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## SECTION 02

# HEAVY DUTY ANCHORS

The following pages show a cross-section of heavy duty and technical anchors, but we have many more to offer. For alternative solutions with technical specifications, give us a call.

**fischer** ANCHORS

**split**



## FBN THROUGH BOLTS

Anchor bolt for push-through and pre-positioned installation.

When the hexagon nut is tightened, the tapered bolt is pulled into the expansion clip and expands it against the hole wall.

### Advantages/benefits

Long thread allows stand-off installations and variable usable lengths.

8 to 16mm diameter also for reduced anchoring depths, e.g. for small loads or if reinforcements are hit.

Embossed letter on the head for subsequent control of the installation as it indicates the setting depth.

Hook anchor FBN 8 H for simple installation of meshed reinforcements, wire gratings, etc.

### Approved for:

Non-cracked concrete C20/25 to C50/60.

### Also suitable for:

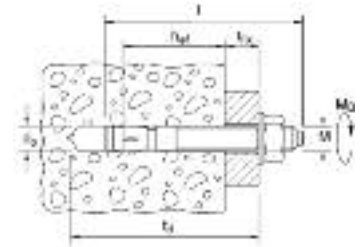
Concrete C12/15, natural stone with dense structure.

### Typical Application

Steel constructions, railings, consoles, ladders, cable trays, machines, staircases, gates, facades, window elements, wooden constructions.

Zinc plated sizes listed below, also available in A4 stainless steel and hot-dip galvanised version for outdoor use and in damp conditions.

For wooden structures use the FBN GS with large washer as per DIN 440 and zinc plated with large washer (FBN-GS).



## FBN Through Bolts

### Zinc Plated

TYPE	APPROVAL ETA*	USABLE LENGTH (MM)	EFFECT. ANCHORING DEPTH HEF (MM)	MIN. DRILL-HOLE DEPTH FOR THROUGH FIXINGS TD (MM)	TOTAL LENGTH L (MM)	THREAD (Ø x LENGTH)	WASHER (OUTER DIAMETER x THICKNESS) (MM)	BOX QTY
FBN 6 x 40	-	5	20	45	40	M6 x 16	12 x 1,6	100
FBN 6 x 55	-	10	25	50	55	M6 x 30	12 x 1,6	100
FBN 6 x 75	-	30	25	70	75	M6 x 30	12 x 1,6	100
FBN 8 x 60	•	5	35	55	58	M8 x 23	16 x 1,6	100
FBN 8 x 75	•	10/23	48/35	73	76	M8 x 41	16 x 1,6	50
FBN 8 x 95	•	30/43	48/35	93	96	M8 x 59	16 x 1,6	50
FBN 8 x 115	•	50/63	48/35	113	116	M8 x 81	16 x 1,6	50
FBN 8 x 165	•	100/113	48/35	163	166	M8 x 130	16 x 1,6	25
FBN 10 x 70	•	5	42	65	69	M10 x 31	20 x 2	50
FBN 10 x 90	•	15/23	50/42	83	89	M10 x 51	20 x 2	50
FBN 10 x 125	•	35/43	50/42	103	109	M10 x 71	20 x 2	50
FBN 10 x 175	•	50/58	50/42	118	124	M10 x 87	20 x 2	20
FBN 10 x 215	•	100/108	50/42	168	174	M10 x 134	20 x 2	20
FBN 10 x 215	•	140/148	50/42	208	214	M10 x 174	20 x 2	20
FBN 10 x 235	•	160/168	50/42	228	234	M10 x 194	20 x 2	20
FBN 12 x 85	•	5	50	75	83	M12 x 41	24 x 2,5	20
FBN 12 x 115	•	15/35	70/50	105	113	M12 x 71	24 x 2,5	20
FBN 12 x 130	•	30/50	70/50	120	128	M12 x 86	24 x 2,5	20
FBN 12 x 145	•	45/65	70/50	135	143	M12 x 103	24 x 2,5	20
FBN 12 x 200	•	100/120	70/50	190	202	M12 x 137	24 x 2,5	20
FBN 16 x 110	•	10	64	98	109	M16 x 54	30 x 3	10
FBN 16 x 145	•	25/45	84/64	133	144	M16 x 89	30 x 3	10
FBN 16 x 170	•	50/70	84/64	158	169	M16 x 114	30 x 3	10
FBN 16 x 220	•	100/120	84/64	208	221	M16 x 166	30 x 3	10
FBN 20 x 120	-	10	70	111	120	M20 x 50	37 x 3	10
FBN 20 x 165	•	20	100	151	165	M20 x 50	37 x 3	10
FBN 20 x 205	•	60	100	191	205	M20 x 90	37 x 3	10
FBN 20 x 265	•	120	100	251	265	M20 x 90	37 x 3	10
FBN 20 x 395	•	250	100	381	395	M20 x 90	37 x 3	5

\*ETA – European Technical Approval

This information is for Fischer products. Alternative products are available and performance may vary by manufacturer. Contact us for more information.

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## SCAFFOLD RING BOLTS M16

This standard scaffold ring has a 54mm eye diameter. The size of the eye has been designed to accept standard size scaffolding tubes, thus securing free standing scaffolds to structures.

### Suitable for:

Concrete.

### Typical Application

Free standing scaffolding.



TYPE	BOX QTY	THREAD (MM)	EYE Ø (MM)
Scaffold Ring M16	1	M16	54

Use with TL Drop In Anchor M16, see page 63.

## FNA II NAIL ANCHORS

Nail anchor for hammer set installation.

The installed nail anchor expands automatically under load, pulls the cone into the expansion clip and expands against the hole wall.

A4 stainless steel version for outdoor use and in damp conditions. Highly corrosion-resistant steel C (material no. 1.4529) for applications in aggressive atmospheres.

### Advantages

Simple and easy setting with a few hammer blows reduces work, particularly with overhead installation.

Little hammering force required, allowing sensitive materials to be fixed, e.g. fire protection boards.

Fixing with different head designs for different areas of application.

Only 6mm hole diameter.

### Approved for:

Lightweight ceilings and suspended ceilings according to DIN 18168, statically comparable fixings in concrete C20/25 to C50/60.

### For fixing of:

M & E applications, squared timbers, battens, metal profiles, wire and nonius hangers, chains, cables, punched tapes, fire partitions, ventilation pipes, substructures made of wood and metal, ceilings, metal clamps.

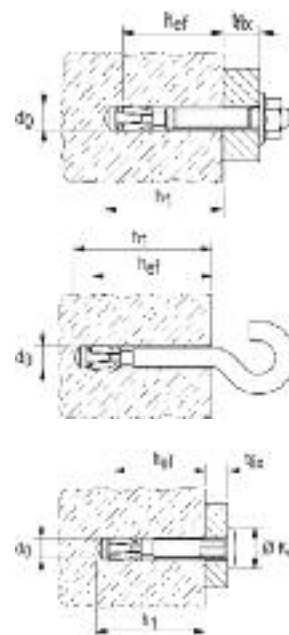


### Typical Application

Concrete C12/15, natural stone with dense structure.

### FNA II with nail head, zinc plated, FNA A4, FNA C

TYPE	DRILL Ø DA (MM)	MIN. DRILL HOLE DEPTH FOR THROUGH FITTINGS TD (MM)	EFFECT. ANCHORING DEPTH HEF (MM)	ANCHOR LENGTH L (MM)	MAX. USABLE LENGTH T FIX (MM)	HEAD DIAMETER Ø (MM)
FNA II 6 x 25/5	6	40	25	35	5	13
FNA II 6 x 30/5	6	45	30	40	5	13
FNA II 6 x 30/30	6	70	30	65	30	13
FNA II 6 x 30/50	6	90	30	85	50	13
FNA II 6 x 30/75	6	115	30	110	75	13
FNA II 6 x 30/100	6	140	30	135	100	13
FNA II 6 x 30/120	6	160	30	155	120	13
FNA II 6 x 30/5 A4	6	45	30	40	5	13
FNA II 6 x 30/30 A4	6	70	30	65	30	13
FNA II 6 x 30/5 C	6	45	30	40	5	13
FNA II 6 x 30/5 C	6	70	30	65	30	13



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## FNA II with thread

TYPE	DRILL Ø (MM)	MIN. DRILL HOLE DEPTH FOR THROUGH FITTINGS TD (MM)	EFFECT-ANCHORING DEPTH HEF (MM)	ANCHOR LENGTH L (MM)	MAX. USABLE LENGTH T FIX (MM)	THREAD	WIDTH ACROSS NUT	WASHER (OUTER DIAMETER X THICKNESS) (MM)
FNA II 6 x 25 M6/5	6	40	25	45	5	M6	10	14 x 6
FNA II 6 x 30 M6/5	6	45	30	50	5	M6	10	14 x 6
FNA II 6 x 30 M6 x 45	6	40	30	45	-	M6	-	-
FNA II 6 x 30 M8/5	6	45	30	50	5	M8	13	18 x 8
FNA II 6 x 30 M6/5 A4	6	45	30	50	5	M6	10	12 x 1,5
FNA II 6 x 30 M6/5 C	6	45	30	50	5	M6	10	12 x 1,5

## FNA II with hook, with eye, for rail fixing

TYPE	CODE	DRILL DIAMETER Ø (MM)	DRILL HOLE DEPTH T (MM)	EFFECT-ANCHORING DEPTH HEF (MM)	ANCHOR LENGTH L (MM)	OPENING SPACE OF THE HOOK (MM)	HEAD DIAMETER Ø (MM)	BOX QTY
FNA with hook	FNA II 6 x 30 H	6	41	30	61	6,5	10	50
FNA with eye	FNA II 6 x 30 OE	6	35	25	53	n/a	10	50
FNA for rail fixing	FNA II 6 x 30 S	6	56	40	52	n/a	10	50

## SLEEVE ANCHORS, FLANGED NUTS

Light sleeve anchor for push-through installation.

When the hexagon nut or bolt is tightened, the tapered bolt is pulled into the expansion sleeve and expands it against the hole wall.

## Advantages/benefits

The half-moon shaped recesses stamped in the sleeve effect contraction in length when tightened. This clamps the item being attached firmly against the concrete.

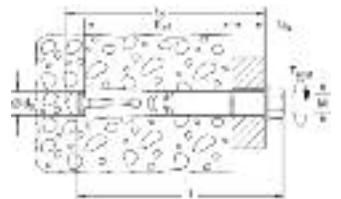
Version FSA-S for fixings with sophisticated design: no protruding thread version after the installation.

## Suitable for:

Concrete C12/15 to C50/60, natural stone with dense structure.

## Typical Application

Steel constructions, gratings, handrails, consoles, ladders, machines, gates.



## FSA-S

TYPE	DRILL Ø (MM)	MIN. DRILL-HOLE DEPTH FOR THROUGH FIXINGS TD (MM)	EFFECT-ANCHORING DEPTH HEF (MM)	ANCHORING LENGTH L (MM)	LENGTH T FIX (MM)	MAX. USABLE LENGTH T FIX (MM)	THREAD M	WIDTH ACROSS NUT	WASHER (OUTER DIAMETER X THICKNESS) (MM)	BOX QTY
FSA 8/15 S	8	65	35	69	15	M6	10	18 x 1,6	50	
FSA 8/40 S	8	90	35	94	40	M6	10	18 x 1,6	50	
FSA 8/65 S	8	115	35	119	65	M6	10	18 x 1,6	50	
FSA 10/10 S	10	65	40	70	10	M8	13	16 x 1,6	20	
FSA 10/35 S	10	90	40	95	35	M8	13	16 x 1,6	20	
FSA 10/60 S	10	115	40	120	60	M8	13	16 x 1,6	20	
FSA 12/10 S	12	75	50	81	10	M10	17	20 x 2	20	
FSA 12/25 S	12	90	50	96	25	M10	17	20 x 2	20	
FSA 12/50 S	12	115	50	121	50	M10	17	20 x 2	20	

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## FSA-B

TYPE	MIN. DRILL-HOLE DEPTH FOR THROUGH FIXINGS TD (MM)	EFFECT. ANCHORING DEPTH HEF (MM)	ANCHORING LENGTH L (MM)	LENGTH T FIX (MM)	MAX. USABLE THREAD M	WIDTH ACROSS NUT	WASHER (OUTER DIAMETER X THICKNESS) (MM)	BOX QTY	
FSA 8/15 B	8	65	35	65	15	M 6	10	18 x 1,6	50
FSA 8/40 B	8	90	35	90	40	M 6	10	18 x 1,6	50
FSA 8/65 B	8	115	35	115	65	M 6	10	18 x 1,6	50
FSA 10/10 B	10	65	40	69	10	M 8	13	16 x 1,6	20
FSA 10/35 B	10	90	40	94	35	M 8	13	16 x 1,6	20
FSA 10/60 B	10	115	40	119	60	M 8	13	16 x 1,6	20
FSA 12/10 B	12	75	50	81	10	M 10	17	20 x 2	20
FSA 12/25 B	12	90	50	96	25	M 10	17	20 x 2	20
FSA 12/50 B	12	115	50	121	50	M 10	17	20 x 2	20
FSA 12/75 B	12	140	50	146	75	M 10	17	20 x 2	20

## FSA-GB

The lightweight sleeve anchor for non-structural critical applications. Zinc Plated sizes listed below, also available in stainless steel (A2).

TYPE	MIN. DRILL-HOLE DEPTH FOR THROUGH FIXINGS TD (MM)	EFFECT. ANCHORING DEPTH HEF (MM)	ANCHORING LENGTH L (MM)	LENGTH T FIX (MM)	MAX. USABLE THREAD M	BOX QTY	
FSA GB 6/5 (6 x 25)	6	-	20	25	5	M6	100
FSA GB 6/8 (6 x 35)	6	-	30	38	8	M6	100
FSA GB 6/25 (6 x 56)	6	-	33	58	25	M6	100
FSA GB 8/8 (8 x 40)	8	-	34	42	8	M8	100
FSA GB 8/30 (8 x 65)	8	-	36	66	30	M8	100
FSA GB 8/55 (8 x 85)	8	-	37	92	55	M8	100
FSA GB 10/10 (10 x 50)	10	-	38	48	10	M10	50
FSA GB 10/35 (10 x 70)	10	-	40	75	35	M10	50
FSA GB 10/60 (10 x 97)	10	-	40	100	60	M10	50
FSA GB 12/12 (12 x 60)	12	-	46	58	12	M12	25
FSA GB 12/20 (12 x 75)	12	-	50	70	20	M12	25
FSA GB 12/50 (12 x 99)	12	-	50	100	50	M12	20
FSA GB 12/75 (12 x 129)	12	-	50	125	75	M12	20
FSA GB 16/12 (16 x 65)	16	-	52	64	12	M12	20
FSA GB 16/12 (16 x 111)	16	-	58	108	50	M16	10
FSA GB 16/80 (16 x 147)	16	-	62	142	80	M16	10
FSA GB 20/20 (20 x 82)	20	-	62	82	20	M20	10
FSA GB 20/95 (20 x 151)	20	-	63	158	95	M20	5

## Fitting Procedure



This information is for Fischer products. Alternative products are available and performance may vary by manufacturer. Contact us for more information.

## SHIELD ANCHORS

### Advantages/benefits

The segmented steel expansion shield is pre-assembled ready for use with various head types. Torque controlled friction locking expansion. Three piece shield for even load spread. Zinc plated and Passivated for protection against corrosion. Versatile heavy duty anchor using traditional fixing method.

### Suitable for:

Concrete B15, dense natural stone, dense solid stone.

### Typical Application

Installation rails, ventilation ducts, pipework, suspended ceilings, metal constructions, metal profiles. Also suitable for temporary fixings such as wall shuttering.

### FWB-S

TYPE	DRILL Ø (MM)	MIN. DRILL HOLE DEPTH (MM)	MIN. ANCHORAGE DEPTH (MM)	THREAD	BOX QTY
FWB 6 S	12	50	45	M6	50
FWB 8 S	14	55	50	M8	50
FWB 10 S	16	65	60	M10	50
FWB 12 S	20	85	75	M12	25
FWB 16 S	25	130	115	M16	10
FWB 20 S	32	150	130	M20	10



### FWB-L Loose Bolt

TYPE	DRILL Ø (MM)	MIN. DRILL HOLE DEPTH (MM)	MIN. ANCHOR DEPTH (MM)	MAX. FIXING THICKNESS (MM)	BOX QTY
FWB 6/10 L	12	50	45	10	50
FWB 6/25 L	12	50	45	25	50
FWB 6/40 L	12	50	45	40	50
FWB 8/10 L	14	55	50	10	50
FWB 8/25 L	14	55	50	25	50
FWB 8/40 L	14	55	50	40	50
FWB 10/10 L	16	65	60	10	50
FWB 10/25 L	16	65	60	25	50
FWB 10/50 L	16	65	60	50	50
FWB 10/75 L	16	65	60	75	25
FWB 12/10 L	20	90	75	10	25
FWB 12/25 L	20	90	75	25	25
FWB 12/40 L	20	90	75	40	25
FWB 12/60 L	20	90	75	60	25
FWB 16/15 L	25	130	115	15	10
FWB 16/30 L	25	130	115	30	10
FWB 16/60 L	25	130	115	60	10
FWB 20/60 L	32	150	130	60	10
FWB 20/100L	32	150	130	100	10



## FWB-P Projecting Bolt

TYPE	DRILL Ø (MM)	MIN. DRILL HOLE DEPTH (MM)	MIN. ANCHORAGE DEPTH (MM)	FIXING THICKNESS MAX. (MM)	BOX QTY
FWB 6/10 P	12	50	45	10	50
FWB 6/25 P	12	50	45	25	50
FWB 6/60 P	12	50	45	60	50
FWB 8/10 P	14	55	50	10	50
FWB 8/25 P	14	55	50	25	50
FWB 8/60 P	14	55	60	60	25
FWB 10/15 P	16	65	60	15	25
FWB 10/30 P	16	65	60	30	25
FWB 10/60 P	16	65	60	60	25
FWB 12/15 P	20	90	75	15	25
FWB 12/30 P	20	90	75	30	25
FWB 12/75 P	20	90	75	75	25
FWB 16/15 P	25	130	115	15	10
FWB 16/35 P	25	130	115	35	10
FWB 16/75 P	25	130	115	75	10
FWB 20/15 P	32	150	130	15	10
FWB 20/30 P	32	150	130	30	10
FWB 20/100 P	32	150	130	100	10



## MASONRY SCREWBOLTS

All purpose universal anchors.

## Advantages/benefits

Stress free, removable, high shear and tensile strength.

## Suitable for:

For all substrates.

## Typical Application

Replacing sleeve anchors, through bolts, shields, resin, wedge anchors etc.

## Hexagon Head Zinc &amp; Yellow Passivated and Stainless Steel

ZINC & YELLOW PASSIVATED	STAINLESS STEEL	SIZE (MM)	MAX. FIXTURE (MM)	DRILL Ø (MM)	MIN. HOLE DEPTH (MM)	MIN. EMBED. (MM)	DRIVE
HSB 06-030	HSB 06/030	6 x 30	3	6	39	27	10mm A/F
HSB 06-050	HSB 06/050	6 x 50	20	6	42	30	10mm A/F
HSB 06-075	HSB 06/075	6 x 75	35	6	52	40	10mm A/F
HSB 06-100	HSB 06/100	6 x 100	50	6	62	50	10mm A/F
HSB 06-150		6 x 150	100	6	62	50	10mm A/F
HSB 08-050	HSB 08/050	8 x 50	14	8	52	36	13mm A/F
HSB 08-075	HSB 08/075	8 x 75	39	8	52	36	13mm A/F
HSB 08-100	HSB 08/100	8 x 100	50	8	66	50	13mm A/F
HSB 10-060	HSB 10/060	10 x 60	15	10	65	45	17mm A/F
HSB 10-075	HSB 10/075	10 x 75	30	10	65	45	17mm A/F
HSB 10-100	HSB 10/100	10 x 100	50	10	70	50	17mm A/F
HSB 10-120	HSB 10/120	10 x 120	70	10	70	50	17mm A/F
HSB 12-075	HSB 12/075	12 x 75	20	12	79	55	19mm A/F
HSB 12-100	HSB 12/100	12 x 100	46	12	78	54	19mm A/F
HSB 12-150	HSB 12/150	12 x 150	96	12	78	54	19mm A/F
HSB 16-100		16 x 100	28	16	104	72	24mm A/F
HSB 16-150		16 x 150	58	16	124	92	24mm A/F
HSB 16-200		16 x 200	108	16	124	92	24mm A/F
HSB 20-100		20 x 100	28	20	112	72	30mm A/F
HSB 20-150		20 x 150	58	20	132	92	30mm A/F
HSB 20-200		20 x 200	108	20	132	92	30mm A/F



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## CHEMICAL ANCHORS

### RM RESIN ANCHOR & RG M THREADED RODS (STUDS)

This tried and tested fixing system consists of the RG M threaded rod and the resin capsule RM. The 2-component resin capsule RM contains quick-setting styrene-free vinyl ester resin and hardener. During setting, the edges of the threaded rod destroy the capsule in the drill hole, which mix and activate the resin. The resin adheres to the entire surface of the threaded rod, bonding it to the wall of the drilled hole.

#### Advantages/benefits

Threaded rods are supplied with an easy to use hexagonal installation drive or can be installed with an adapter.

High-performance resin guarantees high loads in non-cracked concrete.

The resin anchoring is free of expansion forces and permits small axial spacings and edge distances.

Wide range for many applications.

European design method enables optimum use of the anchor system for cost-efficient fixing.

#### Approved for:

Non-cracked concrete >B15 and <B55.

#### Also suitable for:

Natural stone with dense structure.

#### Typical Application

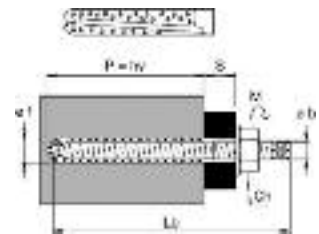
Steel constructions, railings, consoles, ladders, cable trays, machines, staircases, gates, facades, high racks, stand-off installations, wooden constructions.

Zinc Plated sizes listed below, also available in stainless steel (A4) and high corrosion-resistant steel (C).



#### RM Resin Anchor

TYPE	DRILL Ø (MM)	MIN. DRILL HOLE DEPTH FOR THROUGH FITTINGS TD (MM)	EFFECT ANCHORING DEPTH HEF (MM)	FITS	BOX QTY
RM 8	10	80	80	RG M 8 / RG 8 x 75 M5I	10
RM 10	12	90	90	RG M 10 / RG 10 x 75 M6 I	10
RM 12	14	110	110	RG M 12 / RG 12 x 90 M8 I	10
RM 14	16	120	120	RG M 14 / RG 14 x 90 M10 I	10
RM 16	18	125	125	RG M 16 / RG 16 x 100M12I	10
RM 16 E	18	190	190	RG M 16 E	10
RM 20	25	170	170	RG M 20	10
RM 20 E	25	240	240	RG M 20 E	5
RM 24	28	210	210	RG M 24	5
RM 24 E	28	290	290	RG M 24 E	5
RM 27	32	250	250	RG M 27	5
RM 30	35	280	280	RG M 30	5



#### Curing Time

Curing time resin capsule RM.

TEMPERATURES AT ANCHORING BASE	CURING TIME
-5° – +- 0° C	240 minutes
+0° – +10° C	45 minutes
+10° – +20° C	20 minutes
-> +20° C	10 minutes

**Please note:** The curing times apply for dry anchoring bases. In damp anchoring bases they should be doubled. Remove water from drill hole.

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## RG M Threaded Rod Zinc Plated

TYPE	EFFECT ANCHORING DEPTH REF. (MM)	MAX. USABLE LENGTH T FIX. (MM)	HEXAGON NUT SW (MM)	WIDTH ACROSS NUT (MM)	FITS CAPSULE	THREADED ROD LENGTH (MM)	BOX QTY
RG M 8 x 110	80	13	13	5	50270 RM 8	110	10
RG M 8 x 150	80	60	13	5	50270 RM 8	150	10
RG M 8 x 250	80	160	13	5	50270 RM 8	250	10
RG M 10 x 130	90	20	17	7	50271 RM 10	130	10
RG M 10 x 165	90	57	17	7	50271 RM 10	165	10
RG M 10 x 190	90	82	17	7	50271 RM 10	190	10
RG M 10 x 250	90	150	17	7	50271 RM 10	250	10
RG M 10 x 350	90	250	17	7	50271 RM 10	350	10
RG M 12 x 160	110	25	19	8	50272 RM 12	160	10
RG M 12 x 220	110	90	19	8	50272 RM 12	220	10
RG M 12 x 250	110	120	19	8	50272 RM 12	250	10
RG M 12 x 300	110	170	19	8	50272 RM 12	300	10
RG M 12 x 380*	110	255	19	-	50272 RM 12	380	10
RG M 14 x 170	120	38	22	10	50278 RM 14	170	10
RG M 16 x 165	125	13	24	12	50273 RM 16	165	10
RG M 16 x 190	125	35	24	12	50273 RM 16	190	10
RG M 16 x 250	125	98	24	12	50273 RM 16	250	10
RG M 16 x 300	125	148	24	12	50273 RM 16	300	10
RG M 16 x 380*	125	235	24	-	50273 RM 16	380	10
RG M 16 x 500*	125	355	24	-	50273 RM 16	500	10
RG M 16 x 235 E	190	20	24	12	79838 RM 16 E	235	10
RG M 16 x 275 E	190	60	24	12	79838 RM 16 E	275	10
RG M 20 x 260	170	65	30	12	50274 RM 20	260	10
RG M 20 x 350	170	155	30	12	50274 RM 20	350	10
RG M 20 x 500**	170	305	30	-	50274 RM 20	500	10
RG M 20 x 330 E	240	60	30	12	79840 RM 20 E	330	10
RG M 24 x 300**	210	65	36	-	50275 RM 24	300	10
RG M 24 x 400**	210	165	36	-	50275 RM 24	400	10
RG M 24 x 600**	210	365	36	-	50275 RM 24	600	5
RG M 24 x 380 E**	290	60	36	-	79842 RM 24 E	380	5
RG M 27 x 340 **	250	60	41	-	79843 RM 27	340	5
RG M 30 x 380 **	280	65	46	-	50276 RM 30	380	5
RG M 30 x 500 **	280	185	46	-	50276 RM 30	500	5

\* Straight cut, setting tool is enclosed.

\*\* Straight cut, additional setting tool required.

Technical data available on request.

Special lengths available upon request.

Stainless Steel available.



## INJECTION MORTAR FIS EM 390 S EPOXY RESIN

### Suitable for:

Non-cracked concrete, reinforcement bar.

### Typical Application

Steel constructions, consoles, machines, staircases, high-racks, wooden constructions, reinforcement bars.

TYPE	CONTENTS	SIZE (ML)	BOX QTY
FIS EM 390 S	1 cartridge + 2 static mixers	390	6
FIS EM 1100 S	1 cartridge + 2 static mixers	1100	6
FIS SE	Static mixers	390	10

### Curing Time

Gelling and curing time of Fischer FIS EM 390 S

CARTRIDGE TEMPERATURE	GELLING TIME	TEMPERATURE AT ANCHORING BASE	CURING TIME
-5°C – +5°C	4 hours	-5°C – +5°C	80 hours
+5°C – +10°C	2 hours	+5°C – +10°C	40 hours
+10°C – +20°C	30 minutes	+10°C – +20°C	18 hours
+20°C – +30°C	14 minutes	+20°C – +30°C	10 hours
+30°C – +40°C	7 minutes	+30°C – +40°C	5 hours

The above times apply from the moment of contact between resin and hardener in the static mixer. For installation, the cartridge temperature must be at least +5°C. With temperatures above +30°C to +40°C the cartridges have to be cooled down to +15°C or +20°C. For longer installation times i.e. when interruptions occur in work, the mixer should be replaced.

## FIS V 360 S VINYL ESTER RESIN

Styrene-free, quick-curing high-performance hybrid mortar (contains vinyl ester resin and cement). Resin and cement as well as water and hardener are stored in two separate chambers and are not mixed and activated until pushed through the static mixer. Partially-used cartridges can easily be reused by changing the static mixer.

### Approvals:

German approval (DIBt) in conjunction with injection anchor sleeve FIS H M and injection anchor parts FIS G and FIS E for solid and hollow bricks (solid brick also without anchor sleeve).  
European Technical Approval Option 7 in conjunction with threaded rods FIS A resp. RG M for non-cracked concrete.  
German approval (DIBt) for aircrete in conjunction with cone drill PBB, centering sleeve PBZ and threaded rod FIS G.  
German approval (DIBt) for reinforcement bars.  
German approval (DIBt) for remedial wall tie VBS 8.  
German approval (DIBt) for weather facing renovation system FWS.

### Typical Application

Steel constructions, railings, hand-rails, consoles, ladders, machines, cable trays, staircases, gates, facades, window elements, high racks, canopies, stand-off installations.

TYPE	CONTENTS	SIZE (ML)	BOX QTY
FIS V 360 S	1 cartridge + 2 static mixers	360	6

### Curing Time

Gelling and curing time of Fischer FIS V.

CARTRIDGE TEMPERATURE (MORTAR)	GELLING TIME	TEMPERATURE AT ANCHORING BASE	CURING TIME
		-5°C – +/-0°C	24 hours
		+/- 0°C – +5°C	3 hours
+5°C – +10°C	13 minutes	+5°C – +10°C	90 minutes
+10°C – +20°C	30 minutes	+10°C – +20°C	60 minutes
+20°C – +30°C	14 minutes	+20°C – +30°C	45 minutes
+30°C – +40°C	7 minutes	+30°C – +40°C	35 minutes

The above times apply from the moment of contact between resin and hardener in the static mixer. For installation, the cartridge temperature must be at least +5°C. For longer installation times i.e. when interruptions occur in work, the mixer should be replaced.



## INJECTION MORTAR FIS P 380C POLYESTER (STYRENE FREE)

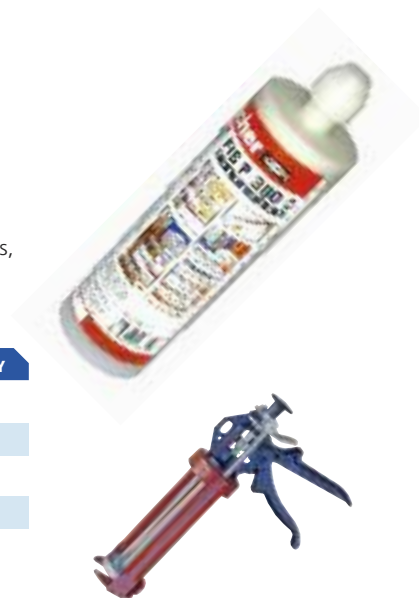
### Suitable for:

Solid brick, sand-lime solid brick, solid block made from lightweight concrete, autoclaved lightweight concrete, aircrete, vertically perforated brick, sand-lime perforated brick, hollow blocks.

### Typical Application

Steel constructions, railings, hand-rails, consoles, ladders, cable trays, machines, staircases, gates, facades, window elements, high racks, canopies stand-off installations.

TYPE	CONTENTS	SIZE (ML)	BOX QTY
FIP 300 S	1 cartridge + 1 static mixer	300	6
FIP 380 C	1 cartridge + 1 static mixer	380	6
FIP C700	1 cartridge + 1 static mixer	400	12
FIS S	10 static mixer		10



### Curing Time

Gelling and curing time of Fischer range.

CARTRIDGE TEMPERATURE (MORTAR)	FIP 300 SF PROCESSING TIME	FIP 300 SF CURING TIME	FIS 380 C GELLING TIME	FIS 380 C CURING TIME	FIP C 700 GELLING TIME	FIP C 700 CURING TIME
-5°C	-	-	-	6 hours	-	-
0°C	-	-	-	3 hours	-	-
+5°C	15 – 30 minutes	3 hours	13 minutes	1.5 hours	15 – 30 minutes	3 hours
+10°C	10 – 20 minutes	2 hours	9 minutes	45 minutes	10 – 20 minutes	2 hours
+20°C	5 – 10 minutes	1 hour	5 minutes	30 minutes	5 – 10 minutes	1 hour
+25°C	-	-	-	-	3.5 – 7 minutes	28 minutes
+30°C	3 – 6 minutes	45 minutes	4 minutes	25 minutes	3 – 6 minutes	45 minutes

### Accessories & Resin Application Guns

TYPE	DESCRIPTION / SIZE	SUITABLE FOR	BOX QTY
FIS AK	Application gun	FIS V 360 S, FIS HB, FIS 390 EM S, FIS VS 150 C, and single component PU foam	1
FIPC	Application gun	FIP 380 C, FIPC 700	1
FIS S	Mixing nozzle		10
FIS Extension tube	1000mm		10
ABG big	Blow-out pump		1
FIS brush	14/20mm		2
FIS brush	20/30mm		2



This information is for Fischer products. Alternative products are available and performance may vary by manufacturer. Contact us for more information.

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## INJECTION ANCHOR SLEEVES FIS E / MI / HM / HK / HN / HL

Injection anchor sleeves, threaded rods and internally threaded sockets, specially for use with injection mortars FIS V, FIS VS, FIS VT or FIS P in masonry materials.

The anchor sleeve saves mortar in hollow materials and centres the anchor in the drill hole.

In solid building materials the anchor sleeves are not required. The injection mortar bonds the entire surface of the anchor rod / internally threaded sockets to the wall of the drilled hole.

With hollow materials the mortar adapts to the anchoring substrate and bears the load primarily through a mechanical interlock.

Threaded rod FIS G is made of stainless steel for outdoor use and in damp conditions.

### FIS H

TYPE	MIN. DRILL HOLE DEPTH (MM) DRILL Ø (MM)	DEPTH ANCHOR (MM)	MIN. ANCHORAGE DEPTH ANCHOR (MM)	MIN. ANCHORAGE DEPTH SLEEVE (MM)	FITS	BOX QTY
FIS H 16 x 75 M	16	90	82	75	M8 – M10	10
FIS H 16 x 100 M	16	105	102	95	M8 – M10	10
FIS H 20 x 75 M	20	90	82	75	M12 – M14	20
FIS H 20 x 100 M	20	105	102	95	M12 – M14	10
FIS H 20 x 200 M	20	210	200	200	M12 – M14	10
FIS H 16 x 85 N	16	95	90	85	Ø8/M8	20
FIS H 18 x 85 N	18	95	90	85	Ø10/M10/FIS 18/M8 I	20
FIS H 20 x 85 N	20	95	90	85	Ø12/M12/FIS 20/M10 I	20
FIS H 12 x 60 K	12	70	60	60	Ø4/M4 – Ø8/M8	20
FIS H 12 x 80 K*	12	90	80	80	Ø4/M4 – Ø8/M8	20
FIS H 14 x 70 K	14	80	70	70	Ø6/M6 – Ø10/M10	10
FIS H 14 x 90 K*	14	100	90	90	Ø6/M6 – Ø10/M10	10
FIS H 16 x 80 K	16	90	80	80	Ø8/M8 – Ø12/M12	10
FIS H 16 x 100 K*	16	110	100	100	Ø8/M8 – Ø12/M12	10
FIS H 12 x 50 K	12	60	-	-	-	50
FIS H 12 x 85 K	12	95	-	-	-	50
FIS H 16 x 85 K	16	95	-	-	-	50
FIS H 16 x 130 K	16	140	-	-	-	50
FIS H 20 x 85 K	20	95	-	-	-	50

\* Anchor sleeve with up to 20mm plaster bridge.

### FIS M I & FIS E

Internally threaded sockets for use with sleeves.

TYPE	MIN. DRILL HOLE DEPTH (MM) DRILL Ø (MM)	DEPTH ANCHOR (MM)	MIN. ANCHORAGE DEPTH ANCHOR (MM)	MIN. ANCHORAGE DEPTH SLEEVE (MM)	FITS	BOX QTY
FIS 18/M8 I	85	8	23	M8	FIS H 18 x 85 N	20
FIS 20/M10 I	85	10	28	M10	FIS H 20 x 85 N	20
FIS E 11 x 75 M8	75	8	60	M8	FIS H 20 x 75 N	20
FIS E 15 x 75 M10	75	10	60	M10	FIS H 20 x 75 N	20
FIS E 15 x 75 M12	75	12	60	M12	FIS H 20 x 75 N	20



## RESINS CROSS-REFERENCE TABLE

	<b>POLYESTER RESINS</b> with or without styrene	<b>HYBRID POLYESTER RESINS</b> (with cement) styrene free	<b>VINYL ESTER RESINS</b> styrene free (methacrylate resin)	<b>HYBRID VINYL ESTER RESIN</b> (with cement) styrene free	<b>EPOXY RESINS</b> styrene free
<b>Fischer</b>	<b>FIPC 700</b> 400ml (styrene free)	<b>FIP P 380 C</b> 380ml <b>FIP 300 SF</b> 300ml fits skeleton gun <b>FIS P 300 EC</b> 300ml	<b>FIS HB 345 S</b> ■ ■ ■ 345ml <b>FIS HB 150 C</b> ■ ■ 150ml	<b>FIS V 360 S</b> ■ ■ ■ ■ 360ml <b>FIS VS 150 C</b> ■ ■ 145ml <b>FIS VS 100 P</b> 100ml <b>FIS V 950 S</b> ■ ■ ■ 950ml <b>FIS VT 380 C</b> 380ml <b>FIS VW 360 S</b> ■ ■ 360ml (faster curing times) <b>FIS VS 300 EC</b> 300ml	<b>FIS EM 390 S</b> ■ ■ ■ 390ml <b>FIS EM 1100 S</b> 1100ml Suitable for Diamond drilled holes. Can be installed underwater <b>FCS Spatula</b> applied 550ml <b>FCS Liquid</b> Pourable 550ml
<b>Hilti</b>	–	–	–	<b>HIT HY70</b> 330, 500 and 1400ml (brick, block, light concrete only) <b>HIT HY150 MAX</b> ■ ■ ■ 330, 500, 1100 and 1400ml (concrete)	<b>HIT-RE 500 SD</b> ■ ■ ■ 330, 500, 1100 and 1400ml
<b>Rawlplug</b>	<b>Rawl RM 50</b> 300ml (styrene free) <b>R-KF2 Kemfast</b> ■ ■ *380ml (with styrene) <b>Rawl R-KSF Surefix</b> 150ml (styrene free) <b>Rawl R-KEM</b> 300ml (styrene free) fits skeleton gun	–	<b>R-KEA</b> ■ 380ml	–	<b>R-KEX</b> 380 and 450ml
<b>Spit</b>	<b>C-Mix Plus</b> 150, 300 and 380ml (styrene free)	–	<b>EPOMAX</b> ■ ■ ■ 150 and 380ml <b>EPOBAR</b> ■ 410ml	–	<b>Epcon</b> ■ ■ ■ 200 and 530ml
<b>Liebig</b>	<b>Injection 2000</b> *380ml (with styrene)	–	–	<b>VEST</b> 345 and 410ml ■	–

\* Styrene is a carcinogenic and also gives off a strong odour.

■ Fire Approval ■ Water Approval ■ General Building ■ ETA

Source: Fischer Fixings

## HEAVY-DUTY ANCHORS CROSS-REFERENCE TABLE

	<b>FISCHER</b>	<b>HILTI</b>	<b>RAWLPLUG</b>	<b>SPIT</b>	<b>LIEBIG</b>
<b>Undercut anchors</b>	FZA  FZEA II	HDA/HSC  HSC-I	–	Fix Form  Fix Form type 1	Ultraplus Superplus BLS, SLS, SXLS, ILS  Superplus ILS
<b>Heavy-duty anchors</b>	FH II	HSL HSL-3	Safetyplus	Safety anchor Triga E, V	Safety bolts S, B, SK (double cone) Anchor AS, AB (single cone)
<b>Throughbolts for uncracked concrete</b>	FBN (FB) FBN II	HSA	R-SPT R-LTT	Spitfix II	–
<b>Throughbolts for cracked concrete</b>	FZA II	HST	R-HPT	Spitfix Z	Wedge anchor BOA-K BOA-G (removable)
<b>Sleeve anchors</b>	FSA	HLC	Rawlock	DYNABOLT ESB, SBV, HPS	–
<b>Drop-in anchors</b>	EA II	HKD-S (with collar)	Wedge anchor	Grip	–
<b>Shield anchors</b>	FWB GM	HB Hilti Bolt	Rawbolt shield anchor	RAMBOLT	–
<b>Resin anchors</b>	RGM/TL/RM	HAS + HVU (foil pack)	R-CAS Kemfix studs + Kemfix capsule / R-HAC (hammer-in)	Hex, stud or hex. Nut drive + Maxima	Chemical anchor KLS + KLP capsule
<b>Resin (cracked concrete)</b>	FHB II FHB IIP Capsule FHB II PF	HVZ  HAS-TZ	–	–	–

Source: Fischer Fixings

The above Cross Reference tables are for guidance only. Suitability of the anchor must be checked by the design engineer.

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