



Call us:

+49 (0)391.73 52 0

Write to us:

info@bt-innovation.de

www.bt-innovation.de



**BT INNOVATION - FOR FASTER CONSTRUCTION** 

## Innovations for precast concrete plants

#### **EVERYTHING CAN ALWAYS BE DONE BETTER**

or in a completely new way. We take new routes with our product solutions. Our developments make production more efficient and reliable. After all, we demand high-quality manufacturing processes.

We have intensively analysed building practic over the years and listened to our partners to develop innovative products. The members of our research and development team communicate with our colleagues in design and sales to come up with ideas that not only make the production process faster and more efficient, but also more ergonomic.

Our innovative ideas are protected by numerous patents. The name BT innovation has long stood for globally recognised quality that customers in over 70 countries use and trust. We have developed an

international network, attend international trade fairs and cooperate with trade partners in every significant market.

We are also trusted, in-demand consultants in demand with expertise in the precast concrete industry. Our extensive practical experience and accompanying support in product development helps our multi-disciplinary consultants find the optimal solution for our customers individual goals.

The products and services we develop are always tailored to practicality and the needs of our customers. By using our innovations, we enable mid-term and long-term increases in efficiency and provide clear cost benefits, all of which makes a clear statement about the strength of our innovations.

4 Contents

### **Contents**

### **Shuttering Magnets**

- 6 MagFly® AP
- 12 Other shuttering magnets

### **Shuttering Systems**

- 24 MultiForm/window and door openings
- 32 Other shuttering systems

### **Transport and Storage Systems**

38 BT transport and storage systems

### **Connecting Systems**

- 42 BT-Spannschloss® (turnbuckle)
- 48 ThermoPin®
- 54 GFRP spacer

### **Sealants and Waterproofing**

- 58 RubberElast®
- 64 SynkoElast®
- 70 InnoElast® type 1 and 2

Contents | Note

### **Battery Mould and Butterfly Formwork®**

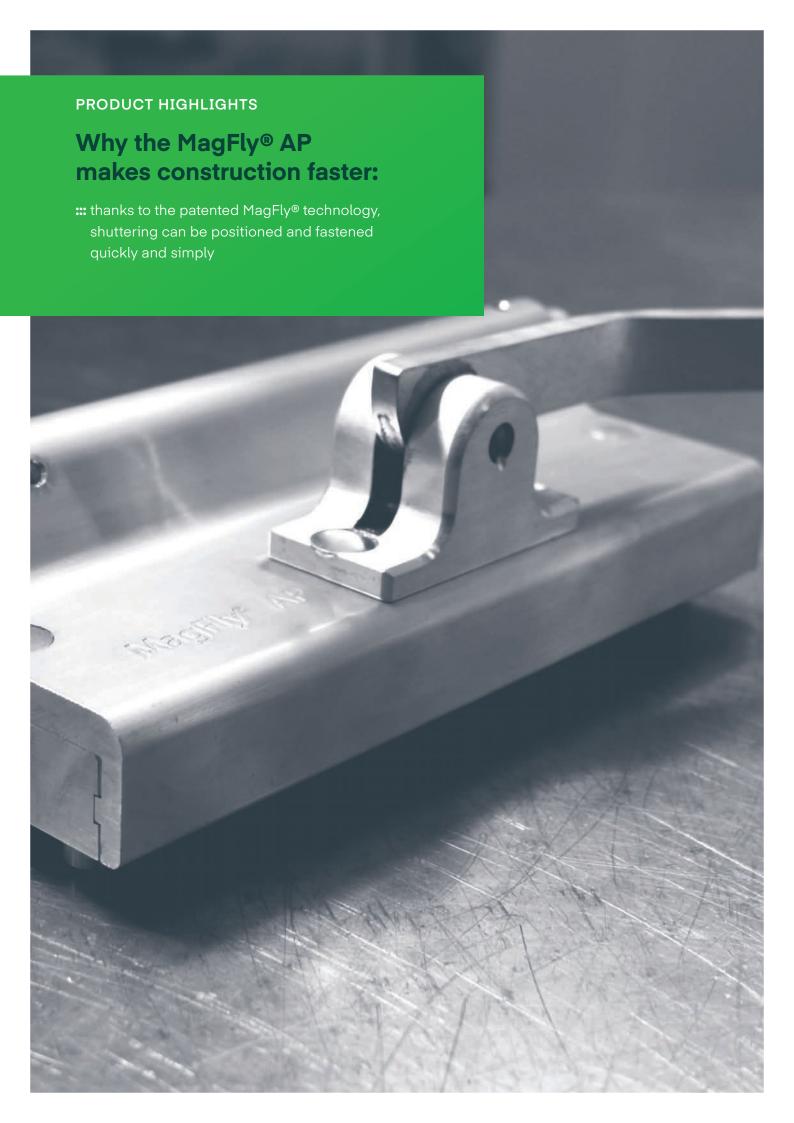
76 Battery Mould and Butterfly Formwork®

### Consulting

80 Consulting

For a current price list please contact us: info@bt-innovation.de

You can also use the download area on our website.



### SHUTTERING MAGNETS FEATURING PATENTED FOOT/SPRING SYSTEM FOR POSITIONING AND RELEASING

## MagFly® AP

The MagFly® AP is a patented shuttering magnet and a component of the BT shuttering system. Unique features include the magnetic force-to-weight ratio, plus the foot/spring system, which allows the magnet to slide easily over the formwork table.

The magnet is activated by a firm pressure from above and adheres to the formwork table by its magnetic force. The MagFly® AP can be released and realigned simply and quickly using the integrated lever. It does not require any additional tools or adapters.

The ultra-light aluminium casing makes ergonomic

work with the magnets possible and saves effort by the user.

In combination with the MultiForm formwork beams and a chamfer profile attached to the shuttering board, the shuttering is pressed firmly against the formwork table on activating the magnet, so that subsequent sealing is unnecessary.

These effective technologies are matched perfectly to each other and substantially speed up the production of precast concrete elements.

#### **Applications**

- Shuttering magnets for pallet circulation systems and tilting tables
- Shuttering for walls, beams, etc.

### **Benefits**

- Patented holding down of shuttering, therefore high contact pressure of shuttering to formwork table
- ✓ No silicone sealant required
- Light and ergonomic handling thanks to the foot/spring system
- Magnet and formwork beams perfectly matched
- **✓** Unbeatable magnetic force-to-weight ratio

### **Application**



### 01

Place the magnet on the formwork table in between the formwork beams so that it's standing on its feet.





### 02

Push the magnet and shuttering into the desired position.



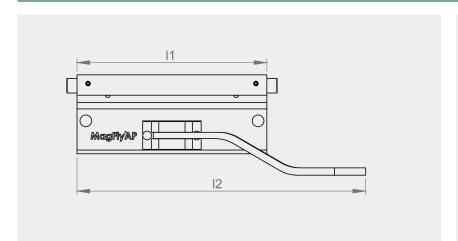
### 03

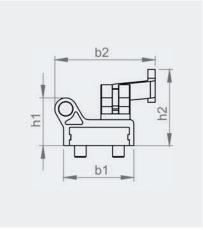
After alignment, the magnet can be fastened. Press firmly on the lever from above with your hand or foot.

### <u>04</u>

To remove or release the magnet from the formwork, pull the lever vertically upwards. The magnet can be released from the shuttering and realigned quickly and simply with the integrated lever.

### **Technical details**



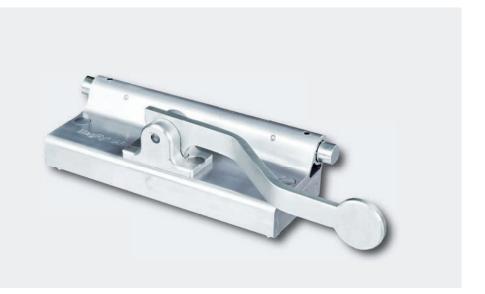


Item no.	Description	Adhesive force [N]	<b>l1</b> [mm]	<b>l2</b> [mm]	<b>b1</b> [mm]	<b>b2</b> [mm]	<b>h1</b> [mm]	<b>h2</b> [mm]
8101067	MagFly® AP with lever on right	22,000	260	407	96	124	65	96
8001075	MagFly® AP with lever on left	22,000	260	407	96	124	65	96
8001081	MagFly® AP with °90 lever	22,000	260	-	96	207	65	85

### Item overview

MagFly® AP is available in three different versions:

- 1. Lever on the right 2. Lever on the left 3. 90° lever



### MagFly® AP

Item no.	Product	Description	Info
8001067	MagFly® AP	lever on right: Standard 22,000 N	Dimensions provided in the technical drawing
8001075	MagFly® AP	lever on left	Dimensions provided in the technical drawing
8001081	MagFly® AP	90° lever	Dimensions provided in the technical drawing

### **Accessories**

Item no.	Product	Info
8008202	MagFly® AP spray guard	The spray guard protects all MagFly® magnets attached to MultiForm Type 1 or Type 2.
8008061	MagFly® AP magnet rack	Rack for 28 magnets with adapter
8008145	Flatbed push cart with 2 magnet racks	For transporting magnet racks without a crane

### BT shuttering system

### MagFly® AP and MultiForm

The BT shuttering system consists of the MagFly® AP system magnets and the MultiForm shuttering elements, which are perfectly matched to them.

### **Shuttering elements**



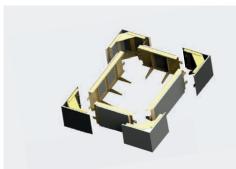
**MultiForm type 1**beam for short shuttering,
e.g. recesses



Multiform type 2 beam for long shuttering, up to 80 cm high, 3,025 m long



**MultiForm Corner** shuttering element for window and door corners

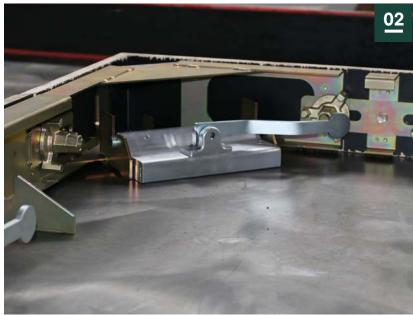


**Window and door opening** for window and door openings, reusable

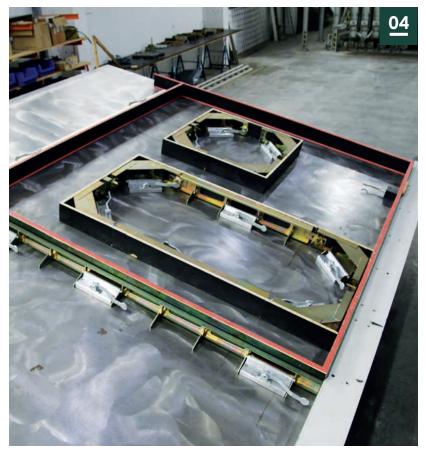


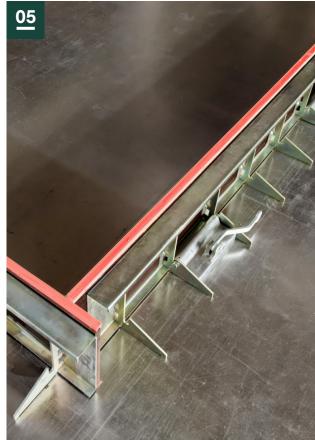
### Application examples

- 01 MagFly® AP with MultiForm type 2 as wall shuttering
- MagFly® AP with MultiForm window and door opening
- MagFly® AP with MultiForm type 2 as beam shuttering
- Example of **shuttering erection** for a wall element
- 05 MagFly® AP with MultiForm type 2







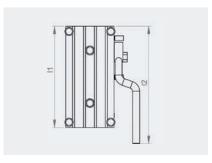


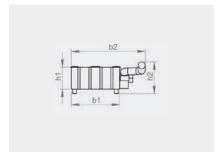
# Other shuttering magnets

#### MagFly® universal magnet

The MagFly $^{\circ}$  universal magnet features the patented MagFly $^{\circ}$  technology and is versatile in use. Two M16 x 1.5 threaded holes are provided for mounting adapters and accessories. The different sizes, shapes and adhesive forces also ensure that you will find the right holding magnet for a variety of applications.







Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	<b>l1</b> [mm]	<b>l2</b> [mm]	<b>b1</b> [mm]	<b>b2</b> [mm]	<b>h1</b> [mm]	<b>h2</b> [mm]
8001052	MagFly® 1000	11,000	5.0	230	270	60	115	50	65
8001055	MagFly® 1600	16,000	7.5	230	270	85	140	50	65
8001060	MagFly® 2000	22,000	10.0	230	270	110	165	50	65
8001064	MagFly® 2500	27,000	12.5	230	270	135	190	50	65
8001065	MagFly® 3000	30,000	15.0	230	270	160	215	50	65

#### Accessories



Hinged adapter, clamping mechanism, alternatively with normal or coarse bundle

Item no.: 8008119



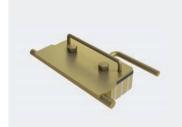
Guide column in various lengths with upper part

Item no.: 8008116 (upper part) 8008135001 (guide column)



Adapter for holding down double wall first layer when turning in

Item no.: 8008139 (Adapter) 8008052 (Clamping lever)



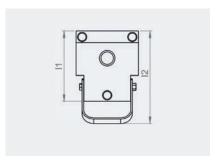
MultiForm system adapter

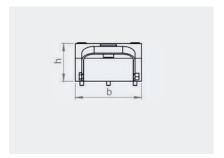
Item no.: 8008148

### Magnet type PL/E

The PL/E holding magnet consists of a stable plastic casing with a strong magnet package. The magnet holds and fastens shuttering, including fastening holes for the direct mounting of shuttering boards as well as window and door openings.







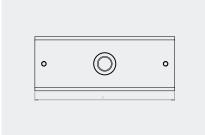
Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	<b>l1</b> [mm]	<b>l2</b> [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8004052	PL/E 400	4,000	3.8	180	252	160	90
8004054	PL/E 650	6,500	3.9	180	252	160	90
8004053	PL/E 850	8,500	4.0	180	252	160	90

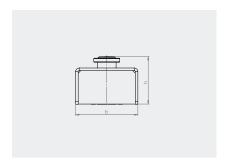
### BT shuttering - magnetic box

The magnetic box for diverse shuttering mounting applications.

The upper fastening point allows a variety of adapters to be attached.







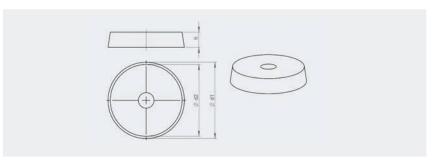
Item no.	Description	Adhesive force [N]	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	h [mm]
8103053	BT shuttering – magnetic box	12,000	7.0	300	120	70
8103073	BT shuttering – magnetic box	18,000	7.3	300	120	70

# Magnets for anchor systems

### **Magnet type GB**

The GB magnet is used for fastening threaded sleeves, waved anchors, etc. on both horizontal and vertical surfaces. This item is available with different diameters and magnetic forces.





Art. no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	Thread	<b>d1</b> [mm]	<b>d2</b> [mm]	<b>h</b> [mm]
8005058	GB 50	650	0.13	M10-M16	50	47	12
8005062	GB 64	1,000	0.23	M12-M24	64	61	12
8005066	GB 80	1,500	0.40	M16-M30	80	77	12
8005056	GB 106	1,900	0.75	M20-M42	106	103	12

### Threaded pin\* for magnet type GB

Interchangeable threaded pins provide flexibility and enable GB magnets to retain their value.

8005093	Thursday I was M10
0000093	Threaded pin M10
8005081	Threaded pin M12
8005082	Threaded pin M14
8005094	Threaded pin M16
8005085	Threaded pin M18
8005087	Threaded pin M20
8005088	Threaded pin M24
8005089	Threaded pin M30
8005092	Threaded pin M36
8005104	Threaded pin M42



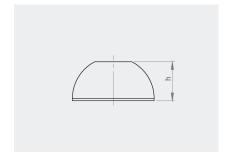
<sup>\*</sup>At the customer's request, threaded pins with imperial threads are also available.

### Magnet type KU

The KU magnet is used for holding ball-headed anchors. Depending on the size of the ball-head anchor, we offer magnets in our range of products that fit with the optimum magnetic force.







Item no.	Designation	Anchor size [t]	Adhesive force [N]	<b>Mass</b> [kg]	<b>d1</b> [mm]	<b>d2</b> [mm]	<b>h</b> [mm]
8005072	KU 13	1.3	1,000	0.49	68	20.5	30.8
8005074	KU 25	2.5	1,000	0.65	74	27.5	33.0
8005075	KU 50	5.0	1,500	2.50	93.5	38.5	50.6
8005076	KU 75	7.5	2,000	3.30	118	48.5	53.0
8005098	KU 100	10.0	2,200	3.30	118	48.5	53.0

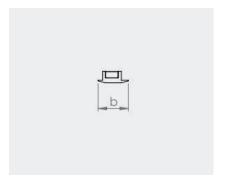
<sup>\*</sup>Matching ball-head anchors are available on request.

### Magnetic strip for cast-in channel

The magnetic strip for cast-in channel enables cast-in channels from different manufacturers to be attached to the shuttering.







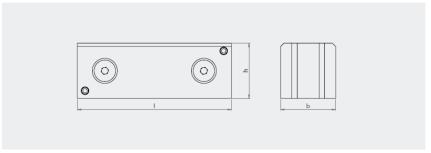
Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	h [mm]
8009144	Magnetic strip for cast-in channel 28/15	260	0.13	100	16	5
8009145	Magnetic strip for cast-in channel 38/17	300	0.23	100	23.5	6.5
8009146	Magnetic strip for cast-in channel 40/25	300	0.4	100	23.5	9

# Magnets for U-profiles and transversal shuttering

### **Magnet type BR**

The BR magnet is a robot-compatible shuttering magnet fort he fastening of U-profiles in automatic systems for the manufacture of ceiling and double wall elements.





Item no.	Designation	Adhesive force [N]	Mass [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8007066	Magnet type BR 40/153	7,500	2	153	50	40
8007055	Magnet type BR 50/140	6,500	2.3	140	50	50
8007058	Magnet type BR 50/185	8,000	3.2	185	50	50
8007061	Magnet type BR 50/230	10,000	4.2	230	50	50

<sup>\*</sup>Other sizes available on request. Also available with aluminium head plates.

### Magnet type ML/ST

The ML magnet is a specially developed fixing device for PE transversal shuttering, which is fixed between the side parts of PE transversal shutterings.

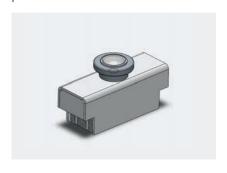


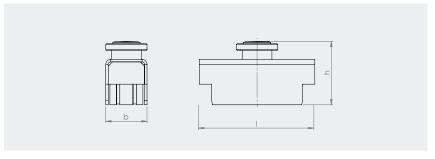


Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8009122	Magnet type ML/ST 150/15	2,100	1.0	150	50	15
8009050	Magnet type ML/ST 155/20	2,000	1.4	155	50	20

### Magnet box for PE transversal shuttering

This magnet fastens transversal shuttering by being placed in a recess of the transversal shuttering, which places it in direct contact with the formwork surface.





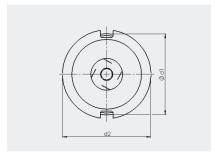
Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8103071	Magnet box for transversal shuttering PE	6,000	1.7	140	50	77

# Magnets for electrical sockets

### Magnet type E for fastening electrical sockets

The magnet type E is an electrical socket magnet based on the GB magnet and is used to fix back boxes from different manufacturers of electrical systems.





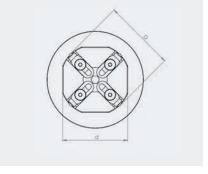
Item no.	Designation	Adhesive force [N]	<b>d1*</b> [mm]	<b>d2*</b> [mm]
8005051	Magnet type E	1,000	-	-
8005108	Magnet type E	650		

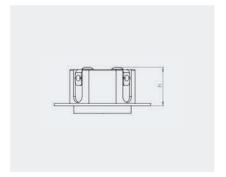
<sup>\*</sup>Individual rubber adapter for different diameters on request.

### MagFly® Magnet type E

Electrical socket magnet with MagFly® technology, adjustable to different sizes. The magnet can be moved on the formwork table. The magnet is activated via pressing and fastens the electric socket at the desired position. The lateral springs are adjustable for different diameters.





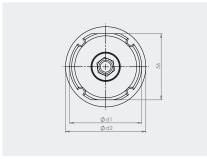


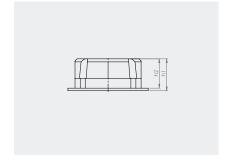
Art. no.	Description	Adhesive force [N]	<b>d</b> [mm]	D [mm]	<b>h</b> [mm]	
8005114	MagFly® magnet type E	0.5	53.5	58.5	29.8	

### Magnet type GB 52 for Kaiser sockets

Electric socket magnet for fastening electrical sockets from the Kaiser company.







Item no.	Designation	Adhesive force [N]	<b>d1</b> [mm]	<b>d2</b> [mm]	<b>h1</b> [mm]	<b>h2</b> [mm]
8005123	Magnet type GB 52 for Kaiser sockets	850	61	68	27	25

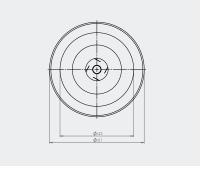
<sup>\*</sup>Other sizes on request.

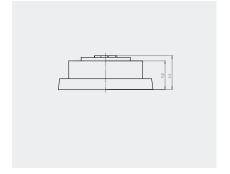
# Magnets for fastening recess tubes

### Magnet type R for fastening recess tubes

The magnet type R is designed for recess tubes. This product comprises of a high-grade steel carrier with a high-performance magnetic core.







Art. no.	Description	Adhesive force [N]
8005110	Magnet type R (GB64)	1,000
8005115	Magnet type R (GB80)	1,500
8005109	Magnet type R (GB106)	1,900

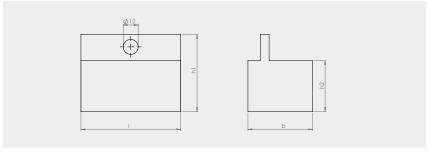
<sup>\*</sup>Other sizes on request.

# Magnets for curves

### **Magnet type BRT**

The magnet type BRT is a special magnet for attaching installation parts to curves or curved shuttering. The thin shape allows a form fit to the substrate and thus a reliable and secure hold.



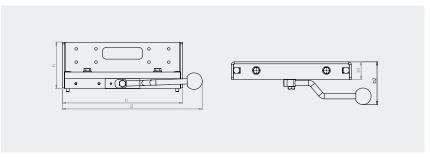


Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	<b>l1</b> [mm]	<b>b</b> [mm]	<b>h1</b> [mm]	<b>h2</b> [mm]
8007067	Magnet type BRT	3,300	1.2	80	50	62	41

### **Special magnet MagPIN**

Special magnet for attaching installation parts to curves or curved shuttering. The curved shape allows a form fit to the substrate and thus a reliable and secure hold.





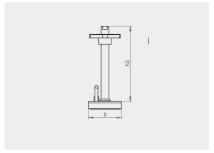
Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	<b>l1</b> [mm]	<b>l2</b> [mm]	<b>b1</b> [mm]	<b>b2</b> [mm]	<b>h</b> [mm]
8009118	Special magnet MagPIN	18,000	5.6	363	413	53	112	140

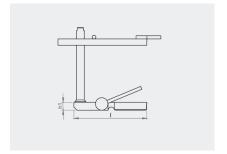
# Magnets for concrete upstands

### **Magnet type FP**

The FP magnetic hold-down device was specially developed for the installation of fibre concrete upstands. On account of its compact design it is also equally suitable for small recesses or light edge shuttering in wood.





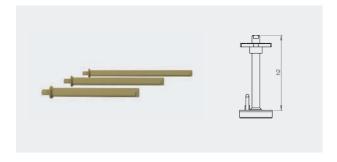


Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h1</b> [mm]	<b>h2</b> [mm]
8006051	FP 1 - 240	5,000	6.2	235	105	25.5	240
8006050	FP 1 - 300	5,000	6.5	235	105	25.5	300
8006053	FP 1 - 400	5,000	6.6	235	105	25.5	400

### **Guide bolts**

Guide bolts for MagFly® magnets with an upper part for holding and pressing down shuttering boards.

Item no.	Description	<b>h2</b> [mm]
8008209	Guide bolt 200 mm	200
8008131	Guide bolt 220 mm	220
8008134	Guide bolt 240 mm	240
8008133	Guide bolt 300 mm	300
8008160	Guide bolt 320 mm	320
8008135	Guide bolt 400 mm	400
8008171	Guide bolt 550 mm	550

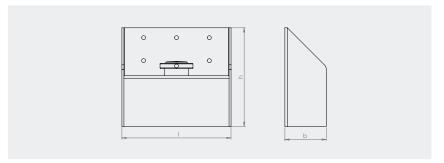


# Magnets for stair formwork

### **BT-Shuttering magnet box TS**

The magnet box TS for stair formwork is designed to be attached directly to the formwork facing on the box.





Item no.	Designation	Adhesive force [N]	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8008112	BT-Shuttering magnet box TS	6,500	2.2	166	63	150





#### **UNIVERSAL SHUTTERING SYSTEM**

### MultiForm window and door openings

MultiForm is a robust and flexible shuttering system for producing the most diverse precast elements.

The Multiform can easily be moved and precisely positioned on the formwork table with the help of the MagFly® magnets. Since the MagFly® AP presses the Multiform against the formwork table, the joint is sealed immediately on activating the magnet if a PE chamfer profile is used on the shuttering board. Subsequent sealing with silicone is thus unnecessary.

A window and door opening suitable for MultiForm

offers a clever solution for enclosed openings in concrete elements.

Using elements that can be removed from the inside of the structure, the shuttering can be removed non-destructively for reuse.

The built-in socket for the MagFly® magnets enables fast and precise assembly and disassembly of the shuttering.

### **Application**

- Manufacture of solid and sandwich walls
- Manufacture of landing slabs, beams and joists
- Use on tilting table, formwork table, circulation pallets and wooden surfaces

#### **Benefits**

- Can be used quickly and ergonomically
- No sealing with silicone between the formwork facings and the formwork table
- Stable and robust system designed for use in precast plants
- The window and door openings can be disassembled from the inside

### **Application**





Place the formwork facing in front of the MultiForm shuttering system and fasten it with screws.



02

Place MagFly® magnets into the MultiForm.



03

Slide and position the shuttering on the formwork table.



04

Fasten the magnets depending on the position of the shuttering.

### Item overview MultiForm



**MultiForm type 1** Height 198



MultiForm type 2 Height 348



MultiForm type 2 Height 98, double

Item no.	Description	Weight [kg]	Dimensi l	ons [mm] b	h
8101050	MultiForm type 1 – formwork angle H70	1.39	280	110	70
8101139	MultiForm type 1 – formwork angle H90	1.75	280	110	90
8101155	MultiForm type 1 – formwork angle H148	1.83	280	115	148
8101144	MultiForm type 1 – formwork angle H190	2.11	280	115	190

Item no.	Description	Weight [kg]	Dimension l	ns [mm] b	h
8101165	MultiForm type 1 – formwork angle H248	2.47	280	115	248
8101207	MultiForm type 1 – formwork angle H290	3.43	280	205	290
8101471	MultiForm type 1 – formwork angle H350	4.06	280	255	350
8101208	MultiForm type 1 – formwork angle H390	4.35	280	266	390
8101470	MultiForm type 1 – formwork angle H440	6.36	280	255	440
8101469	MultiForm type 1 – formwork angle H490	6.96	280	255	490
8101468	MultiForm type 1 – formwork angle H540	7.40	280	255	540
8101467	MultiForm type 1 – formwork angle H590	7.96	280	255	590
8101466	MultiForm type 1 – formwork angle H640	8.58	280	255	640
8101451	MultiForm type 1 – formwork angle H690	9.56	280	255	690
8101063	MultiForm type 2 – 98/3025	12.2	3,025	150	98
8101085	MultiForm type 2 – 148/3025	16.4	3,025	150	148
8101096	MultiForm type 2 – 198/3025	19.4	3,025	150	198
8101107	MultiForm type 2 – 248/3025	23.3	3,025	200	248
8101118	MultiForm type 2 – 298/3025	25.0	3,025	200	298
8101122	MultiForm type 2 – 348/3025	30.0	3,025	200	348
8101123	MultiForm type 2 – 398/3025	34.1	3,025	250	398
8101125	MutliForm type 2 – 448/3025	36.1	3,025	250	448
8101127	MultiForm type 2 – 498/3025	38.0	3,025	250	498
8101379	MultiForm type 2 – 548/3025	44.5	3,025	250	548
8101290	MultiForm type 2 – 598/3025	47.0	3,025	250	598
8101205	MultiForm type 2 – 698/3025	51.6	3,025	300	698
8101063100	MultiForm type 2 – 98/3000 double	25.5	3,000	350	98
8101085200	MultiForm type 2 – 148/3000 double	33	3,000	350	148
8101096200	MultiForm type 2 – 198/3000 double	43	3,000	400	198
8101107200	MultiForm type 2 – 248/3000 double	46	3,000	400	248
8101118200	MultiForm type 2 – 298/3000 double	49.83	3,000	400	298
8101118300	MultiForm type 2 – 298/3000 double	49.7	3,000	350	298
8101122300	MultiForm type 2 – 348/3000 double	56.22	3,000	350	348

<sup>\*</sup>Additional sizes available on request.

### **Overview** window and door openings





MF-spacer



Window and door opening

MultiForm MFE (corner joint)

Item no.	Product	Description	Info
8101461	MultiForm shuttering system – window opening	148/900 x 900 mm	consists of: 4 MultiForm corners and spacers
8101311	MultiForm shuttering system – window opening	148/1,000 x 1,000 mm	consists of: 4 MultiForm corners and spacers
8101458	MultiForm shuttering system – window opening	148/2,000 x 2,000 mm	consists of: 4 MultiForm corners and spacers
8101459	MultiForm shuttering system – window opening	148/1,200 x 900 mm	consists of: 4 MultiForm corners and spacers
8101460	MultiForm shuttering system – window opening	148/1,800 x 1,150 mm	consists of: 4 MultiForm corners and spacers
8101310	MultiForm shuttering system – door opening	148/1,000 x 2,000 mm	consists of: 4 MultiForm corners and spacers

### **Accessories**

Item no.	Product	Designation
8101157	MultiForm shuttering system – MFE 98	Dimensions: 408 x 98
8101243	MultiForm shuttering system – MFE 148	Dimensions: 408 x 148
8101142	MultiForm shuttering system – MFE 198	Dimensions: 408 x 198
8101253	MultiForm shuttering system – MFE 248	Dimensions: 408 x 248
8101278	MultiForm shuttering system – MFE 298	Dimensions: 408 x 298
8101224	MultiForm shuttering system – MFE 348	Dimensions: 408 x 348
8101244	MultiForm shuttering system – MFE 398	Dimensions: 408 x 398
8101472	MultiForm shuttering system – MFE 498	Dimensions: 408 x 498
8101443	MultiForm shuttering system – MFE 148/728 inside corner	Dimensions: 607/550 x 148
8101213	MultiForm shuttering system – MFE 198/728 inside corner	Dimensions: 607/550 x 198
8008053	MultiForm clamp	For shuttering heights from 500 mm
8008072	MultiForm adapter	For wooden formwork
8008062	MultiForm connecting element	
8008063	MultiForm – spacer for connecting element	
8101293	MultiForm single-sided rack system	More information on page 37
8101294	MultiForm single-sided rack system on flatbed push cart	More information on page 38



Inside corner from MultiForm type 2



MultiForm adapter for wooden shuttering



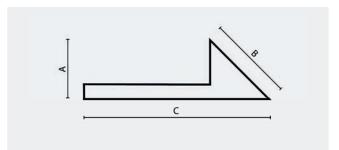
MultiForm clamp

### **Chamfer Profiles**

### PE chamfer profile

The PE chamfer profiles are outstanding for manufacturing chamfers.



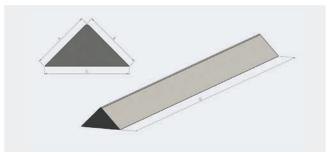


Item no.	Designation	A [mm]	B [mm]	C [mm]
2002106	Chamfer profile PE 10/14.2, nail flange red	10	14.2	27
2002311	Chamfer profile PE 10/15, nail flange yellow	10	15	28
2002107	Chamfer profile PE 15/21.2, nail flange red	15	21.2	32

### Steel chamfer profile

Steel chamfer profiles are outstanding for manufacturing chamfers. The profiles are available with or without magnets.





Item no.	Designation	A [mm]	B [mm]	C [mm]	<b>D</b> [mm]
2002177	Chamfer profile, steel, without magnets	10	10	14	4,000
2002178	Chamfer profile, steel, one-sided magnetised – leg	10	10	14	3,000
2002283	Chamfer profile, steel, one-sided magnetised – leg	13	13	18	3,000
2002182	Chamfer profile, steel, one-sided magnetised – leg	15	15	21	3,000
2002332	Chamfer profile, steel without magnets	20	20	27	3,000
8101318	Chamfer profile, steel, magnetised hypothenuse	20	20	28	3,000

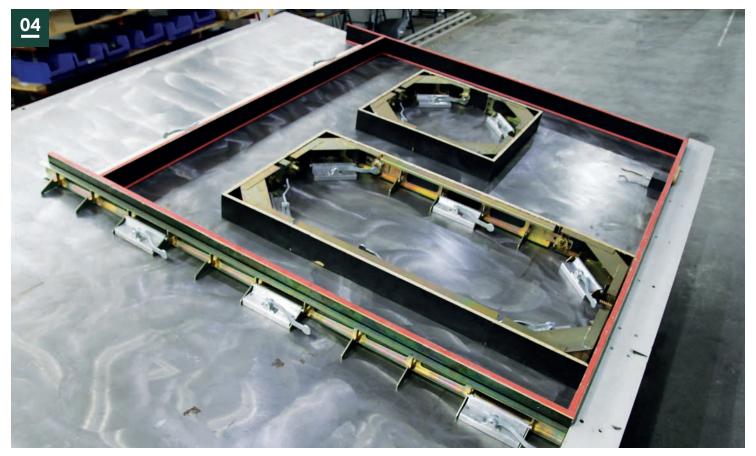


### Application examples

- MultiForm in connection with the MagFly® AP
- MultiForm connection element
- MultiForm clamp for high shuttering
- 04 Window and door openings on tilting table





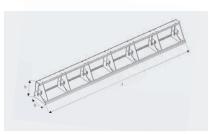


### Other shuttering systems

### **FlyFrame®**

FlyFrame® is an ultra-light aluminium formwork beam equipped with mounts for MagFly® magnets. The light design is stable and very user-friendly, enabling the formwork beam to be moved without a crane. Numerous mounting parts can also be installed via openings on the back. Together with the magnets, the formwork beam can be moved particularly easily on the formwork table and fastened at the exact position.



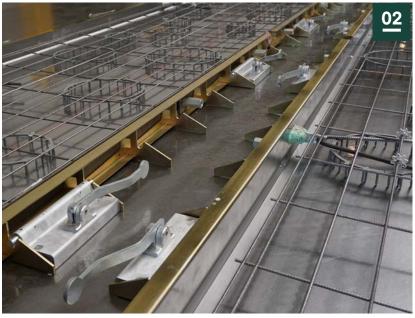


Item no.	Designation	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8101134	FlyFrame® 98/3000	4.7	3,000	180	98
8101135	FlyFrame® 198/3000	6.7	3,000	180	198
8101136	FlyFrame® 298/3000	7.7	3,000	180	298



### **Application examples**

- Onner formation with FlyFrame® combined with MagFly® AP
- 02 UniForm® shuttering system
- Shuttering application with MagFly® AP
- Shuttering application with MagFly® AP





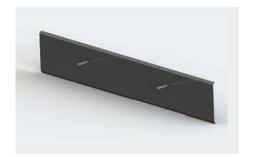


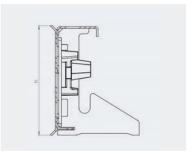


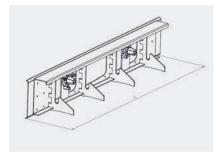


### **UniForm®** shuttering system\*

UniForm® is a continuously usable formwork facing made of steel featuring Dywidag threaded rods on the back for fastening to the MultiForm type 2. Optionally including a chamfer on the top or bottom of the sheet.







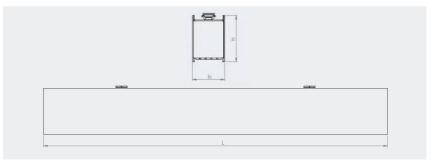
Item no.	Designation	l [mm]	h [mm]
8101295	UniForm® 140	3,100	140
8101300	UniForm® 180	3,100	180
8101234	UniForm® 200	3,100	200
8101303	UniForm® 240	3,000	240
8101317	UniForm® 400	3,050	400
8101318	UniForm® 600	3,050	600

<sup>\*</sup>All UniForm® formwork sheets contain the necessary Dywidag threaded rods.

#### **Solid formwork**

The stable H profile is designed for the production of solid and sandwich walls. The crane crossbeam can be used according to the H profile.





Item no.	Designation	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8109496	Solid formwork - H profile, 160/140/1000	1,000	140	160

### Shuttering - U profile

The U profile is characterised by permanently installed magnets. The magnets are activated by being pressed from above and deactivated by a release lever. The U profile is recommended for fully automated systems. It is manufactured on request.



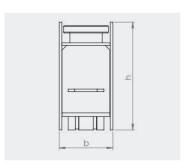


Item no.	Designation	<b>Mass</b> [kg]	<b>b</b> [mm]	<b>h</b> [mm]	
8109150	Shuttering – U profile, 70/60/3000	18.4	60	70	
8109293	Shuttering – U profile, 80/60/3000	19.7	60	80	

### **Shuttering - H profile**

The H profile is characterised by permanently installed magnets. The magnets are activated by being pressed from above and deactivated by a release lever. The H profile is recommended for fully automated systems. It is manufactured on request.



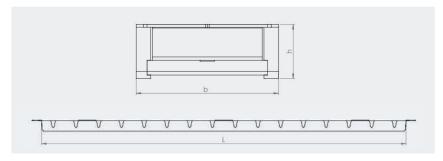


Item no.	Designation	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8109419	Shuttering - H profile, 140/80/70/750	9.4	750	70	140
8109495	Shuttering - H profile, 160/140/3200	93.2	3,200	140	160
8109470	Shuttering - H profile, 200/140/1500	55.8	1,500	140	200

### PE transversal shuttering

The HDPE transversal shuttering for consistent and efficient reinforcement of multiple elements on a pallet. It is manufactured on request.





Item no.	Designation	<b>Mass</b> [kg]	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8109464	HDPE transversal shuttering 2500/195/70 – R8/45 double-sided	17.7	2,500	195	70

### Release lever

The lever is used to release U and H profiles as well as magnet boxes.

Item no.	Designation
8008156	Release lever D40
8008185	Release lever D45
8008090	Release lever D50



### PE shuttering profile

Shuttering profile for panel ceilings, double walls and special parts.

Item no.	Designation	Mass [kg]	<b>b</b> [mm]	<b>h</b> [mm]
8109457	Shuttering profile 70/60/3000-2	13,6	60	70
8109296	Shuttering profile 60/60/3000-2	10,8	60	60



# **Distributor**

# BT INNOVATION HAS A WORLDWIDE DISTRIBUTOR NETWORK

#### Belaium:

Hakron b.v.b.a. Phone: +32 54 317676 www.hakron.be

#### Netherlands:

Hakron Nunspeet b.v. Phone: +31 341 27 88 00 www.hakron.nl

#### France (North-West):

ADITEC SAS

Phone: +33 2 41 55 65 58 www.aditec-materiaux.com

#### France (Paris Metropolitan Area):

ADC Accessoires de Construction Tel: +33 1 39 33 18 60 www.adc-sas.com

#### Denmark

Jordahl & Pfeifer Byggeteknik A/S Phone: +45 9863 1900 www.jordahl-pfeifer.dk

#### Sweden / Norway:

D2B Byggprodukter Phone: +46 31916301 www.d2b-bygg.se

#### Fetonia:

MT Grupp OÜ
Phone: +372 656 3180
www.mtgrupp.ee

#### Finland:

Muottikolmio Oy Phone: +358 98634360 www.muottikolmio.fi

#### Lithuania

UAB Delta Nova Phone: + 370 5 272 53 08 www.deltanova.lt

#### Poland

ARS-3 Sp. z o.o. Sp. k. Phone: +48 41 362 11 33 www.ars-3.pl

Pietsch Engineering Phone: +49 5205 2369617 www.pietsch-engineering.de

#### **South Eastern Europe**

#### maxtruder GmbH

(Croatia, Slovenia, Bosnia and Herzegovina, Serbia, Montenegro, Albania, Bulgaria, Romania, Hungary, Slovakia, Northern Macedonia, Greece, Kosovo)

Phone: +385 99 675 3277 Tomislav Maslic t.maslic@maxtruder.de

#### Ukraine

OOO "Protek-S" (PROTEX) Phone: +380 44 220 14 40 www.sanpol.ua

#### Russia

AO PROMSTROIKONTRAKT Phone: +7 495 234 2502 www.psk-holding.ru

Torgoviy Dom Stroitelnye Sistemy Phone: +7 812 380 7542 www.s-kpd.ru

#### **Ireland / Northern Ireland:**

SDG Construction Technology Ltd. Phone: +44 28 37528 999 www.sdg.ie

#### **Great Britain:**

SDG Construction Technology Ltd. Phone: +44 28 37528 999 www.sdg.ie

Inform UK Ltd. Phone: +44 1223 862230 www.informuk.co.uk

#### Canada

Sylvan Products, LLC Phone: +1 503 639 9000 www.sylvan-products.com

National Concrete Accessories Phone: +1 416 245 4720 www.nca.ca

#### USA:

Sylvan Products, LLC Phone: +1 503 639 9000 www.sylvan-products.com

#### Australia

#### PSA

Phone: +61 3 9764 0031 www.psa.com.au



## BT magnet rack

The BT magnet rack has room to hold 28 MagFly® magnets securely and neatly. The magnet rack is also available in different colours according to the customer's wishes.

Item no.	Designation	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8008061	Magnet rack with adapter	500	500	1,850



## Flatbed push cart including two magnet racks

The flatbed push cart enables flexible working. The two magnet racks can hold and transport 56 MagFly® magnets securely and neatly.



Item no.	Designation	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8008145	Flatbed push card including two magnet racks	1,600	900	2,300

### MultiForm single-sided rack system

The MultiForm rack system is the perfect organisation system for the secure storage of MultiForm shuttering. The rack is loaded from one side only.

Item no.	Designation	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]	
8101293	MultiForm single-sided rack system	2,516	916	2,076	



## Flatbed push cart with MultiForm rack

The flatbed push cart with a MultiForm rack system combines flexibility of use with secure storage of the shuttering system.

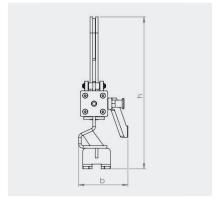
Item no.	Designation	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8008196	Flatbed push cart with MultiForm rack	2,516	915	2,556



# BT Gripper cross beam for solid shuttering

BT Gripper lifting device for solid shuttering. The gripper jaws underneath the cross beam grip under the buttons on the shuttering and lift it.



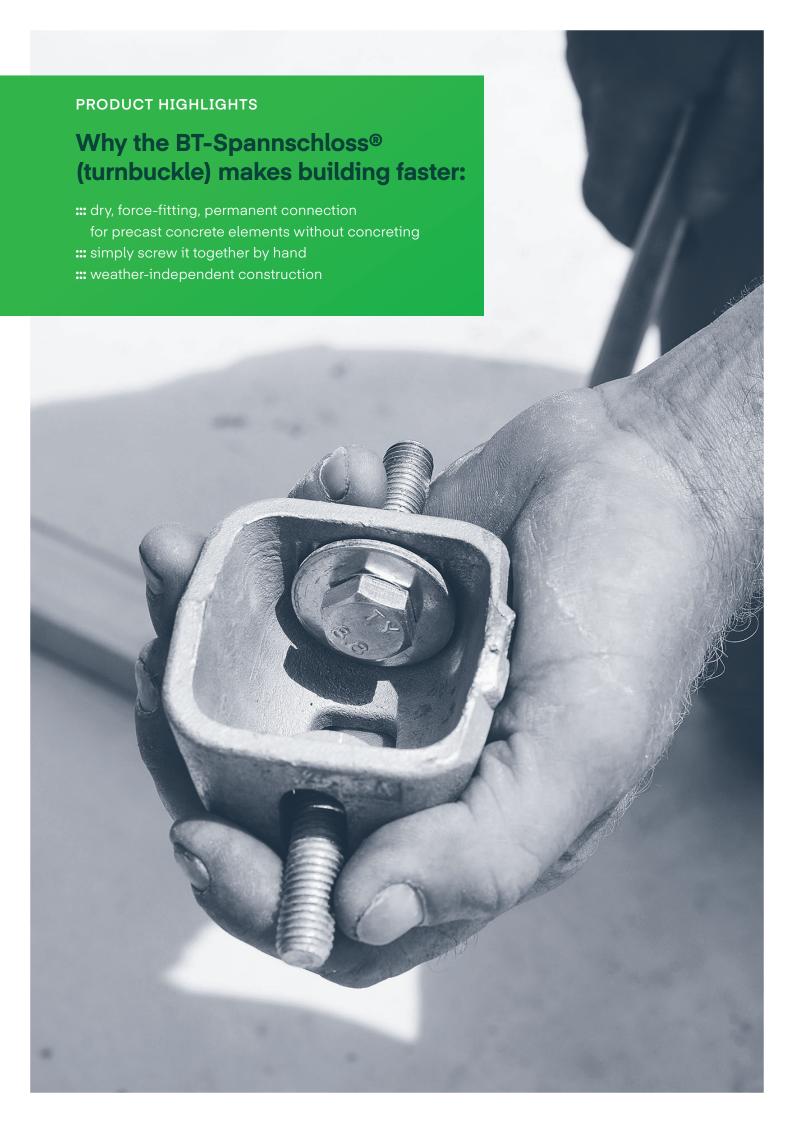


Item no.	Designation	l [mm]	<b>b</b> [mm]	<b>h</b> [mm]
8101475	BT Gripper cross beam for solid shuttering	816	155	475

# Sign up for our Newsletter

and receive attractive offers and interesting information!





# CONNECT PRECAST CONCRETE ELEMENTS DRY AND FAST



# BT-Spannschloss® (turnbuckle)

The BT-Spannschloss® (turnbuckle) is part of an easy to use connection system – without additional materials and tools.

The BT-Spannschloss® (turnbuckle) enables efficient and precise assembly and durable connections for precast concrete elements. By using BT-Spannschloss® (turnbuckle) and corresponding connection materials, precast elements can be joined together without using mineral grouting. This means no curing

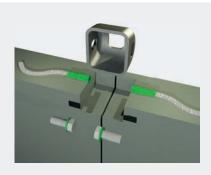
or standstill times due to low temperatures. The BT-Spannschloss® (turnbuckle) can be fully loaded straight away.

The building inspection approval (Z-14.4-599) certifies the reliability of the product.

The BT-Spannschloss® (turnbuckle) is offered in three sizes – M12, M16 and M20 – and is available in galvanised design or stainless steel.

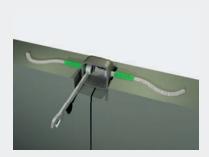
## **Benefits Applications** L-shaped retaining walls in flood protection **Dry bolted connection** Residential and commercial construction No joint grouting, no special tools Agricultural systems Can be loaded immediately, no curing times (e.g. biogas systems, silos) Assembly regardless of weather, Sewer and underground construction (e.g. shaft structures, media ducts, even at low temperatures or in case of precipitation amphibian tunnels) Can be disassembled - removal of temporarily Temporary structures installed structures Three-point connection possible

## **Application**



## 01

Place the precast concrete elements next to each other and insert the BT-Spannschloss® in the recess provided. Then screw the bolts by hand to the fixing anchors.



# 02

Tighten the BT-Spannschloss® (turnbuckle) connection by using the ratchet combination wrench until the required joint width has been reached.



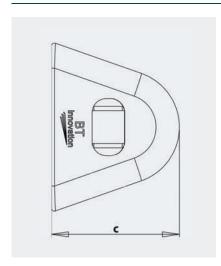
## 03

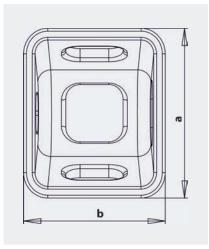
Where appropriate, fill the recess with a suitable mortar to protect the BT-Spannschloss® (turnbuckle) against corrosion.

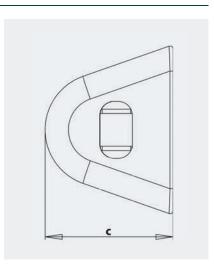


#### THREE-POINT CONNECTION POSSIBLE!

#### **Technical data**







Product	<b>a</b> [mm]	<b>b</b> [mm]	<b>c</b> [mm]	<b>Tensile strength N*</b> [kN]	Shear strength V* [kN]
BT-Spannschloss® (turnbuckle) M12	70	70	51	33.7	9.4
BT-Spannschloss® (turnbuckle) M16	90	90	65	43.5	26.2
BT-Spannschloss® (turnbuckle) M20	120	100	90	52.2	24.8

<sup>\*</sup>According to DiBt Approval Z-14.4-599

## Item overview



**BT-Spannschloss® (turnbuckle)** available in 3 sizes, material: Stainless steel or galvanised



**Accessory** fixing anchor



**Accessory** recess former, available with or without magnet

# BT-Spannschloss® (turnbuckle)

Item no.	Product	Designation	Information
4009086	BT-Spannschloss® (turnbuckle) M12 galvanised, set	including: 2 hexagon head bolts (ISO 4017 – M12 x 40 – 8.8 – tZn) 2 washers (ISO 7093 – 1-12-200 HV – tZn)	for wall thickness ≥ 6 cm ETA-19/0013
4009084	BT-Spannschloss® (turnbuckle) M12 stainless steel, set	including: 2 hexagon head bolts (ISO 4017 – M12 x 40 – A4-70) 2 washers (ISO 7093-1 – 12 – 200 HV – A4)	for wall thickness ≥ 6 cm
4009074	BT-Spannschloss® (turnbuckle) M16 galvanised, set	including: 1 hexagon head bolt (ISO 4017 – M16 x 40 – 8.8 – tZn) 1 hexagon head bolt (ISO 4017 – M16 x 50 – 8.8 – tZn) 2 washers (ISO 7093-1 – 16 – 200 HV – tZn)	for wall thickness ≥ 12 cm ETA-19/0013
4009083	BT-Spannschloss® (turnbuckle) M16 stainless steel, set	including: 1 hexagon head bolt (ISO 4017 – M16 x 40 – A4-70) 1 hexagon head bolt (ISO 4017 – M16 x 50 – A4-70) 2 washers (ISO 7093-1 – 16 – 200 HV – A4)	for wall thickness ≥ 12 cm
4009072	BT-Spannschloss® (turnbuckle) M20 galvanised, set	including: 2 hexagon head bolts (ISO 4017 – M20 x 60 – 8.8 – tZn) 2 washers (ISO 7093-1 – 20 – 200 HV – tZn)	for wall thickness ≥ 14 cm ETA-19/0013
4009085	BT-Spannschloss® (turnbuckle) M20 stainless steel, set	including: 2 hexagon head bolts (ISO 4017 – M20 x 60 – A4-70) 2 washers (ISO 7093-1 – 20 – 200 HV – A4)	for wall thickness ≥ 14 cm
4009123	BT-Spannschloss® (turnbuckle) starter set M16	including: 6 BT-Spannschloss® (turnbuckles) M16 galvanised, 6 M16 x 50 bolts, 6 M16 x 40 bolts, 12 washers M16, 12 T-fixx anchors M16 x 100	plus, free of charge: 1 ratched combination wrench 24 mm, 6 disposable recess formers, 6 nailing plates M16
4009152	BT-Spannschloss® (turnbuckle) starter set M20	including: 6 BT-Spannschloss® (turnbuckles) M20 galvanised, 12 M20 x 60 bolts, 12 washers M20 12 T-fixx anchors M20	plus, free of charge: 1 ratched combination wrench 30 mm, 6 disposable recess formers, 6 nailing plates M20

## **Accessories**

Item no.	Product	Designation
8009132800	Recess former set for BT-Spannschloss® (turnbuckle) M12 magnetic	including: 2 cylinder head bolts ISO 4762 – M12 x 40 1 cylinder head bolt ISO 4762 – M12 x 80
8009100800	Recess former set for BT-Spannschloss® (turnbuckle) M16 magnetic	including: 2 cylinder head bolts ISO 4762 – M16 x 45 1 cylinder head bolt ISO 4762 – M16 x 90
8009099800	Recess former set for BT-Spannschloss® (turnbuckle) M20 magnetic	including: 2 cylinder head bolts ISO 4762 – M20 x 45 1 cylinder head bolt ISO 4762 – M20 x 100
3003213	T-FIXX® sleeve anchor® – M12 x 50 – gv	with European Technical Assessment ETA-13/0222
3003214	T-FIXX® sleeve anchor® – M12 x 70 – gv	with European Technical Assessment ETA-13/0222
3003203	T-FIXX® sleeve anchor® – M12 x 95 – gv	with European Technical Assessment ETA-13/0222
3003151	T-FIXX® sleeve anchor® – M16 x 60 – gv	with European Technical Assessment ETA-13/0222
3003150	T-FIXX® sleeve anchor® – M16 x 100 – gv	with European Technical Assessment ETA-13/0222
3003149	T-FIXX® sleeve anchor® – M16 x 125 – gv	with European Technical Assessment ETA-13/0222
3003212	T-FIXX® sleeve anchor® – M20 x 70 – gv	with European Technical Assessment ETA-13/0222
3003153	T-FIXX® sleeve anchor® – M20 x 100 – gv	with European Technical Assessment ETA-13/0222
3003152	T-FIXX® sleeve anchor® – M20 x 145 – gv	with European Technical Assessment ETA-13/0222
3003163	<b>DB 682 waved anchor</b> – M12 × 108 – gv	with European Technical Assessment ETA-11/0288
3003067	<b>DB 682 waved anchor</b> – M16 x 172 – gv	with European Technical Assessment ETA-11/0288
3003064	<b>DB 682 waved anchor</b> – M20 x 192 – gv	with European Technical Assessment ETA-11/0288
3003331	<b>DB 682 waved anchor</b> – M12 x 108 stainless steel	with European Technical Assessment ETA-11/0288
3003134	<b>DB 682 waved anchor</b> – M16 x 172 stainless steel	with European Technical Assessment ETA-11/0288
3003184	DB 682 waved anchor – M20 x 192 stainless steel	with European Technical Assessment ETA-11/0288
4009089	Three-point adapter for BT-Spannschloss® (turnbuckle) M12 galvanised	for manufacturing three-point connections ETA-19/0013
4009090	Three-point adapter for BT-Spannschloss® (turnbuckle) M16 galvanised	for manufacturing three-point connections ETA-19/0013
4009091	Three-point adapter for BT-Spannschloss® (turnbuckle) M20 galvanised	for manufacturing three-point connections ETA-19/0013



## **Application examples**

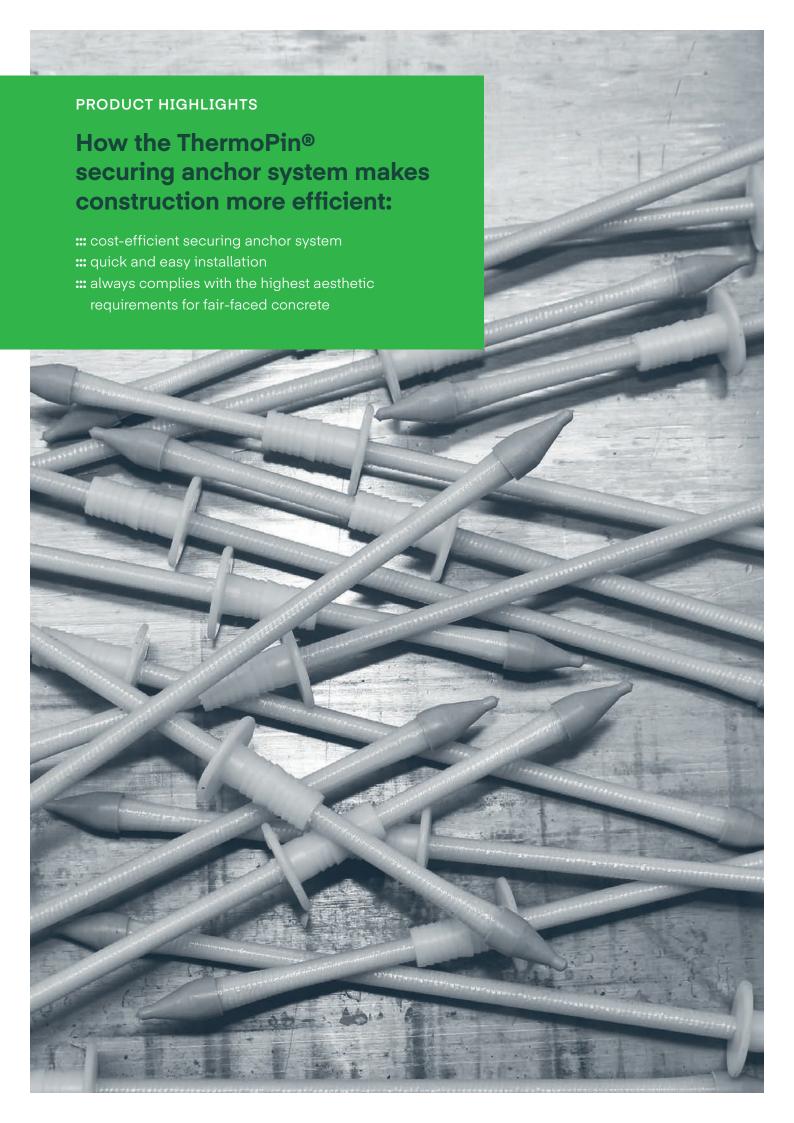
- BT-Spannschloss® (turnbuckle) in residential construction (Deutsche Reihenhaus AG)
- BT-Spannschloss® (turnbuckle) in agricultural construction (biogas plant)
- BT-Spannschloss® (turnbuckle) in combination with RubberElast® in **sewer construction**
- Flood protection wall under construction
- <u>05</u> BT-Spannschloss® (turnbuckle), three-point connection











## FOR CREATING ENERGY-EFFICIENT, CORE-INSULATED CONCRETE WALLS

# **ThermoPin®**

The ThermoPin® is a glass fibre reinforced plastic (GFRP) securing anchor for sandwich walls and core-insulated double walls.

The ThermoPin® is used to connect facing and load-bearing layers of core-insulated precast concrete elements. The GFRP material is suitable for use in thin structural elements.

Thanks to the attached cap, the bar slides smoothly into the fresh concrete, enabling particularly fast assembly. The fixed sleeve guarantees correct installation and ensures that the penetration point

in the insulation is sealed and concrete cannot flow into the opening. As a result, the bar ultimately disappears in the concrete and is not visible on the surface. The result is a perfect surfaces without visible flaws.

ThermoPins® are conical widened at the ends to increase resistance to pulling out. A particularly high tensile strength is achieved by using exclusively fully intact glass fibres along the bar axis.

The ThermoPin® is available in 2 versions: horizontal or diagonal anchor type.

## **Application**

Sandwich walls

Core-insulated double walls

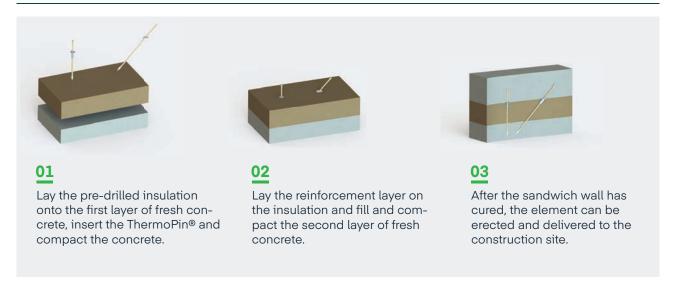
#### **Benefits**

Good value – low assembly costs thanks to simple and fast installation

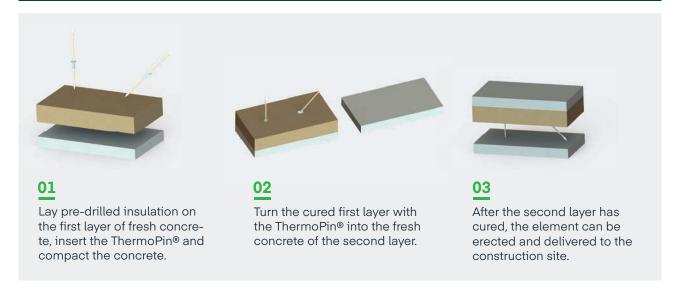
Ourable – proven stability, also in alkaline media

Thin – structures with a low layer thickness are possible

## Application - assembly sandwich wall



## **Application** - assembly of core-insulated double walls



#### Item overview

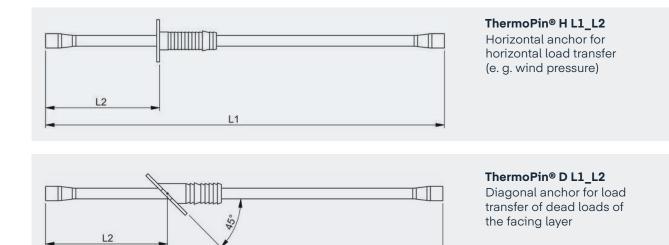


ThermoPin® fibre reinforced anchor

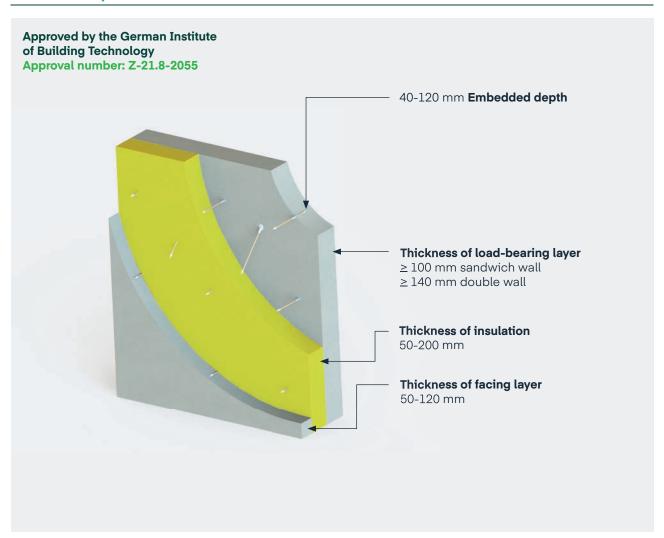


Accessories: Cap

Supplied with attached cap (item no. 3009063)



### **Installation parameters**



# ThermoPin®

Item no.	Item designation	Item description
3009299	ThermoPin® H180_60	L1: 180 mm; L2: 60 mm; horizontal
3009177*	ThermoPin® H180_80	L1: 180 mm; L2: 80 mm; horizontal
3009176	ThermoPin® H190_80	L1: 190 mm; L2: 80 mm; horizontal
3009170*	ThermoPin® H210_80	L1: 210 mm; L2: 80 mm; horizontal
3009179*	ThermoPin® H230_80	L1: 230 mm; L2: 80 mm; horizontal
3009322*	ThermoPin® H240_80	L1: 240 mm; L2: 80 mm; horizontal
3009173*	ThermoPin® H250_80	L1: 250 mm; L2: 80 mm; horizontal
3009172	ThermoPin® H270_80	L1: 270 mm; L2: 80 mm; horizontal
3009312*	ThermoPin® H280_140	L1: 280 mm; L2: 140 mm; horizontal
3009295	ThermoPin® H280_160	L1: 280 mm; L2: 160 mm; horizontal
3009171*	ThermoPin® H290_80	L1: 290 mm; L2: 80 mm; horizontal
3009174	ThermoPin® H310_80	L1: 310 mm; L2: 80 mm; horizontal
3009238*	ThermoPin® H340_160	L1: 340 mm; L2: 160 mm; horizontal
3009236*	ThermoPin® H340_180	L1: 340 mm; L2: 180 mm; horizontal
3009234*	ThermoPin® H340_200	L1: 340 mm; L2: 200 mm; horizontal
3009232	ThermoPin® H340_220	L1: 340 mm; L2: 220 mm; horizontal
3009160*	ThermoPin® H340_80	L1: 340 mm; L2: 80 mm; horizontal
3009287*	ThermoPin® H380_180	L1: 380 mm; L2: 180 mm; horizontal
3009249*	ThermoPin® H380_200	L1: 380 mm; L2: 200 mm; horizontal
3009247*	ThermoPin® H380_220	L1: 380 mm; L2: 220 mm; horizontal
3009245*	ThermoPin® H380_240	L1: 380 mm; L2: 240 mm; horizontal
3009189*	ThermoPin® D250_110	L1: 250 mm; L2: 110 mm; diagonal
3009181*	ThermoPin® D295_110	L1: 295 mm; L2: 110 mm; diagonal
3009188*	ThermoPin® D325_110	L1: 325 mm; L2: 110 mm; diagonal
3009124*	ThermoPin® D340_110	L1: 340 mm; L2: 110 mm; diagonal
3009187*	ThermoPin® D350_110	L1: 350 mm; L2: 110 mm; diagonal
3009185	ThermoPin® D410_110	L1: 410 mm; L2: 110 mm; diagonal
3009204	ThermoPin® D445_225	L1: 445 mm; L2: 225 mm; diagonal
3009334	ThermoPin® D465_100	L1: 465 mm; L2: 100 mm; diagonal
3009137*	ThermoPin® D485_80	L1: 485 mm; L2: 80 mm; diagonal

<sup>\*</sup>Stocked items – additional sizes on request

# **Accessories**

Item no.	Item
3009066	10 mm cap for ThermoPin®, white
3009063	10 mm cap for ThermoPin®, grey
3009061	20 mm cap for ThermoPin®, grey
3009091	20 mm cap for ThermoPin®, black
3009067	20 mm cap for ThermoPin®, white
3009284	45° angle gauge for ThermoPin® securing anchor system



#### References

- BT company building Magdeburg, Germany
- O2 Apartment building La Neuveville,Switzerland
- Ourtyard house Rheinfelden, Switzerland
- Detached house –Rebstein, Germany









#### SPACER FOR THERMALLY ISOLATED, CORE-INSULATED DOUBLE WALLS

# **GFRP** spacer

The GFRP spacer is a profiled bar made of glass fibre reinforced plastic. The spacer guarantees the dimensionally accurate production of core-insulated double walls.

The profiling of the GFRP bar ensures increased pullout and punching shear resistance. The ends of the bar are conically tapered, but the bar nevertheless has a central bearing surface and therefore does not bend sideways. The central load keeps the spacer from deforming terms of height, and no excess dimensioning needs to be planned.

Furthermore, the tapering at the end allows fast and simple penetration into the fresh concrete, since larger aggregates are simply pushed aside.

The bar is hardly visible on the surface thanks to the tapering at the end. The bar is highly resistant to alkaline substances.

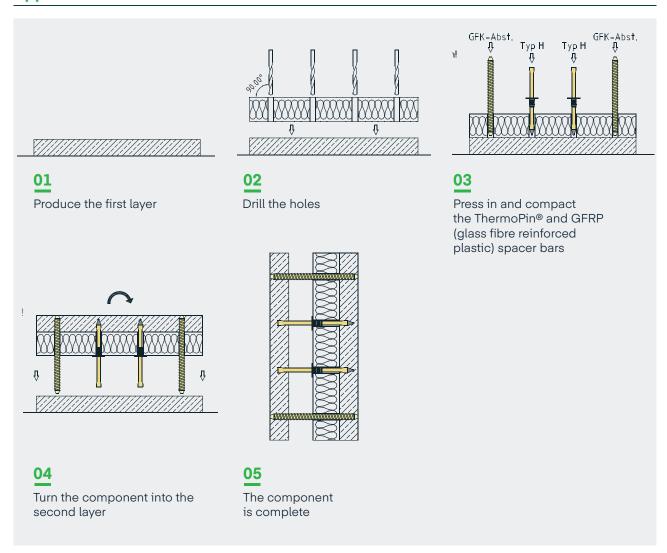
### **Application**

- ✓ Core-insulated double walls
- Residential & commercial construction, single or multi-storey

#### **Benefits**

- Energy efficient adjustment of wall thicknesses without thermal bridges
- Powerful high pull-out and punching shear resistance due to profiling
- Economical low assembly costs thanks to simple and fast installation
- Compatible the perfect addition to the ThermoPin® securing anchor system

## **Application**



### Item overview



# GFRP (glass fibre reinforced plastic) spacer bar

Item no.	Item	Diameter	Description
3009225	GFRP (glass fibre reinforced plastic) spacer bar 300 mm profiled	0 12 mm	spacers for core-insulated double walls with 300 mm wall thickness
3009226	GFRP (glass fibre reinforced plastic) spacer bar 350 mm profiled	0 12 mm	spacers for core-insulated double walls with 350 mm wall thickness
3009224	GFRP (glass fibre reinforced plastic) spacer bar 360 mm profiled	0 12 mm	spacers for core-insulated double walls with 360 mm wall thickness
3009318	GFRP (glass fibre reinforced plastic) spacer bar 365 mm profiled	0 12 mm	spacers for core-insulated double walls with 365 mm wall thickness
3009223	GFRP (glass fibre reinforced plastic) spacer bar 400 mm profiled	0 12 mm	spacers for core-insulated double walls with 400 mm wall thickness
3009321	GFRP (glass fibre reinforced plastic) spacer bar 420 mm profiled	0 12 mm	spacers for core-insulated double walls with 420 mm wall thickness
3009276	GFRP (glass fibre reinforced plastic) spacer bar 440 mm profiled	0 12 mm spacers for core-insulated doub with 440 mm wall thickness	
3009277	GFRP (glass fibre reinforced plastic) spacer bar 500 mm profiled	0 12 mm	spacers for core-insulated double walls with 500 mm wall thickness

Other lengths available on request



# Application examples

- Production of a core-insulated double wall with sandwich parapet
- Production of a core-insulated double wall base element
- Production of a core-insulated double wall with sandwich parapet







#### SEALING TAPE FOR COMPONENT JOINTS BETWEEN PREFABRICATED ELEMENTS

# **RubberElast®**

RubberElast® is a proven, self-adhesive crushing joint tape for the secure and pressure-tight sealing of structural joints between prefabricated elements.

RubberElast® can be processed quickly and easily without additional tools. The self-adhesive RubberElast® is applied to the surface of a structural element on one side. Next, the precast element is mounted and the RubberElast® in the structural joint is compressed so that the structural joint is filled. After compression, the joint is immediately waterproof. We recommend the use of the BT-Spannschloss® (turnbuckle) to assemble precast walls. The material remains continuously elastic, which permanently seals the joint. Installation should take place within a temperature range from -10 °C to 40 °C.

RubberElast® also retains its elasticity at low temperatures. In addition to very good adhesion to concrete, the sealing tape also exhibits excellent adhesive qualities on metals, glass and other materials.

Typical usages include sealing precast concrete slabs/joints during hydraulic construction, as well as cellars and other waterproof structures, including flange joints. Thanks to its resistance to aggressive process liquids, RubberElast® is the perfect option, even for applications in the wastewater sector.

A test certificate from the Material Testing Institute of Braunschweig guarantees its reliability.

### **Applications**



(e.g. L-shaped retaining walls in flood protection)

Sewer and civil engineering
(e.g. shaft structures, media channels, amphibian tunnels)
multi-storey

Residential & commercial building (e.g. waterproof cellars, white tanks)

### **Properties**



Water pressure-tight up to 0.5 bar



Application from -10°C to +40°C



No swelling in contact with water



Resistant to weather acid, alcali and salt

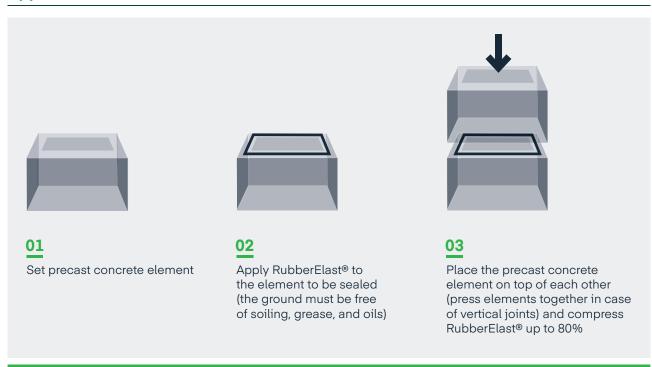


Immediately waterproof



Permanently elastic

## **Application**



(!) NOTE: THE PROCESSING INSTRUCTIONS IN THE TECHNICAL DATA SHEET APPLY.



## Item overview



RubberElast® sealing tape

## **RubberElast®**

Item no.	Size	Joint width	Wall thickness
5002052	RubberElast® 17 x 17 mm	3.4 mm	8.5 cm
5002053	RubberElast® 25 x 19 mm	3.8 mm	12.5 cm
5002054	RubberElast® 32 x 25 mm	5.0 mm	16.0 cm
5002055	RubberElast® 38 x 32 mm	6.4 mm	19.0 cm
5002056	RubberElast® 48 x 42 mm	8.4 mm	24.0 cm

# **Technical information**

Colour	black	
Processing form	self-adhesive on rolls with protective foil	
Pressure resistance	1.39 N/mm² at fast compression by 80%	
Max. joint offset	up to 7 mm for sizes: 38 x 32, 48 x 42 up to 3 mm for sizes: 32 x 25, 25 x 19, 17 x 17	
Temperature resistance	-40°C to +60°C	
Processing temperature	-10°C to +40°C for component and material temperature	



(!) NOTE: FOR ADDITIONAL INFORMATION, PLEASE REFER TO THE TECHNICAL DATA SHEET.



# Application examples

- 01 RubberElast® applied to box culverts
- RubberElast® sealing for **manholes**
- RubberElast® sealing for flood protection walls
- 04 RubberElast® for sealing L-shaped retaining walls









#### SEALING TAPE FOR WORKING JOINTS AND CRACK CONTROL JOINTS

# SynkoElast®

SynkoElast® is a simple to prepare, internal joint tape on a polymer bitumen base. Used in construction and crack control joints in waterproof in-situ concrete structures.

SynkoElast® can be applied both to fresh concrete and set concrete (primer required). Unwanted water circulation is prevented by the solid connection to the surrounding concrete. In case of contact with water, SynkoElast® does not swell, which means it can be laid during rain, or even be applied to slim

structural components without fear of concrete spalling. It also provides a durable seal where water levels fluctuate. With SynkoElast®, we offer a simple and quick-to-use sealing solution that will save you time and money.

SynkoElast® has been tested for general building approval at a water pressure of up to 2 bar.

#### **Applications**

- Working and crack control joints in in-situ concrete
- For concreting the floor slab in multiple sections
- Element wall joints in combination with crack control joints and shuttering elements
- Connection of set concrete with in-situ concrete
- Connection of the floor slab to the wall and for wall and ceiling connections

# **Properties**



Water pressure-tight up to 2 bar



Processing from 0°C to 35°C



No swelling in contact with water

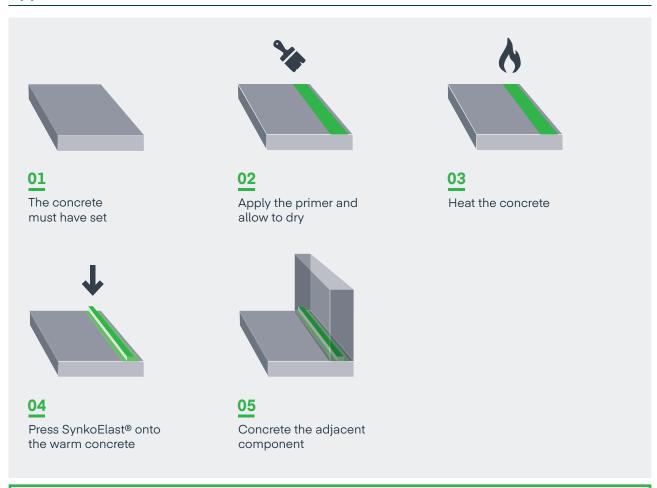


Resistant to weather, acid, alcali and salt

## **Application** - fresh concrete



# Application - set concrete





NOTE: THE PROCESSING INSTRUCTIONS IN THE TECHNICAL DATA SHEET APPLY.

# **Item overview**



SynkoElast® sealing tape



**Accessories** SynkoElast® primer

# SynkoElast®

Item no.	Item	Dimensions	Application	Information
5001051	SynkoElast® 30x20	30 mm x 20 mm, 4 m/roll	Working joint sealing	24 m/box
5001054	SynkoElast® primer	3.79 l/bucket	For set concrete	other sizes available on request
5001061	SynkoElast® crack control joint	Profile width 60 mm	Element wall up to 24 cm	Length 3.0 m
5001055	SynkoElast® crack control joint	Profile width 80 mm	In-situ concrete wall up to 19 cm Element wall 25-29 cm	Length 2.75 m
5001056	SynkoElast® crack control joint	Profile width 100 mm	In-situ concrete wall up to 20-24 cm Element wall 30-37 cm	Length 2.75 m
5001057	SynkoElast® crack control joint	Profile width 125 mm	In-situ concrete wall up to 25-29 cm Element wall 38-45 cm	Length 3.0 m
5001058	SynkoElast® crack control joint	Profile width 150 mm	In-situ concrete wall up to 30-34 cm	Length 3.0 m
5001059	SynkoElast® crack control joint	Profile width 175 mm	In-situ concrete wall up to 30-34 cm	Length 3.0 m
5001063	SynkoElast® shuttering profile	Height 10 bis 15 cm	Shuttering element for working joints	Length 2.25 m
5001064	SynkoElast® shuttering profile	Height 16 bis 19 cm	Shuttering element for working joints	Length 2.25 m
5001065	SynkoElast® shuttering profile	Height 20 bis 25 cm	Shuttering element for working joints	Length 2.25 m
5001066	SynkoElast® shuttering profile	Height 26 bis 30 cm	Shuttering element for working joints	Length 2.25 m
5001087	SynkoElast® shuttering profile	Height 50 cm	Shuttering element for working joints	Length 2.25 m

# **Technical information**

Colour	black	
Processing shape	on rolls with protective foil	
Adhesive pull strength	> 18 kPa on concrete	
Max. joint offset	up to 3 mm for SynkoElast® 30 x 20	
Temperature resistance	-40°C to +70°C	
Processing temperature	0°C to +35°C for component and material temperature	



(!) NOTE: FOR ADDITIONAL INFORMATION, PLEASE REFER TO THE TECHNICAL DATA SHEET.



# Application examples

- O1 SynkoElast® between the floor slab and wall
- Use of SynkoElast® as a shuttering element
- Use of SynkoElast® as a crack control joint
- Use of SynkoElast® in container construction









### PERMANENTLY ELASTIC, 1-COMPONENT JOINT SEALANT

# InnoElast® type 1 and 2

InnoElast® systems are modern, 1-component, universally usable sealants. InnoElast® sealants can be used to seal expansion and connection joints reliably and permanently, both indoors and out.

InnoElast® sealants possess excellent adhesive and application properties, allowing them to be used without primer on substrates such as concrete, stone, wood, metal and many others. InnoElast® can also be used on moist concrete surfaces as low as -3 °C.

InnoElast® sealant paste is solvent-free with exceptionally low shrinkage.

The sealant paste is so stable that joints 5 cm width can be securely filled before it hardens into an elastic, rubber-like material.

The soft and permanently elastic InnoElast® type 1 is a sealant with a high movement absorption capacity of ±25%. Expansion joints in facades, indoor and outdoor pathways are typical uses. The harder, permanently elastic InnoElast® type 2 is used to seal construction joints against pressing water. It is extremely robust, resistant to many chemicals and withstands pressing water up to 4.8 m water column. Joints in the cellar and wastewater sector are typical uses.

#### Applications type 1

- Residential and commercial construction, even in cold climates
- Exterior and interior facades
- Cellars, floors, roofs, windows, and doors
- Sealing against non-pressing water

### **Applications type 2**

- Residential and commercial construction, even in cold climates
- Exterior and interior facades
- Cellars, floors, roofs, windows, and doors
- Sealing against non-pressing and pressing water
- Civil engineering, wastewater sector, chemically stressed areas

## **Properties type 1**



Solvent-free and low shrinkage



Can be applied to moist substrates as low as -3°C



**Properties type 2** 

Solvent-free and low shrinkage



Can be applied to moist substrates as low as -3°C



Weather and UV-resistant



Permanently elastic



Weather and UV-resistant



Permanently elastic



Up to 25% expansion absorption



Can be used without primer



Up to 10% expansion absorption



Can be used without primer

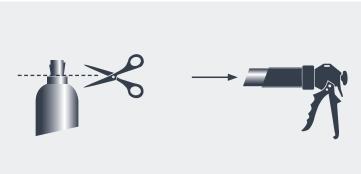


High resistance to chemicals



Water pressure-tight up to 0.48 bar

## **Application**





Cut the tubular bag open on top with scissors

# 02

Insert the tubular bag into the sealing gun



03

Fill the joint with InnoElast® type 1 or type 2



NOTE: THE PROCESSING INSTRUCTIONS IN THE TECHNICAL DATA SHEET APPLY.

### Item overview

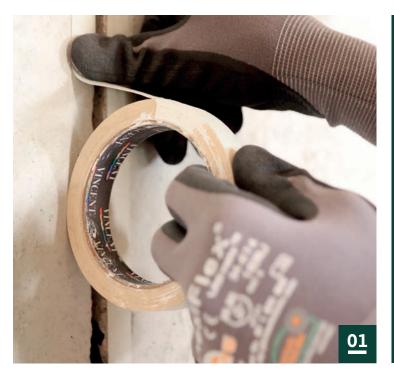


**InnoElast®** type 1 // type 2 Joint sealant

# InnoElast®

Item no.	Item	Description	Info
5004113	InnoElast® – type 1 grey*, 600 ml tubular bag	Special polymer sealant and adherent	Joint thickness 10 mm < x < 50 mm
5004115	InnoElast® – type 2 black*, 600 ml tubular bag	Special polymer sealant and adherent	Joint thickness 10 mm < x < 50 mm

<sup>\*</sup>additional colours available in batch orders



# **Application examples**

- 01 Masking of joint edges
- Filling of joint with InnoElast® type 1
- InnoElast® type 2 for sealing of drains
- 04 InnoElast® for construction of ramps



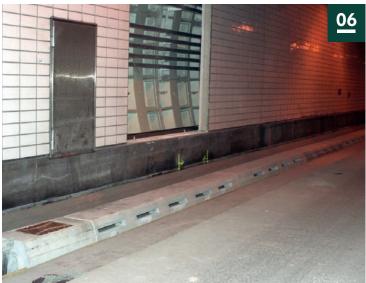




# Application examples

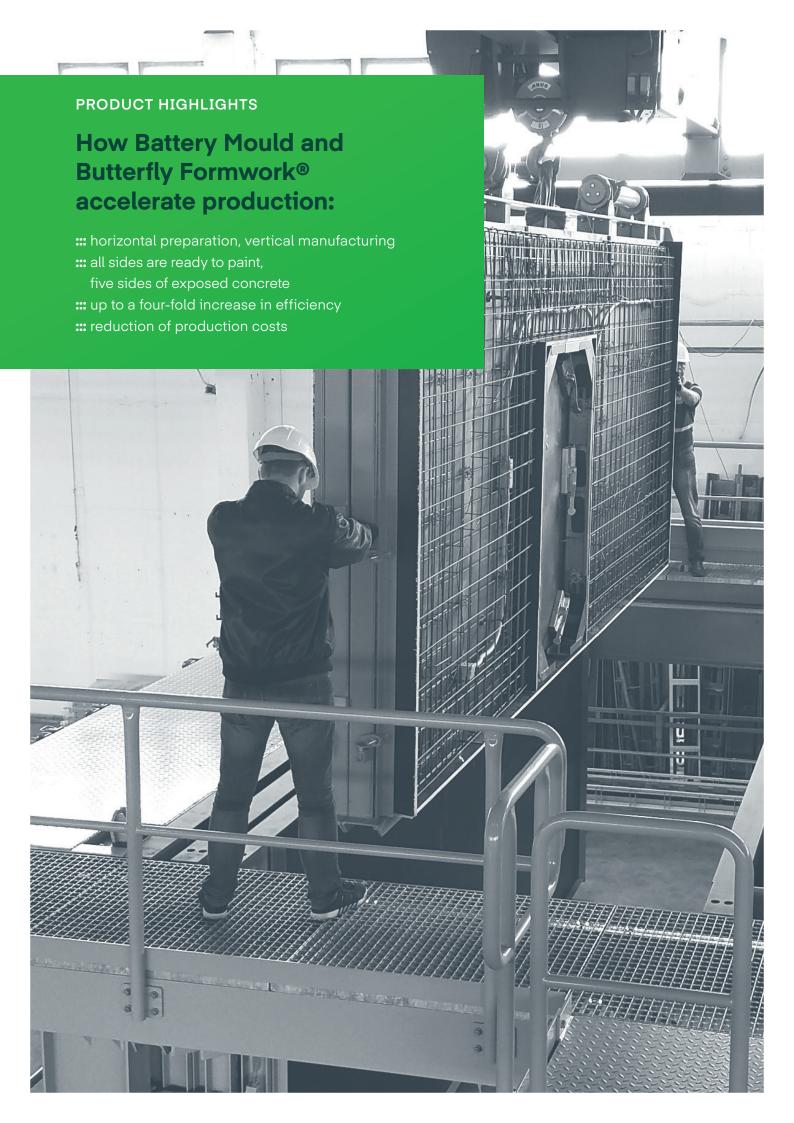
- 05 InnoElast® type 1 for staircase joints
- 06 InnoElast® for tunnel construction
- O7 InnoElast® for floor joints
- InnoElast® type 2 for wide vertical joints











STATIONARY PRODUCTION OF PRECAST CONCRETE ELEMENTS WITH UP TO FOUR-FOLD INCREASE IN EFFICIENCY

# **Battery Mould and Butterfly Formwork®**

Butterfly Formwork®\* is a new, highly-efficient type of shuttering for the production of precast concrete elements.

The Butterfly Formwork® combines the specific advantages of horizontal preparation with upright casting. Like circulation systems, all preparatory work can be completed conveniently and effectively in a horizontal position: from calibration with lasers (or marking with a plotter) and formwork placing, positioning of installation parts through to reinforcement.

After preparation, the Butterfly Formwork® is suspended in the Battery Mould. It folds together in the middle when lifted. The formwork surface therefore moves out of the horizontal position into the vertical

for concreting. Cleaning and oiling of the shuttering surfaces nevertheless take place in part in the Battery Mould. No major work steps are required in the narrow Battery Mould itself. After closing the Battery Mould the equivalent of two battery compartments are ready for concreting: Solid walls, sandwich walls, facade elements and balcony slabs are formwork-smooth on five sides.

Due to parallel work processes on the horizontal formwork tables outside the battery mould, the setup time is substantially reduced. Then, the Battery Mould can be equipped completely within a short period.

The Butterfly Formwork® can be used without a Battery Mould as a replacement for a tilting table.

### **Benefits**

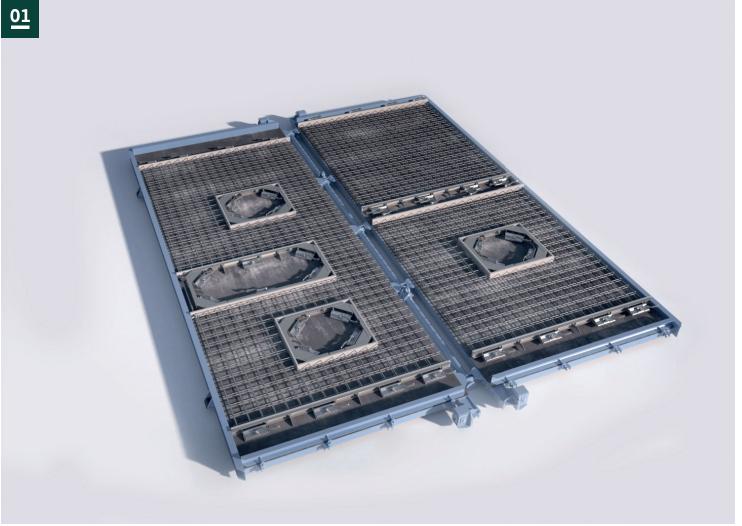
- ✓ Horizontal preparation, vertical manufacturing
- All sides ready for painting (5-sided exposed concrete)
- Measuring with laser projection possible
- Seamless formwork surfaces up to 16 m x 4.5 m
- ✓ Up to four concreting processes per day
- ✓ Low floorspace requirements
- Lower investment costs than tilting table
- ✓ Up to 40% reduction of production costs
- **✓** Efficient heating system (compact design)
- Also available as circulation system
- Successfully used by market leaders

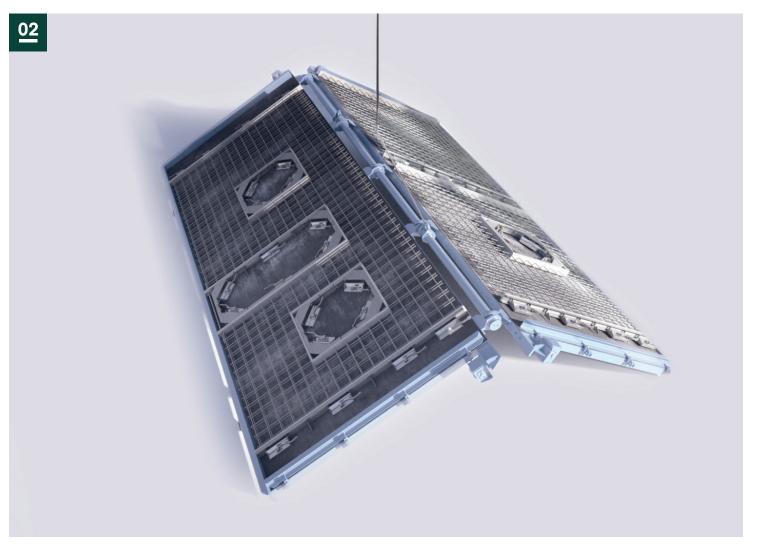
### **Application**

- ✓ Production of solid walls
- ✓ Production of sandwich walls
- **✓** Production of facade elements
- **✓** Production of clinker finished parts
- ✓ Production of balcony slabs
- ✓ Use as tilting table

\* BT innovation distributes the Butterfly Formwork® and Butterfly Battery® for stationary applications on the basis of an exclusive license from NEULANDT GmbH.





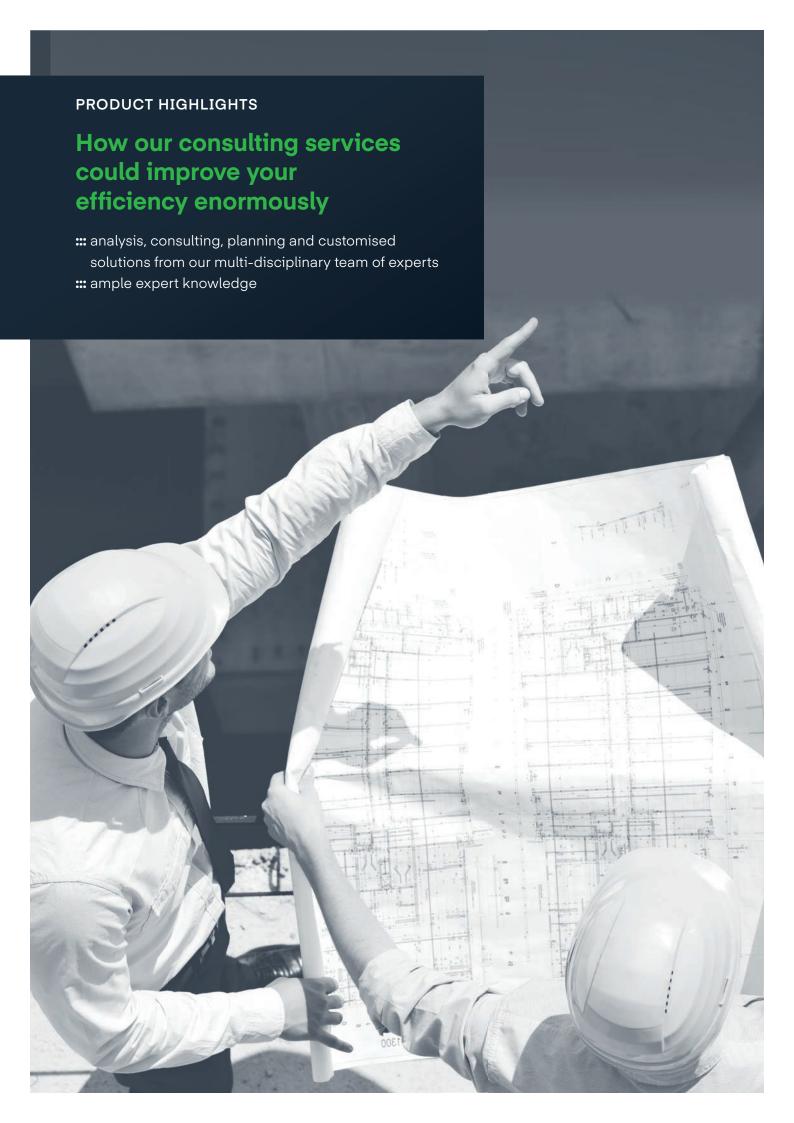




# Functional principle

- Preparation of the
  Butterfly Formwork® in
  horizontal position
- The fully shuttered and reinforced Butterfly Formwork® is lifted
- The Butterfly Formwork® folds together
- 04 The Butterfly Formwork® is inserted into the battery





Consulting 81

### TECHNICAL CONSULTATION FOR THE PRECAST CONCRETE INDUSTRY

# Consulting

BT innovation also offers its customers extensive consulting services. The consulting team has extensive experience and operates nationally and internationally.

BT innovation has been active in the precast concrete element industry for many years. Extensive practical experience and accompanying support in product development help our interdisciplinary consultants find tailor-made solutions for individual customer goals.

The analysis, planning, consulting and implementation performance modules include all necessary steps for maintaining a sustainable competitive

edge, from the objective evaluation of the current situation of precast plants, process optimisation within the plants and effective manpower planning through to the implementation of turnkey precast plants.

Close cooperation with a wide variety of manufacturers and users over many years ensures that our consultants are extremely knowledgeable about the industry.

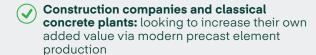
Clients benefit in many ways from BT's great insider knowledge and can rely on receiving the best possible advice.

### Our customers include:



### Precast concrete plants:

looking to improve their capacities purposefully and sustainably while improving quality







# All rights reserved. The above information in this catalogue is based on our current knowledge and experience and has been compiled with the necessary care and taking into account the state of the art in science and technology, but without obligation. In any case, the processing instructions in accordance with the respective approvals must be adhered to. Our General Terms and Conditions apply. We reserve the right to make changes due to technical and building law reasons. www.bt-innovation.de

