 mm (7" x 1/4" x 7/8")	539054	1	4048962267600	20
Metal grinding disc 230/6/22.23 mm (9" x 1/4" x 7/8")	539055	1	4048962267617	10

Metal Cutting Disc for Small and Large Angle Grinders



Clean Cut



Quick Cut



Cutting Threaded Rod



Cutting Solid Metal Rod



Available standard sizes 4", 4.5", 5", 7", and 9". 3 mm thickness

ADVANTAGES

- Specially engineered design offers much higher product life with a faster cut-rate.
- Suitable for both mild and stainless steel materials.
- Up to 25% higher life than competition in its class, assuring you considerable cost savings.
- The faster cut-rate compared to the competition allows for higher productivity and reduces operator fatigue.

APPLICATIONS

- Heavy duty metal cutting
- Metal pipe cutting

TECHNICAL DATA



Metal cutting disc

Item	Art-No.	PAK/Pcs relation	EAN code (PAK)	PAK in inner carton (KAR)
Metal cutting disc 100/3/16 mm (4" x 1/8" x 5/8")	539067	1	4048962267730	25
Metal cutting disc 115/3/22.23 mm (4.5" x 1/8" x 7/8")	539068	1	4048962267747	25
Metal cutting disc 125/3/22.23 mm (5" x 1/8" x 7/8")	539069	1	4048962267754	100
Metal cutting disc 180/3/22.23 mm (7" x 1/8" x 7/8")	539070	1	4048962267761	40
Metal cutting disc 230/3/22.23 mm (9" x 1/8" x 7/8")	539071	1	4048962267778	20

High Quality, Efficient Cutting Discs for Chopsaw Machines



Clean Cut



Quick Cut



Channel Cutting



Cutting Metal Pipe

41 - Straight cut-off wheel

Available standard sizes 12", 14", 16"
3 mm thickness

ADVANTAGES

- Specially engineered product to improve productivity in cutting applications.
- A unique blend of higher life and cut-rate in comparison to competition suitable for use on all types of steel.
- Single reinforced chopsaw for faster cutting and higher productivity and product life of up to 20% higher than competition in its class enables considerable cost savings.

APPLICATIONS

- Any type of angle, pipe, rebar, rod or threaded rod cutting

TECHNICAL DATA



Metal cutting disc for chopsaw

Item	Art-No.	PAK/Pcs relation	EAN code (PAK)	PAK in inner carton (KAR)
Metal cutting disc 305/3/25.4 mm (12" x 1/8" x 1")	539072	1	4048962267785	10
Metal cutting disc 355/3/25.4 mm (14" x 1/8" x 1")	539073	1	4048962267792	10
Metal cutting disc 405/3/25.4 mm (16" x 1/8" x 1")	539074	1	4048962267708	10

Ultra Thin Stainless Steel Cutting Discs for Small and Large Angle Grinders



Cutting Solid Stainless Steel Rod



Cutting Channel

Clean Cut



Quick Cut



41 - Straight cut-off wheel

Available standard sizes 4", 4.5", 5", 7", and 9". 1 mm - 1.9 mm thickness

ADVANTAGES

- Specially engineered design offers much higher product life with a faster cut-rate.
- Suitable for both mild and stainless steel materials.
- Up to 30% higher life than competition in its class, assuring you considerable cost savings.
- The faster cut-rate compared to the competition allows for higher productivity and reduces operator fatigue.

APPLICATIONS

- Channel cutting
- Metal pipe and rod cutting

TECHNICAL DATA



Ultra thin stainless steel cutting discs

Item	Art.No.	PAK/Pcs relation	EAN code (PAK)	PAK in inner carton (KAR)
Ultra thin stainless steel cutting disc 100/1.0/16 mm inox (4" x 0.04" x 0.62")	539075	1	4048962267815	50
Ultra thin stainless steel cutting disc 115/1.0/22.23 mm inox (4.5" x 0.04" x 0.87")	539076	1	4048962267822	50
Ultra thin stainless steel cutting disc 125/1.0/22.23 mm inox (5" x 0.04" x 0.87")	539077	1	4048962267839	50
Ultra thin stainless steel cutting disc 180/1.6/22.23 mm inox (7" x 0.06" x 0.87")	539078	1	4048962267846	25
Ultra thin stainless steel cutting disc 230/1.9/22.23 mm inox (9" x 0.07" x 0.87")	539079	1	4048962267853	25

All New Aluminium Oxide Flap Discs with Innovative Design and Increased Productivity for Metal Surfaces



Edge Deburring



Weld Stock Removal

Available Sizes : 4" & 4.5"
Available Grit : 40, 60, 80 & 120
Type 29 conical for both
contoured surface and edge work

ADVANTAGES

- High productivity and life with strong glass fibre backing.
- Synthetic backing with premium aluminium oxide grains.
- The best choice for fast stock removal.
- Angled flaps provide greater contact when removing stock on flat surface.
- Durable and fray resistant with better cut rate.

APPLICATIONS

- Edge deburring and chamfering
- Weld stock removal and edge blending
- Surface cleaning and finishing rust removal

TECHNICAL DATA



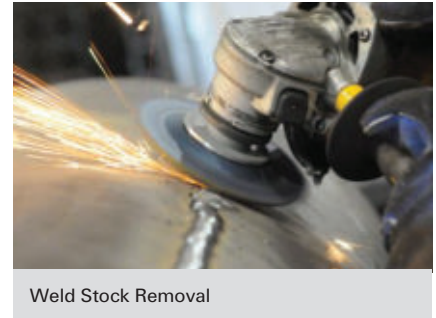
Flap Disc - Aluminium Oxide

Item	Art.No.	PAK/Pcs relation	EAN code (PAK)	PAK in inner carton (KAR)
Flap Disc Almunium Oxide 100x16mm 40 Grit	548452	1	4042205365153	10
Flap Disc Almunium Oxide 100x16mm 60 Grit	548453	1	4042205365160	10
Flap Disc Almunium Oxide 100x16mm 80 Grit	548454	1	4042205365177	10
Flap Disc Almunium Oxide 100x16mm 120 Grit	548455	1	4042205365184	10
Flap Disc Almunium Oxide 115x22.23mm 40 Grit	548456	1	4042205365191	10
Flap Disc Almunium Oxide 115x22.23mm 60 Grit	548457	1	4042205365207	10
Flap Disc Almunium Oxide 115x22.23mm 80 Grit	548458	1	4042205365214	10
Flap Disc Almunium Oxide 115x22.23mm 120 Grit	548459	1	4042205365221	10

All New Zirconia Inox Flap Discs with Innovative Design and Increased Productivity for Stainless Steel Surfaces.



Stainless-Steel Metal Fabrication



Weld Stock Removal

Available Sizes : 4" & 4.5"

Available Grit : 40, 60, 80 & 120

Type 29 conical for both contoured surface and edge work

ADVANTAGES

- High productivity and consistent material removal and finish.
- Best in class backing with zirconia alumina grains.
- Angled flaps provide greater contact when removing stock on flat surfaces.
- Best choice for fast stainless steel stock removal.
- Strong glass fibre backing.

APPLICATIONS

- Stainless steel metal fabrication
- Weld stock removal and surface cleaning
- Weld blending on stainless steel vessels

TECHNICAL DATA



Flap Disc - Zirconia Inox

Item	Art-No.	PAK/Pcs relation	EAN code (PAK)	PAK in inner carton (KAR)
Flap Disc Zirconia Inox 100x16mm 40 Grit	548460	1	4042205365238	10
Flap Disc Zirconia Inox 100x16mm 60 Grit	548461	1	4042205365245	10
Flap Disc Zirconia Inox 100x16mm 80 Grit	548462	1	4042205365252	10
Flap Disc Zirconia Inox 100x16mm 120 Grit	548463	1	4042205365269	10
Flap Disc Zirconia Inox 115x22mm 40 Grit	539080	1	4048962267860	10
Flap Disc Zirconia Inox 115x22mm 60 Grit	539081	1	4048962267877	10
Flap Disc Zirconia Inox 115x22mm 80 Grit	539082	1	4048962267884	10
Flap Disc Zirconia Inox 115x22mm 120 Grit	539083	1	4048962267891	10



Powder Actuated Power Drive F35 Stud Driver Allows for Easy Installation (8 mm tool)



ADVANTAGES

- Optimum adaptation with 3 cartridge strengths and 6-step power control.
- Extremely flexible with a large selection of fastener elements for a wide range of fixing applications.
- Short standstill times thanks to extremely simple care and maintenance.
- High performance allowing fastener elements of up to 62 mm in length to be driven in without pre-nailing.

APPLICATIONS

- Installation of wire mesh on concrete
- Fixing of false ceilings and more

BUILDING MATERIALS

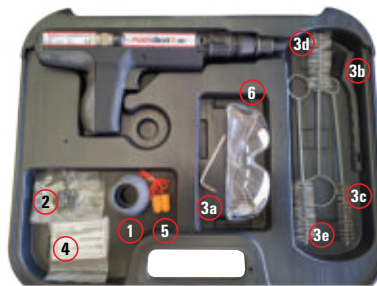


TECHNICAL DATA



Item	Art-No.	Weight (kg)	Tool length (mm)	Max. Length of fastener element (mm)	Max. recommended driving frequency (studs/h)	Power control	Sales unit (pcs)
F35	510000	2.35	340	62	500	3 cartridge strengths and 6-step power control by means of regulation knob	1

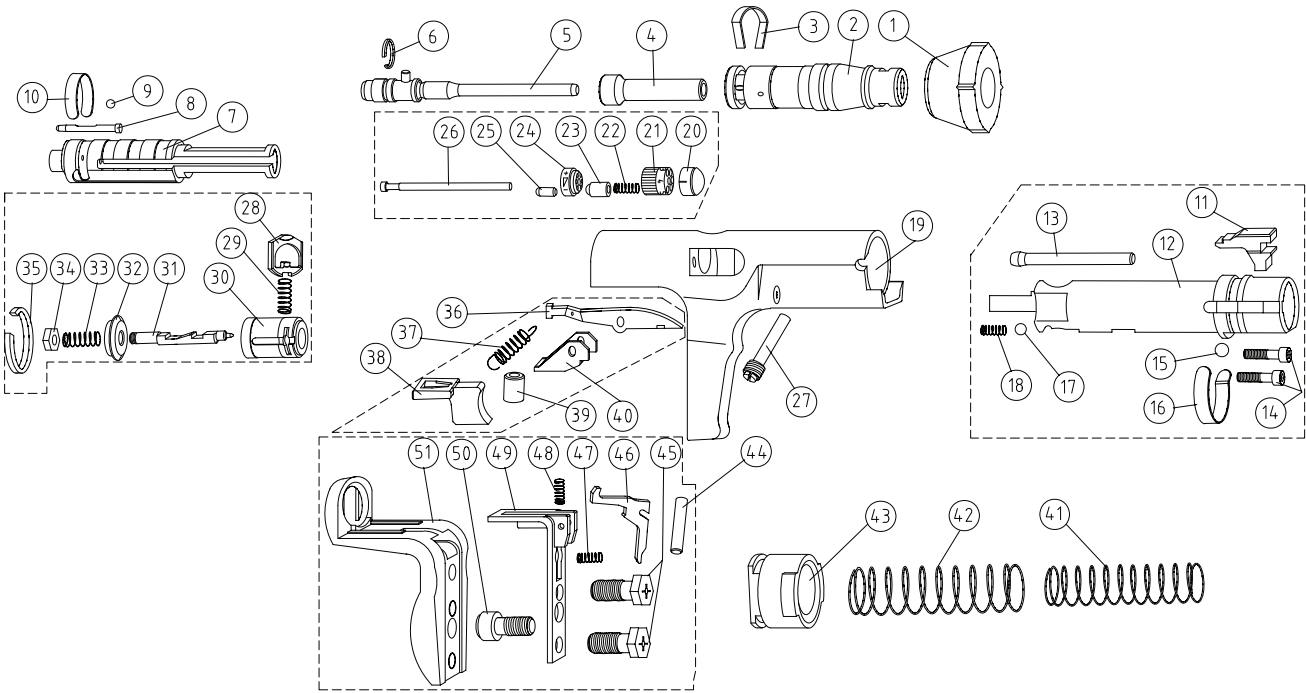
ACCESSORIES



Item	Art-No.	Description	Sales unit
1	510003	Stabilizer	1
2	510005	Shear clip	5
3a - 3e	510256	F35 cleaning kit - 4 x Brushes and 1 x Allen kit	1
4	510017	Steel ball	5

Item	Art-No.	Description	Sales unit
5	510258	Ear protector with strapstabilizer	1
6	510259	Safety goggles, standard model	1
-	510001	F35 transport case	1
-	510002	F35 operating manual (en)	1

SPARE PARTS



Item	Art-No.	Description	Sales unit
1	510003	Stabilizer	1
2	510004	Baseplate 2/S-13 Standard	1
3	510005	Shear clip	5
4	510006	Fastener guide 2/F-3 Standard	5
5	510007	Piston body assembly	5
6	510008	Piston ring	10
7	510009	Piston guide	1
8	510010	Regulation pin	10
9	510011	1/8" steel ball	10
10	510012	C clip for piston guide	10
11	510013	Piston stop	10
12	510014	Steel liner assembly	1
13	510015	Pressure pin	10
14	510016	Front allen cap screw M6x25	10
15	510017	Steel ball	5
16	510018	Annular ball spring	10
17	510019	Strip pressure ball	10
18	510020	Compression spring	10
19	510021	Housing	1
20	510022	Decorative bullet head	10
21	510023	Regulation knob	5
22	510024	Compression spring	10
23	510025	Snap for knob head	10
24	510026	Advance lever guide	5
25	510027	Release lever pin	10
26	510028	Release lever pin	10

Item	Art-No.	Description	Sales unit
27	510029	Threaded pin	10
28	510030	Sear	10
29	510031	Compression spring	10
30	510032	Spring guide	5
31	510033	Firing pin	10
32	510034	Spring detent	10
33	510035	Compression spring	10
34	510036	Firing pin nut	10
35	510037	Retention ring	10
36	510038	Release lever	10
37	510039	Advance lever spring	10
38	510040	Trigger	5
39	510041	Advance lever bushing	10
40	510042	Advance lever guide	5
41	510043	Firing pin spring (left-hand)	5
42	510044	Firing pin spring (right-hand)	5
43	510045	End cap	5
44	510046	Release lever pin	10
45	510047	Front cap screw	10
46	510048	Release lever	10
47	510049	Compression spring	10
48	510050	Compression spring	10
49	510051	Support strip assembly	10
50	510052	Handle allen screw	10
51	510053	Rubber grip	1
7 - 10	510054	Kit 1: Piston assembly guide	1

General information and compatibility

PTB APPROVAL SYMBOL



The fischer Power Drive F35 Stud Driver is type approved and system-tested. The tool therefore bears the approval symbol of the PTB in square form with the approval number S 818. fischer thereby guarantees the conformity with the approved design. Faults discovered during use must be reported to the responsible head of the approvals authority (PTB) and to the office of the Permanent International Commission for Firearms Testing (C.I.P.).

MATERIAL SUITABILITY



fischer studs marked in this annex are suitable for applications in concrete, solid brick and solid lime-sand brick.



fischer studs marked in this annex are suitable for applications in steel with a thickness of ≥ 4 mm.

Fixing in concrete

Effective anchoring depth (h_{ef})

For fixtures in concrete, the effective anchoring depth (h_{ef}) is the determining factor for the selection of the appropriate fastener element. The effective anchoring depth (h_{ef}) is dependent on the compressive strength of the concrete.

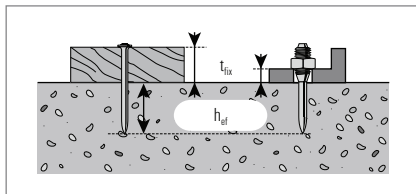
Compressive strength of concrete	Effective anchoring depth (h_{ef})
C16/20	30 - 35 mm *
C20/25	25 - 30 mm *
C30/37	20 - 25 mm *

* The values shown are indicative values. Several test fixings should be carried out in the base material to determine the exact values for the installation situation.

Concrete shaft length of the fastener element

The correct shaft length (L) is determined by the thickness of the part to be fixed (t_{fix}) and the effective anchoring depth (h_{ef}) using the following formula:

$$L = t_{fix} + h_{ef}$$



For fixtures with stud bolts, the necessary shaft length corresponds to the effective anchoring depth (h_{ef}), the thickness of the part to be fixed (t_{fix}) does not have to be taken into consideration.

STUDS IN MAGAZINE



fischer studs marked in this annex are supplied in magazines of 10 studs and can only be used in stud drivers having a suitable magazine.

Fixing in steel

Effective anchoring depth (h_{ef})

For fixtures in steel, the effective anchoring depth (h_{ef}) is the determining factor for the selection of the appropriate fastener element. The effective anchoring depth (h_{ef}) is dependent on the tensile strength of the steel.

Tensile strength of the steel (f_{tk})	Effective anchoring depth (h_{ef})
360 N/mm ²	12 mm
510 N/mm ²	10 mm

* The values shown are indicative values. Several test fixings should be carried out in the base material to determine the exact values for the installation situation.

Correct shaft length of the fastener element

The correct shaft length (L) is determined by the thickness of the part to be fixed (t_{fix}) and the effective anchoring depth (h_{ef}). If proper penetration of the base material is desired, an allowance of 6 mm must be made (see following formulae).

Correct shaft length without penetration of the base material:

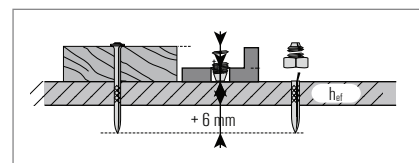
$$L = t_{fix} + h_{ef}$$

Correct shaft length with proper penetration of the base material:

$$L = t_{fix} + h_{ef} + 6 \text{ mm}$$

For fixtures with stud bolts, the necessary shaft length corresponds to the effective anchoring depth (h_{ef}) plus 6 mm allowance, the thickness of the part to be fixed (t_{fix}) does not have to be taken into consideration.

$$L = h_{ef} + 6 \text{ mm}$$





European Technical Approval
European Technical Assessment



Biobased scheme 50-85%
Product partly produced from biobased raw material



DIN - 4102: Part 1
Fire behaviour of building material and elements
Part 1



CC = International Code Council, formed from BOCA, ICBO and SBCCI



General building authority approval
German approval issued by the DIBt. Berlin.



Environmental Product Declaration from the Institute of Building and Environmental (IBU)



A + "Very low emission"
Very low VOC volatile substances



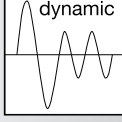
Fixing of high-quality, aging resistant nylon (polyamide).



We have an environmental management system certified according to DIN ISO 14001



The anchor system is suitable for loads under seismic (Earthquake) action.



Fixing that can be dynamically loaded
The fixing is suitable and approved for anchoring of "not predominantly static"



A competent conformity assessment body for manufacturers as a basis to access to the national, european or international markets



FM Certificate
Factory Mutual Research Corporation for Property Conservation, American Insurance Company



Fire-Tested Fixing
The fixing was subjected to a fire test.



Fire behaviour tested according to temperature - time curve of ZTV-ING: 2003-1, part 5 tunnel



Fire behaviour tested according (RWS) time-temperature curve.



UL is an abbreviation of Underwriters Laboratories Inc. which is an independent certification body



Organisation for the Safety of Abrasives (oSa®)



Fire tests on building materials and structures.



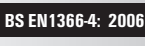
EN 13501-1:2007 + A1:2009
Fire classification of construction products and building elements. Reaction to fire.



The EU standard safety requirement for bonded abrasive products and other standards supporting the health and safety requirements for the supply of machinery.



PGM certificate board for masonry drill bits informs on the suitability of hammer drill bits (SDS Plus & SDS Max) and percussion drill bits for safe anchor fixings



Fire resistance tests for service installations - Linear joint seals.



Test method for surface burning characteristics of building materials.



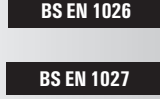
Test method for Fire Resistive Joint Systems. UL 2079 - equivalent



Test method for fire tests of Firestop through penetrations. UL 1479 - equivalent



The laboratory measurement of airborne sound insulation of building elements.



Air permeability test method.
Water permeability test method.



We are quality management certified according to DIN ISO 9001



Evaluation of conformity and the factory production control of Firestop products for use in buildings based on ETAG 026

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- Anchor vs Rebar Theory
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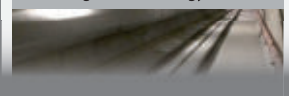
Technical Handbook International



International FireStop Handbook



Fischer Rail Anchors
Fastening rail technology for Metro



Trade Range Catalogue



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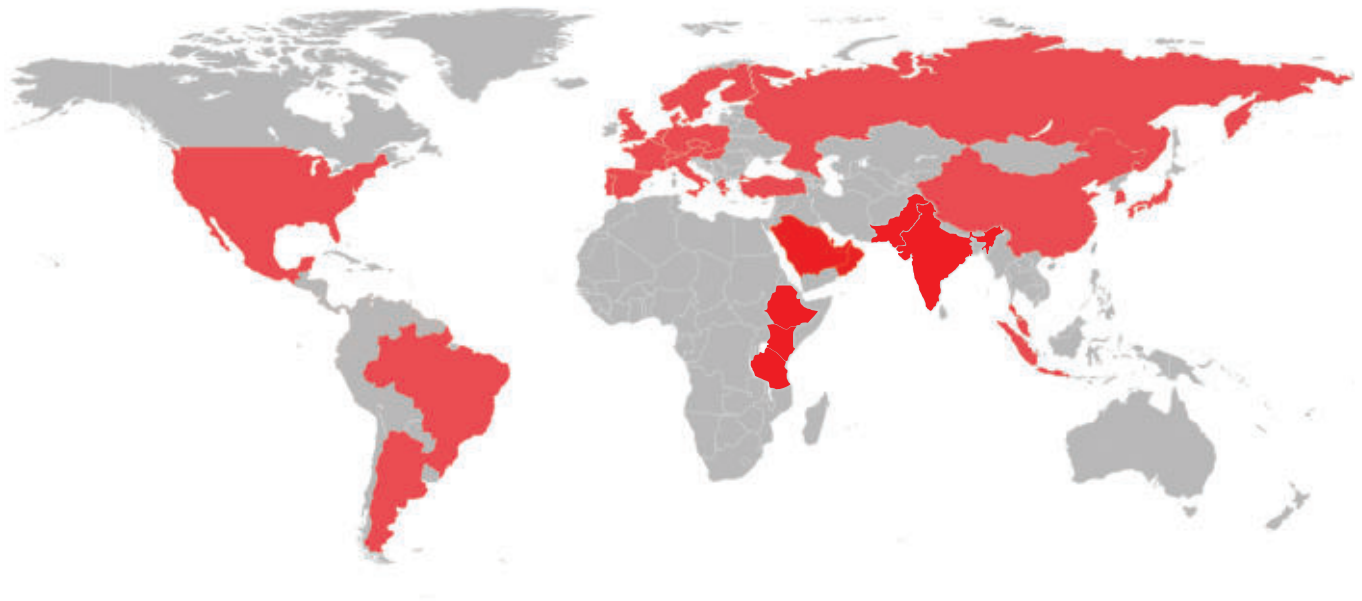
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