MAXTECH
PRECAST TOOLS AND ADHESIVES



PRODUCT CATALOGUE

PRECAST TOOLS & ADHESIVES

Professional solutions for lifting, fixing, connection and bonding in precast concrete.

2026 EDITION

www.maxtechprecast.com

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Twelve product families. Every product carries a short MaxTech code – see page 4.

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WHO WE ARE

STRONG CONNECTIONS, FROM THE MOULD TABLE TO THE BUILDING SITE



MaxTech Precast Solutions supplies tools, adhesives and steel accessories to the precast concrete industry worldwide. We focus on practical solutions that make work faster and safer – in the precast factory and on site.

A wide product range, a strong technical approach, responsive service and on-time deliveries: from a single order of inserts to complete project supply.

50+
standard products

3
continental indoor warehouses

220+
clients worldwide

PRODUCT PORTFOLIO

- Lifting anchors
- Bar lifting loops
- Fixing inserts
- Fastening plates
- Wire loop boxes
- Column shoes
- Wall shoes
- Anchor bolts
- Shuttering magnets
- Tying wire
- Hot melt adhesive
- Bespoke steel parts

NO ROOM FOR MISTAKES

Our products come from a certified production process that meets the strict requirements of the metal and precast industries. Quality management ensures reliability in every delivery.

ISO 9001 | ISO 14001 | ISO 45001 | EN 1090 | CE marked

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THE PRODUCT CODE

Every MaxTech product is identified by one short code. Read it from left to right.

TF

Product type. First letter = family (T threaded, S spherical, P plate, W wire, F fixing, E fastening plate…)

24

Size: thread Rd/M in mm, or load group in tonnes

EZ

Material / finish (table below)

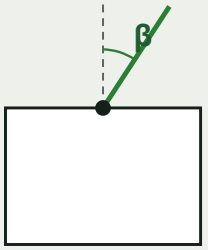
Example: **TF 24-EZ** = footed socket anchor, thread Rd 24, electro-zinc plated.

MATERIAL SUFFIX

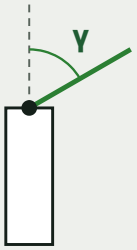
Suffix	Finish	Typical grade
–	Plain / uncoated	S355J2
EZ	Electro-zinc plated	S355J2+N
HD	Hot-dip galvanized	S355J2
SS	Stainless steel (A2)	1.4301 / 1.4571
AR	Acid-resistant steel (A4)	1.4401

Available finishes are listed on each product page. Plate anchors and spherical head anchors are also available heat-treated on request.

LOAD DIRECTION



β – diagonal pull in the plane of the element



γ – transverse pull, e.g. when tilting up an element

SAFE WORKING LOAD

Load values are design capacities (SWL) in kN per anchor. 10 kN ≈ 1 tonne.

CONCRETE CLASS

C12/15 … C50/60: strength of the concrete at the moment of lifting or loading.

APPLICATIONS

Green tags on each page show the elements a product is recommended for.

⚠ For edge distances, additional reinforcement and further technical information, refer to the MaxTech technical manual or contact our technical team. Lifting components belong to one load group: anchor, recess former and clutch must match.

PRODUCT OVERVIEW

All MaxTech products at a glance – 12 families, each with its product code and page number.

01 THREADED LIFTING P. 6



TF · TS · TR · TP · TC · TB · TRS · TRL · TRB · TWL · LK · LL

02 SPHERICAL HEAD LIFTING P. 18



SH · SHB · SHE · SC · RF · SF · MF

03 PLATE ANCHOR LIFTING P. 25



PA · PT · PF · PB · PP · PS · PC · PH · PR

04 WIRE LOOP LIFTING P. 33



WR

05 WIRE LOOP BOXES P. 36



WB · WBS · WB9

06 FIXING INSERTS P. 40



FP · FF

07 BOLTED CONNECTIONS P. 44



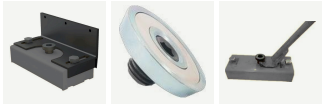
AB-L · AB-P · HB-L · HB-P · CS · WS · WSH

08 FASTENING PLATES P. 52



EP · EPH · EPR

09 MAGNETS P. 58



SM · KM · RT

10 TYING WIRE P. 61



TW

11 ADHESIVE P. 62



MTP43

12 ANCHOR CHANNELS P. 63



ATA · AZA · AS / AZS · Foams

BESPOKE STEEL PARTS

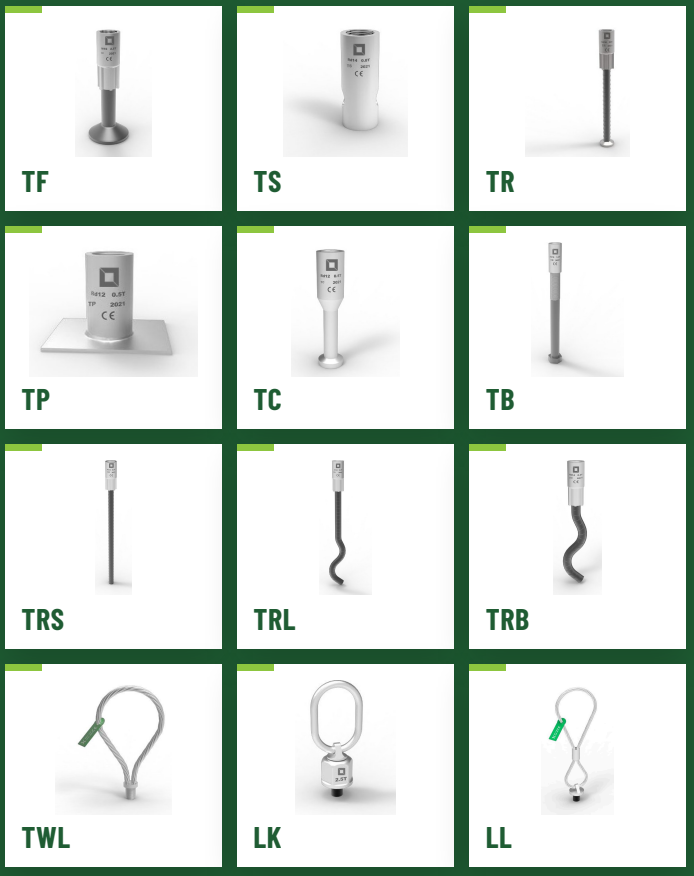
Project-specific plates, sleeves and steel components made to your drawings.

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MAXTECH
PRECAST TOOLS AND ADHESIVES

01

THREADED LIFTING SYSTEMS



A cost-effective way to lift and transport walls, beams, slabs, stairs and other precast elements. A cast-in threaded socket takes a screw-in lifting loop or key, so the element leaves the mould with a flush, clean surface.

IN THIS SECTION

TF	Footed socket anchor	7	**TRS**	Socket with straight rebar	13
TS	Short socket anchor	8	**TRL**	Socket with long bent rebar	14
TR	Socket with rebar & end plate	9	**TRB**	Socket with short bent rebar	15
TP	Flat plate socket	10	**TWL**	Screw-in wire rope loop	16
TC	Compact flared socket	11	**LK**	Swivel lifting key	17
TB	Socket with bolt anchor	12	**LL**	Wire lifting loop with bolt end	17

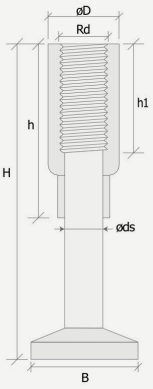
TF

Footed socket anchor

Threaded socket with a forged stud and a wide foot for short embedment depths. For wall and slab elements; takes LK lifting keys and LL lifting loops of the same thread size.



TF



MATERIALS & FINISHES

Version	Socket material	Standard
TF-EZ	S355J2+N, electro-zinc plated	EN 10025
TF-SS	1.4301 stainless steel	EN 10088
TF-AR	1.4401 acid-resistant steel	EN 10088

Stud in all versions: S235J2, uncoated (EN 10025).

RECOMMENDED FOR

Wall · Slab · Column · Beam · Stair · Balcony · Foundation

DIMENSIONS [MM]

Code	H	øD	Rd	øds	B	h	h1
TF 16	100	22	16	16	42	45	29
TF 20	115	28	20	20	54	60	40
TF 24	130	32	24	24	63	70	46
TF 30	175	40	30	30	78	90	60
TF 36	225	48	36	36	99	105	69

SAFE WORKING LOAD [KN]

	Wall elements			Slab elements
Code	β 0–45°	γ 0–10°	γ 10–90°	β 0–45°
TF 16	12.0	12.0	6.0	12.0
TF 20	20.0	20.0	10.0	20.0
TF 24	25.0	25.0	12.5	25.0
TF 30	40.0	40.0	20.0	40.0
TF 36	63.0	63.0	31.5	63.0

Order example: **TF 24-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

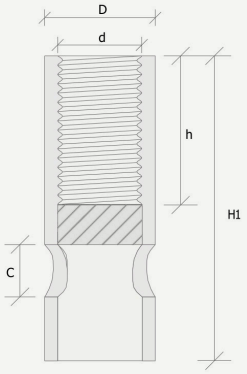
TS

Short socket anchor

Compact threaded socket, anchored in the concrete by a reinforcing bar passed through its cross hole. Ideal where element thickness or space is limited. Thread sizes Rd 12 to Rd 52.



TS



MATERIALS & FINISHES

Version	Material	Standard
TS-EZ	S355J2+N, electro-zinc plated	EN 10025
TS-SS	1.4301 stainless steel	EN 10088
TS-AR	1.4401 acid-resistant steel	EN 10088

RECOMMENDED FOR

Wall · Slab · Column · Stair

DIMENSIONS [MM]

Code	D	d	H1	h	c
TS 12	15	Rd 12	40	22	8
TS 16	21	Rd 16	54	27	12
TS 20	27	Rd 20	69	35	15
TS 24	31	Rd 24	78	43	18
TS 30	40	Rd 30	103	56	22
TS 36	47	Rd 36	125	68	27
TS 42	54	Rd 42	145	80	32
TS 52	67	Rd 52	195	97	40

Dimensions of TS 14 and TS 18 on request.

SWL IN WALL [KN]

Code	β 0–45°	γ 0–90°
TS 12	5.0	2.5
TS 14	8.0	4.0
TS 16	12.0	6.0
TS 18	16.0	8.0
TS 20	20.0	10.0
TS 24	25.0	12.5
TS 30	40.0	20.0
TS 36	63.0	31.5
TS 42	80.0	40.0
TS 52	125.0	62.5

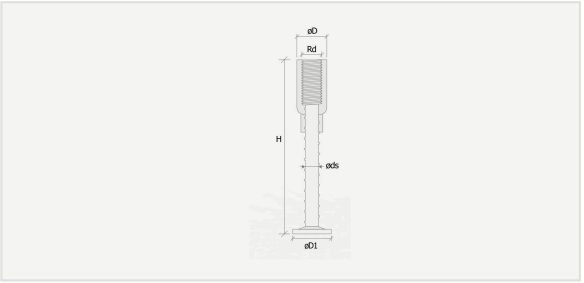
Order example: **TS 20-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

TR

Socket anchor with rebar & end plate

Threaded socket pressed onto a ribbed reinforcing bar with a round end plate – deep anchorage for walls, beams and columns.





DIMENSIONS [MM]

Code	H	øD	Rd	øD1	øds
TR 12	150	15	12	24	8
TR 14	155	18	14	30	10
TR 16	175	21	16	36	12
TR 18	225	24	18	42	14
TR 20	250	27	20	42	14
TR 24	275	31	24	48	16
TR 30	350	40	30	60	20
TR 36	450	47	36	75	25
TR 42	500	54	42	84	28
TR 52	700	67	52	96	32

Version	Socket
TR-EZ	S355J2+N electro-zinc, EN 10025
TR-SS	1.4301 stainless, EN 10088
TR-AR	1.4401 acid-resistant, EN 10088

Rebar: B500B, uncoated (SFS 1300).

Wall · Column · Beam · Stair · Shaft

SAFE WORKING LOAD IN WALL [KN] BY CONCRETE CLASS

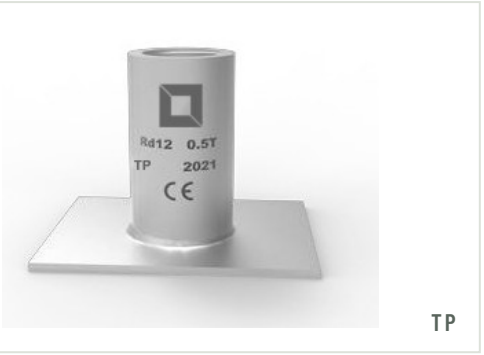
		β 0–45°				γ 0–90°			
Code	Wall B [mm]	C12/15	C16/20	C20/25	C28/35	C12/15	C16/20	C20/25	C28/35
TR 12	60	5.00	5.00	5.00	5.00	2.50	2.50	2.50	2.50
TR 14	70	8.00	8.00	8.00	8.00	4.00	4.00	4.00	4.00
TR 16	80	12.00	12.00	12.00	12.00	6.00	6.00	6.00	6.00
TR 18	100	16.00	16.00	16.00	16.00	8.00	8.00	8.00	8.00
TR 20	110	20.00	20.00	20.00	20.00	10.00	10.00	10.00	10.00
TR 24	120	25.00	25.00	25.00	25.00	12.50	12.50	12.50	12.50
TR 30	140	26.62	35.50	40.00	40.00	13.31	17.75	20.00	20.00
TR 36	150	63.00	63.00	63.00	63.00	31.50	31.50	31.50	31.50
TR 42	160	35.22	46.96	58.70	80.00	17.61	23.48	29.35	40.00
TR 52	160	88.28	101.93	113.96	125.00	44.14	50.97	56.98	62.50

Order example: **TR 24-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

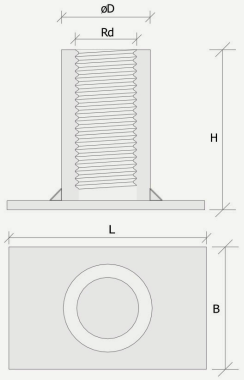
TP

Flat plate socket anchor

Short threaded socket welded to a square steel plate. The plate spreads the load in thin elements, so it lifts slabs, balconies and stair flights with very little embedment.



TP



MATERIALS & FINISHES

Version	Material	Standard
TP-EZ	S355J2+N, electro-zinc plated	EN 10025
TP-SS	1.4301 stainless steel	EN 10088
TP-AR	1.4571 stainless steel	EN 10088

RECOMMENDED FOR

Slab · Balcony · Stair · Pipe · Foundation · Shaft

DIMENSIONS [MM]

Code	H	øD	Rd	L	B
TP 12	30	15	12	35	25
TP 14	33	18	14	35	35
TP 16	35	21	16	50	35
TP 20	47	27	20	60	60
TP 24	54	31	24	80	60
TP 30	72	40	30	100	80
TP 36	84	47	36	130	100
TP 42	98	54	42	130	130
TP 52	117	67	52	150	130

SWL IN SLAB, B 0-45° [KN]

Code	Slab [mm]	C12/15	C16/20	C20/25	C28/35
TP 12	70	5.00	5.00	5.00	5.00
TP 14	80	7.58	8.00	8.00	8.00
TP 16	85	9.44	10.90	12.00	12.00
TP 20	100	15.93	18.39	20.00	20.00
TP 24	115	21.33	24.64	25.00	25.00
TP 30	140	37.08	40.00	40.00	40.00
TP 36	160	51.49	59.46	63.00	63.00
TP 42	175	68.26	78.82	80.00	80.00
TP 52	215	102.57	118.44	125.00	125.00

Slab = minimum element thickness for the listed load.

Order example: **TP 16-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

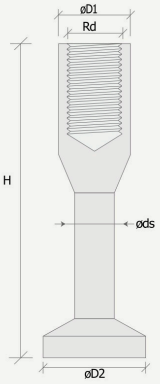
TC

Compact flared socket anchor

One-piece forged socket that narrows into a short shaft with a round foot. Compact and robust – a good choice for thin slabs, balconies, pipes and joists.



TC



MATERIALS & FINISHES

Version	Material	Standard
TC-EZ	S355J2+N, electro-zinc plated	EN 10025
TC-SS	1.4301 stainless steel	EN 10088
TC-AR	1.4401 acid-resistant steel	EN 10088

RECOMMENDED FOR

Slab · Balcony · Pipe · Foundation · Joist

DIMENSIONS [MM]

Code	H	øD1	Rd	øD2	øDs
TC 12	60	17	12	17	10
TC 14	70	19	14	19	10
TC 16	80	21	16	21	12
TC 20	100	27	20	27	15
TC 24	115	31	24	31	18
TC 30	150	40	30	40	20

SWL IN SLAB, B 0-45° [KN]

Code	Slab [mm]	C12/15	C16/20	C20/25	C28/35
TC 12	80	5.98	6.91	7.72	9.14
TC 14	90	7.39	8.67	9.69	11.47
TC 16	100	9.15	10.56	11.81	13.97
TC 20	120	12.94	14.94	16.71	19.77
TC 24	135	16.00	18.48	20.66	24.45
TC 30	170	24.29	28.05	31.36	37.71

Slab = minimum element thickness for the listed load.

Order example: **TC 16-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

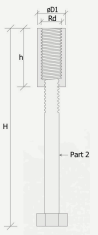
TB

Socket anchor with bolt

Threaded socket combined with a grade 8.8 hexagon bolt as anchoring part. Length can be chosen to suit the element thickness.



TB



DIMENSIONS [MM]

Code	H	øD1	Rd	h	Bolt
TB 12-150	150	15	12	30	M12×120
TB 16-220	220	21	16	45	M16×180
TB 20-180	180	27	20	60	M20×130
TB 20-270	270	27	20	60	M20×220
TB 24-320	320	31	24	70	M24×260
TB 30-380	380	40	30	90	M30×300
TB 36-300	300	47	36	105	M36×300
TB 36-420	420	47	36	105	M36×320
TB 42-300	300	54	42	120	M42×200
TB 42-460	460	54	42	120	M42×360

Part	Material
TB-EZ	Socket S355J2+N electro-zinc, EN 10025
TB-SS	Socket 1.4571 stainless, EN 10088
Bolt	Grade 8.8, ISO 898-1

Slab · Balcony · Pipe · Stair · Shaft · Foundation

SAFE WORKING LOAD IN WALL [KN] BY CONCRETE CLASS

		β 0–45°				γ 0–90°			
Code	Wall B [mm]	C12/15	C16/20	C20/25	C28/35	C12/15	C16/20	C20/25	C28/35
TB 12	60	5.00	5.00	5.00	5.00	2.50	2.50	2.50	2.50
TB 16	80	12.00	7.93	9.91	12.00	6.00	3.97	4.96	6.00
TB 20	110	20.00	13.40	16.75	20.00	10.00	6.70	8.38	10.00
TB 24	120	25.00	17.91	22.39	25.00	12.50	8.96	11.19	12.50
TB 30	140	40.00	30.20	37.74	40.00	20.00	15.10	18.87	20.00
TB 36	150	59.47	44.87	50.26	59.47	29.74	22.44	25.13	29.74
TB 42	160	60.69	45.88	51.29	60.69	30.34	22.94	25.65	30.34
TB 52	160	75.68	57.21	63.97	75.68	37.84	28.61	31.98	37.84

Values apply to both lengths of a thread size. Dimensions of TB 52 on request.

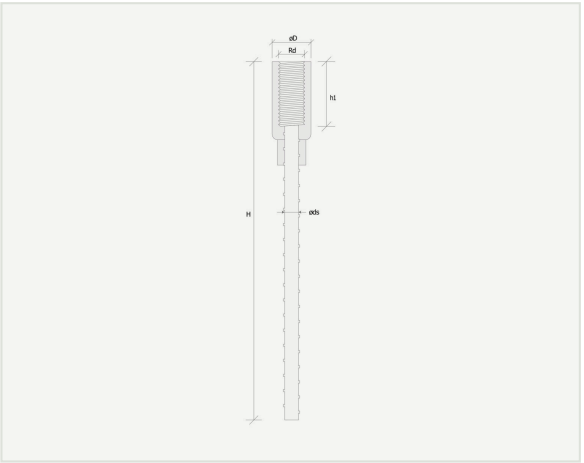
Order example: **TB 20-270-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

TRS

Socket anchor with straight rebar

Threaded socket pressed onto a straight ribbed bar. The bond along the bar gives a slim anchor for columns, beams and walls with little transverse space.


TRS



MATERIALS & FINISHES

Version	Socket material	Standard
TRS-EZ	S355J2+N, electro-zinc plated	EN 10025
TRS-SS	1.4301 stainless steel	EN 10088
TRS-AR	1.4401 acid-resistant steel	EN 10088

Rebar in all versions: B500B, uncoated (SFS 1300).

RECOMMENDED FOR

Column · Beam · Wall · Slab · Shaft

DIMENSIONS [MM]

Code	H	øD	Rd	h1	øds
TRS 12	190	15	12	22	8
TRS 14	235	18	14	25	10
TRS 16	270	21	16	27	12
TRS 18	305	22.3	18	34	14
TRS 20	350	27	20	35	14
TRS 24	400	31	24	43	16
TRS 30	505	40	30	56	20
TRS 36	680	47	36	68	25
TRS 42	790	54	42	80	28
TRS 52	900	67	52	100	32

SWL IN WALL [KN]

Code	β 0–45°	γ 0–90°
TRS 12	5.0	2.5
TRS 14	8.0	4.0
TRS 16	12.0	6.0
TRS 18	16.0	8.0
TRS 20	20.0	10.0
TRS 24	25.0	12.5
TRS 30	40.0	20.0
TRS 36	63.0	31.5
TRS 42	80.0	40.0
TRS 52	125.0	62.5

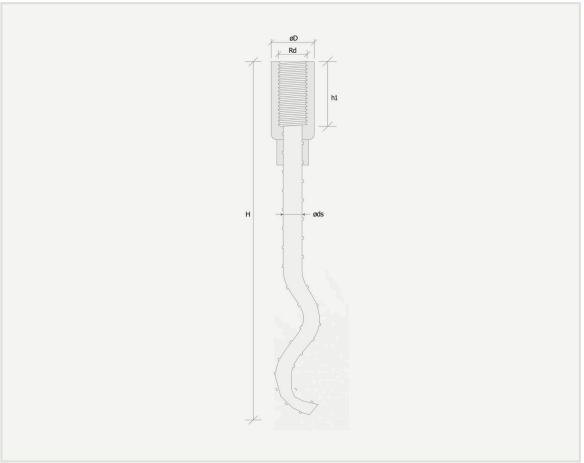
Order example: **TRS 20-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

TRL

Socket anchor with long bent rebar

Threaded socket with a long, wave-bent ribbed bar ending in a hook. The bent bar engages the element reinforcement – ideal for thin walls, TT slabs and joists.


TRL



MATERIALS & FINISHES

Version	Socket material	Standard
TRL-EZ	S355J2+N, electro-zinc plated	EN 10025
TRL-SS	1.4301 stainless steel	EN 10088
TRL-AR	1.4401 acid-resistant steel	EN 10088

Rebar in all versions: B500B, uncoated (SFS 1300).

RECOMMENDED FOR

Wall · TT slab · Joist · Balcony · Column

DIMENSIONS [MM]

Code	H	øD	Rd	h1	øds
TRL 12	137	15	12	22	8
TRL 14	170	18	14	25	10
TRL 16	216	21	16	27	12
TRL 20	257	27	20	35	14
TRL 24	350	31	24	43	16
TRL 30	450	40	30	56	20
TRL 36	570	47	36	68	25
TRL 42	620	54	42	80	28
TRL 52	880	67	52	100	32

SWL IN WALL [KN]

Code	β 0–45°	γ 0–90°
TRL 12	5.0	2.5
TRL 14	8.0	4.0
TRL 16	12.0	6.0
TRL 20	20.0	10.0
TRL 24	25.0	12.5
TRL 30	40.0	20.0
TRL 36	63.0	31.5
TRL 42	80.0	40.0
TRL 52	125.0	62.5

Order example: **TRL 16-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

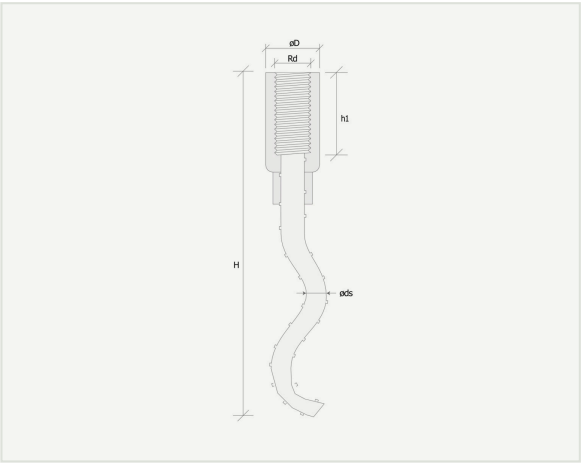
TRB

Socket anchor with short bent rebar

Threaded socket with a short S-bent ribbed bar. A compact anchor with high capacity for stairs, beams, slabs, foundations and columns.



TRB



MATERIALS & FINISHES

Version	Socket material	Standard
TRB-EZ	S355J2+N, electro-zinc plated	EN 10025
TRB-SS	1.4301 stainless steel	EN 10088
TRB-AR	1.4401 acid-resistant steel	EN 10088

Rebar in all versions: B500B, uncoated (SFS 1300).

RECOMMENDED FOR

Stair · Beam · Slab · Foundation · Column

DIMENSIONS [MM]

Code	H	øD	Rd	h1	øds
TRB 12	108	15	12	22	8
TRB 14	130	18	14	25	10
TRB 16	167	21	16	27	12
TRB 20	187	27	20	35	14
TRB 24	240	31	24	43	16
TRB 30	300	40	30	56	20
TRB 36	380	47	36	68	25
TRB 42	450	54	42	80	28

SWL IN WALL [KN]

Code	β 0–45°	γ 0–90°
TRB 12	5.0	2.5
TRB 14	8.0	4.0
TRB 16	12.0	6.0
TRB 20	20.0	10.0
TRB 24	25.0	12.5
TRB 30	40.0	20.0
TRB 36	63.0	31.5
TRB 42	80.0	40.0

Order example: **TRB 24-EZ** · Use with LK / LL of the same thread (p. 17) · Edge distances and additional reinforcement: see the MaxTech technical manual.

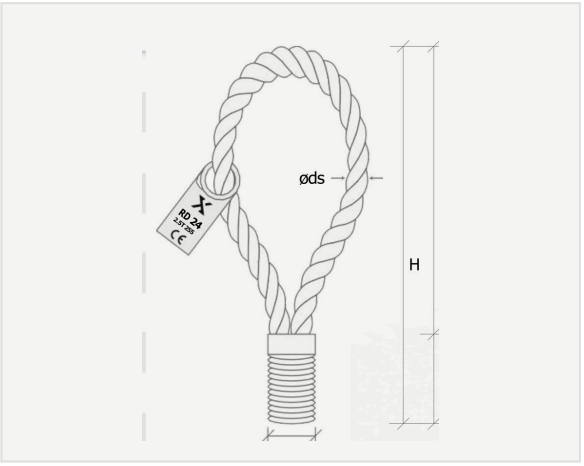
TWL

Screw-in wire rope loop

High-strength steel wire rope loop with a pressed threaded end. Screwed fully into a cast-in socket of the same thread, it gives a quick and flexible lifting point. Each loop carries a tag with its load and batch number.



TWL



MATERIALS

Part	Material	Standard
Wire rope	High-strength steel wire	EN 12385-4
Ferrule	Steel, threaded end	EN 10088

COMPATIBLE WITH

TF · TS · TR · TP · TC · TB · TRS · TRL · TRB

DIMENSIONS [MM]

Code	H	Rd	øds	h1	h2	Wire
TWL 12	155	12	6	22	133	6×19 IWRC
TWL 14	155	14	7	25	130	6×19 IWRC
TWL 16	155	16	8	27	128	6×19 IWRC
TWL 18	190	18	9	34	156	6×19 IWRC
TWL 20	215	20	10	35	180	6×19 IWRC
TWL 24	255	24	12	43	212	6×19 IWRC
TWL 30	300	30	16	56	244	6×36 IWRC
TWL 36	340	36	18	67	273	6×36 IWRC
TWL 42	425	42	20	80	345	6×36 IWRC
TWL 52	510	52	26	97	413	6×36 IWRC

SWL IN WALL [KN]

Code	SWL
TWL 12	5.0
TWL 14	8.0
TWL 16	12.0
TWL 18	16.0
TWL 20	20.0
TWL 24	25.0
TWL 30	40.0
TWL 36	63.0
TWL 42	80.0
TWL 52	125.0

Order example: **TWL 20** · Always screw the loop fully into the socket · Inspect wire rope and ferrule before each use; do not use damaged loops.

LIFTING DEVICES FOR THREADED ANCHORS

Screw-in lifting devices for all MaxTech threaded sockets. Always use a device with the same thread size as the cast-in socket and screw it in completely before lifting.



LK

LK

Swivel lifting key

Forged lifting ring on a swivel bolt. The ring turns and tilts in the direction of pull, so it suits diagonal and transverse lifting.

Thread	a	b	e	g	h	F [kN]
Rd 16	60	56	21	60	150	12
Rd 20	60	70	26	74	160	20
Rd 24	75	74	31	78	185	25
Rd 30	90	90	39	90	220	40
Rd 36	100	101	47	107	255	63

Dimensions in mm: a ring width, b body width, e thread length, g body height, h overall height.


LL

LL

Wire lifting loop with bolt end

Double steel wire rope loop on a threaded bolt with a collar. Light, flexible and easy to handle; the tag shows load and batch number.

Thread	b	e	f	g	h	F [kN]
Rd 16	56	21	34	180	345	12
Rd 20	68	26	44	220	410	20
Rd 24	74	31	55	220	435	25
Rd 30	90	39	65	240	490	40
Rd 36	103	55	90	300	650	63

Dimensions in mm: b collar width, e thread length, f bolt height, g loop length, h overall length.

SAFETY F is the permitted load of the lifting device. The lifting capacity of the connection is the lower of F and the SWL of the cast-in anchor. Inspect devices before each use.

02

SPHERICAL HEAD LIFTING SYSTEMS



SH Spherical head anchor



SHB Bent spherical head anchor



SHE Spherical head eye anchor



SC Spherical head lifting clutch



RF Rubber recess former



SF Steel recess former



MF Magnetic recess former

7
PRODUCTS
Pages 19–24

Round steel anchors with forged heads, cast in with a recess former and lifted with a matching clutch. A simple, fast system for almost every precast element – from 1.3 to 32 tonnes per anchor.

IN THIS SECTION

SH	Spherical head anchor	19	**SC**	Spherical head lifting clutch	24
SHB	Bent spherical head anchor	22	**RF**	Rubber recess former	24
SHE	Spherical head eye anchor	23	**SF**	Steel recess former	24
			MF	Magnetic recess former	24

SYSTEM RULE Anchor, recess former and lifting clutch must belong to the same load group during casting and transport.

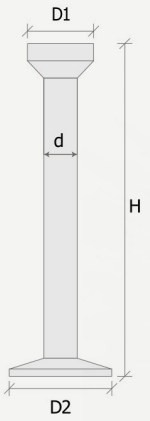
SH

Spherical head anchor

Forged round steel anchor with a spherical head and a foot. Cast in with a recess former and lifted with the SC clutch of the same load group. Nine load groups from 1.3 t to 32 t, each in several lengths.



SH



MATERIALS & FINISHES

Version	Material / finish	Standard
SH	S355J2, uncoated	EN 10025
SH-EZ	S355J2, electro-zinc plated	EN 10025
SH-HD	S355J2, hot-dip galvanized	EN 10025
SH-SS	1.4301 stainless steel	EN 10088
SH-AR	1.4401 acid-resistant steel	EN 10088

Also available heat-treated on request.

DIMENSIONS [MM]

Load group	Available lengths H	D1	D2	d
1.3 t	40 · 50 · 65 · 85 · 120 · 240	18	25	10
2.5 t	55 · 65 · 85 · 120 · 170 · 280	25	35	14
4.0 t	75 · 100 · 120 · 170 · 210 · 340	36	45	18
5.0 t	85 · 95 · 120 · 180 · 240 · 340 · 480	36	50	20
7.5 t	100 · 120 · 140 · 165 · 200 · 300 · 540	46	60	24
10.0 t	115 · 135 · 150 · 170 · 250 · 340 · 680	46	70	28
15.0 t	140 · 165 · 200 · 300 · 400 · 840	69	85	34
20.0 t	200 · 240 · 250 · 340 · 500 · 1000	69	98	38
32.0 t	320 · 700 · 1200	88	135	50

RECOMMENDED FOR

Wall · Column · Beam · Slab · Balcony · Pipe · Manhole · Foundation

ORDER SH [load group]-[length]-[finish]
e.g. SH 5.0-240-EZ

Safe working loads by length, wall thickness and concrete class: pages 20–21 · Clutch and recess formers: page 24 · Edge distances and additional reinforcement: see the MaxTech technical manual.

SH Safe working load in wall [kN] · load groups 2.5 t – 7.5 t

Group	Anchor	Wall B [mm]	β 0–45°				γ 0–90°			
			C12/15	C16/20	C20/25	C28/35	C12/15	C16/20	C20/25	C28/35
2.5 t	2.5-120	80	18.33	21.16	23.66	25.00	9.16	10.58	11.83	12.50
		100	19.12	22.08	24.68	25.00	9.56	11.04	12.34	12.50
		120	19.91	22.99	25.00	25.00	9.95	11.49	12.50	12.50
	2.5-170	80	19.43	22.44	25.00	25.00	9.72	11.22	12.50	12.50
		100	20.76	25.00	25.00	25.00	10.38	12.50	12.50	12.50
		120	21.41	25.00	25.00	25.00	10.71	12.50	12.50	12.50
	2.5-280	80	19.10	22.44	25.00	25.00	9.55	11.22	12.50	12.50
		100	19.51	25.00	25.00	25.00	9.75	12.50	12.50	12.50
		120	19.91	25.00	25.00	25.00	9.96	12.50	12.50	12.50
4.0 t	4.0-170	120	31.37	36.22	40.00	40.00	15.69	18.11	20.00	20.00
		140	32.31	37.31	40.00	40.00	16.16	18.66	20.00	20.00
		160	33.26	38.40	40.00	40.00	16.63	19.20	20.00	20.00
	4.0-210	120	34.66	40.00	40.00	40.00	17.33	20.00	20.00	20.00
		140	35.55	40.00	40.00	40.00	17.77	20.00	20.00	20.00
		160	36.43	40.00	40.00	40.00	18.21	20.00	20.00	20.00
	4.0-340	120	31.48	36.36	40.00	40.00	15.74	18.18	20.00	20.00
		140	32.71	40.00	40.00	40.00	16.35	20.00	20.00	20.00
		160	33.27	40.00	40.00	40.00	16.63	20.00	20.00	20.00
5.0 t	5.0-240	160	45.46	50.00	50.00	50.00	22.73	25.00	25.00	25.00
		180	46.45	50.00	50.00	50.00	23.23	25.00	25.00	25.00
		200	47.44	50.00	50.00	50.00	23.72	25.00	25.00	25.00
	5.0-340	120	41.78	49.31	50.00	50.00	20.89	24.65	25.00	25.00
		140	42.49	50.00	50.00	50.00	21.25	25.00	25.00	25.00
		160	43.20	50.00	50.00	50.00	21.60	25.00	25.00	25.00
	5.0-480	100	35.58	41.09	45.94	50.00	17.79	20.54	22.97	25.00
		120	40.57	49.31	50.00	50.00	20.28	24.65	25.00	25.00
		140	41.08	50.00	50.00	50.00	20.54	25.00	25.00	25.00
7.5 t	7.5-200	160	39.97	46.16	51.60	61.06	19.99	23.08	25.80	30.53
		180	40.98	47.32	52.91	62.60	20.49	23.66	26.46	31.30
		200	42.00	48.49	54.22	64.15	21.00	24.25	27.11	32.08
	7.5-300	160	63.27	75.00	75.00	75.00	31.63	37.50	37.50	37.50
		180	64.43	75.00	75.00	75.00	32.21	37.50	37.50	37.50
		200	65.59	75.00	75.00	75.00	32.79	37.50	37.50	37.50
	7.5-540	140	58.56	69.00	75.00	75.00	29.28	34.50	37.50	37.50
		160	59.21	75.00	75.00	75.00	29.61	37.50	37.50	37.50
		180	59.87	75.00	75.00	75.00	29.93	37.50	37.50	37.50

Anchor = SH [load group]-[length H]. Edge distances and additional reinforcement: see the MaxTech technical manual.

SH Safe working load in wall [kN] · load groups 10 t – 32 t

Group	Anchor	Wall B [mm]	β 0–45°				γ 0–90°			
			C12/15	C16/20	C20/25	C28/35	C12/15	C16/20	C20/25	C28/35
10.0 t	10.0-170	200	34.67	40.03	44.75	52.95	17.33	20.01	22.38	26.48
		240	36.54	42.19	47.17	55.81	18.27	21.10	23.59	27.91
		280	38.41	44.36	49.59	58.68	19.21	22.18	24.80	29.34
	10.0-250	200	55.17	63.71	71.23	84.28	27.59	31.85	35.61	42.14
		240	57.43	66.31	74.14	87.72	28.71	33.16	37.07	43.86
		280	59.68	68.91	77.04	91.16	29.84	34.46	38.52	45.58
	10.0-340	200	81.65	94.28	100.00	100.00	40.83	47.14	50.00	50.00
		240	84.27	97.30	100.00	100.00	42.13	48.65	50.00	50.00
		280	86.88	100.00	100.00	100.00	43.44	50.00	50.00	50.00
	10.0-680	160	81.40	94.00	100.00	100.00	40.70	47.00	50.00	50.00
		180	83.36	100.00	100.00	100.00	41.68	50.00	50.00	50.00
		200	84.10	100.00	100.00	100.00	42.05	50.00	50.00	50.00
15.0 t	15.0-300	300	75.16	86.78	97.03	114.80	37.58	43.39	48.51	57.40
		400	81.29	93.86	104.94	124.17	40.64	46.93	52.47	62.09
		500	87.42	100.95	112.86	133.54	43.71	50.47	56.43	66.77
	15.0-400	300	107.65	124.31	138.98	150.00	53.83	62.15	69.49	75.00
		400	114.71	132.46	148.09	150.00	57.36	66.23	74.05	75.00
		500	121.77	140.61	150.00	150.00	50.88	70.30	75.00	75.00
	15.0-840	200	96.98	127.22	142.23	150.00	48.49	63.61	71.12	75.00
		220	97.68	130.24	150.00	150.00	48.84	65.12	75.00	75.00
		240	98.39	131.19	150.00	150.00	49.19	65.59	75.00	75.00
20.0 t	20.0-340	400	93.72	108.22	121.00	143.17	46.86	54.11	60.50	71.58
		500	100.23	115.73	129.39	153.10	50.11	57.87	64.70	76.55
		600	106.73	123.24	137.79	163.04	53.37	61.62	68.90	81.52
	20.0-500	400	151.03	174.39	194.98	200.00	75.51	87.20	97.49	100.00
		500	158.89	183.47	200.00	200.00	79.44	91.73	100.00	100.00
		600	166.75	192.55	200.00	200.00	83.38	96.27	100.00	100.00
	20.0-1000	240	162.38	197.46	200.00	200.00	81.19	98.73	100.00	100.00
		260	163.37	200.00	200.00	200.00	81.69	100.00	100.00	100.00
		280	164.37	200.00	200.00	200.00	82.19	100.00	100.00	100.00
32.0 t	32.0-320	450	92.32	106.61	119.19	141.03	46.16	53.30	59.59	70.51
		550	98.70	113.96	127.04	150.76	49.35	56.98	63.71	75.38
		650	105.07	121.32	135.64	160.49	52.53	60.66	67.82	80.25
	32.0-700	450	241.38	278.72	311.64	320.00	120.69	139.36	155.81	160.00
		550	250.70	289.49	320.00	320.00	125.35	144.74	160.00	160.00
		650	260.03	300.25	320.00	320.00	130.01	150.13	160.00	160.00
	32.0-1200	300	305.07	320.00	320.00	320.00	152.53	160.00	160.00	160.00
		350	320.00	320.00	320.00	320.00	160.00	160.00	160.00	160.00
		400	320.00	320.00	320.00	320.00	160.00	160.00	160.00	160.00

Anchor = SH [load group]-[length H]. Edge distances and additional reinforcement: see the MaxTech technical manual.

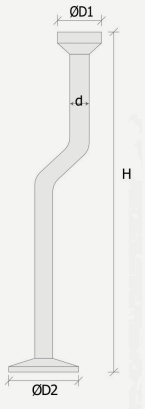
SHB

Bent spherical head anchor

Spherical head anchor with a cranked shaft for sandwich wall panels. The offset places the head in the outer leaf and the foot in the load-bearing inner leaf.



SHB



MATERIALS & FINISHES

Version	Material / finish	Standard
SHB	S355J2, uncoated	EN 10025
SHB-EZ	S355J2, electro-zinc plated	EN 10025
SHB-HD	S355J2, hot-dip galvanized	EN 10025
SHB-SS	1.4301 stainless steel	EN 10088
SHB-AR	1.4401 acid-resistant steel	EN 10088

Recommended for: sandwich panels

DIMENSIONS [MM]

Anchor	H	ØD1	ØD2	d
SHB 2.5-265	265	25	35	14
SHB 5.0-406	406	36	50	20
SHB 5.0-466-1	466	36	50	20
SHB 5.0-466-2	466	36	50	20
SHB 7.5-664	664	46	60	24
SHB 10.0-667	667	46	70	28

NOTE Select the anchor by sandwich wall build-up. The -1 and -2 versions of 5.0-466 cover different wall thicknesses (see table below).

SAFE WORKING LOAD IN WALL [KN] BY CONCRETE CLASS

		β 0–45°				γ 0–90°			
Anchor	Wall B [mm]	C12/15	C16/20	C20/25	C28/35	C12/15	C16/20	C20/25	C28/35
2.5-265	80–120	17.84	21.63	24.19	25.00	8.92	10.82	12.09	12.50
5.0-406	120–160	41.43	49.50	50.00	50.00	20.71	24.75	25.00	25.00
5.0-466-1	120–160	40.98	49.50	50.00	50.00	20.49	24.75	25.00	25.00
5.0-466-2	160–200	42.03	50.00	50.00	50.00	21.02	24.75	25.00	25.00
7.5-664	160–200	61.65	75.00	75.00	75.00	30.83	37.50	37.50	37.50
10.0-667	200–280	81.69	100.00	100.00	100.00	40.85	50.00	50.00	50.00

Order example: **SHB 5.0-406-EZ** · Use with SC clutch and recess former of the same load group (p. 24) · Edge distances and additional reinforcement: see the MaxTech technical manual.

SHE

Spherical head eye anchor

Short spherical head anchor with a forged eye. A reinforcing bar passed through the eye ties the anchor into the element – for high loads with small embedment depth.

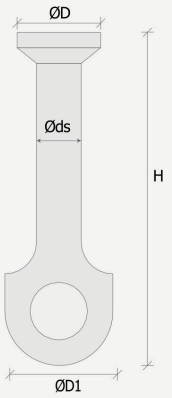


SHE

MATERIALS & FINISHES

Version	Material / finish	Standard
SHE	S355J2, uncoated	EN 10025
SHE-EZ	S355J2, electro-zinc plated	EN 10025
SHE-HD	S355J2, hot-dip galvanized	EN 10025
SHE-SS	1.4301 stainless steel	EN 10088
SHE-AR	1.4401 acid-resistant steel	EN 10088

Wall Column Joist Foundation



DIMENSIONS [MM]

Anchor	H	ØD	ØD1	Øds
SHE 1.3	65	18	22	10
SHE 2.5	90	25	32	14
SHE 5.0	120	36	43	20
SHE 10.0	180	46	57	28
SHE 20.0	250	69	83	38
SHE 32.0	300	88	100	50

SWL IN WALL [KN]

Anchor	β 0–30°
SHE 1.3	13.0
SHE 2.5	25.0
SHE 5.0	50.0
SHE 10.0	100.0
SHE 20.0	200.0
SHE 32.0	320.0

Order example: **SHE 10.0-HD** · Use with SC clutch and recess former of the same load group (p. 24) · Rebar through the eye, edge distances and additional reinforcement: see the MaxTech technical manual.

SYSTEM RULE Anchor, recess former and lifting clutch must belong to the same load group. The recess former creates the pocket around the anchor head; after casting, the clutch fits exactly into it.



SC

SC Lifting clutch

Time-saving lifting key for spherical head anchors from 1.3 to 45 t.

Clutch	Load group [t]
SC 1.3	1.3
SC 2.5	2.5
SC 4.0/5.0	5.0
SC 7.5/10	10.0
SC 15/20	20.0
SC 32	32.0
SC 45	45.0



RF

RF Rubber recess former

Reusable rubber former with wing-nut fixing to the mould.

Former	Load group [t]
RF 1.3	1.3
RF 2.5	2.5
RF 5.0	5.0
RF 10.0	10.0
RF 20.0	20.0
RF 32.0	32.0



SF

SF Steel recess former

Former	Group [t]	ØD [mm]	M	L [mm]
SF 1.3	1.3	60	M8	28
SF 2.5	2.5	74	M12	33
SF 4.0	4.0	94	M12	42
SF 5.0	5.0	94	M12	42
SF 7.5	7.5	118	M12	42
SF 10.0	10.0	118	M12	42



MF

MF Magnetic recess former

Former	Holding [kg]	Group [t]	ØD	M	L
MF 1.3	170	1.3	58	M8	27
MF 2.5	265	2.5	74	M12	33
MF 5.0	470	4.0/5.0	94	M12	42
MF 10	600	7.5/10	118	M12	53

ØD and L in mm. Magnetic formers fix directly to steel moulds.

03

PLATE ANCHOR LIFTING SYSTEMS



Flat steel anchors cast in with a recess former and lifted with the PC ring clutch. The system takes load from any direction, making it a versatile choice for walls, columns, TT slabs, trusses and tilting – from 0.7 to 26 tonnes.

IN THIS SECTION

PA	Plate anchor with spread legs	26	**PS**	Sandwich panel plate anchor	31
PT	Two-hole plate anchor	27	**PC**	Ring clutch	32
PF	Angled foot plate anchor	28	**PH**	Holding plate	32
PB	Plate anchor with split end	29	**PR**	Rubber recess former	32
PP	Base plate anchor	30			

SYSTEM RULE Anchor, recess former and ring clutch must belong to the same load group during casting and transport.

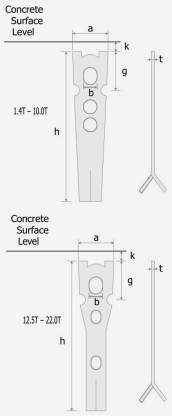
PA

Plate anchor with spread legs

Flat steel anchor with lifting hole and anchorage holes for cross bars; the split, spread legs anchor it deep in the concrete. Lifting in any direction – also for tilting elements – from 1.4 to 22 t.



PA



MATERIALS & FINISHES

Version	Material	Standard
PA-EZ	S355J2+N, electro-zinc plated	EN 10025

Also available plain (PA), hot-dip galvanized (-HD) and stainless steel (-SS).

RECOMMENDED FOR

Column · Trusses · TT slabs · Tilting · Thin walls

DIMENSIONS [MM]

Anchor	h	a	t	b	g	k
PA 1.4	200	55	6	14	45	10
PA 2.5	230	55	10	14	45	10
PA 4.0	270	70	12	18	70	10
PA 5.0	290	70	15	18	70	10
PA 7.5	320	95	15	26	90	15
PA 10.0	390	95	20	26	90	15
PA 12.5	500	148	20	35	90	15
PA 17.0	500	148	25	35	90	15
PA 22.0	500	148	30	35	90	15

t = plate thickness. The hole pattern of 12.5 t – 22 t anchors differs slightly – see the technical manual.

SWL [KN]

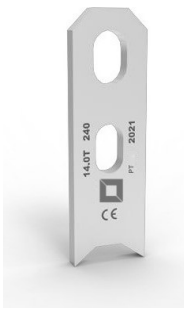
Anchor	β 0–45°	γ 0–10°	γ 10–90°
PA 1.4	14.0	14.0	7.0
PA 2.5	25.0	25.0	12.5
PA 4.0	40.0	40.0	20.0
PA 5.0	50.0	50.0	25.0
PA 7.5	75.0	75.0	37.5
PA 10.0	100.0	100.0	50.0
PA 12.5	125.0	125.0	62.5
PA 17.0	170.0	170.0	85.0
PA 22.0	220.0	220.0	110.0

Order example: **PA 5.0-EZ** · Use with PC ring clutch and PR recess former of the same load group (p. 32) · Edge distances and additional reinforcement: see the MaxTech technical manual.

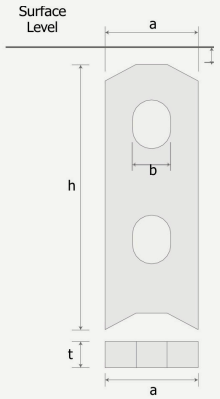
PT

Two-hole plate anchor

Compact flat anchor with a lifting hole and a second hole for a cross bar. Short and strong – for walls, columns, slabs and beams from 1.4 to 26 t.



PT



MATERIALS & FINISHES

Version	Material	Standard
PT-EZ	S355J2+N, electro-zinc plated	EN 10025

Also available plain (PT), hot-dip galvanized (-HD) and stainless steel (-SS).

RECOMMENDED FOR

Wall · Column · Slab · Beam

DIMENSIONS [MM]

Anchor	h	a	t	b	k
PT 1.4	90	30	6	14	10
PT 2.5	90	30	10	14	10
PT 3.0	120	40	10	18	10
PT 4.0	120	40	12	18	10
PT 5.0	120	40	15	18	15
PT 7.5	160	60	15	26	15
PT 10.0	165	60	20	26	15
PT 14.0	240	80	20	35	15
PT 22.0	300	90	25	35	15
PT 26.0	300	120	30	35	15

SWL [KN]

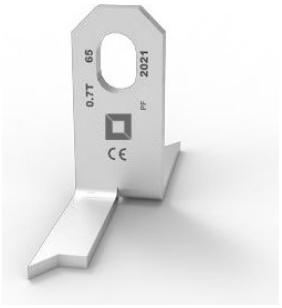
Anchor	β 0–45°	γ 0–10°
PT 1.4	14.0	14.0
PT 2.5	25.0	25.0
PT 3.0	30.0	30.0
PT 4.0	40.0	40.0
PT 5.0	50.0	50.0
PT 7.5	75.0	75.0
PT 10.0	100.0	100.0
PT 14.0	140.0	140.0
PT 22.0	220.0	220.0
PT 26.0	260.0	260.0

Order example: **PT 7.5-EZ** · Use with PC ring clutch and PR recess former of the same load group (p. 32) · Edge distances and additional reinforcement: see the MaxTech technical manual.

PF

Angled foot plate anchor

Plate anchor bent into an L with a flat foot. The foot spreads the load in thin elements, so slabs, balconies and other shallow parts can be lifted safely – from 0.7 to 22 t.



PF

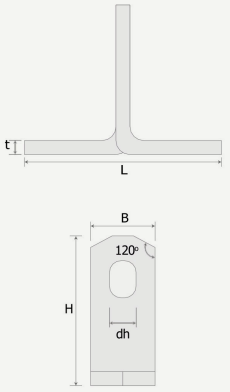
MATERIALS & FINISHES

Version	Material	Standard
PF-EZ	S355J2+N, electro-zinc plated	EN 10025

Also available plain (PF), hot-dip galvanized (-HD) and stainless steel (-SS).

RECOMMENDED FOR

Slab · Balcony · Thin elements



DIMENSIONS [MM]

Anchor	H	B	dh	t	L
PF 0.7	65	30	14	5	70
PF 1.4	65	30	14	6	70
PF 2.0	70	30	14	8	80
PF 2.5	75	30	14	10	94
PF 3.0	90	40	18	10	100
PF 4.0	110	40	18	12	100
PF 5.0	125	40	18	15	105
PF 7.5	170	60	26	16	120
PF 10.0	200	60	26	20	120
PF 12.5	220	80	35	16	200
PF 17.0	270	80	35	20	200
PF 22.0	310	80	35	28	200

SWL [KN]

Anchor	β 0–30°
PF 0.7	7.0
PF 1.4	14.0
PF 2.0	20.0
PF 2.5	25.0
PF 3.0	30.0
PF 4.0	40.0
PF 5.0	50.0
PF 7.5	75.0
PF 10.0	100.0
PF 12.5	125.0
PF 17.0	170.0
PF 22.0	220.0

Order example: **PF 2.5-EZ** · Use with PC ring clutch and PR recess former of the same load group (p. 32) · Edge distances and additional reinforcement: see the MaxTech technical manual.

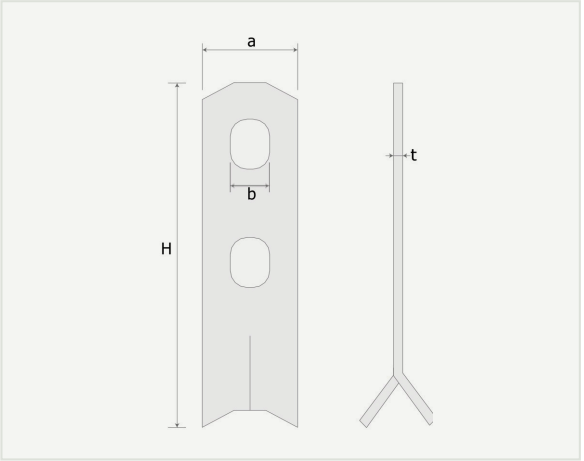
PB

Plate anchor with split end

Two-hole plate anchor whose end is split and the halves bent apart for extra anchorage. Supplied in a range of lengths per load group to suit the element – from 1.4 to 22 t.



PB



MATERIALS & FINISHES

Version	Material	Standard
PB-EZ	S355J2+N, electro-zinc plated	EN 10025

Also available plain (PB), hot-dip galvanized (-HD) and stainless steel (-SS).

RECOMMENDED FOR

Wall · Column · TT slabs · Beam

DIMENSIONS [MM]

Anchor	H (range)	a	b	t
PB 1.4	110 – 210	30	14	6
PB 2.5	150 – 250	30	14	10
PB 3.0	160 – 280	40	18	10
PB 4.0	180 – 320	40	18	12
PB 5.0	180 – 400	40	18	15
PB 7.5	260 – 420	60	26	15
PB 10.0	300 – 520	60	26	20
PB 14.0	370 – 460	80	35	20
PB 22.0	500 – 620	80	35	26

SWL IN WALL [KN]

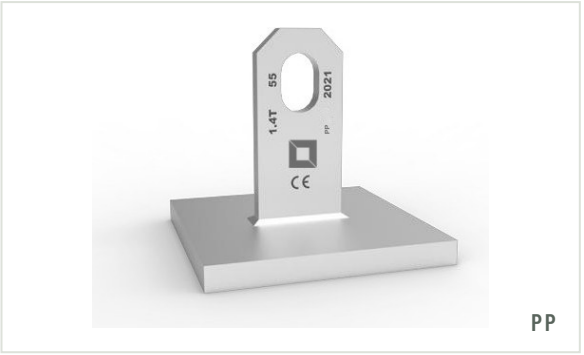
Anchor	β 0–45°	γ 0–10°	γ 10–90°
PB 1.4	14.0	14.0	7.0
PB 2.5	25.0	25.0	12.5
PB 3.0	30.0	30.0	15.0
PB 4.0	40.0	40.0	20.0
PB 5.0	50.0	50.0	25.0
PB 7.5	75.0	75.0	37.5
PB 10.0	100.0	100.0	50.0
PB 14.0	140.0	140.0	70.0
PB 22.0	220.0	220.0	110.0

Order example: **PB 4.0-250-EZ** (load group – length H) · Use with PC ring clutch and PR recess former of the same load group (p. 32) · Edge distances: see the MaxTech technical manual.

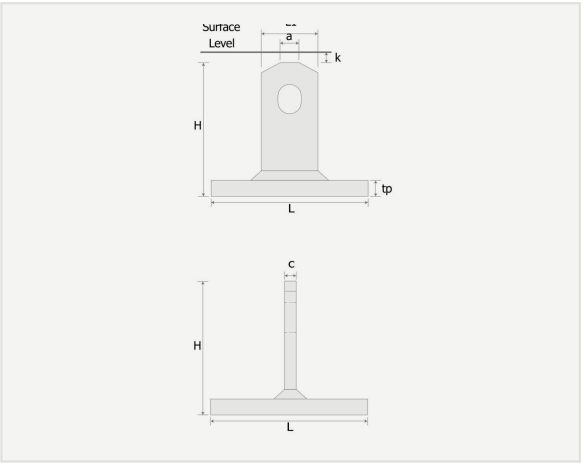
PP

Base plate anchor

Short lifting plate welded onto a wide base plate. The base plate distributes the load over a large area, so very thin elements such as slabs and balconies can be lifted with minimal embedment.



PP



MATERIALS & FINISHES

Version	Material	Standard
PP-EZ	S355J2+N, electro-zinc plated	EN 10025

Also available plain (PP), hot-dip galvanized (-HD) and stainless steel (-SS).

RECOMMENDED FOR

Thin elements · Slab · Balcony

DIMENSIONS [MM] AND SAFE WORKING LOAD [KN]

	Dimensions [mm]							SWL [kN]
Anchor	H	L1	a	c	tp	L	k	β 0–45°, γ 0–10°
PP 1.4	55	30	8.5	6	8	80	10	14.0
PP 2.5	80	30	8.5	10	8	80	10	25.0
PP 5.0	120	40	12.0	15	10	100	10	50.0
PP 10.0	160	60	17.5	20	12	140	15	100.0

c = thickness of the lifting plate · tp = thickness of the base plate · k = cover from concrete surface.



TYPICAL USE

- Lifting thin slabs and balcony elements from the mould
- Small embedment – the base plate sits close to the bottom reinforcement
- Recess former PR keeps the lifting plate free for the ring clutch

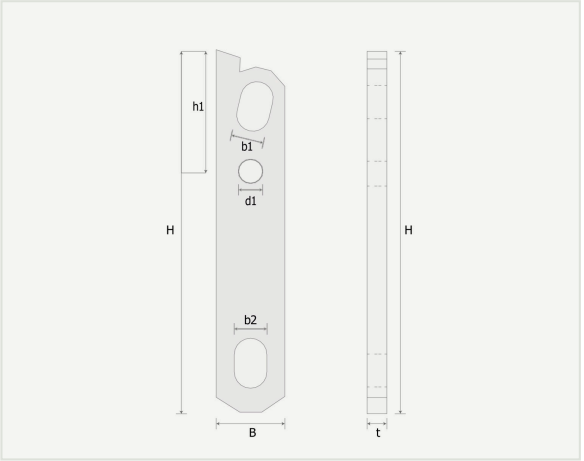
Order example: **PP 2.5-EZ** · Use with PC ring clutch and PR recess former of the same load group (p. 32) · Edge distances and additional reinforcement: see the MaxTech technical manual.

PS

Sandwich panel plate anchor

Long, slim plate anchor for the load-bearing leaf of sandwich wall panels. A lifting slot at the top, an anchorage hole and a lower slot for cross bars transfer the load deep into the inner leaf.


PS



MATERIALS & FINISHES

Version	Material	Standard
PS-EZ	S355J2+N, electro-zinc plated	EN 10025

Also available plain (PS), hot-dip galvanized (-HD) and stainless steel (-SS).

RECOMMENDED FOR

Sandwich panels

DIMENSIONS [MM] AND SAFE WORKING LOAD [KN]

	Dimensions [mm]							SWL in wall [kN]
Anchor	H	B	t	h1	b1	d1	b2	β 0–45°
PS 2.5	250	40	10	72	14	14	18	25.0
PS 5.0	300	60	16	92	18	17.5	26	50.0
PS 7.5	350	80	16	123	26	25	46	75.0
PS 10.0	350	80	20	123	26	26	35	100.0

t = plate thickness.



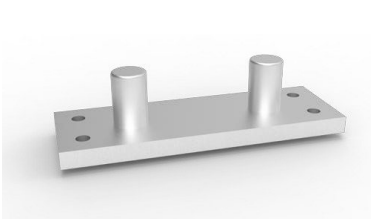
INSTALLATION NOTES

- Place the anchor in the load-bearing (inner) leaf of the panel
- Pass the cross bars through the anchorage hole and lower slot
- Use the PR recess former and PC ring clutch of the same load group

Order example: **PS 5.0-EZ** · Accessories on page 32 · Cross bars, edge distances and additional reinforcement: see the MaxTech technical manual.



PC



PH



PR

PC

Ring clutch

Quick-connect lifting key for all MaxTech plate anchors, for loads from 1.3 to 26 t.

Clutch	Load group [t]
PC 2.5	2.5
PC 5.0	5.0
PC 10.0	10.0
PC 26.0	26.0

PH

Holding plate

Fixes the recess former and anchor to the formwork in the correct position during casting.

Plate	Load group [t]
PH 2.5	2.5
PH 5.0	5.0
PH 10.0	10.0
PH 26.0	26.0

PR

Rubber recess former

Reusable two-part rubber former that clamps around the anchor head.

Former	Load group [t]
PR 1.3	1.3
PR 2.5	2.5
PR 5.0	5.0
PR 7.5	7.5
PR 10.0	10.0
PR 26.0	26.0

HOW THE SYSTEM WORKS

1

Position. Clamp the recess former around the anchor head and fix it to the mould with the holding plate.

2

Cast & strip. After casting, remove the former – a clean recess remains around the anchor head.

3

Lift. Insert the ring clutch of the same load group into the recess, close it and lift in any direction.

SYSTEM RULE Anchor, recess former, holding plate and ring clutch must belong to the same load group. Inspect clutches regularly and withdraw damaged parts.

04

WIRE LOOP LIFTING



WR Wire rope lifting loop

Cast-in loops of high-strength steel wire rope for a wide range of precast elements. Each loop carries a colour-coded tag with its load class and batch number. No lifting clutch is needed – a smooth transition from production to installation.

IN THIS SECTION

WR	Wire rope lifting loop – materials & dimensions	34
WR	Wire rope lifting loop – safe working loads	35

8 – 250
kN load classes

1770
MPa min. wire strength

15
standard sizes

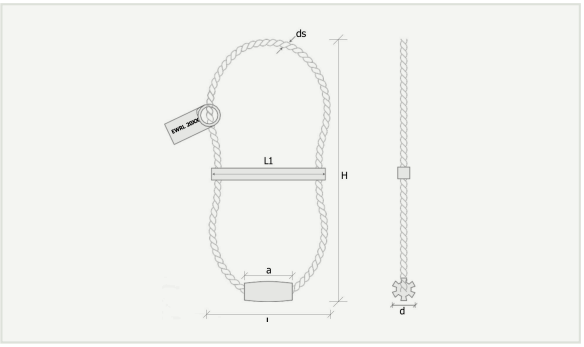
WR

Wire rope lifting loop

Steel wire rope loop with a pressed ferrule, a positioning belt and a tag showing load class and batch number. Cast in directly – the crane hook goes straight into the loop. Load classes 8 to 250 kN.



WR



MATERIALS

Part	Material	Standard
Wire rope	High-strength steel wire, min. 1770 MPa	EN 12385-4
Ferrule	Alloy	EN 13411-3
Belt	Polypropylene	–
Data ring / tag	Metal	–

DIMENSIONS [MM]

Loop	Load class [kN]	H	L	ds	L1	a	a1	d	Tol. d	Cut length
WR 8	8	200	85	6	65	27	5	12	+0.15	505
WR 12	12	225	90	7	70	32	5	14	+0.15	565
WR 16	16	245	100	8	70	36	5	16	+0.15	605
WR 20	20	265	125	9	95	40	5	18	+0.15	665
WR 20L	20	900	270	9	180	44	10	20	+0.15	2130
WR 25	25	285	140	10	115	45	5	20	+0.20	760
WR 40	40	345	160	12	130	54	5	24	+0.20	900
WR 52	52	390	180	14	160	63	5	28	+0.30	990
WR 63	63	415	210	16	180	72	5	32	+0.30	1100
WR 80	80	460	220	18	170	100	15	36	+0.40	1250
WR 100	100	510	250	20	180	90	10	40	+0.40	1280
WR 125	125	570	280	22	225	99	10	44	+0.40	1430
WR 160	160	640	295	24	240	108	10	48	+0.50	1550
WR 200	200	715	320	28	260	117	10	56	+0.50	1800
WR 250	250	800	380	30	300	126	10	60	+0.50	1800

Wire rope 6×19 IWRC with diameter ds · a = ferrule length · d = ferrule diameter (tolerance –0.00) · Safe working loads on page 35.

Order example: **WR 40** · Edge distances and additional reinforcement: see the MaxTech technical manual.

WR Safe working load [kN]

Loop	β 0–45°, γ 0–12.5°		
	C12/15	C16/20	C20/25
WR 8	4.9	5.9	6.9
WR 12	12.0	12.0	12.0
WR 16	15.9	16.0	16.0
WR 20	19.4	20.0	20.0
WR 20L	20.0	20.0	20.0
WR 25	23.2	25.0	25.0
WR 40	33.7	40.0	40.0
WR 52	44.4	52.0	52.0
WR 63	54.4	63.0	63.0
WR 80	67.3	80.0	80.0
WR 100	82.9	100.0	100.0
WR 125	101.9	123.5	125.0
WR 160	124.9	151.3	160.0
WR 200	162.8	197.2	200.0
WR 250	195.1	236.4	250.0

Concrete class = strength at the time of lifting.



WR

GOOD PRACTICE

- Check the tag for load class and batch before casting
- Position the loop with the belt as shown in the technical manual
- Do not use loops with kinked, broken or corroded wires
- Seat the crane hook fully in the loop before lifting

Embedment, edge distances and additional reinforcement: see the MaxTech technical manual.

05

WIRE LOOP BOXES



WB Wire loop box, Ø6 / Ø8 wire



WBS Slim wire loop box, Ø5 wire



WB9 Heavy wire loop box, Ø9 wire

3
PRODUCTS
Pages 37-39

Ready-made connections between precast walls and columns. A galvanized steel box holds a folded wire rope loop behind protective tape; fixed to the mould with magnets, the box is opened after casting and the loop folded out to join the next element.

IN THIS SECTION

WB	Wire loop box, Ø6 / Ø8 wire	37	**WB9**	Heavy wire loop box, Ø9 wire	39
WBS	Slim wire loop box, Ø5 wire	38			





Standard loop lengths 60, 80, 100, 120 and 140 mm. Shear resistances are given for the complete joint, by number of boxes and concrete class.

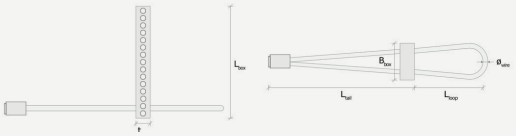
WB

Wire loop box

Standard wire loop box for wall-to-wall and wall-to-column joints. Galvanized steel box with a folded Ø6 or Ø8 mm wire rope loop, protected by tape until the formwork is stripped.



WB



MATERIALS

Part	Material	Standard
Box	Galvanized steel plate 0.5 – 0.7 mm	EN 10130, 1.0330
Ferrule	Steel compression sleeve 012-L25 / 018-L40	EN 10025
Wire rope	Ø6 or Ø8 mm 6×19 IWRC, 1770 MPa, zinc coated	EN 12385
Tape	Duct tape	–

DIMENSIONS [MM]

Box	L box	L loop	L tail	B box	t box	Ø wire
WB 60	160	60	190	55	20	6
WB 80	160	80	190	55	20	6
WB 100	160	100	190	55	20	6
WB 120	160	120	190	55	20	6
WB 140	200	140	350	75	30	8

SHEAR RESISTANCE OF THE JOINT [KN] BY NUMBER OF BOXES AND CONCRETE CLASS

	WB 60 ... 120					WB 140				
Boxes	C30/37	C35/45	C40/50	C45/55	C50/60	C30/37	C35/45	C40/50	C45/55	C50/60
2	41.1	46.2	51.1	55.1	58.3	76.6	82.7	88.6	94.4	100.1
3	61.7	69.2	76.6	82.7	87.4	114.9	124.0	132.8	141.5	150.1
4	82.3	92.3	102.2	110.3	116.6	153.2	165.3	177.1	188.7	200.1
5	102.9	115.4	127.7	137.9	145.7	191.5	206.6	221.4	235.9	250.2
6	123.4	138.5	153.2	165.4	174.8	229.8	248.0	265.7	283.1	300.2
7	144.0	161.5	178.8	192.6	203.4	268.1	289.3	309.9	330.2	350.3
8	164.6	184.6	201.4	214.3	226.7	306.5	330.6	354.2	377.4	400.3
9	185.1	206.1	221.1	235.5	249.5	342.5	371.4	398.5	424.6	450.3
10	205.7	223.8	240.4	256.4	272.0	371.5	403.5	434.3	464.2	493.2

Order example: **WB 100** · Joint grout, edge distances and reinforcement: see the MaxTech technical manual.

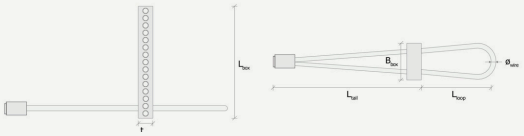
WBS

Slim wire loop box

Narrow wire loop box with a Ø5 mm wire rope loop for thin walls and light joints. Same box length for all loop sizes – quick to place along the joint.



WBS



MATERIALS

Part	Material	Standard
Box	Galvanized steel plate 0.5 mm	EN 10130, 1.0330
Ferrule	Steel compression sleeve 016-L28	EN 10025
Wire rope	Ø5 mm 6×7 IWRC, 1770 MPa, zinc coated	EN 12385
Tape	Duct tape	–

DIMENSIONS [MM]

Box	L box	L loop	L tail	B box	t box	Ø wire
WBS 60	160	60	150	36	20	5
WBS 80	160	80	150	36	20	5
WBS 100	160	100	150	36	20	5
WBS 120	160	120	150	36	20	5
WBS 140	160	140	150	36	20	5

SHEAR RESISTANCE OF THE JOINT [KN], WBS 60 ... 140

Boxes	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
4	22.53	23.64	24.69	25.70	26.66	27.59
5	26.00	27.12	28.17	29.18	30.14	31.07
6	29.48	30.60	31.65	32.65	33.62	34.55
7	32.96	34.07	35.13	36.13	37.10	38.02
8	36.44	37.55	38.61	39.61	40.57	41.50
9	39.92	41.03	42.08	43.09	44.05	44.98
10	43.40	44.51	45.56	46.57	47.53	48.46
11	46.87	47.99	49.04	50.05	51.01	51.94
12	50.35	51.47	52.52	53.52	54.49	55.41

Order example: **WBS 80** · Joint grout, edge distances and reinforcement: see the MaxTech technical manual.

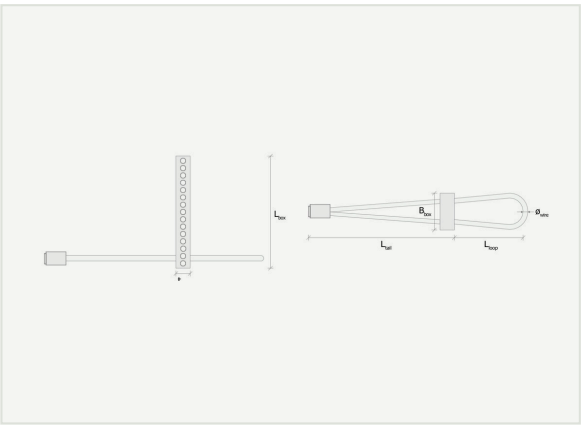
WB9

Heavy wire loop box

Wire loop box with a 9 mm, grade 1770 wire rope loop for joints with higher tension and shear demands. Deep 30 mm box and long 250 mm tail for full anchorage.



WB9



MATERIALS

Part	Material	Standard
Box	Galvanized metal sheet	JIS G3302
Ferrule	Alloyed steel	EN 13411-3
Wire rope	9×19 IWRC steel wire rope, grade 1770	EN 12385-2
Tape	Duct tape	–

DIMENSIONS [MM]

Box	L box	L loop	L tail	B box	t box	Ø wire
WB9 80	120	80	250	60	30	9
WB9 100	160	100	250	60	30	9
WB9 120	160	120	250	60	30	9
WB9 140	200	140	250	60	30	9

DESIGN RESISTANCE PER BOX [KN] – TENSION N_{RD}, WALL ≥ 150 MM

Box	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
WB9 80	22.17	26.27	30.20	34.09	37.94	41.77
WB9 100	22.30	26.27	30.20	34.09	37.94	41.77
WB9 120	22.30	26.27	30.20	34.09	37.94	41.77
WB9 140	22.30	26.27	30.20	34.09	37.94	41.77

DESIGN RESISTANCE PER BOX [KN] – SHEAR F_{RD}, WALL 150 MM

Box	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
WB9 80 … 140	30.12	35.34	40.30	44.98	49.40	53.55

Order example: **WB9 120** · Joint grout, edge distances and reinforcement: see the MaxTech technical manual.

06

FIXING INSERTS



FP Cross-pin fixing insert



FF Flat-end fixing insert

Cast-in threaded sockets for the temporary propping of precast walls and other elements, and for fixing building components. Sizes M6 to M30, in electro-zinc plated, stainless and acid-resistant steel.

IN THIS SECTION

FP	Cross-pin fixing insert – dimensions	41
FP	Cross-pin fixing insert – resistances	42
FF	Flat-end fixing insert	43





Use the matching KM socket magnet (p. 60) to fix inserts to steel formwork quickly and in the exact position.

FP

Cross-pin fixing insert

Threaded steel socket with a cross pin for anchorage. For props and braces of wall panels during erection and for permanent fixings. Sizes M10 to M24.



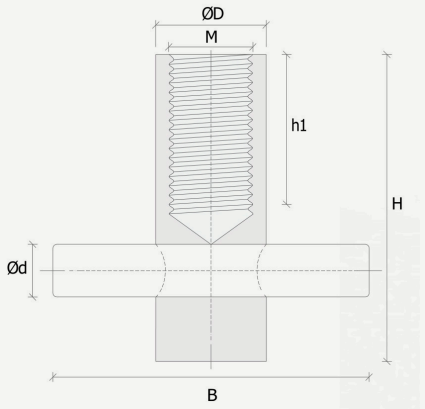
FP

MATERIALS & FINISHES

Part / version	Material	Standard
FP-EZ socket	S355J0, electro-zinc plated	EN 10025
FP-SS socket	1.4301 stainless steel	EN 10088
Cross pin	S355J0, electro-zinc plated	EN 10025

TYPICAL USE

Wall propping · Braces · Fixings



DIMENSIONS [MM]

Insert	M	H	h1	ØD	Ød	B
FP M10×45	10	45	20	15	6	50
FP M10×50	10	50	20	15	8	60
FP M10×60	10	60	20	15	8	60
FP M12×50	12	50	24	18	8	60
FP M12×70	12	70	24	18	10	75
FP M16×50	16	50	28	24	8	60
FP M16×70	16	70	32	24	10	75
FP M16×90	16	90	32	24	10	75
FP M20×100	20	100	35	28	12	85
FP M24×120	24	120	45	34	15	110
FP M24×150	24	150	45	34	15	110

ØD = socket diameter · Ød = cross pin diameter · B = cross pin length · Tension and shear resistances on page 42.

Order example: **FP M16×70-EZ** · Edge distances and additional reinforcement: see the MaxTech technical manual.

FP Design resistances [kN] by concrete class

TENSION N

Insert	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50
FP M10×45	3.35	3.74	4.19	4.59	4.95	5.30
FP M10×50	3.48	3.89	4.34	4.76	5.14	5.49
FP M10×60	4.13	5.17	5.97	6.54	7.07	7.56
FP M12×50	3.48	3.89	4.34	4.76	5.14	5.49
FP M12×70	6.18	6.94	7.76	8.50	9.18	9.81
FP M16×50	3.48	3.89	4.34	4.76	5.14	5.49
FP M16×70	6.84	7.64	8.55	9.36	10.11	10.81
FP M16×90	11.32	12.66	14.16	15.51	15.75	17.91
FP M20×100	11.19	12.51	13.99	15.32	15.55	17.69
FP M24×120	15.86	17.73	19.82	21.72	23.46	25.08
FP M24×150	27.02	30.21	33.77	36.99	39.96	42.72

SHEAR V

Insert	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50
FP M10×45	5.02	5.62	6.28	6.88	7.43	7.94
FP M10×50	5.21	5.83	6.52	7.14	7.71	8.24
FP M10×60	7.17	8.02	8.96	9.82	10.60	11.34
FP M12×50	5.21	5.83	6.52	7.14	7.71	8.24
FP M12×70	9.31	10.41	11.64	12.75	13.77	14.72
FP M16×50	5.21	5.83	6.52	7.14	7.71	8.24
FP M16×70	10.26	11.47	12.82	14.04	15.17	16.22
FP M16×90	16.99	18.99	21.23	23.26	25.12	26.82
FP M20×100	16.78	18.76	20.98	22.98	24.82	26.54
FP M24×120	23.79	26.60	29.74	32.57	35.18	37.16
FP M24×150	40.52	45.31	50.66	55.49	59.94	64.07

NOTE Values apply to a single insert. Combined tension and shear, edge distances and group effects: see the MaxTech technical manual.

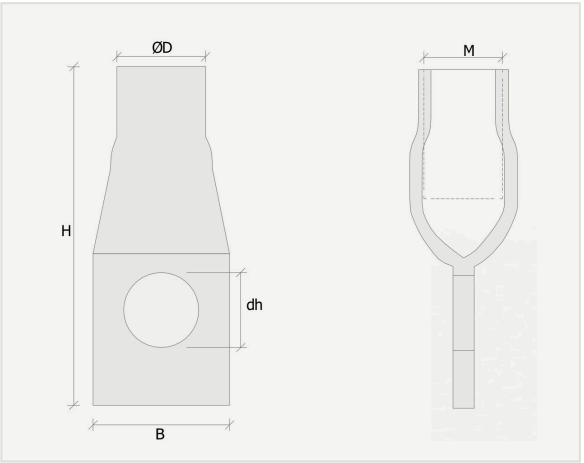
FF

Flat-end fixing insert

One-piece threaded insert whose end is pressed flat and pierced with a hole for a cross bar. Slim and economical – from M6 for light fixings up to M30 for props and heavy brackets.



FF



MATERIALS & FINISHES

Version	Material	Standard
FF-EZ	S355J0, electro-zinc plated	EN 10025
FF-SS	1.4301 stainless steel	EN 10088
FF-AR	1.4401 acid-resistant steel	EN 10088

TYPICAL USE

Wall propping · Façade fixings · Brackets

DIMENSIONS [MM] AND DESIGN RESISTANCES [KN]

	Dimensions [mm]						Design resistance [kN]	
Insert	M	H	h1	ØD	B	dh	Axial pull F_{Rd}	Shear V_{Rd}
FF M6×35	6	35	5	8.5	13	6.3	2.6	1.47
FF M6×40	6	40	5	8.5	13	6.3	2.6	1.47
FF M6×50	6	50	5	8.5	13	6.3	2.6	1.47
FF M8×40	8	40	8	12	17	8.3	4.3	2.39
FF M10×45	10	45	9	14	20	10.3	4.8	2.67
FF M10×57	10	57	9	15	21	10.3	6.3	3.53
FF M12×55	12	55	11	17	24	12.1	7.8	4.36
FF M12×65	12	65	11	17	24	12.1	7.8	4.36
FF M16×80	16	80	15	22	32	12.1	18.2	10.22
FF M16×100	16	100	15	22	32	12.1	18.2	10.22
FF M20×95	20	95	17	28	40	14.2	25.3	14.19
FF M20×100	20	100	17	28	40	14.2	25.3	14.19
FF M20×120	20	120	17	28	40	14.2	25.3	14.19
FF M24×120	24	120	20	32	46	14.2	36.4	20.41
FF M30×150	30	150	28	40	57	16.0	67.0	32.21

dh = diameter of the cross-bar hole.

Order example: **FF M12×55-SS** · Edge distances and additional reinforcement: see the MaxTech technical manual.

MAXTECH
PRECAST TOOLS AND ADHESIVES

07
BOLTED CONNECTIONS



AB-L Anchor bolt with anchor plate



AB-P Anchor bolt, long bond type



HB-L High-strength bolt with plate



HB-P High-strength bolt, long bond type



CS Column shoe



WS Wall shoe, normal capacity



WSH Wall shoe, high capacity

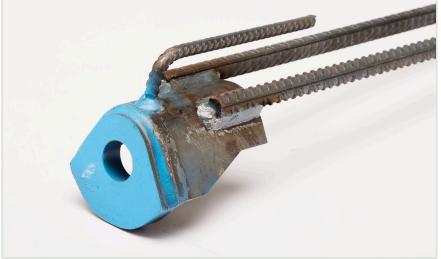
7
PRODUCTS
Pages 45–51

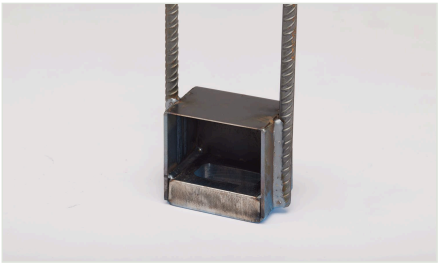
Fast, secure connections between column and foundation, column and column or wall and wall. Anchor bolts cast into the lower element take the column shoes or wall shoes cast into the upper element – for warehouses, industrial and residential buildings.

IN THIS SECTION

AB-L	Anchor bolt with anchor plate	45	**CS**	Column shoe	49
AB-P	Anchor bolt, long bond type	46	**WS**	Wall shoe, normal capacity	50
HB-L	High-strength bolt with plate	47	**WSH**	Wall shoe, high capacity	51
HB-P	High-strength bolt, long bond type	48			





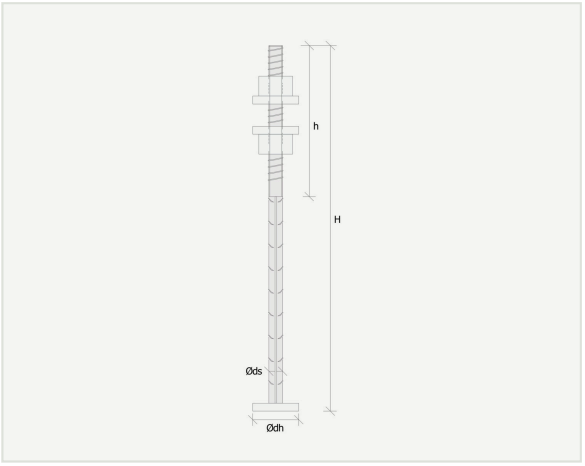


AB-L

Anchor bolt with anchor plate

Ribbed bar with a rolled thread, nuts and washers, and a round anchor plate at the end for short anchorage. Cast into foundations or lower elements to bolt column shoes and wall shoes. M16 to M39.


AB-L



MATERIALS

Component	Material	Standard
Ribbed bar	B500B	EN 10080:2006
Washers	S355J2+N	EN 10025-2:2019
Nuts	Class 8	ISO 4032:2023
Anchor plate	S355J2+N	EN 10025-2:2019

DIMENSIONS [MM]

Bolt	H	h	Ødh
AB-L M16	280	140	16	36
AB-L M20	350	140	20	46
AB-L M24	430	170	25	55
AB-L M30	500	190	32	70
AB-L M39	700	200	40	90

RESISTANCE [KN] – ONLY ONE FORCE ACTING

	Installation		Final stage	
Bolt	$N_{Rd0,s}$	$V_{Rd0,s}$	$N_{Rd0,s}$	$V_{Rd0,s}$
M16	62	4	62	20
M20	97	8	97	31
M24	140	12.5	140	45
M30	220	24	220	71
M39	385	39	385	125

USE WITH **CS** column shoe (p. 49) and **WS** wall shoe (p. 50) of the same thread size. Installation stage = before grouting; final stage = after the joint has been grouted.

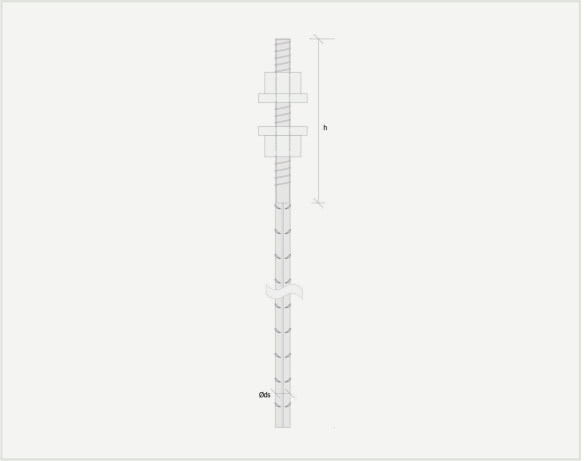
Order example: **AB-L M24** · Supplied with nuts and washers · Edge distances and reinforcement: see the MaxTech technical manual.

AB-P

Anchor bolt, long bond type

Long ribbed bar with rolled thread, nuts and washers. Anchored by bond along its length – for connections where the bolt laps with the main reinforcement of the foundation, column or wall. M16 to M39.


AB-P



MATERIALS

Component	Material	Standard
Ribbed bar	B500B	EN 10080:2006
Washers	S355J2+N	EN 10025-2:2019
Nuts	Class 8	ISO 4032:2023

DIMENSIONS [MM]

Bolt	H	h	Øds
AB-P M16	810	140	16
AB-P M20	960	140	20
AB-P M24	1160	170	25
AB-P M30	1460	190	32
AB-P M39	2000	200	40

RESISTANCE [KN] – ONLY ONE FORCE ACTING

	Installation		Final stage	
Bolt	$N_{Rd0,s}$	$V_{Rd0,s}$	$N_{Rd0,s}$	$V_{Rd0,s}$
M16	62	4	62	20
M20	97	8	97	31
M24	140	12.5	140	45
M30	220	24	220	71
M39	385	39	385	125

USE WITH **CS** column shoe (p. 49) and **WS** wall shoe (p. 50) of the same thread size. Resistances are the same as for AB-L.

Order example: **AB-P M30** · Lap length, edge distances and reinforcement: see the MaxTech technical manual.

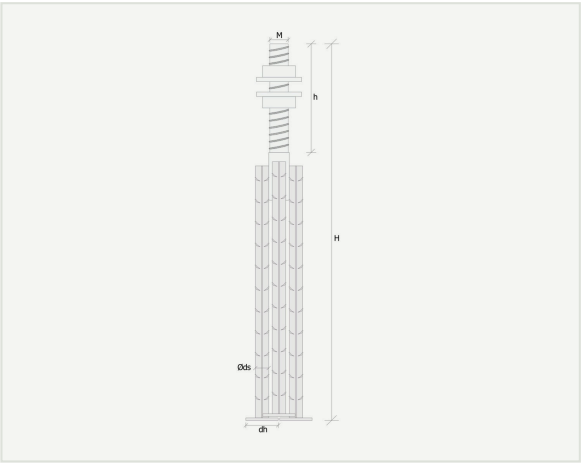
HB-L

High-strength anchor bolt with plate

High-strength threaded bar combined with a bundle of 2 to 4 ribbed bars and an anchor plate. For heavy columns and high-capacity wall shoes. M30 to M60.



HB-L



MATERIALS

Component	Material	Standard
Threaded bar	High-strength steel, $f_{yk} \geq 640$ MPa, $f_{uk} \geq 800$ MPa	EN 10027-1, ISO 898-1
Ribbed bars	B500B	EN 10080:2006
Washers	S355J2+N	EN 10025-2:2019
Nuts	Class 10	ISO 4032:2023
Anchor plate	S355J2+N	EN 10025-2:2019

DIMENSIONS [MM]

Bolt	H	h	Øds	dh
HB-L M30	670	190	2 × 25	55
HB-L M36	740	190	4 × 20	46
HB-L M39	880	200	3 × 25	55
HB-L M45	980	220	4 × 25	55
HB-L M52	1140	250	4 × 32	70
HB-L M60	1330	310	4 × 32	70

Øds = number × diameter of the ribbed bars.

RESISTANCE [KN] – ONLY ONE FORCE ACTING

Bolt	Installation		Final stage	
	$N_{Rd0,s}$	$V_{Rd0,s}$	$N_{Rd0,s}$	$V_{Rd0,s}$
M30	299	32	299	71
M36	435	50	435	103
M39	520	59	520	124
M45	695	82	695	165
M52	938	119	938	219
M60	1260	162	1260	225

USE WITH **WSH** high-capacity wall shoe (p. 51) of the same thread size, and heavy column connections.

Order example: **HB-L M39** · Edge distances and reinforcement: see the MaxTech technical manual.

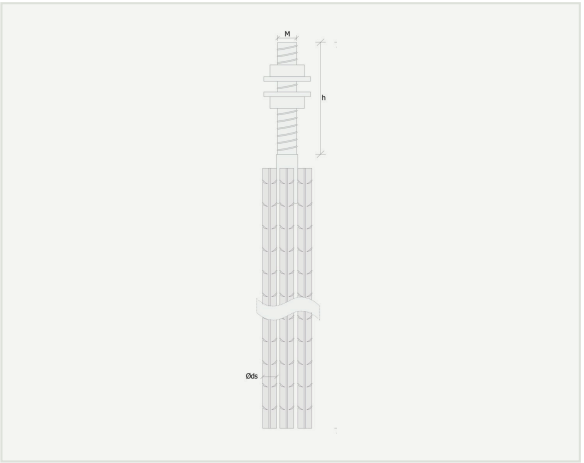
HB-P

High-strength anchor bolt, long bond type

High-strength threaded bar combined with a long bundle of 2 to 4 ribbed bars, anchored by bond. For heavy column and wall connections where the bolt laps with the main reinforcement. M30 to M60.



HB-P



MATERIALS

Component	Material	Standard
Threaded bar	High-strength steel, $f_{yk} \geq 640$ MPa, $f_{uk} \geq 800$ MPa	EN 10027-1, ISO 898-1
Ribbed bars	B500B	EN 10080:2006
Washers	S355J2+N	EN 10025-2:2019
Nuts	Class 10	ISO 4032:2023

DIMENSIONS [MM]

Bolt	H	h	Øds
HB-P M30	1705	190	2 × 25
HB-P M36	1370	190	4 × 20
HB-P M39	1710	200	3 × 25
HB-P M45	1720	220	4 × 25
HB-P M52	1860	250	4 × 32
HB-P M60	2390	310	4 × 32

Øds = number × diameter of the ribbed bars.

RESISTANCE [KN] – ONLY ONE FORCE ACTING

	Installation		Final stage	
Bolt	$N_{Rd0,s}$	$V_{Rd0,s}$	$N_{Rd0,s}$	$V_{Rd0,s}$
M30	299	32	299	71
M36	435	50	435	103
M39	520	59	520	124
M45	695	82	695	165
M52	938	119	938	219
M60	1260	162	1260	225

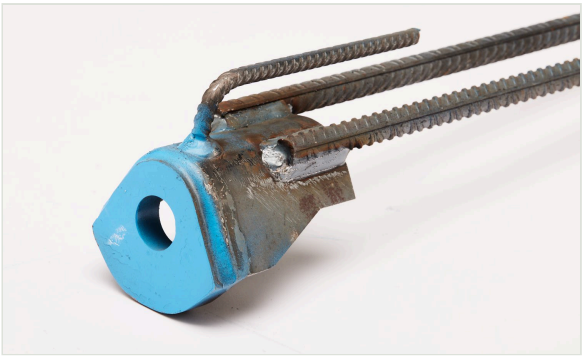
USE WITH **WSH** high-capacity wall shoe (p. 51) of the same thread size. Resistances are the same as for HB-L.

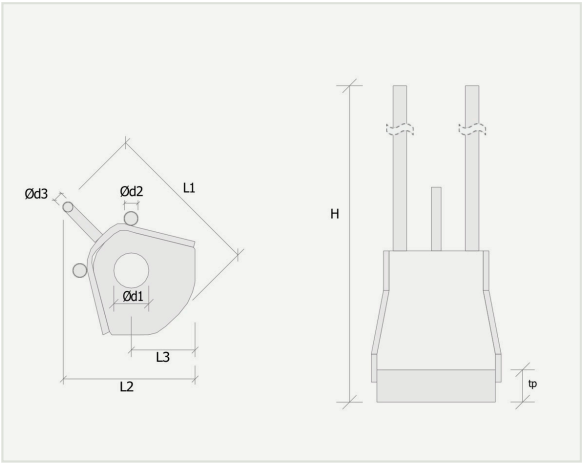
Order example: **HB-P M45** · Lap length, edge distances and reinforcement: see the MaxTech technical manual.

CS

Column shoe

Steel shoe with welded ribbed bars, cast into the corners of a precast column. Bolted onto AB anchor bolts, it gives a rigid, moment-resisting column-to-foundation or column-to-column joint that can be adjusted on site. M16 to M39.





MATERIALS

Part	Material	Standard
Ribbed bars	B500B	EN 10080:2006
Plates	S355J2+N	EN 10025-2:2019



CS

DIMENSIONS [MM] AND WEIGHT

Shoe	H	L1	L2	L3	Ød1	Ød2	Ød3	tp	Weight [kg]
CS M16	597	124	104	50	28	12	8	15	2.3
CS M20	820	130	108	50	31	16	10	20	4.2
CS M24	1185	140	116	50	35	16	12	30	6.7
CS M30	1390	169	137	50	40	20	16	45	12.2
CS M39	1910	221	177	60	55	25	20	50	26.7

RESISTANCE [KN] AT ERECTION AND FINAL STAGE

	Erection stage		Final stage		
Shoe	$N_{Ed0,s}$	$V_{Ed0,s}$	$N_{Ed,s}$	$V_{Ed,s}$	Lever arm l_s [mm]
CS M16	62	4	62	20	66
CS M20	97	8	97	31	70
CS M24	139	12.5	139	45	74
CS M30	222	24	222	71	80
CS M39	385	39	385	125	100

Order example: **CS M24** · Use with AB-L / AB-P anchor bolts of the same thread (p. 39–40) · Edge distances and reinforcement: see the MaxTech technical manual.

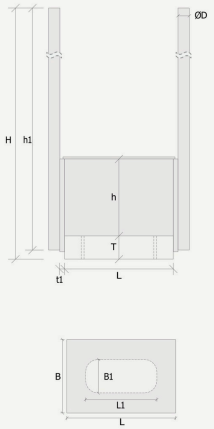
WS

Wall shoe, normal capacity

Compact steel box shoe with two welded ribbed bars, cast into the base of a precast wall. Bolted onto AB anchor bolts for fast wall-to-foundation and wall-to-wall connections. M16 to M39.



WS



MATERIALS

Part	Material	Standard
Ribbed bars	B500B	EN 10080:2006
Plates	S355J2+N	EN 10025-2:2019

RESISTANCE $N_{RD,S}$ [KN]

Shoe	Anchor bolt	$N_{Rd,s}$
WS M16	M16	62
WS M20	M20	97
WS M24	M24	139
WS M30	M30	222
WS M39	M39	386

DIMENSIONS [MM]

Shoe	L	B	H	T	L1	B1	h	h1	t1	ØD
WS M16	119	80	630	30	76	36	80	620	5	12
WS M20	124	90	800	35	80	40	90	750	5	16
WS M24	129	110	965	35	84	49	105	950	6	20
WS M30	144	120	1130	40	90	55	115	1160	6	25
WS M39	165	145	1600	50	99	64	140	1580	10	32

L × B = base plate · L1 × B1 = bolt slot · T = base plate thickness · ØD = diameter of the ribbed bars.

Order example: **WS M20** · Use with AB-L / AB-P anchor bolts of the same thread (p. 39–40) · Edge distances and reinforcement: see the MaxTech technical manual.

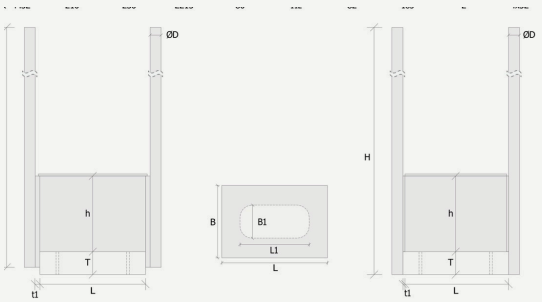
WSH

Wall shoe, high capacity

Heavy wall shoe with two or four welded ribbed bars for high tension forces – shear walls, stability cores and tall wall elements. Bolted onto HB high-strength anchor bolts. M30 to M52.



WSH



MATERIALS

Part	Material	Standard
Ribbed bars	B500B	EN 10080:2006
Plates	S355J2+N	EN 10025-2:2019

RESISTANCE $N_{RD,S}$ [KN]

Shoe	Anchor bolt	$N_{Rd,s}$
WSH M30	M30	299
WSH M36	M36	435
WSH M39	M39	520
WSH M45	M45	696
WSH M52	M52	937

DIMENSIONS [MM]

Shoe	L	B	H	T	L1	B1	h	t1	ØD
WSH M30	145	130	1460	45	90	55	120	8	2 × 25
WSH M36	164	150	1765	55	96	61	140	10	2 × 32
WSH M39	165	150	1650	60	99	64	147	2	4 × 25
WSH M45	180	175	2015	70	105	75	162	2	4 × 32
WSH M52	210	230	2215	80	112	82	185	2	4 × 32

L × B = base plate · L1 × B1 = bolt slot · ØD = number × diameter of the ribbed bars.

Order example: **WSH M39** · Use with HB-L / HB-P anchor bolts of the same thread (p. 41–42) · Edge distances and reinforcement: see the MaxTech technical manual.

MAXTECH
PRECAST TOOLS AND ADHESIVES

08 FASTENING PLATES



EP Fastening plate with headed studs



EPH Heavy-duty fastening plate



EPR Fastening plate with rebar legs

3
PRODUCTS
Pages 53–57

Steel plates with welded anchor studs or rebar legs that transfer loads from steel structures and attachments into the concrete. Sizes from 100 × 50 to 600 × 600 mm, anchorage depths 68 to 435 mm, in black, stainless and acid-resistant steel – also made to your drawings.

IN THIS SECTION

EP	Fastening plate with headed studs	53	**EPH**	Heavy-duty fastening plate – loads	56
EP	Fastening plate – safe working loads	54	**EPR**	Fastening plate with rebar legs	57
EPH	Heavy-duty fastening plate	55			





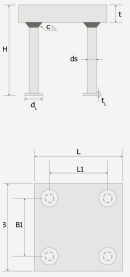


EP

Fastening plate with headed studs

Steel plate with two or four welded headed studs. Cast flush into the concrete surface for welding on steel brackets, beams, rails and other attachments.


EP



MATERIALS & VERSIONS

Version	Plate	Studs (EN ISO 13918)
EP	S355J2+N, EN 10025	SD1
EP-SS	1.4301, EN 10088	SD1
EP-AR	1.4401, EN 10088	SD1
EP-SS3	1.4301, EN 10088	SD3 (stainless)
EP-AR3	1.4401, EN 10088	SD3 (stainless)

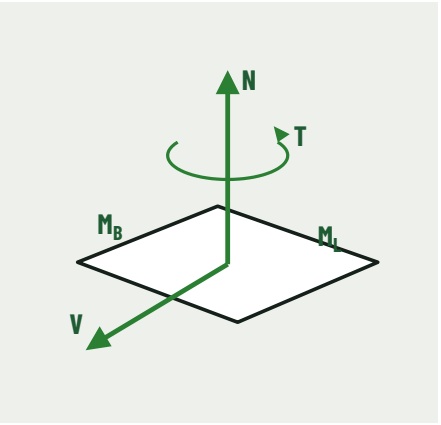
DIMENSIONS [MM]

Plate L × B – H	H	B1	L1	t	ds	dL	tL
EP 100×50-68	68	0	60	8	10	19	7
EP 100×50-108	108	0	60	8	10	19	7
EP 100×100-68	68	60	60	8	10	19	7
EP 100×100-108	108	60	60	8	10	19	7
EP 150×100-70	70	60	90	10	10	19	7
EP 150×100-110	110	60	90	10	10	19	7
EP 200×100-72	72	70	120	12	13	25	8
EP 200×100-112	112	70	120	12	13	25	8
EP 200×100-162	162	70	120	12	13	25	8
EP 300×100-165	165	60	180	15	16	32	8
EP 150×150-70	70	90	90	10	10	19	7
EP 150×150-110	110	90	90	10	10	19	7
EP 150×150-162	162	90	90	12	13	25	8
EP 200×200-72	72	120	120	12	13	25	8
EP 200×200-112	112	120	120	12	13	25	8
EP 200×200-162	162	120	120	12	16	32	8
EP 300×200-165	165	120	180	15	16	32	8
EP 250×250-165	165	170	170	15	16	32	8
EP 300×300-165	165	180	180	15	16	32	8

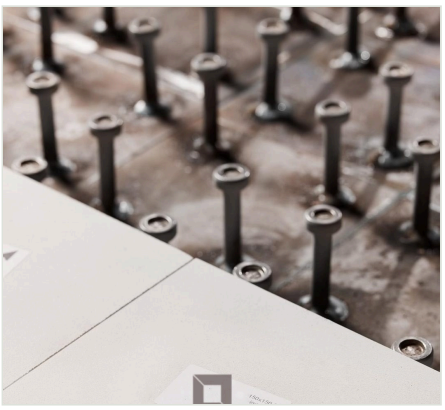
B1 = 0: single row of two studs · ds stud shaft, dL / tL stud head diameter / thickness · Safe working loads on page 54.

EP Safe working loads

Plate L × B – H	N [kN]	V [kN]	M_L [kNm]	M_B [kNm]	T [kNm]
100×50-68	12.5	25.0	0.7	0.2	0.7
100×50-108	32.0	32.5	1.8	0.5	0.9
100×100-68	16.5	33.0	0.9	0.9	1.2
100×100-108	38.0	65.5	2.3	2.3	2.5
150×100-70	19.5	39.0	1.5	1.1	1.9
150×100-110	42.0	65.5	3.7	2.6	3.3
200×100-72	23.0	46.0	2.2	1.4	3.0
200×100-112	47.0	94.5	5.2	3.1	6.2
200×100-162	75.5	111.5	8.8	5.1	7.3
300×100-165	84.0	168.0	13.8	5.5	15.4
150×150-70	21.5	43.5	1.7	1.7	2.6
150×150-110	45.5	65.5	4.1	4.1	3.9
150×150-162	74.5	111.5	6.9	6.9	6.7
200×200-72	27.5	55.0	2.7	2.7	4.4
200×200-112	53.5	107.5	6.1	6.1	8.7
200×200-162	83.0	166.0	10.1	10.1	13.5
300×200-165	93.5	168.5	15.8	11.6	17.6
250×250-165	100.0	168.5	15.0	15.0	19.7
300×300-165	103.0	168.5	17.6	17.6	20.9



- **N** – tension perpendicular to the plate
- **V** – shear in the plane of the plate
- **M_L / M_B** – bending about the L / B axis
- **T** – torsion about the plate axis



Combined actions, edge distances and additional reinforcement: see the MaxTech technical manual. Bespoke plates to your drawings on request.

EPH

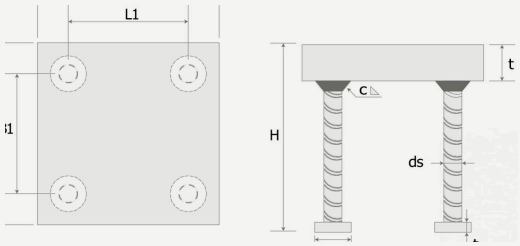
Heavy-duty fastening plate

Thick 25 – 30 mm steel plate with four long anchor bars and heads, for very high loads: crane rails, heavy steel beams, bearings and industrial attachments. Plate sizes 150 × 150 up to 600 × 600 mm, anchorage depth 220 to 435 mm.

Black steel | Stainless steel | Acid-resistant steel | Bespoke sizes



EPH



DIMENSIONS [MM]

Plate L × B – H	H	B1	L1	t	ds	dL	tL
EPH 150×150-220	220	90	90	25	16	40	6
EPH 150×150-285	285	90	90	25	16	40	6
EPH 200×150-220	220	100	120	25	20	50	8
EPH 200×150-355	355	100	120	25	20	50	8
EPH 250×150-220	220	100	190	25	20	50	8
EPH 250×150-355	355	100	190	25	20	50	8
EPH 200×200-220	220	120	120	25	20	50	8
EPH 200×200-355	355	120	120	25	20	50	8
EPH 250×200-220	220	120	190	25	20	50	8
EPH 250×200-355	355	120	190	25	20	50	8
EPH 300×200-280	280	120	200	25	25	65	10
EPH 300×200-435	435	120	200	25	25	65	10
EPH 250×250-220	220	190	190	25	20	50	8
EPH 250×250-355	355	190	190	25	20	50	8
EPH 300×300-280	280	200	200	25	25	65	10
EPH 300×300-435	435	200	200	25	25	65	10
EPH 300×500-280	280	133	200	30	25	65	10
EPH 300×500-435	435	133	200	30	25	65	10
EPH 400×400-280	280	300	300	30	25	65	10
EPH 400×400-435	435	300	300	30	25	65	10
EPH 500×500-280	280	400	400	30	25	65	10
EPH 500×500-435	435	400	400	30	25	65	10
EPH 600×600-280	280	500	500	30	25	65	10
EPH 600×600-435	435	500	500	30	25	65	10

Safe working loads on page 56.

EPH Safe working loads

Plate L × B – H	N [kN]	V [kN]	M_L [kNm]	M_B [kNm]	T [kNm]
150×150-220	112.5	143.0	10.3	10.3	8.3
150×150-285	153.5	143.0	14.1	14.1	8.3
200×150-220	116.5	229.0	11.5	14.3	17.0
200×150-355	223.5	229.0	20.6	25.8	17.0
250×150-220	127.5	236.0	12.7	20.2	24.5
250×150-355	237.0	236.0	22.7	37.9	24.5
200×200-220	120.0	235.5	15.0	15.0	19.1
200×200-355	227.5	235.5	27.8	27.8	19.1
250×200-220	131.0	239.0	16.6	21.1	26.0
250×200-355	241.5	239.0	30.3	40.1	26.0
300×200-280	177.5	355.0	23.0	33.3	40.2
300×200-435	316.5	374.5	39.8	59.8	42.4
250×250-220	143.5	249.5	23.3	23.3	32.6
250×250-355	256.0	249.5	43.3	43.3	32.6
300×300-280	193.0	386.0	37.0	37.0	53.2
300×300-435	335.0	391.5	66.0	66.0	54.0
300×500-280	380.0	742.5	77.3	155.4	81.6
300×500-435	231.0	462.5	44.9	94.0	50.8
400×400-280	233.0	404.5	58.1	58.1	84.3
400×400-435	382.0	404.5	102.9	102.9	84.3
500×500-280	277.5	411.0	82.3	82.3	114.8
500×500-435	432.0	411.0	143.4	143.4	114.8
600×600-280	325.5	415.0	109.5	109.5	145.3
600×600-435	485.5	415.0	187.6	187.6	145.3



- **N** – tension
- **V** – shear
- **M_L / M_B** – bending about the L / B axis
- **T** – torsion

See the load diagram on page 54.

Combined actions, edge distances and additional reinforcement: see the MaxTech technical manual. Bespoke plates to your drawings on request.

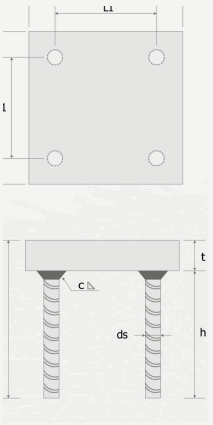
EPR

Fastening plate with rebar legs

Steel plate with two or four welded ribbed bars as anchors. The long bars anchor by bond and can be tied into the element reinforcement – for deep elements and high tension loads.



EPR



MATERIALS & VERSIONS

Version	Plate	Anchor bars
EPR	S355J2+N, EN 10025	B500B / BSt 500 S
EPR-SS	1.4301, EN 10088	B500B / BSt 500 S
EPR-AR	1.4401, EN 10088	B500B / BSt 500 S

Anchor bars to SFS 1300 / DIN 488.

DIMENSIONS [MM] AND SAFE WORKING LOADS

	Dimensions [mm]							[kN]		[kNm]		
Plate L × B	H	B1	L1	t	ds	h	c	N	V	M_L	M_B	T
EPR 100×50	218	0	60	8	12	210	5	15.0	17.2	1.2	0.5	0.5
EPR 100×100	218	60	60	8	12	210	5	39.2	35.0	2.5	2.5	2.0
EPR 150×100	220	60	90	10	12	210	5	45.0	35.0	4.4	2.7	2.5
EPR 150×150	222	90	90	12	16	210	7	73.0	71.0	6.4	6.4	5.5
EPR 200×100	222	60	120	12	16	210	7	58.5	62.2	7.4	3.4	5.9
EPR 200×200	312	120	120	12	20	300	8	158.0	119.3	16.4	16.4	12.0
EPR 250×250	315	150	150	15	20	300	8	195.6	124.5	24.5	24.5	15.1
EPR 300×100	315	60	180	15	20	300	8	110.0	97.3	19.5	6.1	13.5
EPR 300×200	315	120	180	15	20	300	8	170.0	119.3	26.5	17.4	15.5
EPR 300×300	315	180	180	15	20	300	8	207.5	128.4	31.0	31.0	18.4

h = anchor bar length · c = weld size · N tension, V shear, M_L / M_B bending, T torsion (see p. 54).

Order example: **EPR 200×200-SS** · Combined actions, edge distances and reinforcement: see the MaxTech technical manual.

09
MAGNETS



SM Shuttering magnet



KM Socket magnet



RT Release tool

3
PRODUCTS
Pages 59-60

Shuttering magnets fix side formwork to steel casting tables and keep it stable during pouring; socket magnets hold threaded cast-in inserts in position on steel formwork. Faster set-up, less labour and higher accuracy in every element.

IN THIS SECTION

SM	Shuttering magnet	59	**KM**	Socket magnet	60
RT	Release tool	59		Safety & usage instructions	60







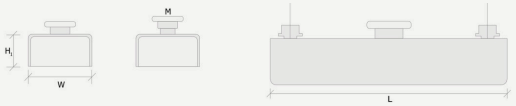
SM

Shuttering magnet

Permanent box magnet with a push-button clamping handle and threaded adapter. Holds side formwork firmly on steel casting tables and is repositioned in seconds. Holding forces from 900 to 3100 kg.



SM



DIMENSIONS [MM]

Magnet	Holding force	L	L1	W	H1	M
SM 900	900 kg	280	230	70	60	13
SM 1600	1600 kg	270	218	120	60	16
SM 2100	2100 kg	320	270	120	60	16
SM 2500	2500 kg	320	270	120	60	16
SM 3100	3100 kg	320	270	120	60	16

L1 = distance between fixing points · M = thread of the adapter.



RT

RT Release tool

Placed under the clamping handle and pushed down, the tool lifts the handle and demagnetizes the shuttering magnet – easy, ergonomic and durable.

HOW TO USE

- Put the tool in position under the clamping handle
- Push the handle of the tool down to release the magnet
- Never use a hammer – release the magnet with the tool only

09

Order example: **SM 2100** · Safety and usage instructions on page 60.

SAFETY & USAGE INSTRUCTIONS

SAFETY

- The magnet is permanent – its magnetic force is always ON.
- Handle with care: never put hands, feet or other body parts under the magnet.
- Keep electronic devices away – the magnetic field can damage them.

USAGE

- Never hit the magnet with a hammer or other tool – marks of misuse void the warranty.
- Open the magnet only with the RT release tool.
- Clean the magnet and table surface before placing the magnet.
- Clean the magnet with a stainless steel plate only.
- Store magnets in the OFF position (handle button up), side by side.
- Oil the magnet before use and before storage.



KM Socket magnet

Round magnet with a threaded stud that screws into a cast-in socket or fixing insert and holds it in the exact position on steel formwork. No drilling, no screws through the mould.

Magnet	Thread D	D1 [mm]	D2 [mm]	H [mm]
KM M8	M8	45	40	8
KM M10	M10	45	40	8
KM M12	M12	54	48	10
KM M16	M16	54	48	10
KM M20	M20	60	53.8	10
KM M24	M24	77.2	73	12



KM

For FP / FF fixing inserts and threaded sockets of the same thread.

MAXTECH
PRECAST TOOLS AND ADHESIVES

10

TYING WIRE & CUT AND BENT REBAR

Pre-cut tying wire to bind reinforcement bars and mesh quickly and securely – plus cut and bent rebar to your bending schedules.



TW Pre-cut tying wire

TW Pre-cut tying wire

Straight cut wire in bundles, ready to use with a tying hook or tying tool. Four finishes for every exposure condition.

AVAILABLE SIZES – DIAMETER × LENGTH [MM]

Stainless 1.4301	Copper-coated	Hot-dip galvanized	Plain (uncoated)
0.7 × 330	0.9 × 400	0.7 × 330	0.9 × 400
0.7 × 350	0.9 × 450	0.7 × 350	–
0.9 × 300	1.1 × 400	0.7 × 450	–
0.9 × 350	1.1 × 450	0.9 × 400	–
0.9 × 400	1.2 × 450	1.2 × 450	–
0.9 × 450	1.2 × 500	1.2 × 500	–
0.9 × 550	–	–	–

Order example: **TW 0.9×400-SS** (finish suffix: SS stainless, CU copper, HD hot-dip galvanized, none = plain).



TW



CUT & BENT REBAR Send us your bending schedule: we supply reinforcement bars cut to length and bent to shape, bundled and labelled per element, together with your precast accessories.

MAXTECH
PRECAST TOOLS AND ADHESIVES

11 MTP43

HOT MELT ADHESIVE FOR PRECAST CONCRETE

MaxTech's own adhesive, formulated for the precast industry: bonds wood, plastic, metal and foam to mould bases – fast setting, versatile and easy to clean off.



MTP43 Hot melt adhesive

TECHNICAL CHARACTERISTICS

Composition	Synthetic resin
Solid content	100 %
Size	43 ± 2 mm × 43 ± 2 mm
Ring & ball softening point	125 °C ± 5 °C
Brookfield viscosity	2,800 ± 1,000 mPa·s at 180 °C
Setting time	10 – 15 seconds
Appearance	White
Application temperature	180 – 200 °C

RECOMMENDED USE

Application area	Precast concrete industry
Typical use	Bonding accessories, inserts, foam, wood, plastic and metal parts to mould bases
Substrates	Wood, plastic, metal, foam
Main advantages	Fast setting, good adhesion, low viscosity when melted, easy cleaning from mould bases

10 kg Carton box, approx. 180 pellets per box

HANDLING & SAFETY

- Molten adhesive can cause severe burns.
- On skin contact, cool immediately with cold water; do not try to remove molten adhesive from the skin.
- Use in a well-ventilated area and avoid overheating.
- Wear suitable gloves and eye protection.
- Fire: use dry powder or CO_2 – never water on molten or burning product.

STORAGE

- Store between 5 °C and 30 °C.
- Keep in a cool, clean and dry place.
- Keep boxes closed, away from direct sunlight and heat sources.
- Use oldest stock first.

MAXTECH
PRECAST TOOLS AND ADHESIVES

12

CAST-IN ANCHOR CHANNELS



ATA Channels



AZA Toothed channels



AS / AZS T-bolts



Foams Channel foam fillers

Hot-rolled cast-in channels with headed anchors and matching T-bolts. Cast in flush with the concrete surface, they transfer high loads into reinforced and unreinforced concrete and allow adjustable, weld-free fixing of façades, rails, pipes and equipment.

IN THIS SECTION

–	Benefits & application areas	64
–	Range, materials & minimum spacing	65
ATA	Channels – product overview	66
ATA	Dimensions, lengths & anchors	67
AS	T-bolts & design values	68
AZA	Toothed channels – overview & resistance	69
AZA	Dimensions, properties & anchors	70
AZS	T-bolts & design values	71
–	Fire, fatigue & anti-corrosion	72
–	Curved channels, accessories, installation	73

THE BENEFITS AT A GLANCE

MaxTech cast-in channels offer excellent adjustability and save considerable installation time – faster construction and lower overall cost.

SAFE AND RELIABLE

- No damage to the reinforcement
- Approved for fire-resistant structural elements
- For concrete compression and tension zones
- Hot-rolled profiles suitable for dynamic loads
- Hot-dip galvanized or stainless steel

FAST AND ECONOMICAL

- Adjustable anchoring – bolts instead of welding
- Efficient installation with standard tools
- Optimized pre-planning shortens construction time
- Large range of profiles for every requirement
- No noise, dust or vibration during installation

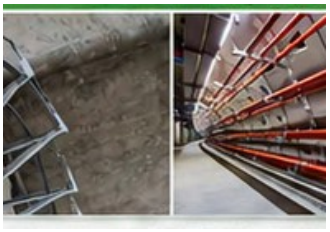

ATA


AZA

APPLICATION AREAS



High-speed railway
Pipeline, noise & safety barrier fastening



Pipeline fastening
Support and hangers for pipes and equipment



Bridges
Hanging fences and ladder troughs



Metro stations
Pipelines, supports and hangers



Tunnels
Pipelines, supports and hangers



Pipe galleries
Pipelines, supports and hangers



Power stations
Brackets, ladders, hangers, cranes



Earthquake-resistant construction
Pipelines, supports and hangers

PRODUCT RANGE

Type	Profiles
ATA	ATA 52/34 · ATA 50/30 · ATA 40/22
AZA (toothed)	AZA 64/44 · AZA 53/34 · AZA 50/26 · AZA 40/22 · AZA 38/23 · AZA 30/20

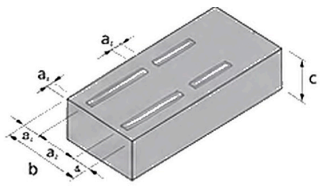
MATERIALS

Component	Material / standard	Properties	Environments
Channel profile	Carbon steel 1.0038, 1.0044 (EN 10025), hot-dip galvanized (EN ISO 1461)	Structural steel with high weldability, HDG min. 55 µm	Dry and damp interiors, outdoor, coastal and aggressive atmospheres
Channel bolt	Strength class 4.6 / 8.8 (EN ISO 898-1), HDG (EN ISO 10684)	High strength and reliable anchorage, HDG min. 50 µm	Indoor and outdoor, incl. industrial and coastal areas
Washers	Steel (EN 10025), HDG (EN ISO 10684)	Distribute load and protect the surface, HDG min. 50 µm	Indoor and outdoor
Hexagon nut	Strength class 5 / 8 (EN 898-2), HDG (EN ISO 10684)	High strength, HDG min. 50 µm	Indoor and outdoor

Stainless steel A2 / A4 and duplex stainless steel (DSS) available on request.

MINIMUM SPACING OF CHANNELS [MM]

Profile	a_r	a_s	a_e	a_c	b
ATA 52/34	200	400	175	350	400
ATA 50/30	200	400	175	350	400
ATA 40/22	150	300	130	250	300
AZA 64/44	250	500	225	450	500
AZA 53/34	200	400	175	350	400
AZA 50/26	200	400	175	350	400
AZA 40/22	150	300	130	250	300
AZA 38/23	150	300	130	250	300
AZA 30/20	100	200	80	200	300



1. Values apply to reinforced standard-weight concrete ≥ C20/25. If dimensions are increased by 30 %, no reinforcement is required.
2. Applies when one channel is used.
3. Results from installation height and concrete cover (DIN 1045-1 / EN 1992-1-1, 4.4).
4. Permissible only for central tension.



TOP VIEW



BOTTOM VIEW

We deliver cast-in channels in any length from 100 mm to 6070 mm. Any number of anchors with individual spacing is possible.

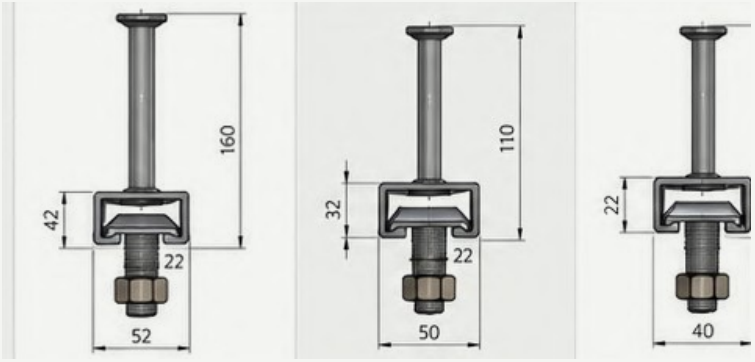
ATA

Hot-rolled cast-in channels

C-shaped hot-rolled channel with forged headed anchors, used with AS T-bolts. Three profiles from 40/22 to 52/34 for medium to high loads.



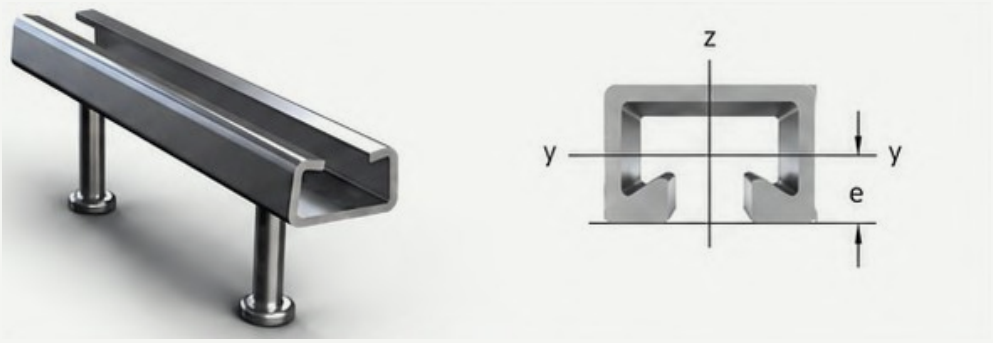
ATA



Profile	ATA 52/34	ATA 50/30	ATA 40/22
Type	Hot-rolled	Hot-rolled	Hot-rolled
Materials	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS
Bolts	AS 50/30	AS 50/30	AS 40/22
Bolt sizes	M16 – M20	M16 – M20	M12 – M16
s_{lb} [mm]	104	100	80
Profile load capacity			
$N^0_{Rd,s}$ [kN]	31.3	19.7	14.3
$V^0_{Rd,s}$ [kN]	54.4	31.7	22.6
$M^0_{Rd,s,flex}$ [N·m]	3589	2461	1128
Geometry [mm]			
h_{nom}	160	110	84
b_{ch}	52	50	40
h_{ch}	34	30	22
f	10.8	8.1	6
c_{min}	100	75	50

DSS = duplex stainless steel · s_{lb} = axial bolt spacing for $N^0_{Rd,s}$ · N / V / M = channel lip tension, shear and flexure capacity · c_{min} = minimum channel-to-edge distance. Values cover the channel profile only; the concrete capacity must be verified for each case. Stainless and DSS versions on request.

ATA Channel dimensions, lengths & anchors



CROSS-SECTION PROPERTIES

Profile	G [kg/m]	A [cm²]	e [mm]	I_y [cm⁴]	I_z [cm⁴]	$W_{pl,y}$ [cm³]	W_{el} [cm³]	$W_{pl,z}$ [cm³]
ATA 52/34	5.27	6.71	17.4	9.96	24.67	5.73	9.45	5.99
ATA 50/30	3.79	4.83	15.3	6.01	16.85	3.93	6.74	4.09
ATA 40/22	2.38	3.03	12.2	2.19	6.71	1.8	3.35	2.02

CHANNEL LENGTH AND ANCHORS

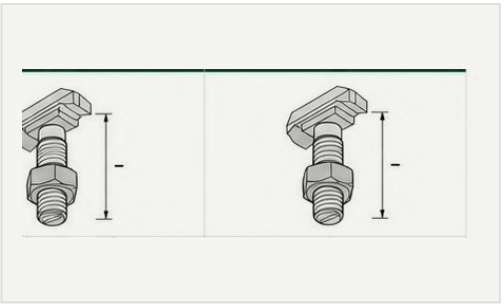
	ATA 52/34		ATA 50/30 · 40/22	
Length [mm]	Anchors	Edge spacing [mm]	Anchors	Edge spacing [mm]
150	2	35	2	25
200	2	35	2	25
250	2	35	2	25
300	2	35	2	25
350	3	35	3	25
400	3	35	3	25
550	3	35	4	25
800	4	35	4	25
1050	5	35	5	25
3030	13	35	13	25
6070	25	35	25	25

Spacing of anchors: 100 ≤ s ≤ 250 mm. Other lengths on request.

AS

T-bolts for ATA channels

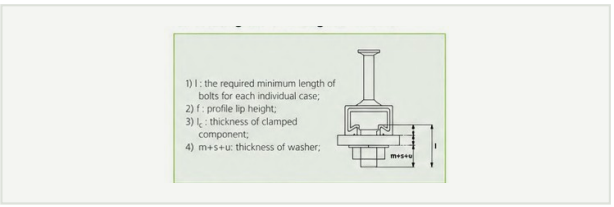
Hammer-head T-bolts with nut and washer. Insert into the channel slot, turn 90° and tighten to the installation torque.



Channel profile	Bolt	Sizes
ATA 52/34, 50/30	AS 50/30	M12 · M16 · M20
ATA 40/22	AS 40/22	M12 · M16

Lengths l: 30 · 40 · 45 · 50 · 55 · 60 · 65 · 70 · 80 · 100 · 125 · 150 · 200 · 250 · 300 mm.
Grades 4.6 · 8.8 · A2 and A4 (50, 70) on request.





WASHER M+S+U [MM]

Bolt	m+s+u
M12	17.0
M16	20.5
M20	26.0

LIP HEIGHT F [MM]

Profile	f
ATA 52/34	10.5
ATA 50/30	7.9
ATA 40/22	6.0

Required bolt length $l \geq f + l_c$ (thickness of clamped part) + m+s+u (nut, washer, thread projection).

INSTALLATION TORQUE T_{INST} [N·M]

		Standard	Steel–steel			
Channel	Bolt	all grades	4.6	8.8	A4-50	A4-70
ATA 40/22	M12	25	25	70	25	50
ATA 40/22	M16	45	45	180	60	130
ATA 50/30	M12	25	25	70	25	50
ATA 50/30	M16	60	65	180	60	130
ATA 50/30	M20	75	130	360	120	250
ATA 52/34	M12	25	25	70	25	50
ATA 52/34	M16	60	65	180	60	130
ATA 52/34	M20	120	130	360	120	250

BOLT DESIGN VALUES

Grade	Value	M12	M16	M20
4.6	$N_{Rd,s}$ [kN]	16.9	31.4	49.0
	$V_{Rd,s}$ [kN]	12.1	22.6	35.2
	$M_{Rd,s}$ [N·m]	31.4	79.8	155.4
8.8	$N_{Rd,s}$	44.9	83.7	130.7
	$V_{Rd,s}$	27.0	50.2	78.4
	$M_{Rd,s}$	83.8	213.1	415.9
A4-50	$N_{Rd,s}$	14.8	27.4	42.8
	$V_{Rd,s}$	10.6	19.8	30.9
	$M_{Rd,s}$	27.5	70.0	136.3
A4-70	$N_{Rd,s}$	31.6	58.8	91.7
	$V_{Rd,s}$	22.7	42.2	66.0
	$M_{Rd,s}$	58.8	149.4	291.3

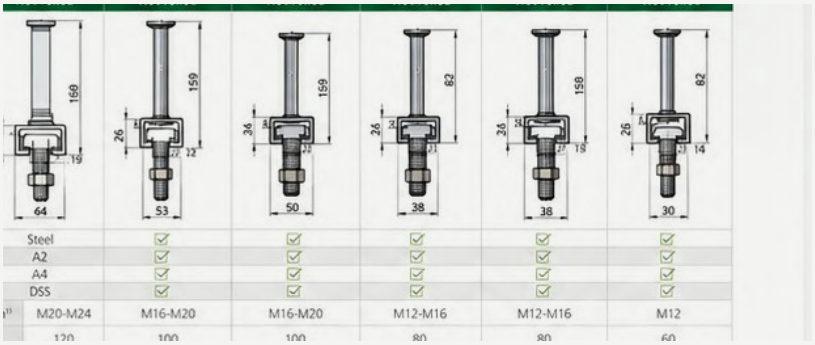
T_{inst} must not be exceeded. Standard: the attachment bears on channel and concrete. Steel–steel: the attachment is braced to the channel by a steel part (e.g. washer) and bears on the channel only.

AZA

Hot-rolled toothed cast-in channels

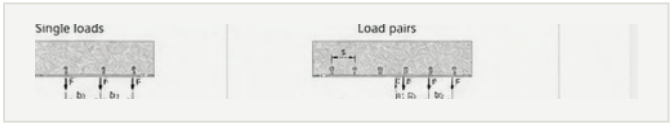
Toothed channel lips interlock with the serrated AZS T-bolts for a positive connection, also in the longitudinal direction. Six profiles from 30/20 to 64/44.





Profile	AZA 64/44	AZA 53/34	AZA 50/26	AZA 40/22	AZA 38/23	AZA 30/20
Type	Hot-rolled	Hot-rolled	Hot-rolled	Hot-rolled	Hot-rolled	Hot-rolled
Materials	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS	Steel · A2 · A4 · DSS
Bolt sizes	M20–M24	M16–M20	M16–M20	M12–M16	M12–M16	M12
s_{lb} [mm]	120	100	100	80	80	60

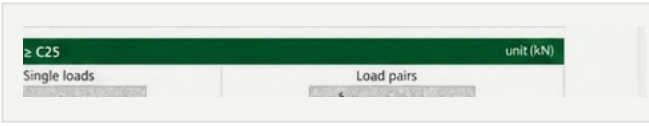
DESIGN RESISTANCE F_{RD} – TENSION [KN], ≥ C25



AZA	Single loads	Load pairs
64/44	30.5	15.4
53/34	14.0	7.0
50/26	14.0	7.0
40/22	8.4	5.6
38/23	8.4	5.6
30/20	5.6	4.2

Single: $s \leq 250$, $b_i \geq 250$ · Pairs: $p_i \geq 100$

DESIGN RESISTANCE F_{RD} – SHEAR [KN], ≥ C25



AZA	Single loads	Load pairs
64/44	30.5	15.4
53/34	16.8	9.8
50/26	16.8	9.8
40/22	14.0	8.4
38/23	14.0	8.4
30/20	11.2	7.0

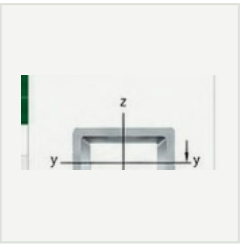
Single: $b_i \geq 250$ · Pairs: $p_i \geq 100$, $b_i \geq 250$

COMBINED $F_{Ed} = \sqrt{(N_{Ed}^2 + V_{Ed}^2)} \leq F_{Rd}$. For simultaneous loads in different directions the resultant load must not exceed the design load. F_{Rd} with transverse load and paired loads at $\alpha \leq 150°$; calculation details on request.

AZA Dimensions, properties & anchors

CROSS-SECTION DIMENSIONS [MM]

Dimension	AZA 64/44	AZA 53/34	AZA 50/26	AZA 40/22	AZA 38/23	AZA 30/20
h_{nom}	169	159	106	82	103	80
b_{ch}	64	53	50	40	38	30
h_{ch}	44	34	26	22	23	20
f	9	7	8	6	6	5
c_{min}	125	100	100	75	75	50



CROSS-SECTION PROPERTIES

Profile	G [kg/m]	A [cm²]	e [cm]	I_y [cm⁴]	I_z [cm⁴]	W_y [cm³]	W_z [cm³]	$W_{pl,z}$ [cm³]
AZA 64/44	4.64	5.91	1.85	9.25	23.19	5.01	8.83	6.86
AZA 53/34	4.64	5.91	1.85	9.25	23.19	5.01	8.83	6.86
AZA 50/26	2.42	3.09	1.33	2.1	6.13	1.58	3.23	2.3
AZA 40/22	2.42	3.09	1.33	2.1	6.13	1.58	3.23	2.3
AZA 38/23	1.55	1.98	1.12	1.02	2.39	0.91	1.65	1.3
AZA 30/20	1.55	1.98	1.12	1.02	2.39	0.91	1.65	1.3

PROFILE LOAD CAPACITY

Profile	N_{Rd} [kN]	$V^0_{Rd,y}$ [kN]	$V^0_{Rd,z}$ [kN]	$M^0_{Rd,flex}$ [N·m]
AZA 64/44	58.9	86.8	39.7	6935
AZA 53/34	45.8	56.2	18.3	3452
AZA 50/26	45.8	56.2	18.3	3452
AZA 40/22	29.8	29.8	14.8	2289
AZA 38/23	29.8	29.8	14.8	2289
AZA 30/20	12.7	11.2	7.0	87.3

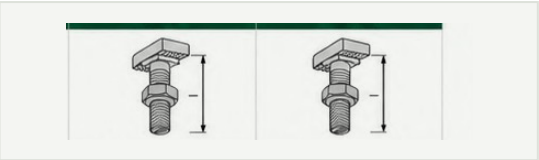
CHANNEL LENGTH AND ANCHORS

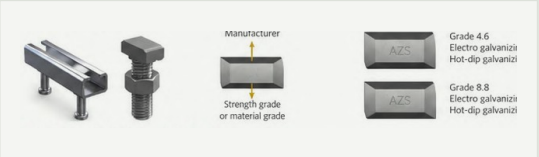
	64/44 · 53/34 · 50/26 · 40/22		38/23			30/20	
Length [mm]	Anchors	Edge [mm]	Anchors	Edge [mm]	Length [mm]	Anchors	Edge [mm]
150	2	35	2	28	100	2	28
200	2	35	2	28	150	2	28
250	2	35	2	28	200	2	28
300	2	35	2	28	250	2	28
350	3	35	3	28	350	3	28
400	3	35	3	28	400	3	28
550	3	35	3	28	550	4	28
800	4	35	4	28	850	5	28
1050	5	35	5	28	1050	6	28
3030	13	35	13	28	3030	16	28
6070	25	35	25	28	6070	31	28

Spacing of anchors: 64/44 80 ≤ s ≤ 300 · 53/34, 50/26, 40/22, 38/23 80 ≤ s ≤ 250 · 30/20 50 ≤ s ≤ 200 mm.

AZS

Serrated T-bolts for AZA channels





Channel profile	Bolt	Sizes
AZA 64/44	AZS 64/44	M20 · M24
AZA 53/34	AZS 53/34	M16 · M20
AZA 50/26	AZS 50/26	M16 · M20

Lengths l 30 – 300 mm (as AS bolts) · grades 4.6 · 8.8 · A2 / A4 on request.

M+S+U [MM]

Bolt	m+s+u
M12	17.0
M16	20.5
M20	26.0
M24	29.0

LIP HEIGHT F [MM]

AZA	f
64/44	9
53/34	7
50/26	8
40/22	6
38/23	6
30/20	5

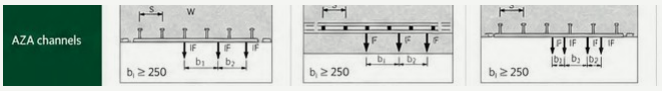
TORQUE T_{INST} [N·M]

		Std.	Steel–steel	
AZA	Bolt	8.8/A4-70	8.8	A4-70
30/20	M10	15	40	30
30/20	M12	25	70	50
40/22 · 38/23	M12	25	70	50
40/22 · 38/23	M16	60	180	130
53/34 · 50/26	M12	25	70	50
53/34 · 50/26	M16	60	180	130
53/34 · 50/26	M20	120	360	250
64/44	M20	250	360	250
64/44	M24	353	625	435

BOLT DESIGN VALUES

Grade	Value	M12	M16	M20	M24
8.8	$N_{Rd,s}$ [kN]	44.9	83.7	130.7	188.3
	$V_{Rd,s}$ [kN]	27.0	50.2	78.4	113.0
	$M^0_{Rd,s}$ [N·m]	83.8	213.1	415.4	718.4
A4-70	$N_{Rd,s}$ [kN]	31.6	58.8	42.8	132.1
	$V_{Rd,s}$ [kN]	22.7	42.2	66.0	95.1
	$M^0_{Rd,s}$ [N·m]	58.8	149.4	291.3	503.8

DESIGN RESISTANCE OF CHANNEL F_{RD} – TENSION [KN], ≥ C25



			Load pairs		
AZA	Single, $b_i \geq 250$	Single (row), $b_i \geq 250$	$p_i \geq 50$	$p_i \geq 100$	$p_i \geq 150$
64/44	37.8	15	–	–	22.4
53/34	30.8	15	–	19.25	22.0
50/26	30.8	15	–	19.25	22.0
40/22	16.8	12	9.4	10.5	12.0
38/23	16.8	12	9.4	10.5	12.0
30/20	11.2	8	6.3	7.5	9.0

Combined loads: $F_{Ed} = \sqrt{(N_{Ed}^2 + V_{Ed}^2 + X_{Ed}^2)} \leq F_{Rd} \cdot T_{inst}$ must not be exceeded · further calculation details on request.

FIRE EXPOSURE

ATA and AZA channels can be used in standard concrete components with fire requirement R90 and R120 (GB/T 37613). Only static loads at right angles to the channel axis – central tension / diagonal pull and shear – are permissible (no longitudinal load).

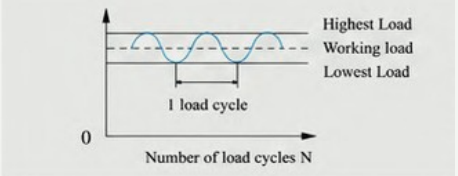
	ISO 834 fire curve (GB/T 9978.1)		RABT-ZTV tunnel fire curve (EN 1363-2, GB/T 26784)	
Channel	Load [kN]	Time [min]	Load [kN]	Time [min]
ATA 52/34	3.0	90	1.5	120
ATA 50/30	3.0	90	1.5	120
ATA 40/22	2.0	90	1.0	120
AZA 64/44	3.0	90	1.5	120
AZA 53/34	3.0	90	1.5	120
AZA 50/26	3.0	90	1.5	120
AZA 40/22	2.0	90	1.0	120
AZA 38/23	2.0	90	1.0	120
AZA 30/20	1.8	90	0.8	120

FATIGUE

Thanks to the hot-rolling process, the channels are well suited to fully or partially dynamic loads (fatigue test to GB/T 37613).

Channel	Load cycles	Working load [kN]	Amplitude [kN]
ATA 52/34	2×10^6	22	± 6.6
AZA 53/34	2×10^6	22	± 6.6
AZA 38/23	2×10^6	10	± 3
AZA 30/20	2×10^6	10	± 3

Highest load = working load + amplitude; lowest load = working load – amplitude. Example: ATA 52/34 carries a working load of 22 kN with ± 6.6 kN cyclic amplitude.



Anti-corrosion

ANTI-CORROSION

50+ years

HDG ≥ 85 µm + 60 µm coating: 150 h CASS or 1200 h neutral salt spray (TB/T 3329-2013) without red rust.

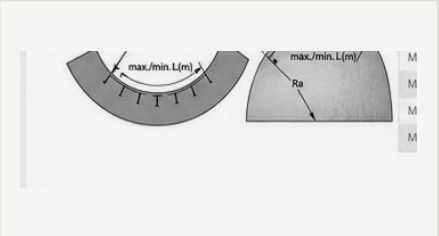
100+ years

Thicker HDG and coating: 300 h CASS or 2400 h neutral salt spray (GB/T 37613-2019) without red rust.

HDG and coating thickness can be customized for each individual case.

CUSTOMIZED CURVED ANCHOR CHANNELS

Channels can be curved concave (slot inside) or convex (slot outside) – for example for tunnel segments. A high-precision process is required; bending is done with specially prepared calipers.



	ATA				AZA				
Value	52/34	50/30	40/22	64/44	53/34	50/26	40/22	38/23	30/20
Min R_i [m]	0.5	0.5	0.5	–	0.5	0.5	0.5	0.5	0.5
Min R_a [m]	2.5	2.0	2.0	–	2.5	2.0	2.0	2.0	2.0
Min L [m]	1.5	1.5	1.0	–	1.5	0.5	0.5	0.5	0.5
Max L [m]	5.8	5.8	5.8	–	5.8	5.8	5.8	5.8	5.8

R_i = inner slot radius · R_a = outer slot radius · L = channel length after bending · – on request.

ACCESSORIES





Anchor · foam tape & filled foam · sealing plug · T-bolt with nut and washer · slot hole · toothed channel.

FILLED FOAMS



- Durable, does not shrink – fills the channel completely
- Non-tear fabric reinforcement – removed in one piece
- Foam tape leaves no residual glue

PACKING & TRANSPORT



- Short channels: carton boxes on plywood pallets
- Long channels: wood-reinforced plywood or iron pallets
- Carton size and quantity per pallet can be customized

INSTALLATION



1. Fix the channel to the formwork with rivets, nails or staples
2. Cast the concrete; remove the foam filling
3. Insert the T-bolt and tighten the nut to the installation torque

PRECAST ACCESSORIES IN ACTION

From building foundations to industrial halls and infrastructure – our lifting, fixing and connection systems bring precision and reliability to every stage, in the factory and on site.



07 Foundations with cast-in anchor bolts



01–04 Lifting a precast beam in the factory



07 Anchor bolts ready for delivery



04 · 05 Element connections on site



08 Fastening plates in production



10 Reinforcement with cast-in parts



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