KPTF/2020V01PL

TFIX
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Catalogue

2021

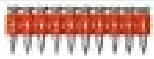
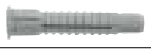
CONSTRUCTION FASTENING SYSTEMS

Contents

DIRECT FASTENING

ANCHORING

DRILL BITS, DIAMOND BLADES AND SAFETY EQUIPMENT

PAGE	PRODUCTS / BASE MATERIAL							ASSESS-MENTS/ CER-TIFICATES
DIRECT FASTENING								
6		**FGN90C** – Gas Nailer	✓			✓		CE
7		**FGT** – Magazine Nails for Gas Nailer	✓	✓		✓		
8		**FDM / FC...M** – Magazine Drive Pins	✓	✓		✓		
9		**FD/ FC** – Drive Pins with Plastic Washer	✓	✓		✓		
10		**FHNR/ FHMN** –Hardened Nails	✓	✓			✓	
CHEMICAL MORTARS								
12		**FCR410V PRO (PROFESSIONAL)** 410ml, for cracked concrete / threaded rod and rebar, seismic resistance C1, fading blue	✓					♦♦
13		**FCR585RE (PURE EPOXY)** 585 ml, for cracked concrete / threaded rod and rebar, seismic resistance C1 /C2	✓					♦♦
14		**FCR410MV / FCR300MV (SAFE)** 410 and 300ml, for concrete, brick, Porotherm / threaded rod and rebar, fading blue	✓	✓	✓			♦♦♦
15		**FCR410M PRO / FCR300M PRO (UNIVERSAL)** 410 and 300ml, for concrete, brick, Porotherm / threaded rod	✓	✓	✓			♦♦
16		**FCR410FIX / FCR300FIX (ECONOMIC)** 410 and 300ml, for concrete / threaded rod	✓					♦
17		**FCR410MVZ / FCR300MVZ (WINTER)** 410 and 300 ml, for concrete, brick, Porotherm / threaded rod and rebar	✓	✓	✓			♦♦♦
MECHANICAL ANCHORS								
21		**FCB** – Concrete Bolts	✓					
22		**FT** – Throughbolt - Segment Anchors	✓					♦
24		**FDA** – Drop-in Anchors	✓					♦
26		**FHS** – Hammerscrews	✓	✓				♦
26		**FFA** – Frame Anchors (countersunk head, hexagonal head, ceiling and straight hook)	✓	✓	✓			♦
28		**FHLP** – Heavy Duty Nylon Plugs	✓	✓				
28		**FUP** – All-Purpose Nylon Plugs	✓	✓	✓			
28		**FNPK** – Wall Plugs	✓	✓				♦
29		**FSP** – Expansion Plugs for fixing stair steps	✓	✓				

PAGE	PRODUCTS / BASE MATERIAL							ASSESS-MENTS/ CER-TIFICATES
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30		**HF** – Cable Ties						CE
30		**FCTPH** – Cable Tie Pin Holders	✓	✓	✓		✓	
30		**FUPO** – Cable Tie Plate Holders						
30		**FSB** – Perforated Steel Straps						
31		Pin Holders for fixing electric cables in concrete	✓	✓				
31		Pin Holders for fixing electric cables in Porotherm	✓	✓	✓		✓	
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32		**FDP** – Insulation Anchors for fixing in concrete	✓	✓				♦
32		**FDP** – Insulation Anchors for fixing in Porotherm		✓	✓			
TIMBER SCREWS								
34		**FWCP** – Heavy Duty Timber Screws, flange head					✓	
34		**FWHS** –High-performance Timber Screws, countersunk head					✓	
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36		**FCDB** – 3-edge SDS-Plus Hammer Drill Bits for reinforced concrete	✓					SICHERSAFE
37		**FCDT** – 2-edge SDS-Plus Hammer Drill Bits for concrete and masonry	✓	✓				SICHERSAFE
38		**FCDF** – 4-edge SDS-Plus Hammer Drill Bits for stone and concrete	✓					SICHERSAFE
38		**FCDW** – SDS-Plus Hammer Drill Bits for Porotherm			✓			SICHERSAFE
39		**FADD** – Dust Free SDS + / MAX Hammer Drill Bits with dust extraction.	✓					SICHERSAFE
40		**FCCD** – Ceramic Tiles Drill Bits with a cylindrical shank						
40		**FGDB** – Granite and Hard Stone Drill Bits with cylindrical shank						SICHERSAFE
40		**FCGD** – Concrete Drill Bits with a conical shank	✓	✓				SICHERSAFE
DIAMOND CUTTING BLADES								
41		**FTDT** – TURBO Universal Diamond Cutting Blades	✓	✓	✓	✓	✓	
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45		**FRS** – Welding Gloves						EN 407
46		**FR** – Work Gloves						EN 388

FGN90C – Gas nailers

Gas nailers are designed for driving nails into masonry, concrete and steel. They are used in fixing drywall framing, in electrical installation works for fixing wires, cables, pipes and conduits using textile tapes and FSB12 perforated steel tapes or various types of holders, e.g. FTGH08. In general construction, for fixing nets, foils and seals with FPS25 washers, as well as for hydraulic and gas works for fixing cables and pipes using dedicated grips. The use of a gas nailer facilitates and speeds up the execution of planned works, because there is no need to drill holes in the substrate (also steel) to perform the fastening, and you do not need to use expansion bolts and waste time on their assembly.

- *Low-battery indicator light.*
- *Safety lock prevents accidental actuation of the tool or firing a shot without a nail in the magazine.*
- *The compact, ergonomic design of the gas nailer prevents operator fatigue, even during prolonged work.*
- *One fuel cell is enough to drive ca. 1000 nails.*

Technical Specification:

Model: FGN90C	
Energy Level:	90J
Nails:	Nail Length: 15-40mm
	Shank Diameter: 2.6-3.0mm
	Head Diameter: 6.3mm
Magazine Capacity:	32 or 42 nails
Weight:	3.6kg/3.7kg (with battery)
Battery:	Lithium-Ion 7.2V/ 1.5Ah (3000 shots)
Fuel Cell:	FGC165

Tool Case Contents:
- *Gas Nailer*
- *2 batteries with charger and power adapter*
- *Personal protection: safety glasses, earplugs.*
- *Repair kit: Allen wrench, barrel cover and gas cell valve seat.*
- *User manual*

CE

FMGT – Cleaning & Lubricating Set

FMC150 - Cleaning agent
For the maintenance of all types of nailers.
- *Effectively dissolves and removes impurities (carbon deposit) formed during the operation of gas- and powder-actuated nailers and pneumatic tools*
- *Extends tool life and improves performance.*

FMO150 - Lubricating agent
For the maintenance of all types of nailers.
- *Oils and protects against corrosion moving parts of gas- and powder-actuated nailers and pneumatic tools*
- *High temperature resistant.*
- *Extends tool life and improves performance.*

ART. NO.	DESCRIPTION	VOL	BOX	OUTER BOX
FMC150	Cleaning agent	150ml	1	20
FMO150	Lubricating agent	150ml	1	20
FMGT	Cleaning & Lubricating Set	2 x 150ml	2	10

FGC – Fuel Cells for Gas Nailers

- *152 mm fuel cells are generally used in concrete nailers, and 165 fuel cells are for wood nailers.*
- *115 mm fuel cells are dedicated to the Pulsa P700 nailers.*
- *165 mm and 152 mm fuel cells are sufficient on average to make 1000 shots, and 115 mm and 100 mm fuel cells capacity is 500 shots.*

ART. NO.	HEIGHT	CAPACITY	WEIGHT	BOX	OUTER BOX
Measure unit	[mm]	[ml]	[gr]	[pcs]	[pcs]
FGC165	165	80	40	10	100
FGC152	152	80	40	10	100
FGC115	115	40	20	10	100
FGC100R	100	40	20	10	100

5F GHS02 50°C

Related Products:

FCTW Cable Ties - p. 30
FSB Perforated Steel Straps - p. 30

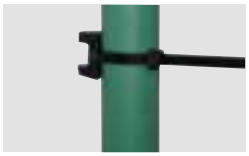
FGT – PREMIUM Nails for Gas Tools

- *The surface hardening prevents cracking of the nails as their core remains flexible.*
- *Nail diameter gradation from Ø 3.0 to 2.6 mm and a ballistic shape of the tip make it easier to drive the nails into hard materials such as steel or concrete.*
- *The grooved surface of the nails increases adhesion to the substrate (load capacity).*
- *Hardness: 53-56 HRc*
- *Compliant with PN-84/M-81000 standard*
- *Galvanized.*

ART. NO.	DESCRIPTION	Ø x L	BOX	OUTER BOX
FGT15P	steel	3.0 x 15	1000	5000
FGT19P	steel / concrete / brick	3.0 x 19	1000	5000
FGT22P	steel / concrete / brick	3.0 x 22	1000	5000
FGT25P	steel / concrete / brick	3.0 x 25	1000	5000
FGT32P	steel / concrete / brick	3.0 x 32	1000	5000
FGT38P	steel / concrete / brick	3.0 x 38	1000	5000

FUMO – Cable Tie Holder

The holder is installed with a gas nailer to a concrete or steel substrate, enabling the attachment of conduits and pipes of different diameters with zip ties. It is durable (does not break during installation), convenient and quick to install. It is easy to assemble into packages, and after cutting the end of the zip tie, the fastening looks aesthetically and neatly.



ART. NO.	DESCRIPTION	BOX	OUTER BOX
FUMO	holder	100	1000

FPS25 – Steel washers for fixing foil and nets with a gas nailer

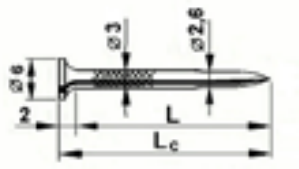
- *Fastening of foil, membranes, seals.*
- *Fastening of nets.*

ART. NO.	DESCRIPTION	DIAMETER	BOX	OUTER BOX
FPS25	washer	25	100	1000

Gas Nails, technical data

Characteristic values of resistance to tension load	kN
Steel substrate[1] (min 3mm thick)	1.30
Concrete substrate[2] (anchoring depth at least 20mm)	2.25

[1] for steel S280GD acc. To PN-EN 10346: 2011
[2] for concrete class C20 / 25 according to PN-EN 206-1: 2003



Related Products:
FCTW Cable Ties - p. 30
FSB Perforated Steel Straps - p. 30

FMC – Magazine Cartridges - cal. 6.8 / 11mm

- *Winchester powder strips (10 pcs each) of 6.8/11 mm caliber.*
- *Use with the Hilti, Ramset, Wurth, Trutek.*

ART. NO.	COLOR	POWER	BOX	OUTER BOX
FMCG	green	weak	100	10000
FMCY	yellow	medium	100	10000
FMCR	red	strong	100	10000
FMCB	black	very strong	100	10000

FDM – Magazine Drive Pins - Head Ø 8mm

- *One strip contains 10 nails.*
- *DN head of 8 mm diameter, nail dia. 3.8 mm.*
- *Surface hardened, galvanized.*
- *Grooved surface of nails for driving into steel.*
- *Compliant with PN-84/M-81000 standard.*
- *Use with Hilti, Wurth and Trutek nailers*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FDM16K	3.8 x 16	steel	100	2000
FDM19K	3.8 x 19	steel	100	2000
FDM22K	3.8 x 22	steel	100	2000
FDM27	3.8 x 27	steel / concrete / brick	100	2000
FDM32	3.8 x 32	steel / concrete / brick	100	2000
FDM37	3.8 x 37	steel / concrete / brick	100	2000
FDM42	3.8 x 42	steel / concrete / brick	100	2000
FDM47	3.8 x 47	steel / concrete / brick	100	2000
FDM52	3.8 x 52	steel / concrete / brick	100	2000

FD – Drive Pins - Head Ø 8mm

- *DN head of 8 mm diameter, nail dia. 3.8 mm.*
- *Surface hardened, galvanized.*
- *Compliant with PN-84/M-81000 standard.*
- *Use with Hilti, Wurth and Trutek nailers.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FD16K	3.8 x 16	steel	100	2000
FD19K	3.8 x 19	steel	100	2000
FD22K	3.8 x 22	steel	100	2000
FD27	3.8 x 27	steel / concrete / brick	100	2000
FD32	3.8 x 32	steel / concrete / brick	100	2000
FD37	3.8 x 37	steel / concrete / brick	100	2000
FD42	3.8 x 42	steel / concrete / brick	100	2000
FD47	3.8 x 47	steel / concrete / brick	100	2000
FD52	3.8 x 52	steel / concrete / brick	100	2000

FMWP – Drive Pins 23mm Metal Washer - Head Ø 8mm

- *Washer diameter 23 mm*
- *DN head of 8 mm diameter, nail dia. 3.8 mm.*
- *Surface hardened, galvanized.*
- *Compliant with PN-84/M-81000 standard.*
- *Use with Hilti, Wurth and Trutek nailers.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FMWP32	3.8 x 32	steel / concrete / brick	100	1500
FMWP47	3.8 x 47	steel / concrete / brick	100	1500

FMD – Magazine Cartridges - Disk cal. 6.8 / 11mm

- *Winchester powder loads in disks (10 pcs each) of 6.3/10 mm caliber.*
- *Use with Spit and Trutek nailers.*

ART. NO.	COLOR	POWER	BOX	OUTER BOX
FMD10G	green	weak	100	10000
FMD10Y	yellow	medium	100	10000
FMD10R	red	strong	100	10000

FCM – Magazine Drive Pins - Head Ø 9mm

- *One strip contains 10 nails.*
- *Flat head Ø 9 mm, nail Ø 3.8 mm.*
- *Surface hardened and galvanized.*
- *Compliant with PN-84/M-81000 standard.*
- *Use with Split nailers.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FC50M	3.8 x 50	steel / concrete / brick	100	2 000

FC – Drive Pins with Plastic Washer - Head Ø 8mm

- *Flat head Ø 9 mm, nail Ø 3.8 mm.*
- *Surface hardened and galvanized.*
- *Compliant with PN-84/M-81000 standard.*
- *Use with Split nailers.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FC50	3.8 x 50	steel / concrete / brick	100	2000

PAT Nails, FDM, FD, FMVP, FCM, technical data

Characteristic values of resistance to tension load	kN
Steel substrate[1] (min 4mm thick)	4,60
Concrete substrate[2] (anchoring depth at least 30mm)	5,20

Characteristic values of resistance to tension load under fire	kN
Concrete substrate[2] (anchoring depth at least 30mm) R120	0,1

[1] for steel S280GD acc. To PN-EN 10346: 2011
[2] for concrete class C20 / 25 according to PN-EN 206-1: 2003

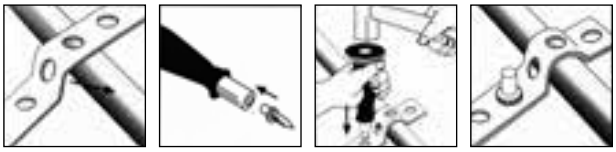
FHNR – Hardened Nails with washer

The FHNR nails are designed for convenient and quick fastening in very hard surfaces such as concrete, brick, cement plaster with the use of the FAT01 setting tool. The use of a setting tool ensures that EVERY nail is properly driven into the substrate without hammering your fingers, bending nails or splitting the plaster.

- *Hardening makes the nails easily driven into the hardest materials without bending.*
- *Their grooved surface increases the force needed to pull the nail out of the substrate.*
- *The washer prevents driving the nail too deep.*
- *Special passivation coating protects the nails against corrosion.*
- *Hardness 52-54 HRc.*
- *Compliant with PN-84/M-81000 standard.*
- *Use with FAT01 nailer.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FHNR4015	4.0 x 16	concrete / brick / plaster	200	7200
FHNR4018	4.0 x 18	concrete / brick / plaster	200	6800
FHNR4022	4.0 x 22	concrete / brick / plaster	200	6000

ART. NO.	DESCRIPTION	BOX	OUTER BOX
FAT01	Setting Tool for FHNR... nails	1	1



FHMN – Hardened Nails for masonry (smooth)

The FHMN ... W nails are designed for fixing elements made of wood and wood-based materials such as plywood, OSB, etc. to hard surfaces (concrete, brick). They are characterized by high hardness, bending resistance and corrosion protection coating.

- *Special hardening technology minimizes nail breaking during driving.*
- *Bending strength 45 - 90°*
- *Hardness 52-54 HRc.*
- *Passivation coating protects the nails against corrosion.*
- *Compliant with PN-84/M-81000 standard.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FHMN25025W	2.5 x 25	brick / concrete	100	2000
FHMN30030W	3.0 x 30	brick / concrete	100	2000
FHMN35050W	3.5 x 50	brick / concrete	100	2000

FHMN – Hardened Nails for concrete (knurled)

The FHMN ... W nails are designed for fixing elements made of wood and wood-based materials such as plywood, OSB, etc. to hard concrete surfaces. The longitudinal knurling facilitates guiding the nail during driving. They are characterized by high hardness, bending resistance and corrosion protection coating.

- *Special hardening technology minimizes nail breaking during driving.*
- *Bending strength 45 - 90°*
- *Hardness 52-54 HRc.*
- *Passivation coating protects the nails against corrosion.*
- *Compliant with PN-84/M-81000 standard.*

ART. NO.	Ø x L	SUBSTRATE	BOX	OUTER BOX
FHMN35035WK	3.5 x 35	concrete	250	2000
FHMN35045WK	3.5 x 45	concrete	250	5000
FHMN35050WK	3.5 x 50	concrete	250	5000
FHMN35055WK	3.5 x 55	concrete	250	2000
FHMN35065WK	3.5 x 65	concrete	250	2000

The innovative technology that changes the colour of the resin during gelation from blue (when applied) to grey when completely cured, eliminating the troublesome problem of properly choosing the installation time depending on the ambient temperature and humidity. The grey colour of the resin indicates the required fixing performance.

FCR 410V PRO – PROFESSIONAL RESIN, for the heavy loads

FADING BLUE

F120 FIRE RESISTANCE

CRACKED CONCRETE

C1 SEISMIC TESTED

LEED TESTED

SEA WATER

OVERHEAD

ÉMISSIONS DANS L'AIR INTÉRIEUR* A+ (A+ A B C)

WRAS APPROVED PRODUCT

Hybrid resin with the highest strength parameters, providing excellent load capacity and high security of anchoring in concrete and stone.

Applications:

- Bonding of reinforcing bars, load-bearing columns and ceilings.
- Anchoring of load-bearing poles in the structures of frame halls.
- Anchoring in offshore construction (quays).
- Reliable fastening in bridge, tunnel and road construction such as supports, tension members, barriers etc.
- Anchoring of machines and devices in industry; conveyors, hoists, overhead cranes, etc. exposed to vibrations and shocks.

Advantages:

- Changes the colour from blue to grey when the gelation process ends (then begins the waiting time to full load capacity).
- Withstanding the highest loads in cracked and non-cracked concrete (anchoring of installations in roofs, tunnels, etc.).
- Reduced resin consumption (up to 30% depending on the diameter).
- Resistant to strokes and class C1 seismic shocks,.
- Approved for use with drinking water - WRAS certified.
- After hardening, not reacting with chemicals and water (aggressive industrial environments such as sewage treatment plants and maritime environment).
- Fire resistance for 120 minutes, enabling anchoring in fire zones, e.g. underground garages.
- Quick gelation and hardening at low temperatures.
- Installation in dry and wet concrete and under water.
- Sea water resistant. Anchoring of structural elements and devices that are mounted above or below the sea surface, exposed to sea water splashes during installation.

Capacity	8.5
Substrate types	concrete, stone
Scope of anchoring	threaded rods M8-M30 rebars Ø8 - Ø32 rebar joints Ø8 - Ø25
Concrete condition	cracked and non-cracked
Fire resistance	F120
Seismic resistance	C1
Food industry approval	WRAS certificates
Ecological certificates	LEED, VOC A+ certificates
Cartridge capacity	410ml
Dispenser	FMT380, FMT380PRO, FMT410AKU

CHANGES COLOUR FROM BLUE TO GREY AFTER GELATION

ART. NO	CAPACITY	BOX
FCR410V PRO	410ml	12 pcs

CE ETA-19/0111

CE ETA-19/0112

Chemical Stud Anchor:

- Reinforcing bars, straight and roll-out
- Carbon steel threaded rods, grades: 4.6, 5.8, 8.8, 10.9
- Stainless steel threaded rods A2-70, A4-70, A4-80
- Rust-resistant threaded rods 1.4529, 1.4565

Related Products:

Resin Injection Applicators, FMT380, FMT410PRO - page 19
Mortar Mixers, FMN... - page 19
Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19
Mixer Extension Nozzle, FEN01 - page 19
Chemical Studs Anchor, FCS... - page 18
Drill Bits for concrete, brick, Porotherm, granite - pages 35 - 41
Safety Work Gloves - page 42

FCR 585RE – PURE EPOXY RESIN 3:1 for the heavy loads

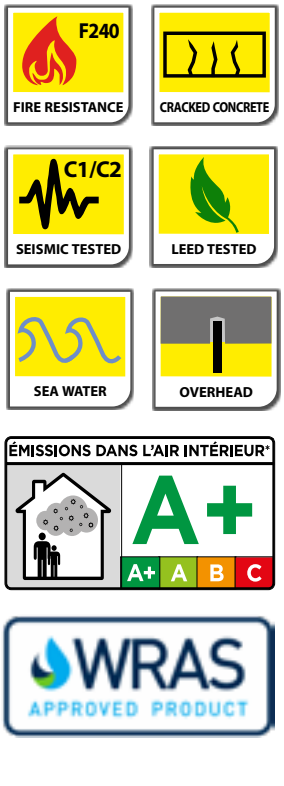
Pure Epoxy resin with the highest strength parameters, providing un-compromised security of anchoring.

Applications:

- Bonding of reinforcement of load-bearing columns and ceiling reinforcement.
- Anchoring of steel columns in frame hall structures.
- Anchoring in offshore construction (quays).
- Reliable fastening in bridge, tunnel and road construction such as supports, tension members, barriers, etc..
- Anchoring of machines and devices in industry; conveyors, hoists, overhead cranes, etc. exposed to vibrations and shocks.

Advantages:

- Withstanding the highest loads in cracked and non-cracked concrete (anchoring of installations in roofs, tunnels, etc.).
- Resistant to class C1 and C2 seismic strokes and shocks,.
- Fire resistance for 120 minutes, enabling anchoring in fire zones, e.g. underground garages, public buildings.
- Approved for use with drinking water - WRAS certified.
- After hardening, not reacting with chemicals and water (aggressive industrial environments such as sewage treatment plants and maritime environment).
- Installation in dry and wet concrete and under water.
- Reduced resin consumption (up to 30% depending on the diameter).
- Extended gelation time enables deep anchoring of rebars and threaded rods,
- The highest resistance to aging (decrease in load capacity),
- Anchoring in holes drilled with diamond techniques.
- Sea water resistant. Anchoring of structural elements and devices that are mounted above or below the sea surface, exposed to sea water splashes during installation



Capacity	10
Substrate types	concrete, stone
Scope of anchoring	threaded rods M8-M30 rebars Ø8 - Ø32 rebar joints Ø8 - Ø25
Concrete condition	cracked and non-cracked
Fire resistance	F240
Seismic resistance	C1 i C2
Food industry approval	WRAS certificate
Ecological certificates	LEED, VOC A+ certificates
Cartridge capacity	585ml
Dispenser	FMT585, FMT585AKU

ART. NO	CAPACITY	BOX
FCR585RE	585ml	12 pcs

ETA-20/0087

ETA-20/0088

Chemical Stud Anchor:

- Reinforcing bars, straight and roll-out
- Carbon steel threaded rods, grades: 4.6, 5.8, 8.8, 10.9
- Stainless steel threaded rods A2-70, A4-70, A4-80
- Rust-resistant threaded rods 1.4529, 1.4565

Related Products:

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Mortar Mixers, FMN... - page 19
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FCR ...FIX – ECONOMICAL RESIN, for concrete

Cost effective resin with high strength parameters suitable for anchoring threaded rods in concrete.

Applications:

- Anchoring of light supporting structures, canopies, devices, barriers, handrails, fence posts, gates and garage doors.
- Concrete repair: filling in cracks and damaged surfaces.

Advantages:

- Strong and durable resin at attractive prices.
- Does not contain styrene.
- Quick gelation and hardening.
- Installation in dry and wet concrete.

Capacity	3,5
Substrate types	concrete,
Scope of anchoring	threaded rods M8-M24
Anchoring in Porotherm (with perforated sleeve)	-
Concrete condition	non-cracked
Fire resistance	-
Seismic resistance	-
Food industry approval	-
Ecological certificates	-
Cartridge capacity	410ml, 300ml
Dispenser	FMT380, FMT380PRO, FMT410AKU

ART. NO	CAPACITY	BOX
FCR410FIX	410ml	12 pcs
FCR300FIX	300ml	12 pcs

ETA-19/0294

Chemical Stud Anchor:

- Carbon steel threaded rods, grades: 4.6, 5.8, 8.8, 10.9
- Stainless steel threaded rods A2-70, A4-70, A4-80
- Rust-resistant threaded rods 1.4529, 1.4565

Related Products:

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FCR ...MV – SAFE RESIN, for high loads in most building substrates

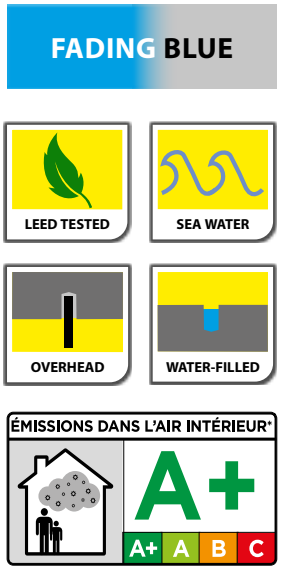
Resin with high strength parameters ensuring safe anchoring in concrete and masonry surfaces such as solid brick, Ytong or Porotherm with the use of threaded rods and rebars.

Applications:

- Anchoring of all kinds of construction structures and load-bearing pillars of frame structures.
- Fixing of barriers and road signs, acoustic screens, supports and handrails.
- Anchoring of machines and devices as well as elements of industrial installations.
- Concrete repair: filling in cracks and damaged surfaces.

Advantages:

- Changes the colour from blue to grey when the gelation process ends (then begins the waiting time to full load capacity).
- Mounting in all surfaces: concrete and walls made of solid bricks, hollow blocks, Porotherm, Ytong, etc.,
- Anchoring threaded rods and rebars.
- Installation in dry or wet concrete and under water.
- Reduced resin consumption (up to 30% depending on the diameter).
- Three European technical approvals for various applications and substrates.



Capacity	6,5
Substrate types	concrete, stone, masonry surfaces such as: solid brick, Ytong or Porotherm
Scope of anchoring	threaded rods M8-M24 rebars Ø8 - Ø20
Anchoring in Porotherm (with perforated sleeve)	threaded rods M8-M12
Concrete condition	non-cracked
Fire resistance	-
Seismic resistance	-
Food industry approval	-
Ecological certificates	LEED, VOC A+ certificates
Cartridge capacity	410ml, 300ml
Dispenser	FMT380, FMT380PRO, FMT410AKU

CHANGES COLOUR FROM BLUE TO GREY AFTER GELATION

ART. NO	CAPACITY	BOX
FCR410MV	410ml	12 pcs
FCR300MV	300ml	12 pcs

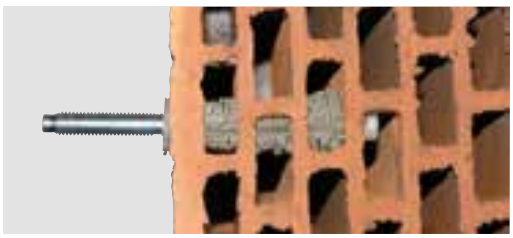
ETA-19/0740

ETA-19/0741

ETA-19/0742

Chemical Stud Anchor:

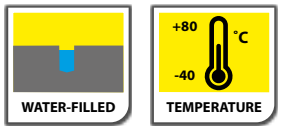
- Reinforcing bars, straight and roll-out
- Carbon steel threaded rods, grades: 5.8, 8.8, 10.9
- Stainless steel threaded rods A2-70, A4-70, A4-80
- Rust-resistant threaded rods 1.4529, 1.4565



Related Products:

Resin Injection Applicators, FMT380, FMT410PRO - page 19
Mortar Mixers, FMN... - page 19
Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19
Mixer Extension Nozzle, FEN01 - page 19
Chemical Studs Anchor, FCS... - page 18
Drill Bits for concrete, brick, Porotherm, granite - pages 35 - 41
Safety Work Gloves - page 42

FCR ...M PRO – UNIVERSAL RESIN, for most building substrates



Universal resin with high strength parameters ensuring safe fixing in most construction surfaces.

Applications:

- Anchoring of threaded rods in concrete and masonry surfaces, such as full brick and chequered brick, Porotherm (with use of a perforated sleeve), silicate brick, Ytong, etc.
- Anchoring of all kinds of construction structures, barriers, brackets, posts, handrails, gates and garage doors.
- Concrete repair: filling in cracks and damaged surfaces.

Advantages:

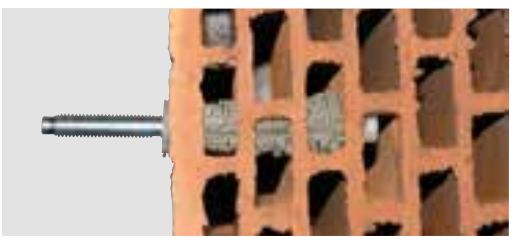
- Fastening in all surfaces: concrete and walls made of solid bricks, hollow blocks, Porotherm, Ytong etc.
- Reduced resin consumption (up to 30% depending on the diameter).
- Installation in dry or wet concrete and under water.
- Quick gelation and curing at low temperatures.

Capacity	5
Substrate types	concrete, masonry surfaces such as: solid brick, Ytong or Porotherm
Scope of anchoring	threaded rods M8-M24
Anchoring in Porotherm (with perforated sleeve)	threaded rods M8-M12
Concrete condition	non-cracked
Fire resistance	-
Seismic resistance	-
Food industry approval	-
Ecological certificates	-
Cartridge capacity	410ml, 300ml
Dispenser	FMT380, FMT380PRO, FMT410AKU

ART. NO	CAPACITY	BOX
FCR410M PRO	410ml	12 pcs
FCR300M PRO	300ml	12 pcs

ETA-19/0110

ETA-19/0109



Chemical Stud Anchor:

- Carbon steel threaded rods, grades: 4.6, 5.8, 8.8, 10.9
- Stainless steel threaded rods A2-70, A4-70, A4-80
- Rust-resistant threaded rods 1.4529, 1.4565

Related Products:

Resin Injection Applicators, FMT380, FMT410PRO - page 19
Mortar Mixers, FMN... - page 19
Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19
Mixer Extension Nozzle, FEN01 - page 19
Chemical Studs Anchor, FCS... - page 18
Drill Bits for concrete, brick, Porotherm, granite - pages 35 - 41
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FCR ...MVZ – HIGH LOADS WINTER RESIN in most building substrates

Winter variant of the FCR ... MV resin, with high strength parameters, ensuring safe and cost effective anchoring in concrete, stone and masonry substrates, such as: solid brick, Ytong or Porotherm, with the use of threaded rods and rebars at ambient temperatures down to -15 ° C

Applications:

- Anchoring of all kinds of construction structures and load-bearing pillars of frame structures.
- Fixing of barriers and road signs, acoustic screens, supports and handrails.
- Anchoring of machines and devices as well as elements of industrial installations.
- Concrete repair: filling in cracks and damaged surfaces.

Advantages:

- Fastening in all surfaces: concrete and walls made of solid bricks, hollow blocks, Porotherm, Ytong etc.
- Reduced resin consumption (up to 30% depending on the diameter).
- Installation in dry or wet concrete and under water.
- Quick gelation and curing at low temperatures.

-15°C

LEED TESTED

SEA WATER

OVERHEAD

WATER-FILLED

ÉMISSIONS DANS L'AIR INTÉRIEUR*

A+

A+ A B C

Capacity	6,5
Substrate types	concrete, stone, masonry surfaces such as: solid brick, Ytong or Porotherm
Scope of anchoring	threaded rods M8-M24 rebars Ø8 - Ø20
Anchoring in Porotherm (with perforated sleeve)	threaded rods M8-M12
Concrete condition	non-cracked
Fire resistance	-
Seismic resistance	-
Food industry approval	-
Ecological certificates	LEED, VOC A+ certificates
Cartridge capacity	410ml, 300ml
Dispenser	FMT380, FMT380PRO, FMT410AKU
winter version	from -15 °C

ART. NO	CAPACITY	BOX
FCR410MVZ	410ml	12 pcs
FCR300MVZ	300ml	12 pcs

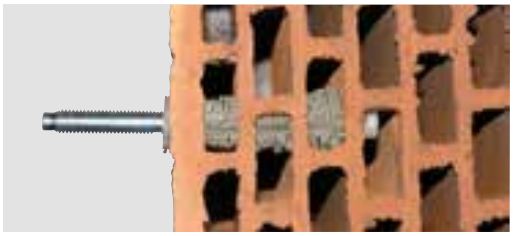
ETA-19/0740

ETA-19/0741

ETA-19/0742

Chemical Stud Anchor:

- Reinforcing bars, straight and roll-out
- Carbon steel threaded rods, grades: 5.8, 8.8, 10.9
- Stainless steel threaded rods A2-70, A4-70, A4-80
- Rust-resistant threaded rods 1.4529, 1.4565



Related Products:

Resin Injection Applicators, FMT380, FMT410PRO - page 19
Mortar Mixers, FMN... - page 19
Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Mixer Extension Nozzle, FEN01 - page 19
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Chemical Anchors – rods

Chemical anchor rods are integral part of anchoring with the use of resin mortars. After applying the resin to the drilled and cleaned of dust hole, slowly insert the anchor rod while turning it slightly until the hole bottom is reached. After the mortar is fully cured (depending on the type of resin used, ambient temperature and humidity), we can proceed to screwing the element that we want to fix. Threaded rods have a significant impact on the load capacity and fastening properties, so make a careful choice depending on your needs. The rods of chemical anchors are made of steel of various strengths class, e.g. 4.6, 5.8, 8.8, with a diameter ranging from M8 to M30 and various protective coating to increase their corrosion resistance. When you need to fasten in conditions particularly exposed to corrosion, e.g. outdoor, in maritime or industrial conditions, use hot-dip galvanized rods or made of A2 or A4 stainless steel.

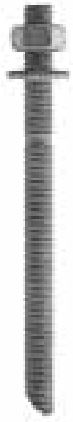
FCS – Chemical Stud Anchor (class 5.8, galvanized Steel)

- *Hexagonal head*
- *Dual slant cut rod end*
- *Carbon steel class 5.8, galvanized min. 5 µm*
- *Flat cutting at both ends*
- *Carbon steel class 4.8, galvanized min. 5 µm*
- *Compliant with EN ISO 4032, 887, 7089, 7093*

ART. NO.	M x L	BOX	OUTER BOX
FCS08110	8 x 110	10	200
FCS10130	10 x 130	10	200
FCS12160	12 x 160	10	80
FCS16190	16 x 190	10	80
FCS20260	20 x 260	5	30
FCS24300	24 x 300	5	20

On request are available studs of classes 4.6, 8.8, 10.9 and of stainless steel A2 and A4 of any diameters and lengths.

FCS...G – Chemical Stud Anchor (class 5.8, hot deep galvanized steel)

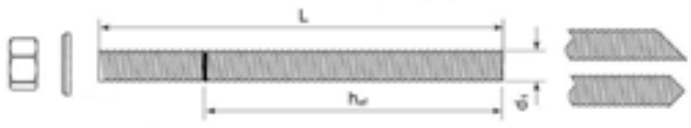


- *Slant cut rod end*
- *Carbon steel class 5.8, hot-dip galvanized min. 40 µm.*
- *Compliant with EN ISO 4032, 887, 7089, 7093, 7094*

ART. NO.	M x L	BOX	OUTER BOX
FCS08110G	8 x 110	10	200
FCS10130G	10 x 130	10	200
FCS12160G	12 x 160	10	80
FCS16190G	16 x 190	10	80
FCS20260G	20 x 260	5	30
FCS24300G	24 x 300	5	20

On request are available studs of classes 4.6, 8.8,10.9 of any diameters and lengths.

Assembly parameters of threaded studs



SIZE M x L	Hole diameter	Min-max hole depth	Stand. hole depth	Fixture thickness	Min. edge distance	Min. spacing	Number of fixings per cartridge*		
							585 ml	410 ml	300 ml
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[pcs]	[pcs]	[pcs]
8 x 110	10	64-160	80	18	35	35	176	124	90
10 x 130	12	80-200	90	25	40	40	127	89	65
12 x 160	14	90-240	110	34	50	50	88	62	45
16 x 190	18	128-320	125	45	65	65	58	41	30
20 x 260	22	160-400	170	55	80	80	36	25	18
24 x 300	26	192-480	210	55	96	96	25	17	12
30 x 380	35	240-600	280	70	120	120	6	4	3

** Number of fixings are approximate values*

Related Products:

Chemical Mortars, FCR... - pages 12-17
Resin Injection Applicators, FMT380, FMT585 - page 19
Mortar Mixers, FMN... - page 19
Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19
Perforated Sleeves, FPS - page 19
Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

FMN – Mortar Mixers

Mixers are used for exact mixing of the components of the resin mortar, i.e. resin and hardener. They are screwed onto the thread on the mortar cartridge, after unscrewing its cap and inserting the cartridge into the dispenser

ART. NO.	DESCRIPTION	BOX	OUTER BOX
FMN02	For use with 300/ 380/ 410, 585 ml.	12	720

Mixer extenders are used in the case of deep holes in order to properly fill the holes with resin mortar.

ART. NO.	DESCRIPTION	BOX	OUTER BOX
FEN01	Mixer extender (length 185mm)	12	600

FPS – Perforated Sleeve

Perforated sleeves are used for anchoring in hollow materials such as Porotherm, chequered brick or hollow brick. Insert a perforated sleeve into the drilled hole and fill it entirely with resin. Then slowly insert the anchor rod and leave it until fully cured.

ART. NO.	Ø x L	Ø x L	M	BOX	OUTER BOX
	mesh sleeve [mm]	hole [mm]	rod [mm]	[pcs]	[pcs]
FPS01	11 x 50	12 x 55	M6 – M8	100	2500
FPS02	15 x 85	16 x 90	M10 – M12	50	1000
FPS03	15 x 130	16 x 135	M10 – M12	50	1000
FPS04	20 x 85	22 x 90	M16	50	1000

FMS – Wire Mesh Sleeve

Steel mesh sleeves serve the same purpose as perforated sleeves, they are used for deep anchoring (deeper than the FPS perforated sleeves allow), e.g. for reinforcing large-panel construction structures.

ART. NO.	Ø x L	Ø	M	BOX	OUTER BOX
	mesh sleeve [mm]	hole [mm]	rod [mm]	[pcs]	[pcs]
FMS12	11 x 1000	12	M6 – M8	10	300
FMS16	14.5 x 1000	16	M10 – M12	10	300
FMS22	19.5 x 1000	22	M12 – M16	5	150
FMS26	24 x 1000	26	M20	5	100
FMS28	26 x 1000	28	M20	5	100

FBP – Debris Blow Out Pump / FCS – Hole Cleaning Brushes

The brushes and the pump are used to clean the hole before injecting the resin mortar. Steel brushes are used for holes in concrete and stone, and nylon brushes shall be used in brick and Porotherm. The recommended procedure is as follows: alternately blow the dust three times with a pump, and then twice clean the hole with a brush.

ART. NO.	DESCRIPTION	BOX
FBP01	Debris blow out pump	1

ART. NO.	Ø	L	BOX
FCB13	Diameter of the anchored rod M8 – M12	300	1
FCB18	Diameter of the anchored rod M14 – M18	300	1
FCB28	Diameter of the anchored rod M20 – M32	300	1

Note: *holes drilled with FADD drill bits (NO DUST, with internal dust extraction) do not require cleaning the holes using a pump and a brush. More information on page 39*

FMT – Resin Injection Applicators

The dispensers are used to precisely squeeze the resin mortar out of the cartridge and inject it into the hole using a mixer. The dispenser should be selected to match the capacity of the mortar cartridge, e.g. for cartridges with a capacity of 300 ml it should be the FMT300 or FMT300AKU dispenser. In the case of a large number of holes, it is worth considering the purchase of a battery operated dispenser, which will make easier and speed up the anchoring process.

ART. NO.	TYPE	FOR USE WITH MORTAR CAPACITY [ml]	BOX	OUTER BOX
FMT300	manual	280 – 300	12	24
FMT380	manual	380 - 410	6	12
FMT410PRO	manual	380 - 410	6	12
FMT585	manual	385 / 585	1	6
FMT300AKU	battery	280 – 300	1	2
FMT410AKU	battery	380 - 410	1	2
FMT585AKU	battery	385 - 585	1	2

Related Products:

Chemical Mortars, FCR... - pages 12-17
Chemical Studs Anchor, FCS... - page 18
Drill Bits for concrete, brick, Porotherm, granite - pages 35 - 41
Safety Work Gloves - page 42


020 8335
3477

FCB – Concrete Bolt

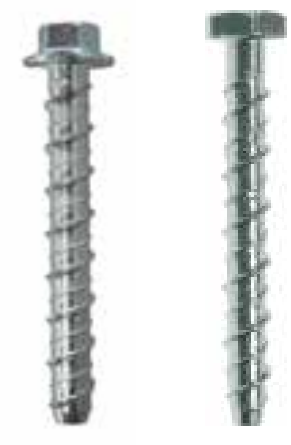
FCB bolts for concrete are not yet well known but quickly gaining popularity anchors for concrete, stone and solid masonry substrates. Installation is very simple and involves screwing the anchor into a pre-drilled hole with an impact wrench.

Advantages:

- *No expansion forces (as with other, expansion anchors), which allows anchoring close to the edge of the substrate without the risk of breaking off the edge.*
- *Very high load capacities of fastenings in both non-cracked the cracked surface (e.g. ceilings).*
- *The possibility of „improving the fastening": you can unscrew the anchor, make corrections and then screw it into the hole again - without losing its load capacity.*
- *In temporary fastenings, after demolition, you can reuse the screw for another fastening (note: the number of successive anchorages is limited).*
- *It is not necessary to clean the hole as with other anchors.*
- *It can be used in concrete, stone and masonry made of full ceramic brick.*
- *Much faster installation compared to traditional expansion anchors.*

Applications:

FCB concrete bolts successfully replace traditional anchors (such as FT ... Throughbols or FCR… chemical anchors) in most applications, while surpassing them in terms of strength, versatility of use as well as ease and speed of installation.



FCB Concrete Bolt – Hexagon Flange Head*

ART. NO.	M x L	Ø hole	Ø washer	SW	BOX	OUTER BOX
FCB06/08030F	8 x 30	6	16	10	200	800
FCB06/08050F	8 x 50	6	16	10	200	800
FCB06/08075F	8 x 75	6	16	10	100	400
FCB08/10060F	10 x 60	8	20	13	100	400
FCB08/10075F	10 x 75	8	20	13	100	400
FCB08/10100F	10 x 100	8	20	13	50	200
FCB10/12075F	12 x 75	10	23	15	50	200
FCB10/12100F	12 x 100	10	23	15	50	200
FCB10/12125F	12 x 125	10	23	15	25	100
FCB10/12150F	12 x 150	10	23	15	25	100
FCB12/14075F	14 x 75	12	26	16	20	80
FCB12/14100F	14 x 100	12	26	16	20	80
FCB12/14130F	14 x 130	12	26	16	20	80
FCB12/14150F	14 x 150	12	26	16	20	80
FCB12/14190F	14 x 190	12	26	16	20	80
FCB16/18130F	18 x 130	16	30	19	15	60
FCB16/18150F	18 x 150	16	30	19	10	40

** Steel White Zinc Plated*

Pending

SW – wrench size

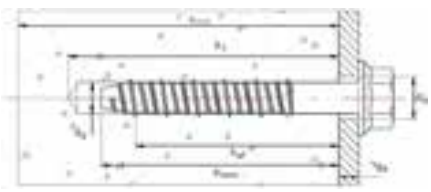
FCB Concrete Bolt – Hexagon Head*

ART. NO.	M x L	Ø	SW	BOX
FCB10/12075H	12 x 75	10	17	50
FCB10/12100H	12 x 100	10	17	25
FCB10/12250H	12 x 125	10	17	25
FCB12/14100H	14 x 100	12	19	20
FCB12/14130H	14 x 130	12	19	20
FCB12/14150H	14 x 150	12	19	20
FCB16/18130H	18 x 130	16	27	10
FCB16/18150H	18 x 150	16	27	10

** Steel White Zinc Plated*

FCB Concrete Bolt, technical specification

Parameters / Hole diameter		Ø6	Ø8	Ø10	Ø12	Ø16
Depth of drill hole	h_0 [mm]	40	45	55	70	90
Nominal drill hole diameter	d_0 [mm]	6	8	10	12	16
Diameter of clearance hole in the fixture	d_f [mm]	10	12	14	16	20
Minimum thickness of base material	h_{min} [mm]	100	100	110	130	150
Minimum spacing	S_{min} [mm]	50	60	70	80	90
Minimum edge distance	C_{min} [mm]	45	50	60	80	100
Installation torque moment	T_{inst} [Nm]	45	50	60	80	100
Characteristic values for tension loads in non cracked concrete	$N_{Rk,p}$ [kN]	7	9	17	35	65
Characteristic values for tension loads in cracked concrete	$N_{Rk,p}$ [kN]	4	6	10	28	40



Related Products: Drill Bits for concrete, brick, Porotherm, granite - pages 35 - 41 Safety Work Gloves - page 42

FT THROUGHBOLT – Wedge Anchors

Wedge Anchors are the most common fasteners in both professional and home applications. They owe their popularity to high load capacity, easy installation and a wide range of diameters and lengths. Despite the similar appearance, their strength differs significantly due to the class of the steel used by the manufacturer (which affects the anchor load capacity), production technology, the shape of the expansion ring or the thickness of the zinc coating.

Applications:

- Wedge Anchors are intended for fastenings in the range of medium and large loads, typically for elements of building structures, facades, protective barriers, handrails, balconies, storage racks, various types of machines and devices, elements of hydraulic installations, ventilation and air conditioning.

Base material:

Non-cracked concrete min. C20/25 class.

FT THROUGHBOLT, Wedge Anchors (Steel White Zinc Plated)

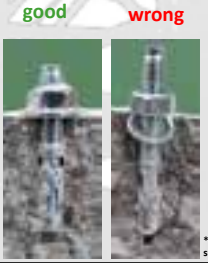
ETA-20/0733

ETA option 7 / for non-cracked concrete
R120 - 120 min of fire resistance

ART. NO.	M x L	t_{fix}	BOX	OUTER BOX
FT08050	M8 x 50	5	200	800
FT08065	M8 x 65	20	100	400
FT08080	M8 x 80	35	100	400
FT08090	M8 x 90	45	100	400
FT08100	M8 x 100	55	100	400
FT08115	M8 x 115	70	100	400
FT10065	M10 x 65	8	100	400
FT10075	M10 x 75	18	100	400
FT10090	M10 x 90	33	50	200
FT10105	M10 x 105	50	50	200
FT10120	M10 x 120	63	50	200
FT10140	M10 x 140	73	50	200
FT12080	M10 x 80	12	50	200
FT12100	M12 x 100	25	50	200
FT12120	M12 x 120	45	25	100
FT12140	M12 x 140	65	25	100
FT12160	M12 x 160	85	25	100
FT12180	M12 x 180	105	25	100
FT12200	M12 x 200	125	25	100
FT12220	M12 x 220	145	25	100
FT12240	M12 x 240	165	25	100
FT16105	M16 x 105	12	25	100
FT16125	M16 x 125	30	20	80
FT16150	M16 x 150	55	20	80
FT16175	M16.x 175	80	20	80
FT16200	M16 x 200	105	20	80
FT16220	M16 x 220	125	15	60
FT16240	M16 x 240	145	10	40
FT20130	M20 x 130	20	15	60
FT20160	M20 x 160	50	10	40
FT20200	M20 x 200	70	10	40
FT20220	M20 x 220	110	10	40
FT20240	M20 x 240	130	5	20

Advantages:

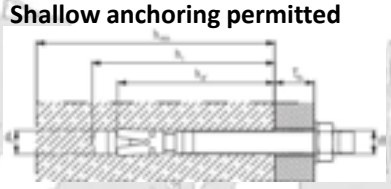
Rapid expansion of the anchor



Three* turns of the wrench are enough to install an FT...II anchor. By these means the installation time is shorter, and the threaded rod of the anchor will only insignificantly protrude above the surface.

* Depending on the class of concrete substrate

Shallow anchoring permitted



Very shallow effective embedding makes easier the design and installation of supporting elements and structures. It is particularly suitable for fastenings duct ceilings, not requiring a load capacity reduction factor to be used.

The minimum distance from the edge and between the anchors may be very small

The minimum edge distance can be kept very small, which allows the safe use of FT... II anchors in applications not accessible by other anchors. e.g. fixing barriers close to the edge of concrete or fixing hydraulic consoles and supports where the holes in the fixing plates are very close to each other

Related Products:

Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

FT...SS Throughbot – Wedge Anchors (Stainless Steel A4-316)

Anchors made of A4 steel are intended for anchoring in conditions particularly exposed to corrosion, such as: highly industrialized areas with high emission of pollutants, coastal areas, overbridges, flyovers, industrial plants, sewage treatment plants, etc.

ART. NO.	M x L	t_{fix}	BOX	OUTER BOX
FT06045SS	M6 x 45	5	100	1000
FT06055SS	M6 x 55	10	100	1000
FT06085SS	M6 x 85	35	100	1000
FT08065SS	M8 x 65	20	100	800
FT08080SS	M8 x 80	35	100	800
FT08090SS	M8 x 90	45	100	600
FT08100SS	M8 x 100	55	100	600
FT08115SS	M8 x 115	70	100	400
FT10065SS	M10 x 65	8	100	600
FT10075SS	M10 x 75	18	100	400
FT10090SS	M10 x 90	33	100	400
FT10105SS	M10 x 105	50	100	400
FT10120SS	M10 x 120	63	50	300
FT10140SS	M10 x 140	73	50	300
FT12100SS	M12 x 100	12	50	200
FT12120SS	M12 x 120	25	25	200
FT12140SS	M12 x 140	45	25	200
FT16125SS	M16 x 125	30	25	100
FT16150SS	M16 x 150	55	25	100

A2-304 anchors available on request

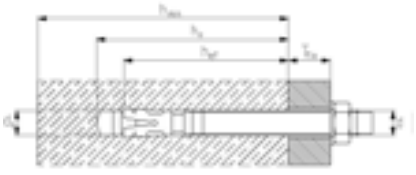
FT...HDG – Wedge Anchors (Steel Hot Dipped Galvanized)

Hot-dip galvanized anchors are intended for anchorages outside buildings where the fastenings are exposed to weather conditions, such as rain or snow.

ART. NO.	M x L	t_{fix}	BOX	OUTER BOX
FT08065	M8 x 65	20	100	800
FT08080	M8 x 80	35	100	800
FT08090	M8 x 90	45	100	600
FT08100	M8 x 100	55	100	600
FT08115	M8 x 115	70	100	400
FT10065	M10 x 65	8	100	600
FT10075	M10 x 75	18	100	400
FT10090	M10 x 90	33	100	400
FT10105	M10 x 105	50	100	400
FT10120	M10 x 120	63	50	300
FT10140	M10 x 140	73	50	300
FT12100	M12 x 100	12	50	200
FT12120	M12 x 120	25	25	200
FT12140	M12 x 140	45	25	200
FT16125	M16 x 125	30	25	100
FT16150	M16 x 150	55	25	100

FT THROUGHBOLT, technical specification*

Parameters / Hole diameter		M6	M8	M10	M12	M16	M20
Depth of drill hole	h_1 [mm]	50	60	65	90	110	120
Nominal drill hole diameter	d_0 [mm]	6	8	10	12	16	20
Effective anchorage depth	h_{ef} [mm]	35	45	50	70	85	100
Diameter of clearance hole in the fixture	d_f [mm]	7	9	12	14	18	22
Minimum thickness of base material	h_{min} [mm]	70	90	100	140	170	200
Minimum spacing	S_{min} [mm]	30	35	40	50	65	80
Minimum edge distance	C_{min} [mm]	30	35	40	50	65	80
Installation torque moment	T_{inst} [Nm]	10	20	30	50	120	160
Characteristic values for tension loads in non cracked concrete	$N_{Rk,p}$ [kN]	7	14	20	30	40	50
Installation safety factor	γ_{inst}	1,0			1,2	1,0	
Characteristic values for shear loads in non cracked concrete	$N_{Rk,p}$ [kN]	4	7,3	11,6	16,9	31,4	49
Ductility factor	k	0,8					
Partial safety factor	γ_{inst}	1,25					



**applied to Zinc Plated Throughbolt Anchors only*

Related Products:

Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

FDA Drop-in Anchor

Drop-In Anchors are used wherever you want to use bolts with metric threads or threaded rods. The anchor is installed by striking the steel pin inside the sleeve with the FS setting tool, which expands the lower part of the anchor and wedges it in the substrate.

They are most often used for the assembly of plumbing, sprinkler and ventilation systems, fixing of scaffolding, anchoring of diamond drilling rigs and securing of formwork.

Base material:
Non-cracked concrete min. C20/25 class

FDA Drop-in Anchor

ITB® Aprobata techniczna

Option 7 / for non-cracked concrete
R120 - 120 min of fire resistance

ART. NO.	Ø x L	M	BOX	OUTER BOX
FDA06	8 x 25	6	100	2000
FDA08	10 x 30	8	100	2000
FDA10	12 x 40	10	50	1000
FDA12	16 x 50	12	50	500
FDA16	20 x 65	16	25	250

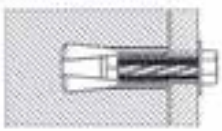
FDA Drop-in Anchor – Lipped

The lipped version of the anchor is used when you want to prevent the anchor being installed from falling into the hole (e.g. during installation in channel slabs).

ART. NO.	Ø x L	M	BOX	OUTER BOX
FDA06L	8 x 25	6	100	2000
FDA08L	10 x 30	8	100	2000
FDA10L	12 x 40	10	50	1000
FDA12L	16 x 50	12	50	500
FDA16L	20 x 65	16	25	200

FDA Drop-in Anchors, technical specification

installation in a channel slab



installation in solid concrete

Parameters / Hole diameter		M6	M8	M10	M12	M16	M20
Depth of drill hole	h_o [mm]	25	25/30 [1]	40	50	65	80
Nominal drill hole diameter	d_o [mm]	8	10	12	16	20	25
Diameter of clearance hole in the fixture	d_f [mm]	8	10	12	16	20	25
Minimum thickness of base material	h_{min} [mm]	80/50 [2]	80/50 [2]	80/50 [2]	100/50 [2]	130	160
Minimum spacing	S_{min} [mm]	200	200	200	200	260	320
Minimum edge distance	C_{min} [mm]	150	150	150	150	195	240
Installation torque moment	T_{inst} [Nm]	4.5	11	22	38	98	130
Characteristic values for tension/ shear loads in solid concrete	$N_{Rk,p}$ [kN]	3	3/4 [1]	5	6	9	16
Characteristic values for tension/ shear loads in a channel slab	$\gamma 2 = \gamma_{inst}$	2	2/2.5 [1]	5	6	-	-

[1] *for reduced depth and standard depth, respectively*
[2] *for a channel slab*
The load capacity depends on the use of a bolt made of ordinary carbon steel in a class not lower than 4.8 acc. PN-EN ISO 898-1: 2013

Related Products:

Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

FDA Drop-in Anchor – (Stainless Steel A4-316)

Anchors made of A4 steel are intended for anchoring in conditions particularly exposed to corrosion, such as: highly industrialized areas with high emission of pollutants, coastal areas, overbridges, flyovers, industrial plants, sewage treatment plants, etc.

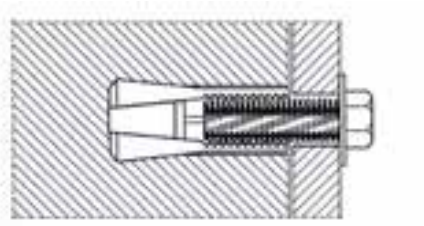
ART. NO.	Ø x L	M	BOX	OUTER BOX
FDA06SS	8 x 25	6	100	2000
FDA08SS	10 x 30	8	100	2000
FDA10SS	12 x 40	10	50	1000
FDA12SS	16 x 50	12	50	500
FDA16SS	20 x 65	16	25	200

A2-304 anchors available on request

FST – Drop-in Anchor Setting Tool

ART. NO.	DESCRIPTION	BOX
FST06	FDA06, FDA06L, FDA06SS	1
FST08	FDA08, FDA08L, FDA08SS	1
FST10	FDA10, FDA10L, FDA016S	1
FST12	FDA12, FDA12L, FDA12SS	1
FST16	FDA16, FDA16L, FDA16SS	1

FDA...SS Drop-in Anchors, technical specification



Parameters / Hole diameter		M6	M8	M10	M12	M16
Depth of drill hole	h_0 [mm]	25	30	40	50	65
Nominal drill hole diameter	d_0 [mm]	8	10	12	16	20
Diameter of clearance hole in the fixture	d_f [mm]	8	10	12	16	20
Minimum thickness of base material	h_{min} [mm]	80	80	80	100	130
Minimum spacing	S_{min} [mm]	200	200	200	200	260
Minimum edge distance	C_{min} [mm]	150	150	150	150	195
Installation torque moment	T_{inst} [Nm]	4.5	11	22	38	98
Characteristic values for tension/ shear loads in solid concrete	$N_{Rk,p}$ [kN]	2.5	3	4	5	7,5

Advantages:

Anchoring in channel slabs

The technical approval permits anchoring in hollow core slabs, which allows the use of FDA anchors in modern buildings with light ceilings (with a hollow) for fixing elements of plumbing, ventilation and air conditioning systems.

Fire resistance

R30 / 60/90 and 120 min.

FDA anchors are characterized by high fire resistance (load capacity in case of fire). The technical approval covers performance for R30 / 60/90 and 120 minutes.
This allows them to be used in "fire zones", such as garages, for attaching elements of hydraulic installations or heavy devices of ventilation and air conditioning systems.

Easy and quick installation

Two* hammer blows are enough to install the FDA anchor... in concrete or hollow core slab.
Thanks to this, the installer is not tired after a day of work, the installation time is shortened and the anchor is properly seated, achieving high load capacities.

*** Depending on the concrete class**

Related Products:

Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

Frame Anchors

FHS – Hammerscrews

Aprobata techniczna

- *Sleeve flange – conical-flat (funnel)*
- *Sleeve made of material resistant to shocks and low temperatures.*
- *Simple and quick installation: just insert the complete pin into the borehole and hammer the screw home.*
- *Screw with countersunk head (PZ2) made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

ART. NO.	Ø x L	t_{fix}	BOX	OUTER BOX
FHS06040	M6 x 40	10	200	2800
FHS06060	M6 x 60	30	100	1400
FHS06080	M6 x 80	50	100	1400
FHS08060	M8 x 60	20	100	1400
FHS08080	M8 x 80	40	100	1400
FHS08100	M8 x 100	60	100	1400
FHS08120	M8 x 120	80	50	700
FHS08140	M8 x 140	100	50	700
FHS08160	M8 x 160	120	50	700
FHS10080	M10 x 80	30	25	350
FHS10100	M10 x 100	50	25	350
FHS10120	M10 x 120	70	25	350
FHS10140	M10 x 140	90	25	350
FHS10160	M10 x 160	110	25	350
FHS06040XL	M6 x 40	10	600	-
FHS06060XL	M6 x 60	30	400	-
FHS08080XL	M8 x 80	40	200	-

use PZ2

FHS Hammerscrews, technical specification

Parameters / Hole diameter		Ø6	Ø8	Ø10
Depth of drill hole	h_0 [mm]	40	50	60
Nominal drill hole diameter	d_0 [mm]	6	8	10
Minimum thickness of base material	h_{min} [mm]	45	60	75
Minimum spacing Minimum spacing	S_{min} [mm]	60	80	100
Minimum edge distance	C_{min} [mm]	60	80	100
Characteristic values for tension/ shear loads	$N_{Rk,p}$ [kN]	0,1	0,1	0,4

FFA – Frame Anchors Ø 8 i Ø 10 (screw with countersunk & hexagonal head)

Aprobata techniczna

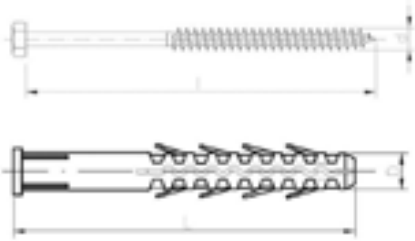
Ø8 and Ø10 – use PZ3 or Torx 40

Ø8 – SW 11
Ø10 – SW 13

- *Sleeve flange – conical-flat (funnel) shape*
- *Sleeve made of material resistant to shocks and low temperatures.*
- *Large expansion force guarantees high load capacities*
- *Screw with countersunk (PZ3 or Torx 40) or hexagonal head made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

ART. NO. (countersunk head)	ART. NO. (hexagonal head)	Ø x L	t_{fix}	BOX	OUTER BOX
FFA08100C	FFA08100H	M8 x 100	30	10	100
FFA08120C	FFA08120H	M8 x 120	50	10	100
FFA10100C	FFA10100H	M10 x 100	30	10	100
FFA10120C	FFA10120H	M10 x 120	50	10	100
FFA10140C	FFA10140H	M10 x 140	70	10	100
FFA10160C	FFA10160H	M10 x 160	90	10	100

FFA Frame Anchors, technical specification



Parameters / Hole diameter		Ø 8	Ø 10	Ø 12	Ø 14
Depth of drill hole	h_0 [mm]	50	80	100	100
Nominal drill hole diameter	d_0 [mm]	8	10	12	14
Minimum thickness of base material	h_{min} [mm]	60	105	135	135
Minimum spacing Minimum spacing	S_{min} [mm]	80	140	180	180
Minimum edge distance	C_{min} [mm]	80	140	180	180
Characteristic values for tension/ shear loads	$N_{Rk,p}$ [kN]	0,4	0,6	0,75	0,90

Related Products:

Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

FFA – Segmented Frame Anchors Ø 12 and Ø 14 (with hexagonal head)

The sleeve of the anchor consists of a 100 mm long expansion segment and 40 mm long segments that extend the anchor in the part intended for the thickness of the element to be fixed.

- *Sleeve made of material resistant to shocks and low temperatures.*
- *Large expansion force guarantees high load capacities*
- *Sleeve flange – flat (widened)*
- *Screw with countersunk (PZ3 or Torx 40) or hexagonal head made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

Aprobata techniczna

ART. NO.	Ø x L	t_{fix}	BOX	OUTER BOX
FFA12100H	M12 x 100	10	10	100
FFA12120H	M12 x 120	30	10	100
FFA12140H	M12 x 140	50	10	100
FFA12160H	M12 x 160	70	10	100
FFA12180H	M12 x 180	90	10	100
FFA12200H	M12 x 200	110	10	100
FFA12220H	M12 x 220	130	10	100
FFA12240H	M12 x 240	150	10	100
FFA12260H	M12 x 260	170	10	100
FFA12280H	M12 x 280	190	10	100
FFA12300H	M12 x 300	210	10	100
FFA14100H	M14 x 100	10	10	100
FFA14120H	M14 x 120	30	10	100
FFA14140H	M14 x 140	50	10	100
FFA14160H	M14 x 160	70	10	100
FFA14180H	M14 x 180	90	10	100
FFA14200H	M14 x 200	110	10	100
FFA14220H	M14 x 220	130	10	100
FFA14240H	M14 x 240	150	10	100
FFA14260H	M14 x 260	170	10	100
FFA14280H	M14 x 280	190	10	100
FFA14300H	M14 x 300	210	10	100

Ø12 – SW 13
Ø14 – SW 17

Anchors with a length of up to 400mm are available on request

FFA – Segmented Frame Anchors Ø 10, Ø 12 and Ø 14 (with ceiling hook and straight hook)

The sleeve of the Ø10 anchor is one-piece, while the sleeves of the Ø12 and Ø14 anchors consist of a 100 mm long expansion segment and 40 mm long segments that extend the part intended for the thickness of the element to be fixed.

- *Sleeve made of material resistant to shocks and low temperatures.*
- *Large expansion force guarantees high load capacities*
- *Sleeve flange - conical-flat for Ø10, flat widened for Ø12 and Ø14*
- *Screw with ceiling or straight hook made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

Aprobata techniczna

ART. NO. (ceiling hook)	ART. NO. (straight hook)	Ø x L	BOX	OUTER BOX
FFA10100S	FFA10100P	M10 x 100	10	100
FFA10120S	FFA10120P	M10 x 120	10	100
FFA10140S	FFA10140P	M10 x 140	10	100
FFA10160S	FFA10160P	M10 x 160	10	100

ART. NO. (ceiling hook)	ART. NO. (straight hook)	Ø x L	BOX	OUTER BOX
FFA12100S	FFA12100P	M12 x 100	10	100
FFA12120S	FFA12120P	M12 x 120	10	100
FFA12140S	FFA12140P	M12 x 140	10	100
FFA12160S	FFA12160P	M12 x 160	10	100
FFA12180S	FFA12180P	M12 x 180	10	100
FFA12200S	FFA12200P	M12 x 200	10	100
FFA12220S	FFA12220P	M12 x 220	10	100
FFA12240S	FFA12240P	M12 x 240	10	100
FFA12260S	FFA12260P	M12 x 260	10	100
FFA12280S	FFA12280P	M12 x 280	10	100
FFA12300S	FFA12300P	M12 x 300	10	100
FFA14100S	FFA14100P	M14 x 100	10	100
FFA14120S	FFA14120P	M14 x 120	10	100
FFA14140S	FFA14140P	M14 x 140	10	100
FFA14160S	FFA14160P	M14 x 160	10	100
FFA14180S	FFA14180P	M14 x 180	10	100
FFA14200S	FFA14200P	M14 x 200	10	100
FFA14220S	FFA14220P	M14 x 220	10	100
FFA14240S	FFA14240P	M14 x 240	10	100
FFA14260S	FFA14260P	M14 x 260	10	100
FFA14280S	FFA14280P	M14 x 280	10	100
FFA14300S	FFA14300P	M14 x 300	10	100

Ø inner hook 21.5 mm

Related Products:

Debris Blow Out Pump, FBP01 - page 19
Hole Cleaning Brushes, FCB - page 19

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Safety Work Gloves - page 42

FHLP – Heavy Duty Nylon Plug

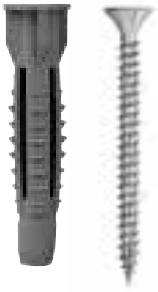
use PZ2

The HL (High Load) plug is intended for fastening in solid materials wherever high load capacities are required but frame or steel anchors cannot be used, e.g. due to the low thickness of the substrate. The unique internal structure of the sleeve forces the expansion of the pin in 4 ways (unlike traditional pins), and its high-quality nylon guarantees high adhesion to the substrate and many years of resistance to aging.

- *Sleeve flange – flat*
- *Sleeve made of material resistant to shocks and low temperatures.*
- *Screw with countersunk head (PZ2) made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FHLP06	6 x 30	-	200	9 600
FHLP08	8 x 40	-	100	7 200
FHLP10	10 x 50	-	50	3 600
FHLP12	12 x 60	-	50	3 600
FHLP06/04040	6 x 30	4.0 x 40	100	1 900
FHLP08/05050	8 x 40	5.0 x 50	50	900
FHLP10/06060	10 x 50	6.0 x 60	25	450
FHLP12/08080	12 x 60	8.0 x 80	25	450

FUP – All-Purpose Nylon Plug



use PZ2

The FUP (Universal) plug is intended for fixing in most base materials, ranging from solid materials, such as concrete or brick, through hollow-block materials, as Porotherm or chequered brick, to drywall. The unique design of the pin allows it to expand in 4 ways in solid materials or knot in the hollow-block materials, enabling to fix heavy elements, such as bookcases or shelves.

- *Sleeve flange – flat*
- *Sleeve made of material resistant to shocks and low temperatures.*
- *Screw with countersunk head (PZ2) made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FUP06	6 x 30	-	200	9 600
FUP06L	6 x 40	-	200	7 200
FUP08	8 x 50	-	100	7 200
FUP10	10 x 60	-	50	3 600
FUP06/04035	6 x 30	4.0 x 35	100	1 800
FUP06/04050L	6 x 40	4.0 x 50	100	1 800
FUP08/05060	8 x 50	5.0 x 60	50	900
FUP10/06070	10 x 60	6.0 x 70	25	450

FNPK – Wall Plugs (countersunk head screw)

Aprobata techniczna

Ø6/8 – use bit PZ2
Ø10/12 – use bit PZ3

The FNPK plug is designed for solid materials, such as concrete or brick. Due to the long expansion zone, large contact surface and additional expansion elements acting crosswise to those of the main expansion zone, it achieves very high load capacities. The sticking out pieces prevent the pin from turning in the hole during installation.

- *Sleeve flange – flat*
- *Sleeve made of material resistant to shocks and low temperatures.*
- *Screw with countersunk (PZ2) or hexagonal head made of ordinary carbon steel S235JRG2 according to PN-EN ISO 10025-1:2007*

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FNPK06	6 x 30	-	200	3600
FNPK06L	6 x 40	-	200	3600
FNPK08	8 x 40	-	100	1800
FNPK08L	8 x 50	-	100	1800
FNPK10	10 x 50	-	100	1800
FNPK10L	10 x 60	-	100	1800
FNPK12	12 x 60	-	100	900

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FNPK06/04035	6 x 30	4.0 x 35	200	3600
FNPK06/04050	6 x 30	4.0 x 50	200	3600
FNPK06/04050L	6 x 40	4.0 x 50	200	3600
FNPK08/05045	8 x 40	5.0 x 45	100	1800
FNPK08/05060	8 x 40	5.0 x 60	100	1800
FNPK08/05060L	8 x 50	5.0 x 60	100	1800
FNPK10/06060	10 x 50	6.0 x 60	100	1800
FNPK10/06080	10 x 50	6.0 x 80	100	1800
FNPK10/06070L	10 x 60	6.0 x 70	100	1800
FNPK12/08080	12 x 60	8.0 x 80	100	900

FNPH – Wall Plugs (hexagonal head screw)

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FNPH10/06060	10 x 50	6,0 x 60	100	1800
FNPH10/06080	10 x 50	6,0 x 80	100	1800
FNPH10/06100	10 x 60	6,0 x 100	100	1800
FNPK12/08060	12 x 60	8,0 x 60	100	1800
FNPK12/08070	12 x 60	6,0 x 70	100	1800
FNPH12/08080	12 x 60	6,0 x 80	100	1800
FNPH12/08100	12 x 60	6,0 x 100	100	900

Aprobata techniczna

Ø10 – SW 13
Ø12 – SW 17

FNP – Classic Wall Plugs

The FNP is a classic designed for fastening in solid materials, such as concrete or brick. The long expansion zone and sticking out pieces prevent the pin from turning in the hole during installation, making it ideal for most household applications.

- *Sleeve flange – flat*
- *Sleeve material resistant to shocks.*
- *Screw countersunk head made of ordinary carbon steel*

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FNP06	6 x 30	-	200	3600
FNP08	8 x 40	-	100	1800
FNP10	10 x 50	-	100	1800
FNP12	12 x 60	-	100	900

ART. NO.	Ø x L	SCREW	BOX	OUTER BOX
FNP06/04035	6 x 30	4.0 x 35	200	3600
FNP06/04050	6 x 30	4.0 x 50	200	3600
FNP08/05045	8 x 40	5.0 x 45	100	1800
FNP08/05060	8 x 40	5.0 x 60	100	1800
FNP10/06060	10 x 50	6.0 x 60	100	1800
FNP10/06080	10 x 50	6.0 x 80	100	1800
FNP12/08080	12 x 60	8.0 x 80	100	900
FNP12/08100	12 x 60	8.0 x 100	100	900

Aprobata techniczna

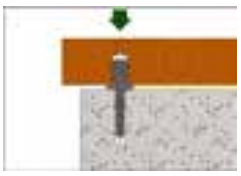
Ø 6/8 – use bit PZ2
Ø 10/12 – use bit PZ3

FSP – Stair Fastening Set

The FSP expansion plugs enable solid and INVISIBLE fastening of wooden stair steps to concrete substrates and steel framing.

- *Expansion section size Ø8 x 40 mm*
- *Wood fixing part size. Ø14 x 22 mm*
- *Material resistant to shocks and aging*
- *The set includes: plug, screws, levelling washers, carpentry markers.*
- *Screw with countersunk head (PZ3)*

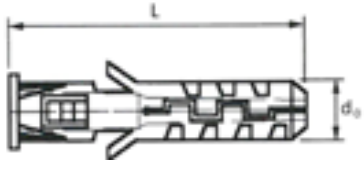
ART. NO.	DESCRIPTION	BOX
FSP08040S	plugs / screws / leveling washers / markers	100



Installation instructions: *Drill four holes in the bas material with Ø8 drill to a depth of about 45 mm. Put the carpenter's markers into the holes and arrange the step you want to fix. When it is adjusted properly, press it against the base, thus marking the location of holes on the step. Remove the markers from the base material, insert the FSP pins (expansion parts) and fix them with screws. Using a wood drill, drill holes of Ø14 mm and depth of 23 – 24 mm in the locations marked earlier. Level the step with the washers. Before fixing the step, damping mats or foam may be applied on the base material. Apply glue into the holes in the step and fix the step on the pins.*

Wall Plugs, technical specification[1)]

Parameters / Hole diameter		Ø 6	Ø 8	Ø 10	Ø 12
Depth of drill hole	h_0 [mm]	40	50	60	70
Nominal drill hole diameter	d_0 [mm]	6	8	10	12
Minimum thickness of base material	h_{min} [mm]	45	60	75	90
Minimum spacing Minimum spacing	S_{min} [mm]	60	80	100	120
Minimum edge distance	C_{min} [mm]	60	80	100	120
Characteristic values for tension/ shear loads	$N_{Rk,p}$ [kN]	0,1	0,2	0,3	0,4



[1)]The data applies to the FNPK/ FNPH plugs

HFN – Cable Ties

High-quality cable ties made of polyamide (nylon) class 6.6. They do not break during installation, even at negative temperatures. They are resistant to aging, high temperatures and chemicals such as oils and greases.

Properties:
- *installation temperature: -10°C to + 60°C*
- *working temperature: -40°C to + 85°C*
- *material: polyamide (nylon) class 6.6*
- *fire resistance: according to UL 94-V2*
- *UV resistance: only black version*
- *halogen free*

Applications:
- *electric installations*
- *industrial cabling*
- *motor industry*

Advantages:
- *High mechanical strength.*
- *Bent tip for easy pulling through the head of the tie.*
- *Rounded edges to avoid cuts.*
- *Low friction factor of the material facilitates tightening*

ART. NO.		S x L	N	BOX	OUTER BOX
neutral	black	[mm]	[kg]	[pcs]	[pcs]
HFB1025	HFN1025	2.5 x 100	7.90	5x100	15 000
HFB1425	HFN1425	2.5 x 140	7.90	5x100	12 000
HFB2025	HFN2025	2.5 x 200	7.90	5x100	10 000
HFB1436	HFN1436	3.6 x 140	13.7	5x100	10 000
HFB2036	HFN2036	3.6 x 200	13.7	5x100	7 000
HFB2936	HFN2936	3.6 x 290	13.7	5x100	4 500
HFB3636	HFN3636	3.6 x 360	13.7	5x100	6 000
HFB2048	HFN2048	4.8 x 200	24.1	5x100	5 000
HFB2548	HFN2548	4.8 x 250	24.1	5x100	5 000
HFB2948	HFN2948	4.8 x 290	24.1	5x100	3 500
HFB3648	HFN3648	4.8 x 360	24.1	5x100	4 500
HFB3948	HFN3948	4.8 x 390	24.1	5x100	5 000
HFB4348	HFN4348	4.8 x 430	24.1	5x100	5 000
HFB5348	HFN5348	4.8 x 530	24.1	5x100	3 000
HFB2576	HFN2576	7.6 x 250	56.0	5x100	2 500
HFB3676	HFN3676	7.6 x 360	56.0	5x100	2 500
HFB4576	HFN4576	7.6 x 450	56.0	5x100	2 000
HFB5476	HFN5476	7.6 x 540	56.0	5x100	1 500
HFB7576	HFN7576	7.6 x 750	56.0	5x100	1 000

FCTPH – Cable Tie Pin Holders

These pins are intended for fastening cables, covers, conduits, etc. to concrete, solid brick or chequered brick, Ytong or Porotherm substrates with the use of cable ties. Fastening in the substrate takes place without the need to expand the pin with a screw, and the diameter of the element being fixed depends only on the length of the cable tie used.

ART. NO.	Ø x L	Ø	BOX	OUTER BOX
FCTPH08	10 x 37	8	100	5000

FUPO – Cable Tie Plate Holders

These holders are designed to fasten cables, covers, conduits etc. to concrete, solid brick or Ytong substrates with the use of cable ties. The holder is fixed to the base material by using a Hammerscrew (e.g. FHS06040). The diameter of the element being fastened depends only on the length of the cable tie used.

ART. NO.	DESCRIPTION	BOX	OUTER BOX
FUPO	cable tie holder	100	1000

FSB – Perforated Steel Straps

Perforated steel tapes are most often used to fasten hydraulic pipes (hot and cold water) when arranging heating and water installations, as well as electrical cables and conduits, etc. The perforation of the tape enables easy and quick fixing to the substrate with hardened nails, gas or powder actuated nailers or hammerscrews. The tape package ensures convenient transport, unwinding and cutting the required length of the tape.

ART. NO.	S x G [mm]	L [m]	BOX	OUTER BOX
FSB12	12 x 0.7	10	1	10
FSB17	17 x 0.7	10	1	10
FSB25	25 x 0.7	10	1	5

Related Products:

Drill Bits for concrete, brick, Porotherm, granite - pages 35-41
Hammerscrews - page 26
Hardened nails - page 10
Safety Work Gloves - page 42

Installation Accessories

Flush-mounting cable holders can be divided into: intended for fixing flat cables and for fixing round cables. Traditional holders, e.g. FZW, are intended for mounting in solid base materials, such as concrete or brick. A novelty are universal holders that allow for secure mounting in both concrete and hollow-block materials, such as **Porotherm**, or porous materials, such as **Ytong**. If you are sure that you will only fasten in concrete, you can buy traditional holders, but if you fasten in various materials or you do care about stable fastening, it is worth getting universal holder for concrete and hollow-block materials.

FZW – Holders for fixing round cables in concrete

ART. NO.	DESCRIPTION	Ø hole	Ø wire	H hole	BOX
	for example	[mm]	[mm]	[mm]	[pcs]
FZWO06	YTKSY(1-5)x2x0,5	5	6	30	100
FZWO08	YDY(2x1.0), antenna and television cables	6	8	35	100
FZWO10	YDY(2x2.5), antenna and television cables	6	10	35	100
FZWO12	YDY(3x4.0), RVKL (cable cover Ø12)	8	12	35	50
FZWO14	YDY(3x6.0), RVKL (cable cover Ø14)	8	14	40	50
FZWO16	YDY(4x6.0), (cable cover Ø16), pipe PP	8	16	40	50
FZWO18	PVC pipes , RVKL (cable cover Ø18)	8	18	40	50
FZWO20	PVC pipes , RVKL (cable cover Ø20)	8	20	40	50

FUH – Hook Holders for fixing round cables in concrete

ART. NO.	DESCRIPTION	Ø hole	Ø wire	H hole	BOX
	for example	[mm]	[mm]	[mm]	[pcs]
FUHO01	YTKSY(1-5)x2x0.5 antenna and television cables	5	10	35	100
FUHO02	PVC pipes , RVKL (cable cover Ø16)	6	16	45	100

FZWP – Holders for fixing flat cables in concrete

ART. NO.	DESCRIPTION	Ø hole	Ø wire	H hole	BOX
	for example	[mm]	[mm]	[mm]	[pcs]
FZWP02	YDYp (2x2.5), YDY(3x1.0),	6	10	30	100
FZWP03	YDYp (3x1.5), YDY(3x2.5),	6	12	40	100
FZWP04	YDYp (4x1.5), YDY(4x2.5),	6	16	40	100
FZWP05	YDYp (5x1.5), YDY(5x2.5),	6	18	40	100
FZWP06	YDYp (5x4.0), YDY(5x6.0),	8	18	40	50
FZWP03K*	YDYp (3x1.5), YDY(3x2.5),	6	12	40	100

**short version*

FUHP – Double Holders for fixing flat cables in concrete

ART. NO.	DESCRIPTION	Ø hole	Ø wire	H hole	BOX
	for example	[mm]	[mm]	[mm]	[pcs]
FUHP01	2x YDY p (3x1.0), 2x YDY(2x2.5)	6	12	40	100
FUHP02	2x YDY p (3x1.5), 2x YDY(3x2.5)	6	12	40	100

FSE – Hook Holders for fixing flat/round cables in Porotherm and concrete

ART. NO.	DESCRIPTION	Ø hole	Ø wire	H hole	BOX
	for example	[mm]	[mm]	[mm]	[pcs]
FSE10	YDYp (2x2.5), YDY(3x1.0),	6	10	40	100
FSE12	YDYp (3x1.5), YDY(3x2.5),	6	12	40	100
FSE17	YDYp (5x1.5), YDY(5x2.5),	6	17	40	100

FUHP – Double Holders for fixing flat cables in Porotherm and concrete

ART. NO.	DESCRIPTION	Ø hole	Ø wire	H hole	BOX
	for example	[mm]	[mm]	[mm]	[pcs]
FUHP02	YDY p (3x1.5), YDY p (3x2.5),	6	16	45	100

FDP...BP – Universal hammer driven fastener with plastic pin - short expansion zone

Aprobata techniczna

Cost effective fasteners with a short expansion zone, designed for fixing hard thermal insulation, e.g. expanded polystyrene, in concrete and brick. The expansion pin integrated with the plate head speeds up fastening. They will not cause cold bridges.

ART. NO.	Ø x L	BOX	OUTER BOX
FDP10080BP	10 x 80	100	1000
FDP10090BP	10 x 90	100	1000
FDP10100BP	10 x 100	100	1000
FDP10110BP	10 x 110	100	1000
FDP10120BP	10 x 120	100	1000
FDP10140BP	10 x 140	100	1000
FDP10160BP	10 x 160	100	1000
FDP10180BP	10 x 180	100	1000
FDP10200BP	10 x 200	100	1000
FDP10220BP	10 x 220	50	1000

FDP...BU – Universal hammer driven fastener with hardened pin - short expansion zone

Aprobata techniczna

Fasteners with a short expansion zone intended for fixing hard thermal insulation, e.g. expanded polystyrene, in concrete and brick. The use of a hardened expanding pin made of glass fiber increases fastener resistance to pulling out and shearing forces. They will not cause cold bridges.

ART. NO.	Ø x L	BOX	OUTER BOX
FDP10080BU	10 x 80	100	1000
FDP10090BU	10 x 90	100	1000
FDP10100BU	10 x 100	100	1000
FDP10110BU	10 x 110	100	1000
FDP10120BU	10 x 120	100	1000
FDP10140BU	10 x 140	100	1000
FDP10160BU	10 x 160	100	1000
FDP10180BU	10 x 180	100	1000
FDP10200BU	10 x 200	100	1000
FDP10220BU	10 x 220	50	500

FDP...B – Universal hammer driven fastener with steel pin - short expansion zone

Aprobata techniczna

Fasteners with a short expansion zone intended for fixing hard thermal insulation, e.g. expanded polystyrene, in concrete and brick. Highest pull-out and shear load capacity thanks to the use of a steel expansion mandrel.

ART. NO.	Ø x L	BOX	OUTER BOX
FDP10080B	10 x 80	100	1000
FDP10090B	10 x 90	100	1000
FDP10100B	10 x 100	100	1000
FDP10110B	10 x 110	100	1000
FDP10120B	10 x 120	100	1000
FDP10140B	10 x 140	100	1000
FDP10160B	10 x 160	100	1000
FDP10180B	10 x 180	100	1000
FDP10200B	10 x 200	100	1000
FDP10220B	10 x 220	50	500

FDP...PP – Hammer driven fastener with plastic pin and extended expansion zone

Cost effective fasteners with a long expansion zone, designed for fixing hard thermal insulation, e.g. expanded polystyrene, in hollow-block materials, such as chequered brick or Porotherm. The expansion pin integrated with the plate head speeds up fastening. They will not cause cold bridges.

ART. NO.	Ø x L	BOX	OUTER BOX
FDP10140PP	10 x 140	100	1000
FDP10160PP	10 x 160	100	1000
FDP10180PP	10 x 180	100	1000
FDP10200PP	10 x 200	100	1000
FDP10220PP	10 x 220	50	500

FDP...PU – Hammer driven fastener with plastic hardened pin and extended expansion zone

Fasteners with a long expansion zone intended for fixing hard thermal insulation, e.g. expanded polystyrene, in hollow-block materials, such as chequered brick or Porotherm. The use of a hardened expanding pin made of glass fiber increases fastener resistance to pulling out and shearing forces. They will not cause cold bridges.

ART. NO.	Ø x L	BOX	OUTER BOX
FDP10140PU	10 x 140	100	1000
FDP10160PU	10 x 160	100	1000
FDP10180PU	10 x 180	100	1000
FDP10200PU	10 x 200	100	1000
FDP10220PU	10 x 220	50	500

FDP...P – Hammer driven fastener with steel pin and extended expansion zone

Fasteners with a long expansion zone intended for fixing hard thermal insulation, e.g. expanded polystyrene, in hollow-block materials, such as chequered brick or Porotherm. Highest pull-out and shear load capacity thanks to the use of a steel expansion mandrel.

ART. NO.	Ø x L	BOX	OUTER BOX
FDP10140P	10 x 140	100	1000
FDP10160P	10 x 160	100	1000
FDP10180P	10 x 180	100	1000
FDP10200P	10 x 200	100	1000
FDP10220P	10 x 220	50	500

FTD – Hold down plates

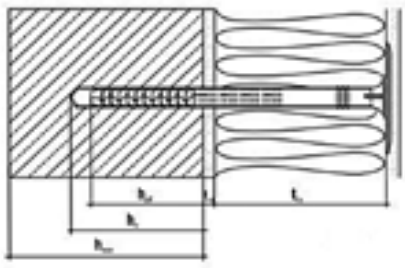
Hold down plates are intended for fixing both hard thermal insulation, e.g. expanded polystyrene, and soft thermal insulation, as mineral wool, in wood substrates using carpentry screws with a widened head.

ART. NO.	Ø	BOX	OUTER BOX
FTD60	60	100	1000
FTD70	70	100	1000

Fasteners for thermal insulation, technical specification

Parameters / Hole diameter		CONCRETE	POROTHERM
Fastener diameter	d [mm]	10	10
Plate head diameter	D [mm]	60	60
Fastener lenght	L [mm]	80-220	140-220
Depth of drill hole	h_0 [mm]	60	60
Nominal drill hole diameter	d_0 [mm]	10	10
Minimum thickness of base material	h_{min} [mm]	100	100
Thermal conductivity point[1)]	X [W/K]	0,00	0,00
Thermal conductivity point[2)]	X [W/K]	0,08	0,08
Characteristic values for tension loads (plastic mandrel)	$N_{Rk,p}$ [kN]	0,10	0,15
Characteristic values for tension loads (steel mandrel)	$N_{Rk,p}$ [kN]	0,30	0,40

1) for integrated and hardened mandrel
2) for steel mandrel



Timber Screws

- *Wax coating - reduces the tightening torque, which facilitates and speeds up installation*

- *Reaming cutter reduces the tightening torque and makes it easier to tighten elements being fastened.*

- *The auger point prevents the wood from breaking.*

- *The serrated thread cuts the wood grains to reduce friction and make screwing easier.*

- *The flange head with socket TX 40 provides more contact area with the work surface.*

- *The serrations make the head easily slice into the surface to create their own recess without tearing the wood grains.*
- *Material: galvanized low carbon steel.*

FWCP – Heavy Duty Timber Screws, flange head

Screws intended for structural joints of wood elements: solid, glued, X-LAM, LVL and wood-base boards where deep head sinking must be avoided. No predrilling of the base material is required.

ART. NO.	Ø x L	BOX	OUTER BOX
FWCP08080	8 x 80	50	450
FWCP08100	8 x 100	50	450
FWCP08120	8 x 120	50	450
FWCP08140	8 x 140	50	450
FWCP08160	8 x 160	50	450
FWCP08180	8 x 180	50	450
FWCP08200	8 x 200	50	300
FWCP08220	8 x 220	50	300
FWCP08240	8 x 240	50	300
FWCP08260	8 x 260	50	300
FWCP08280	8 x 280	50	300
FWCP08300	8 x 300	50	300
FWCP08320	8 x 320	50	150
FWCP08340	8 x 340	50	150
FWCP08360	8 x 360	50	150

FWHS – High-performance Timber Screws, countersunk head

Screws intended for structural joints of wood elements: solid, glued, X-LAM, LVL and wood-base boards where the head flush with the work surface is required.
No predrilling of the base material is required.

ART. NO.	Ø x L	BOX	OUTER BOX
FWHS30300	3.0 x 30	2 000	18000
FWHS30350	3.0 x 35	2 000	18000
FWHS30040	3.0 x 40	1 000	9000
FWHS35030	3.5 x 30	1 000	9000
FWHS35035	3.5 x 35	1 000	9000
FWHS35040	3.5 x 40	1 000	9000
FWHS35050	3.5 x 50	500	4500
FWHS40030	4.0 x 30	1 000	9000
FWHS40400	4.0 x 40	1 000	9000
FWHS40050	4.0 x 50	500	4500
FWHS40060	4.0 x 60	500	4500
FWHS40070	4.0 x 70	250	2250
FWHS45040	4.5 x 40	1 000	9000
FWHS45050	4.5 x 50	500	4500
FWHS45060	4.5 x 60	250	2250
FWHS45070	4.5 x 70	250	2250
FWHS45080	4.5 x 80	250	2250
FWHS50040	5.0 x 40	500	4500
FWHS50050	5.0 x 50	500	4500
FWHS50060	5.0 x 60	250	2250
FWHS50070	5.0 x 70	250	2250
FWHS50080	5.0 x 80	250	2250
FWHS50090	5.0 x 90	250	2250
FWHS50100	5.0 x 100	200	1800
FWHS50120	5.0 x 120	100	900
FWHS60050	6.0 x 50	250	2250
FWHS60060	6.0 x 60	250	2250
FWHS60070	6.0 x 70	250	2250
FWHS60080	6.0 x 80	250	2250
FWHS60090	6.0 x 90	100	900
FWHS60100	6.0 x 100	100	900
FWHS60120	6.0 x 120	100	900
FWHS60140	6.0 x 140	100	900
FWHS60160	6.0 x 160	100	900
FWHS60180	6.0 x 180	100	900
FWHS60200	6.0 x 200	100	900

Related Products: Hold Down Plates - page 33 Safety Work Gloves - page 42

3-cutting edge drill bits

PROLine+ *drill bits will drill through any reinforcement,*

2-cutting edge drill bits

PROLine *drill bits will prove efficient when drilling quickly in concrete and masonry thanks to the unique carbide with a double centring point and* ***TwinMax*** *helix,*

4-cutting edge drill bits

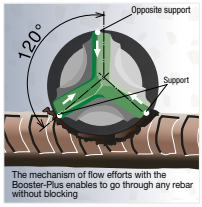
4 CUTTER *drill bits are marked by the highest durability and resistance to destruction.*

DUST-FREE drill bits

drill bits with internal debris extraction

PRO line+

RELIABLE IN REINFORCED CONCRETE



THE LONGEST LIFE

- *The drill bits are characterized by the highest durability and resistance to damage.*
- *The 3-cutting edge drill head will not jam in when it hits rebar.*
- *The cutter blades will not break off as the entire drill head is made of one piece of carbide*

3-cutting edge drill bits

PROLine+ *drill bits will drill through any reinforcement,*

- *Perfectly round borehole.*
- *High resistance to overheating*
- *Hammering effect.*
- *High drilling precision.*
- *Fast removal of debris.*

PROLINE PLUS – professional hammer drill bits for reinforced concrete with SDS+ shank

ART. NO.	Ø x L	L_{rob}	BOX
FCDB06110	6 x 110	50	1
FCDB06160	6 x 160	100	1
FCDB06210	6 x 210	150	1
FCDB06260	6 x 260	200	1
FCDB08160	8 x 160	100	1
FCDB08210	8 x 210	150	1
FCDB08260	8 x 260	200	1
FCDB08310	8 x 310	250	1
FCDB10160	10 x 160	100	1
FCDB10210	10 x 210	150	1
FCDB10260	10 x 260	200	1
FCDB10310	10 x 310	250	1
FCDB12160	12 x 160	100	1

ART. NO.	Ø x L	L_{rob}	BOX
FCDB12210	12 x 210	150	1
FCDB12260	12 x 260	200	1
FCDB12310	12 x 310	250	1
FCDB14210	14 x 210	150	1
FCDB14260	14 x 260	200	1
FCDB14310	14 x 310	250	1
FCDB16160	16 x 160	100	1
FCDB16210	16 x 210	150	1
FCDB16310	16 x 310	250	1
FCDB18210	18 x 210	150	1
FCDB18310	18 x 310	250	1
FCDB20310	20 x 310	250	1

Drill bits in packages of 12 pcs.

ART. NO.	Ø x L	L_{rob}	BOX
P12FCDB06110	6 x 110	50	12
P12FCDB06160	6 x 160	100	12
P12FCDB06210	6 x 210	150	12
P12FCDB08160	8 x 160	100	12
P12FCDB08210	8 x 210	150	12
P12FCDB08260	8 x 260	200	12
P12FCDB10160	10 x 160	100	12

ART. NO.	Ø x L	L_{rob}	BOX
P12FCDB10210	10 x 210	150	12
P12FCDB10260	10 x 260	200	12
P12FCDB10310	10 x 310	250	12
P12FCDB12160	12 x 160	100	12
P12FCDB12210	12 x 210	150	12
P12FCDB12260	12 x 260	200	12

FAST AND DURABLE FOR CONCRETE AND MASONRY

PRO line

Made in Germany

2-cutting edge drill bits

PROLine *drill bits will prove efficient when drilling quickly in concrete and masonry thanks to the unique carbide with a double centring point and* ***TwinMax*** *helix,*

Unique drill head

- *Stabilized geometry of the drill head increases the service life when drilling in reinforced concrete.*
- *Double centring point increases drilling speed and precision.*
- *Rounded carbide cutting edges prevent the carbide from breaking out of the head when it hits stone or reinforcement.*

Innovative helix design „Twinmax 3D"

- *The thick double helix enables quick removal of debris out of the borehole, so preventing its wear.*
- *The helix profile with a variable thickness, compresses and expands the debris, which prevents its 'compaction'.*
- *Additional stepped profile inside the helix breaks up the debris, preventing the drill from 'clogging up'.*
- *Hardened core and optimized geometry increase the strength of the drill bit and ensure effective transfer of impact to the substrate.*

PROLINE – professional hammer drill bits for concrete and brick with SDS+ shank

ART. NO.	Ø x L	L_{rob}	BOX
FCDT06110	6 x 110	50	1
FCDT06160	6 x 160	100	1
FCDT06210	6 x 210	150	1
FCDT06260	6 x 260	200	1
FCDT08160	8 x 160	100	1
FCDT08210	8 x 210	150	1
FCDT08260	8 x 260	200	1
FCDT08310	8 x 310	250	1
FCDT10160	10 x 160	100	1
FCDT10210	10 x 210	150	1
FCDT10260	10 x 260	200	1
FCDT10310	10 x 310	250	1
FCDT10460	10 x 460	400	1

ART. NO.	Ø x L	L_{rob}	BOX
FCDT12160	12 x 160	100	1
FCDT12210	12 x 210	150	1
FCDT12260	12 x 260	200	1
FCDT12310	12 x 310	250	1
FCDT12460	12 x 460	400	1
FCDT14200	14 x 200	150	1
FCDT14250	14 x 250	200	1
FCDT14300	14 x 300	250	1
FCDT16200	16 x 200	100	1
FCDT16300	16 x 300	150	1
FCDT18200	18 x 200	200	1
FCDT18300	18 x 300	250	1
FCDT20300	20 x 300	150	1
FCDT20450	20 x 450	250	1

Drill bits in packages of 10 pcs.

ART. NO.	Ø x L	L_{rob}	BOX
P10FCDT06110	6 x 110	50	10
P10FCDT06160	6 x 160	100	10
P10FCDT06210	6 x 210	150	10
P10FCDT08160	8 x 160	100	10
P10FCDT08210	8 x 210	150	10
P10FCDT10160	10 x 160	100	10

ART. NO.	Ø x L	L_{rob}	BOX
P10FCDT10210	10 x 210	150	10
P10FCDT10260	10 x 260	200	10
P10FCDT10310	10 x 310	250	10
P10FCDT12160	12 x 160	100	10
P10FCDT12210	12 x 210	150	10
P10FCDT12260	12 x 260	200	10

4CUTTER

Made in Germany

THE STRONGEST IN ALL SUBSTRATES

4 carbide cutting edges ensure the highest durability and enable fast and reliable drilling in all building materials.

- *Carbide pieces deeply recessed in the drill shaft make the drill head very resistant to damages.*
- *4 cutting edges improve durability and extend drill bit service life.*
- *Optimum helix design ensures effective removal of debris and minimizes air dust even when drilling deep holes.*
- *Very low vibration thanks to computer aided helix design.*

4 CUTTER – professional hammer drill bits for concrete with SDS+ shank

ART. NO.	Ø x L	L_{rob}	BOX
FCDF06110	6 x 110	50	1
FCDF06160	6 x 160	100	1
FCDF06210	6 x 210	150	1
FCDF06260	6 x 260	200	1
FCDF08160	8 x 160	100	1
FCDF08210	8 x 210	150	1
FCDF08260	8 x 260	200	1
FCDF08310	8 x 310	250	1
FCDF10160	10 x 160	100	1
FCDF10210	10 x 210	150	1
FCDF10260	10 x 260	200	1
FCDF10310	10 x 310	250	1

ART. NO.	Ø x L	L_{rob}	BOX
FCDF10460	10 x 460	400	1
FCDF12160	12 x 160	100	1
FCDF12210	12 x 210	150	1
FCDF12260	12 x 260	200	1
FCDF12310	12 x 310	250	1
FCDF12450	12 x 450	400	1
FCDF14200	14 x 200	150	1
FCDF14250	14 x 250	200	1
FCDF14300	14 x 300	250	1
FCDF16200	16 x 200	150	1
FCDF16300	16 x 300	250	1

Drill bits in packages of 11 pcs.

ART. NO.	Ø x L	L_{rob}	BOX
P11FCDF06160	6 x 160	100	11
P11FCDF08160	8 x 160	100	11

ART. NO.	Ø x L	L_{rob}	BOX
P11FCDF10160	10 x 160	100	11
P11FCDF12160	12 x 160	100	11

FCDW – drill bits for Porotherm with SDS + shank

FCDW drill bits are designed for drilling holes for fastenings in hollow-block materials, like chequered brick, Porotherm, concrete blocks or Ytong, without destroying their walls, thus ensuring high load capacity and reliability of anchorage.

- *The positive rake angle of the cutting edges and the carbide tip angle of 130° accelerate drilling and prevent wall damage.*
- *Hammer action reducer optimises the stroke and impact force.*
- *The helix shape makes it easier to pull the drill out of the drilled hole.*
- *The shank of the drill bit is SDS+ compatible.*

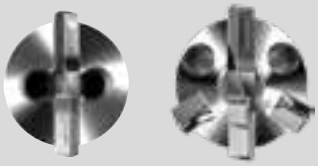
ART. NO.	Ø x L	L_{rob}	BOX
FCDW06160	6 x 160	100	1
FCDW06260	6 x 260	200	1
FCDW08160	8 x 160	100	1
FCDW08260	8 x 260	200	1
FCDW10160	10 x 160	100	1

ART. NO.	Ø x L	L_{rob}	BOX
FCDW10260	10 x 260	200	1
FCDW12260	12 x 260	200	1
FCDW14260	14 x 260	200	1
FCDW16260	16 x 260	200	1

Damage to the walls of hollow-block materials when drilling with traditional drill bits can make anchoring impossible or reduce its load capacity by up to 70%

DRILLING WITHOUT DUST

FADD drill bits with inner dust extraction allow for 'clean' drilling, with no dust/debris escaping outside the hole.



- *No dust coming out outside the borehole while drilling, as it is sucked off with a vacuum cleaner through the openings in the drill head.*
- *Operators are protected against dust according to strict health protection standards (e.g. TRGS 900).*
- *Perfectly clean workplace.*
- *No need to brush boreholes and blow out dust when anchoring with chemical mortars.*
- *Drilling and dust removal at the same time, making the job done faster.*
- *These drill bits have a service life ca. 5 times longer compared with conventional drill bits.*

FADD – **DUST-FREE** SDS+ drill bits with inner debris/dust extraction

ART. NO.	Ø x L	L_{rob}	BOX
FADD06220	6 x 220	100	1
FADD08270	8 x 270	150	1
FADD10270	10 x 270	150	1
FADD12320	12 x 320	200	1
FADD14370	14 x 370	250	1

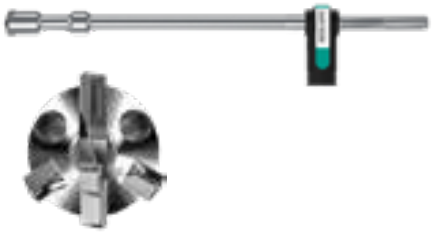
ART. NO.	Ø x L	L_{rob}	BOX
FADD16370	16 x 370	250	1
FADD18370	18 x 370	250	1
FADD20370	20 x 370	250	1
FADD24370	24 x 370	250	1

NOTE: *the drill bits require an industrial vacuum cleaner for dust extractor.*

FADD – DUST-FREE SDS MAX drill bits with inner debris/dust extraction

ART. NO.	Ø x L	L_{rob}	BOX
FADD18600	18 x 600	400	1
FADD20600	20 x 600	400	1
FADD22600	22 x 600	400	1
FADD24600	24 x 600	400	1
FADD25600	25 x 600	400	1

ART. NO.	Ø x L	L_{rob}	BOX
FADD28600	28 x 600	400	1
FADD30600	30 x 600	400	1
FADD32600	32 x 600	400	1
FADD35600	35 x 600	400	1
FADD40600	40 x 600	400	1



NOTE: *the drill bits require an industrial vacuum cleaner for dust extractor.*

FCCD – Drill bits for drilling in ceramic tiles with cylindrical shank

FCCD drill bits are designed for drilling in ceramic and terracotta tiles.

- *Durable tip made of high-hardness cemented carbide.*
- *Positive rake angle and centring point make it easier to start drilling*
- *Helix with hardened edges.*
- *Blue colour of the drill bit finish*

ART. NO.	Ø x L	L_{rob}	BOX
FCCD03060	3 x 60	20	1
FCCD04075	4 x 75	35	1
FCCD05085	5 x 85	45	1
FCCD06100	6 x 100	60	1
FCCD07120	7 x 120	80	1

ART. NO.	Ø x L	L_{rob}	BOX
FCCD08120	8 x 120	80	1
FCCD09120	9 x 120	80	1
FCCD10120	10 x 120	80	1
FCCD12150	12 x 150	110	1

Drill bits in packages of 5 pcs.

ART. NO.	Ø x L	BOX
P5FCCD01	4 x 75/ 5 x 85/ 6 x 100/ 8 x 120/ 10 x 120	5

FGDB – Drill bits for drilling in granite and other hard stones

FGDB drill bits are designed for drilling in concrete, granite and other hard stones.

- *A wide range of uses and perfect centring thanks to the ground carbide insert and high-strength soldering of the tips.*
- *The multi-edge shank prevents the drill bit from slipping in the drill chuck.*

ART. NO.	Ø x L	L_{rob}	BOX
FGDB04115	4 x 115	45	1
FGDB05115	5 x 115	50	1
FGDB05200	5 x 200	135	1
FGDB06125	6 x 125	60	1
FGDB06175	6 x 175	110	1
FGDB06250	6 x 250	185	1
FGDB07125	7 x 125	60	1

ART. NO.	Ø x L	L_{rob}	BOX
FGDB08145	8 x 145	80	1
FGDB08250	8 x 250	185	1
FGDB09145	9 x 145	80	1
FGDB10145	10 x 145	80	1
FGDB10250	10 x 250	185	1
FGDB12150	12 x 150	90	1
FGDB14150	14 x 150	90	1

FCGD – Drill bits for drilling in concrete with a conical shank

Drill bits with a conical shank are used for hammer drilling in concrete for pins used for fixing thermal insulation on flat roofs. The drill bit is clamped in an adapter with a length of 270 to 800mm, and then a hole is drilled in the concrete through the insulation. The screw of a pin for fixing the insulation is driven into the borehole.

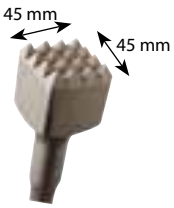
ART. NO.	Ø x L	L_{rob}	BOX	OUTER BOX
FCGD05110	5 x 110	50	1	20
FCGD05160	5 x 160	100	1	20

** other diameters and lengths - available on request.*

ART. NO.	Ø x L	BOX
FDE270	270	1
FDE500	500	1
FDE650	650	1
FDE800	800	1

The adapter features, at one end, a conical socket for attaching a drill bit and, at the other end, an SDS+ shank to clamp in a hammer drill.

FBH – Deburring tools with SDS MAX shank



Deburring tools are used for surface treatment of concrete and stone, removing excess concrete and smoothing the surface.

- *16 teeth ensure long and efficient work.*
- *Monolithic structure - the head and the tip of the grader are made of one piece of steel, which prevents damage during heavy duty works.*
- *High durability thanks to the monolithic structure and the use of hard surface-hardened alloy steel.*

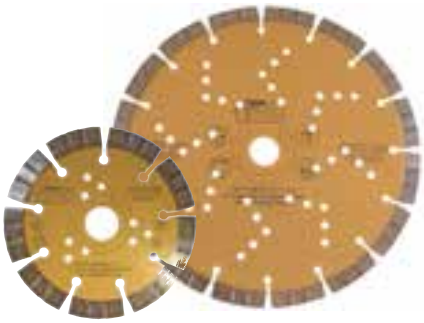
ART. NO.	□ x L	BOX
FBH45240	45 x 45 x 240	1

DIAMOND BLADES

TURBO universal diamond blades are designed for cutting most building materials, such as reinforced and unreinforced concrete, sandstone, paving stones, brick, as well as wood and wood-based materials, such as plywood, OSB, etc.

They can be used both "dry" and "wet". However, the use of water cooling, especially during heavy duty work, will significantly extend the blade's life.

FTDT – Universal Diamond Blades



- *12 mm high segments increase the efficiency of the blade and extends its durability.*
- *A large amount of diamonds accelerates cutting and increases the comfort of work*
- *Can be used "dry" and "wet"*
- *Ventilation holes effectively cool the disc, reduce its stress and aid in quickly draining the water.*
- *A rigid disc increases work safety and improves cutting precision.*

ART. NO.	D x d	BOX
FTDT125	125 x 22.5	1
FTDT230	230 x 22.5	1

Protective Gloves

EN 420 standard

is the basic standard for gloves belonging to all resistance categories. It defines the basic requirements for protective gloves in terms of:

- *Manufacturer identification and product marking,*
- *Impact on the user,*
- *Compliance with agreed sizes,*
- *Convenience of use,*
- *Glove design,*
- *Packaging, storage, maintenance and cleaning,*
- *User information in the user's manual, whatever category it may be: technical parameters, pictograms, use, precautions for use, the range of available sizes.*

EN388 standard

applies to all types of gloves in terms of physical and mechanical hazards caused by abrasion, cutting with a sharp object, puncturing and tearing. This standard does not apply to vibration-resistant gloves.

A. Abrasion resistance (from 0 to 4). Determined by the number of cycles required to wipe the product sample.

B. Sharp cut resistance (from 0 to 5). Defined by the number of cycles required to cut the sample at constant speed.

C. Tear resistance (from 0 to 4). This is the minimum force necessary to tear the sample.

D. Puncture resistance (from 0 to 4). This is the force required to pierce the sample with a normalized steel pin.

EN407 standard

This standard specifies test methods, general requirements, levels of thermal parameters and methods of marking protective gloves against heat and/or fire. It applies to all gloves that should protect hands from heat and/or flame in one or more of the following forms: fire, contact heat, convection heat, radiant heat, small splashes of molten metal or large splashes of liquid metal.

A. Flammability (from 1 to 4). Based on the amount of time the material remains burning and continues to melt after the source of the fire is removed.

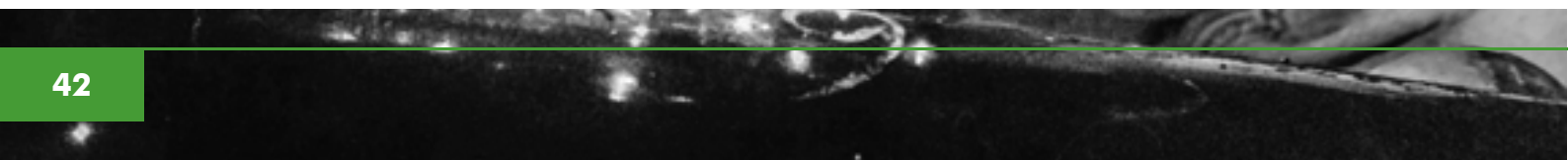
B. Resistance to contact with a hot object (from 1 to 4). Based on a temperature in the range of 100° C to 500° C at which the person wearing the gloves will not experience any pain for at least 15 seconds.

C. Resistance to convection heat (from 1 to 4). Based on time during which the sample is able to retard the heat transfer of the flame.

D. Resistance to thermal radiation (from 1 to 4). An indicator specifying the time required for the sample to reach certain temperature.

E. Resistance to small splashes of molten metal (from 1 to 4). An indicator showing the amount of heat required to bring the sample to certain temperature.

F. Resistance to large splashes of molten metal (from 1 to 4). An indicator showing the amount of heat required to cause destruction of the skin substitute placed immediately under the sample.



FRDR – Handling Gloves „driver" type

The FRDR „driver" handling gloves *are made entirely of goat grain leather, which is characterized by high abrasion resistance and low thickness. The crinkled, knitted cuff makes it easy to take the gloves off and put on, preventing them from slipping out of the hand and fraying the edge of the cuff. They provide excellent feeling, grip and tactile precision. They protect hands against medium threats, such as dirt and mechanical damage. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2121) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRDR8	M (8)	12	120
FRDR9	L (9)	12	120
FRDR10	XL (10)	12	120

- **goat grain leather**
- **crinkled cuff**
- **hemmed cuff**

FRDR...B – Handling Gloves „driver" type

The FRDR ... B "driver" handling gloves *are made entirely of grain cowhide, which is thicker and harder than goatskin. They are characterized by increased resistance to mechanical damage. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 and EN420 (cat. II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRDR8B	M (8)	12	120
FRDR9B	L (9)	12	120
FRDR10B	XL (10)	12	120

- **goat grain leather**
- **crinkled cuff**
- **hemmed cuff**

FRDZ – Winter Handling Gloves „driver" type

The FRDZ „driver" winter handling gloves *are made entirely of cowhide or goat grain leather. They are characterized by increased resistance to mechanical damage. Inside the glove, there is a delicate cotton insulation to protect against heat loss and enable comfortable work in negative temperatures. At the same time, the gloves provide excellent feel, grip and tactile precision. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2121) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRDZ8	M (8)	12	120
FRDZ9	L (9)	12	120
FRDZ10	XL (10)	12	120

- **goat grain leather**
- **crinkled cuff**
- **hemmed cuff**

FRNW...B – Handling Gloves with a ribbing

The FRNW ... B handling gloves *with a ribbing are made of thick light cotton knit and grain goatskin. The gloves are warm, durable and resistant to abrasion. The knitted ribbing warms the wrist and part of the forearm and also prevents the gloves from sliding off the hand. The gloves provide excellent feel, grip and tactile precision. They protect against dirt and minor mechanical injuries. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2121) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRNW8B	M (8)	12	120
FRNW9B	L (9)	12	120
FRNW10B	XL (10)	12	120

- **goat grain leather**
- **thick light cotton knit**
- **flexible warm ribbing**

Gloves for installers

FROW – Handling Gloves (reinforced)

The FROW handling gloves *are made of strong and flexible cotton knit and grain goat leather. The combination of abrasion-resistant leather and airy knit makes the gloves lightweight, durable and resistant to abrasions. The material prevents the hand from overheating and allows excess moisture to evaporate outside. The elastic ribbing fastened with Velcro prevents glove sliding off the hand and increases the comfort of work. The sewn-in reinforcement prevents abrasions, extending their durability. The gloves provide excellent feel, grip and tactile precision. They protect against dirt and minor mechanical injuries. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2122) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FROW8	M (8)	12	120
FROW9	L (9)	12	120
FROW10	XL (10)	12	120

- **goat grain leather**
- **elastic ribbing fastened with Velcro**
- **reinforced grip area**
- **airy knit**

FRBW – Handling Gloves (modern)

FRBW handling gloves *are made of strong „breathable" fabric and goat grain leather, thanks to which they are light, airy, durable and resistant to abrasions. The material prevents the hand from overheating, allowing excess moisture to evaporate outside. The crumpling prevents the gloves from sliding off the hand. The gloves provide excellent feel, grip and tactile precision. They protect against dirt and minor mechanical injuries. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2121) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRBW10	XL (10)	12	120
FRBW9	L (9)	12	120

- **goat grain leather**
- **airy knit**
- **crinkled cuff**

FRRW – Handling Gloves (standard)

The FRRW handling gloves *are made of elastic cotton knit and grain goat leather. The gloves are durable and resistant to abrasion. The material allows excess moisture to evaporate outside. The elastic ribbing fastened with Velcro prevents the glove from sliding off the hand and increases the comfort of work. The gloves provide a good feel and precise touch. They protect against dirt and minor mechanical injuries. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2122) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRRW8	M (8)	12	120
FRRW9	L (9)	12	120
FRRW10	XL (10)	12	120

- **goat grain leather**
- **airy knit**
- **elastic ribbing fastened with Velcro**

FRNW – Handling Gloves (ECO)

The FRNW handling gloves *are made of thick cotton knit and grain goat leather. The gloves are durable and resistant to abrasion. The material allows excess moisture to evaporate outside. The ribbing prevents the glove from sliding off the hand. The gloves provide excellent feel, grip and tactile precision. They protect against dirt and minor mechanical injuries. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN 388: 2016 (2121) and EN420 (cat II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRNW8	M (8)	12	120
FRNW9	L (9)	12	120
FRNW10	XL (10)	12	120

- **goat grain leather**
- **thick cotton knit**
- **crinkled cuff**

FRSP – Welding Gloves (TIG)

The FRSP are soft and precise welding gloves *made of grain goatskin, characterized by high strength and low thickness. They are designed for TIG welding. The places exposed to high temperature were sewn with flame-retardant and temperature-resistant Kevlar thread. The gloves provide excellent feel, grip and tactile precision. A 15 cm long cuff is made of thick cowhide, protecting the user against splashes and burns. The gloves meet the requirements of the EN 388: 2016 (2121), EN407 (122X2X) heat and/or fire protection standards and EN420 (cat II) standard.*

ART. NO.	SIZE	BOX	OUTER BOX
FRSP10	XL (10,5) universal	12	120

- **goat grain leather**
- **long cuff made of thick cowhide**
- **Kevlar reinforced seams**

FRSG – Welding Gloves (thick)

The FRSG are five-finger welding gloves *made of cow split leather. They are designed for most welding works, e.g. MIG/MAG, TIG and SMAW/MMA. The gloves are marked by high resistance to inflammation, convection heat and small splashes. The places exposed to high temperature were sewn with flame-retardant and temperature-resistant Kevlar threads. The dorsal part, along with the cuff and fingers, are made of one piece of leather. The lining used increases the comfort of use. The gloves meet the requirements of the EN 388: 2016 (4122), EN407 (413X4X) heat and/or fire protection standards, and EN420 (cat. II) standard.*

ART. NO.	SIZE	BOX	OUTER BOX
FRSG10	XL (10,5) universal	12	120

- **thick cow split leather**
- **cotton lining**
- **Kevlar reinforced seams**

FROD – Protective Gloves

The FROD protective gloves *are made entirely of cow leather. The palm is made of white grain leather and the upper part is made of coarse split leather. The crinkled, knitted cuff makes it easy to take the glove off and put on, preventing them from slipping out of the hand and fraying their edges. The gripping part at the base of the thumb is additionally reinforced, thanks to which the gloves are characterized by high mechanical strength and resistance to damage. The grain leather used increases the resistance of the gloves to soaking. They are intended for all medium-heavy construction and assembly works. The gloves meet the requirements of the EN 388: 2016 (2121X) and EN420 (cat. II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FROD10	XL (10,5) universal	12	120

- **cowhide**
- **cow split leather**
- **crinkled cuff**

FFSC – Welding Apron

The FFSC welding apron *is made of thick cow split leather. It is characterized by high resistance to inflammation and small splashes. It is designed for welding works using MIG/MAG, TIG and SMAW/MMA techniques. It protects the welder against harmful UV and IR radiation arising during welding work. It will also protect against burns and minor mechanical injuries.*

ART. NO.	SIZE	BOX	OUTER BOX
FFSC	universal	12	120

- **thick cow split leather**
- **tying with tapes**

FRRS – Protective Gloves (heavy work)

The FRR protective gloves *are made of thick cow split leather tanned in white. The gripping part, upper part and the stiffened cuff are red. The gripping part is made of a single piece of leather, thanks to which the gloves show high durability and abrasion resistance. The upper material is impermeable to water. A soft cotton insert in the grip area additionally protects against mechanical injuries. They are designed for the heaviest road work and general construction jobs. The gloves meet the requirements of the EN 388: 2016 (4243X) and EN420 (cat. II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRRS	XL (10,5) universal	12	120

- **thick cow split leather**
- **rubberized cuff**
- **soft cotton insert**
- **waterproof outer fabric**

FRRG – Protective Gloves (heavy work)

The FRRG protective gloves *are made of full grain cow leather. The stiffened, rubberized knitted cuff and the upper part are yellow. The gripping part is made of one piece of leather, thanks to which the gloves are characterized by high mechanical strength and resistance to destruction. The upper material is impermeable to water. A soft cotton insert in the grip area additionally protects against mechanical injuries. The grain leather used increases the glove resistance to soaking. They are intended for road work, general construction and industry. The gloves meet the requirements of the EN 388: 2016 (2242X) and EN420 (cat. II) standards.*

ART. NO.	SIZE	BOX	OUTER BOX
FRRG	XL (10,5) universal	12	120

- **thick full-grain cowhide leather**
- **rubberized cuff**
- **soft cotton insert**
- **waterproof outer fabric**

FRPL – Coated Gloves (latex)

The FRPL coated gloves, *made of durable polyester knit coated with crinkled latex on the inside. Flexible and stretchable, they perfectly match the shape of the hand. The material allows excess moisture to evaporate, and the adjacent welt prevents the gloves from slipping off. The gloves are durable and resistant to abrasion, they perfectly adhere to the hand, providing a good feel, a stable grip and a precise touch. They will protect against dirt and minor mechanical damage. They are dedicated to fitters, technicians and mechanics. The gloves meet the requirements of the EN420 (cat. II) standard.*

ART. NO.	SIZE	BOX	OUTER BOX
FRPL7C	S (7)	12	120
FRPL8C	M (8)	12	120
FRPL9C	L (9)	12	120
FRPL10C	XL (10)	12	120

FRPP – Coated Gloves (polyurethane)

The FRPP coated gloves, *made of durable polyester knit, coated with white polyurethane on the inside. Flexible and stretchable, they perfectly match the shape of the hand. The material allows excess moisture to evaporate, and the adjacent welt prevents the gloves from slipping off. They perfectly adhere to the hand, ensuring good feel, stable grip and tactile precision. They will protect against dirt and minor mechanical injuries. They are recommended for delicate work in dry conditions, precision works, small assembly, production lines, gardening, warehouse works. The gloves meet the requirements of the EN420 (cat. II) standard.*

ART. NO.	SIZE	BOX	OUTER BOX
FRPP8B	M (8)	12	120
FRPP9B	L (9)	12	120
FRPP10B	XL (10)	12	120

The Tfix company was founded in 2014 as a professional but cost effective alternative in the field of fastening techniques for customers looking for the highest quality fasteners and construction accessories at an affordable price. Our offer includes chemical and mechanical heavy duty anchors for professional users in the construction industry, as well as a variety of light fastenings to be used in interior design and furnishing. Our offer of fastening techniques is complemented by numerous accessories, such as drill bits, diamond blades, nails, screws and protective gloves, necessary on every construction site.

Safety, the highest quality of products

Thanks to our many years of experience in the field of fastenings for construction, we offer our customers durable and reliable solutions proven in construction projects around the world. Our products are subject to strict and demanding quality control that ensure the highest and stable quality and full safety of use. This is confirmed by numerous technical assessments, certificates and technical approvals

Technical support and consulting

We offer our assistance and technical advice on the selection of the correct fastening from a wide range of our products in typical and specific needs.

- Telephone product support
- Choice of fasteners in line with the design
- Reports on the choice of anchors
- Tests and demonstration at construction sites

Orders

Orders (in writing or electronically) received by until 13 o'clock. are normally processed and delivered the next business day. Non-standard products (specially marked in the catalogue) are delivered on a date individually agreed with the customer.

Supply

Orders worth more than PLN 500 net are delivered free of charge to the indicated destination throughout the country. Orders of lower value are shipped at the expense of the customer. Courier and express shipment, Saturday deliveries or realized through the forwarding agent indicated by the ordering party require agreement and are subject to an additional fee. Specific information is available at the telephone number +48 (22) 354 67 97

Filing a complaint

In order to submit a complaint, return or replace the goods, use the complaint form available on the website or contact the customer service department, where the notification will be registered and the its number assigned. Our company reserves two weeks to review the notification and provide a proposal on how to solve it. If the complaint is considered justified, the company's employee and the person submitting the complaint will determine how the complaint will be solved.

Order cancelation

Withdrawing without justification from the contract prior to the receipt of the goods or refusal to accept the ordered goods, will result in the necessity to cover the flat-rate costs incurred by Tfix in the amount of 10% of the net value of the order.

Return

It is possible to return or exchange the purchased goods for other within 14 days from the date of delivery. Return of only originally packed, undamaged and properly stored products will be accepted.

CONTACT

Detailed commercial terms concerning contracts, delivery and payment are available in the customer service department. The above mentioned conditions, including the offered range of products, technical data and prices are subject to change without notice and without giving reasons.

Tfix Polska Sp. z o.o.
Al. Krakowska 55, Sękocin Nowy
05-090 Raszyn, Polska

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