

**PRODUCT CATALOGUE 2018/2019** 







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We are always here for you

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## RATEC has revolutionised the world of precast concrete elements

Innovation and tradition are at the core of what we do. We set standards – then and now.

RATEC is one of the leading suppliers and service providers in the precast concrete industry. We set global standards in terms of developing and producing magnetic shuttering technology and complex shuttering solutions.

Originating from the rationalisation philosophy of Reymann Technik GmbH, RATEC has made a name for itself since its foundation in 1994 through innovation and quality.

We were a pioneer in using shuttering magnets in precast concrete plants. We were also first to integrate switchable magnets directly into the shuttering – back in the days this was a small revolution in the precast concrete industry. Today, magnet-based shuttering solutions are standard worldwide in many precast concrete productions.

With our know-how of almost 25 years of intensive development work in close cooperation with our customers world-wide, RATEC has the right answer to every conceivable shuttering situation. Our solutions are not only technically well-engineered, but they also take into account economic feasibility, efficiency and process optimisation.

With more than 80 employees, two wholly-owned production sites in Germany and the USA, additional offices in Spain and Singapore and a worldwide distribution network, RATEC is present on all continents.

Our motto "MEET THE BETTER IDEAS!" is part of our daily corporate culture and, in combination with innovation and extensive know-how, it yields innovative and economical solutions of the highest quality.





# Engineering and the highest level of vertical integration are the basis for innovative solutions

Thanks to our focus on providing streamlined shuttering technology solutions for precast concrete plants, RATEC's components and shuttering systems are the world leaders in the industry.

With our wealth of experience through the integration into the Reymann Group, new developments in the precast concrete industry can be incorporated into the further development of our shuttering components often even before they are implemented into production processes.

Due to full in-house production, individual requirements can be accommodated any time.

Our capacity for innovation, reliability, swiftness of all employees and the short decision-making channels when working with our customer are the main building blocks for continuous further development.

Another important aspect of our productivity is our in-house magnet production, which supplies all the components required for RATEC shuttering solutions and thus combines absolute transparency with reliability and quality "Made in Germany".



All shuttering formwork is developed and produced centrally in Hockenheim, from where it is shipped to customers in more than 70 countries worldwide.



In-house production ensures high quality and flexibility.



#### Production area of approx. 4000 m² in Hockenheim

With the expansion of the production halls in Hockenheim, more than 4000 m² of production space is now available. This provides additional space, which is required particularly for the construction of components for upcrete® – such as battery moulds, room module moulds and pump stations. Another production site is located in the USA, where the products for the US market are manufactured. All other RATEC shuttering formwork and components are produced exclusively in Hockenheim, from where they are shipped world-wide.



#### New laser offers even more precision

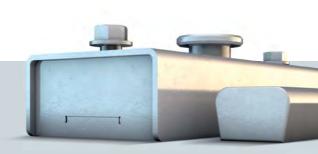
Precision shuttering requires precision tools during production. In order to produce even faster and more efficiently, we have continually made ground-breaking investments in the machine park. For example, one of the first solid-state lasers with a laser output of 8 kW of the latest Trumpf generation has been in use since September 2015.

This allows the sheets to be processed even faster and offers highly precise cutting.



#### **SHUTTERING MAGNETS**

The RATEC magnet product range offers the perfect detailed solution for every conceivable shuttering task. With MTK Magnet-Fabrik Solingen GmbH as a partner company in the RATEC Group, we have our very own in-house developer, manufacturer and supplier of high-quality construction magnet systems and special solutions.



## MAGNETIC SHUTTERING SYSTEMS FOR HORIZONTAL PRODUCTION

Through the continuous further development of our shuttering and magnetic technology, RATEC has developed a modular system that can be used flexibly, quickly, safely and efficiently in all areas, thus giving our customers a decisive advantage.



## SHUTTERING SYSTEMS FOR VERTICAL PRODUCTION

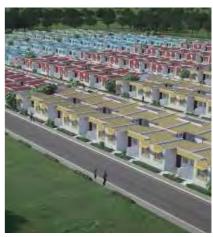
We develop and manufacture pioneering battery systems and 3D moulds for volumetric elements such as room modules, stairs, columns and many other items pursuant to our customers' specifications.





## The upcrete® technology makes complex forms economically feasible





Modular housing, Peru





Facade elements, Expo Pavillon, Italy

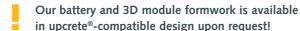




Mast elements for wind farm, China



Noise barriers, USA





## With upcrete®, nearly every conceivable precast geometry can be produced in a single step.

upcrete® – a technology developed by RATEC in cooperation with Reymann Technik – describes the process of concreting the most complex precast geometries by means of filling a mould with concrete from bottom to top under pressure in a mounting stream, which yields all-round exposed concrete surfaces and maximum efficiency.

In this process, self-compacting concrete is pumped from below into a partially closed mould. The flexibility of the system offers unique possibilities for shaping, element geometry and the production process – while at the same time ensuring maximum quality and smooth surfaces on all sides.

The elements are filled via a pump from below (injection). Very little air is introduced into the concrete by the filling process. When using self-compacting concrete, no additional mechanical compaction is required. Almost all bounding surfaces can be encased. Air outlets are provided only at certain points of the encased geometry, similar to injection moulding of plastics and metals.

#### THE UPCRETE® PROCESS -

#### **ADVANTAGES FOR EVERYONE**

- → Fewer limitations in terms of feasibility
- → Highest dimensional accuracy on the component
- Complete filling of the most difficult geometries
- Production of complex concrete bodies in installation position
- → All-around smooth surfaces
- → No peeling and smoothing of surfaces
- Minimal concrete residue
- Maximum performance
- Quiet, low-fatigue, efficient and employee-friendly concrete elements production
- 7 High utilisation of the shuttering
- Easy integration into existing production possible via concrete pump suitable for local concrete logistics (mixer, ready-mixed concrete, bucket conveyor).



## More than just a supplier – RATEC takes responsibility

Together with the customer, RATEC evaluates which type of production is most suitable for a precast concrete element in a given quantity and quality.

RATEC not only provides suitable shuttering solutions, but, if needed, also develops the appropriate production concept based on the customer's requirements.

Particularly for our vertical and 3D module shuttering, we can support you in planning and implementing well-thought-out production processes and ensure that your production becomes operational efficiently and logistically optimised.

When integrating into existing production, we also develop a proposal on how you can optimally integrate our shuttering components or concrete pumps into your production processes. RATEC solutions are always created in close cooperation and good faith with our customers.

We want you to succeed! This is why we take your needs seriously. With a team of experienced precast concrete specialists, application engineers, plant planners and engineers, we offer integrated advice.

Our close contact with customers and understanding of their needs results in better ideas.

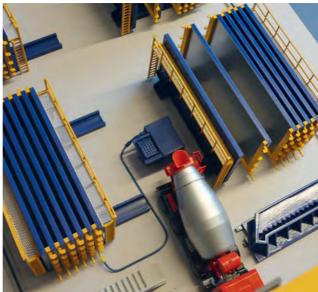


Factory model of a battery manufacture











Modular housing production plant, Peru



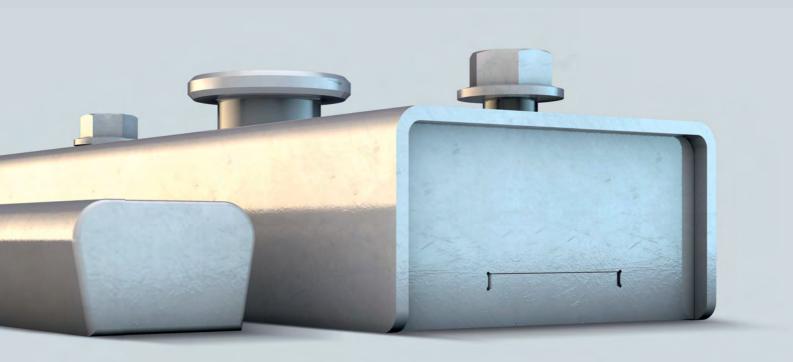
### **02 SHUTTERING MAGNETS**

The basis for efficient shuttering technology

With our own "Made in Germany" magnet production and complete in-house production at our location in Hockenheim, we can tailor our magnet components perfectly to fit your needs.

Or rely on our proven and practical standard solutions, which can be found on the next page.

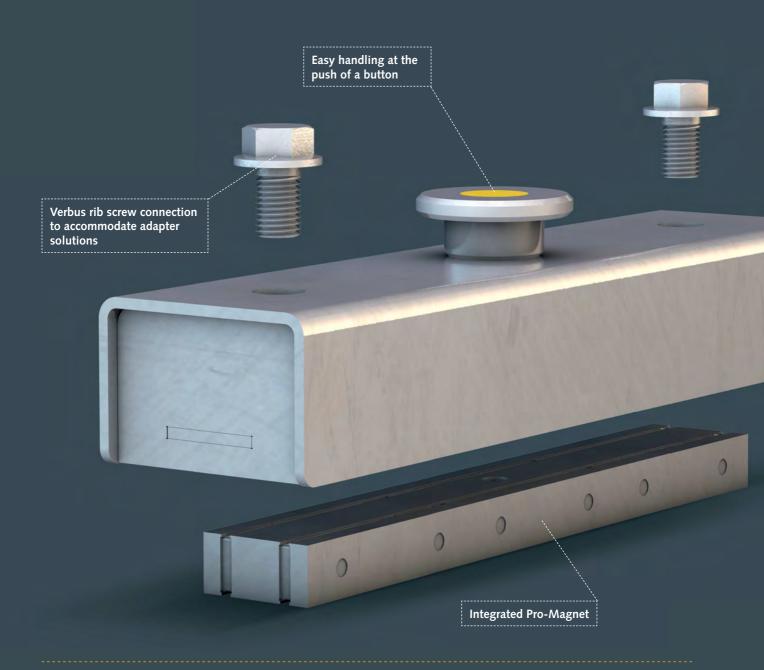
Benefit from experience and flexibility – **MEET THE BETTER IDEAS!** 



SPB STANDARD PRO MAGNETIC BOX – SWITCHABLE MAGNETS	Page 16
EURO RTM STANDARD MAGNETS – NON-SWITCHABLE MAGNETS	Page 24
STANDARD MAGNETS – A, P AND PDA SERIES	Page 30
BLOCK MAGNETS – MLU SERIES	Page <b>31</b>

## SPB Standard Pro Magnetic Box Unlimited possibilities at the touch of a button

With the SPB Standard Pro Magnetic Box, we have set the standard for switchable shuttering magnets in the precast concrete plant. The SPB is the original and offers absolute reliability and durability with its integrated Pro-Magnet, even in difficult conditions. The magnetic retaining core is tested regularly in our own magnet production to meet the specified retaining force. The SPB is ready to accommodate adapters and various shuttering skin carriers, which offer countless usage possibilities and thus maximum flexibility for the future.



#### FIELDS OF APPLICATION

The Verbus rib screw connection offers countless possibilities for attaching shuttering skin carriers of all types and for integrating systems such as, e.g. Doka, Peri, H-beam carriers or RATEC shuttering systems.

#### **PROPERTIES**

- → Integrated Pro-Magnet "Made in Germany"
- → RATEC original automatic magnet system for optimum hold even under heavy loads
- Maximum retaining force with minimal weight
- → Stable, canted housing construction
- Completely closed design
- Demonstrably longer service life of the integrated magnet components

#### THE MAGNET IN THE BOX

#### Pro-Magnet - the basis of all our ideas

Our standard magnets of the Pro-Magnet series are used in all RATEC magnet components and shuttering systems.

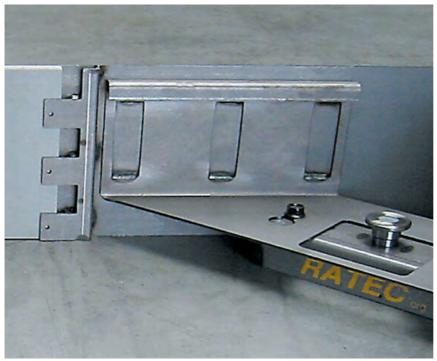
Our in-house magnet production allows us to tailor the magnets to the exacting requirements of our customers and thus realise numerous special solutions. In addition to the tried-and-tested standard variants with a retaining force of 450, 900, 1350, 1800 or 2100 kg, we can also implement other designs and magnet strengths as required, or adapt the installation components structurally without losing retaining force.

High performance neodymium magnets are used for the Pro-Magnet series, which are installed in-house in a patented process, resulting in our standard installation magnets. Stainless steel bandages and various coating steps and processes make the magnetic core extremely corrosion resistant. Our extensive know-how in the field of magnet design and application enables us to perfectly meet every customer-specific requirement.





## Application examples



RATEGO

SPB with special corner bracket





SPB for fixing staircase moulds



SPB with angle adapter

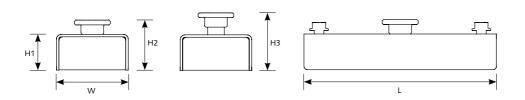


SPB as the basis of the PSV shuttering system, page 48

#### SPB Standard Pro Magnetic Box

The SPB is the basis for all applications in shuttering construction. The SPB consists of a heavily canted U-profile with an integrated automatic magnet system with a retaining force of 450–2100 kg and screw connections for accommodating adapters.





	SPB 450	SPB 900	SPB 1350	SPB 1800	SPB 2100
Article no.	05477	03255	04200	07949	03232
L (mm)	170	280	360	320	320
W (mm)	60	60	90	120	120
H1 casing (mm)	40	40	60	60	60
H2 switched (mm)	69	69	84	84	84
H3 released (mm)	79	79	94	94	94
Retaining force (kg)	450	900	1350	1800	2100

### Accessories

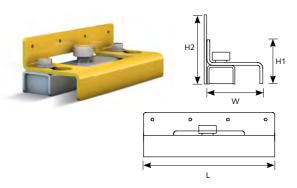
#### Lifting tool



Article no.	03299	03292
For	SPB 450 SPB 900	SPB 1350 SPB 1800 SPB 2100

#### Angle adapter H = 95 mm

Longitudinal side for fixing of plywood.

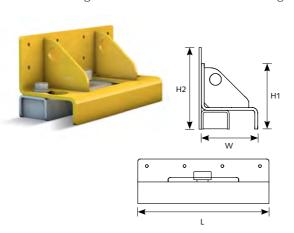


Article no.	07514	04299
For	SPB 450	SPB 900
L (mm)	250	278
W (mm)	120	120
H1 base height (mm)	95	95
H2 shuttering skin (mm)	95-200	95-200

Other heights are available upon request. The shuttering skin can protrude up to 100 mm at the top.

#### → Angle adapter H = 140 mm

For shuttering skin from 140 mm to 240 mm in height.

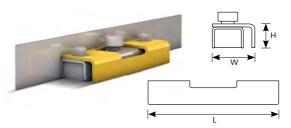


Article no.	06278
For	SPB 900
L (mm)	278
W (mm)	120
H1 base height (mm)	140
H2 shuttering skin (mm)	140-240

Other heights are available upon request. The shuttering skin can protrude up to 100 mm at the top.

#### Angle adapter for welding

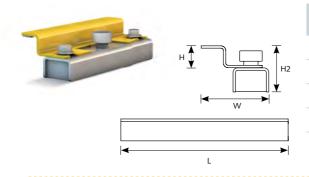
For welding of a steel front.



Article no.	08999
For	SPB 900
L (mm)	278
W (mm)	80
H adapter (mm)	40

#### Suppressing device

For secure fixing of, e.g. U-profiles, window frames, etc.

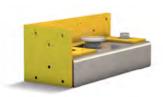


Article no.	09057
For	SPB 900
L (mm)	278
W (mm)	105
H1 adapter (mm)	73
H2 adapter and magnet (mm)	100

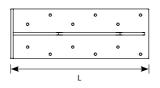
Other heights are available upon request.

#### 2-sided attachment combo angle

For longitudinal or frontal fixing of plywood, suitable for SPB 1800 and 2100.





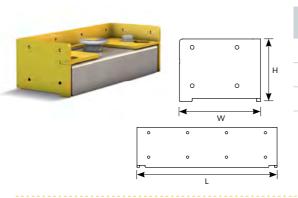


Article no.	21668	54193	20457	69046	40409
For			SPB 1800, SPB 2100		
L (mm)	336	336	336	336	336
W (mm)	126	126	126	126	126
H adapter (mm)	98	148	198	248	298
For plywood (mm)	100-200	150-250	200-300	250-350	300-400

Other heights are available upon request. The shuttering skin can protrude up to 100 mm at the top.

#### 3-sided attachment combo angle

For longitudinal or frontal fixing of plywood, suitable for SPB 1800 and 2100.



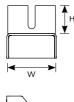
Article no.	46441	69531	46446	69532	40336
For		SPB ′	1800, SPB	2100	
L (mm)	342				
W (mm)	126				
H adapter (mm)	98	148	198	248	298

Other heights are available upon request. The shuttering skin can protrude up to 100 mm at the top.

#### → Attachment face angle Dywidag for radius shuttering e.g. for balconies

Angle adapter with Dywidag quick release and fastening plate for mounting on a steel or spring steel sheet.







Article no.	08264	10162
For	SPB 1350, SPB	1800, SPB 2100
L (mm)	120	136
W (mm)	136	60
H shuttering skin (mm)	160-220	140-160

Other heights are available upon request.

#### **Wood tensioner with clamping adapter** suitable for all SPB variants

For safe holding down of shuttering profiles of all types.



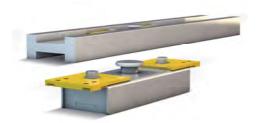
Hold-downrod	Hold-down rod	Wood tensioner

Article no.	04399	22802	04400
For	SPB 900 SPB 1350 SPB 1800 SPB 2100	SPB 450	All
L (mm)	365	365	180

Other heights are available upon request.

#### Adapter for H-beam

For magnetic fixation of an H-beam, e.g. Doka, Peri etc.



Article no.	46878	46870
For	Doka H20 N, I	Peri VT20, etc.

#### How many magnets do I need for my shuttering?

The number of magnets given below is calculated for  $8\,\text{mm}$  steel pallets and a concrete density of  $2.4\,\text{t/m}^3$ . Please contact us if other dimensions are required, we are happy to help.

The numbers indicated are a non-binding recommendation!

Height 100-150 mm					
Length (mm)	SPB 2100	SPB 1800	SPB 1350	SPB 900	
1000	2	2	3	3	
1500	2	2	3	3	
2000	2	2	3	3	
2500	2	2	3	3	
3000	2	2	3	3	
3500	3	3	4	5	
4000	3	4	5	5	

	Height 150-200 mm					
Length (mm)	SPB 2100	SPB 1800	SPB 1350	SPB 900		
1000	2	2	2	3		
1500	2	2	3	4		
2000	2	2	3	4		
2500	2	2	3	4		
3000	2	3	4	4		
3500	3	3	4	5		
4000	3	4	5	6		

Height 200-250 mm					
Length (mm)	SPB 2100	SPB 1800	SPB 1350	SPB 900	
1000	2	2	3	3	
1500	2	2	3	3	
2000	2	2	3	4	
2500	2	2	3	4	
3000	2	3	4	5	
3500	3	3	4	6	
4000	3	4	5	6	

Height 250-300 mm				
Length (mm)	SPB 2100	SPB 1800	SPB 1350	SPB 900
1000	2	2	3	3
1500	2	2	3	3
2000	2	2	3	4
2500	3	3	4	5
3000	3	3	4	6
3500	3	4	5	7
4000	4	4	6	8

Height 300-350 mm					
Length (mm)	SPB 2100	SPB 1800	SPB 1350	SPB 900	
1000	2	2	3	3	
1500	2	2	3	4	
2000	3	3	4	5	
2500	3	3	4	6	
3000	4	4	5	7	
3500	4	4	6	8	
4000	5	5	6	9	

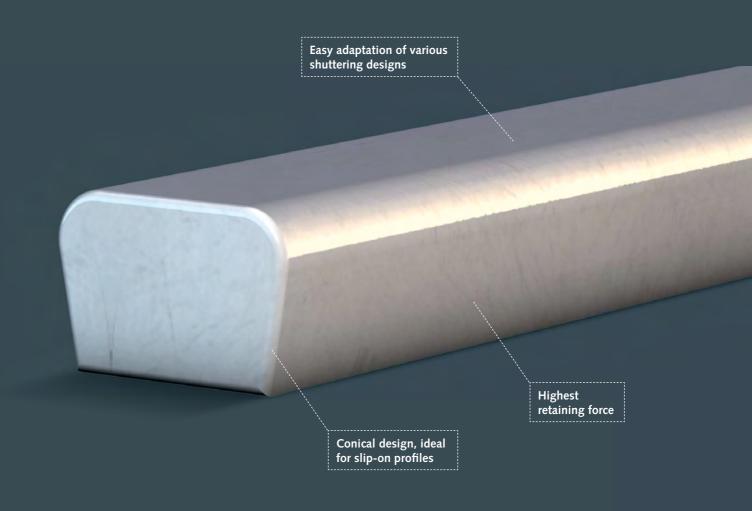
Height 350-400 mm				
Length (mm)	SPB 2100	SPB 1800	SPB 1350	SPB 900
1000	2	2	3	4
1500	2	3	4	5
2000	3	3	4	6
2500	3	4	5	7
3000	4	4	6	8
3500	5	5	7	9
4000	5	6	7	11

## **EURO RTM**

## The compact basic solution

The EURO RTM standard magnets were the first magnetic components to introduce magnetic shuttering solutions to modern precast concrete production. With their compact design and reliable retaining force, they are still suitable for many shuttering tasks and are used today in numerous plants.

The special shape allows for various accessory components to be slipped over and safely fixed in place through positive locking.



Shuttering magnets | EURO RTM 24 | 25

#### FIELDS OF APPLICATIONS

For secure attachment of multifunctional slip-on shuttering or the RATEC universal adapter set, as well as for installation into existing plywood shuttering.

#### **PROPERTIES**

- → Compact design
- → High retaining force with minimal own weight
- → Smooth, easy to clean surfaces on all sides
- **→** Conical bevel for original-pressure-point effect when fastening U-shuttering
- → Insulated on all sides, only the contact surface is magnetic

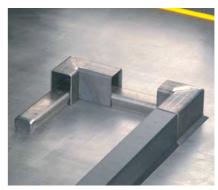
## Application examples



Combination with universal adapter H, page 28



EURO RTM with RATEC plastic RTU profiles



Use with slip-on profile for corners



Combination with universal adapter GF, page 28

Shuttering magnets | EURO RTM 26 | 27

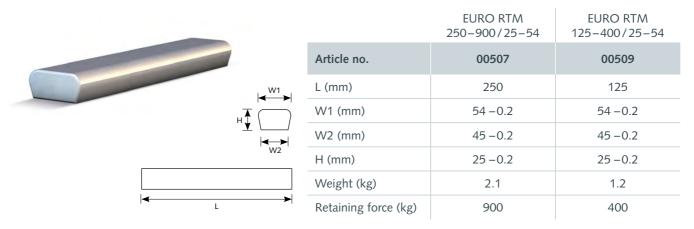
#### **7** EURO RTM – the all-rounder

The foundation for attaching RATEC U shuttering and the RATEC universal adapter, from page 28.



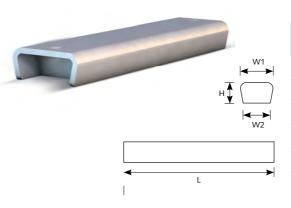
#### **7** EURO RTM – the flat one

With its extremely flat design featuring only 25 mm in height, this unit is particularly suitable for the construction of low U-shuttering and for special solutions with pre-stressed elements.



#### → EURO RTM – the couplable one

The second generation of EURO RTM standard magnets with increased retaining force. The replaceable threaded pieces enable the fixing of various attachments and shuttering elements. Depending on the application, it is available in a wide or narrow design.



	EURO RTM 320-1800 2G	EURO RTM 300-900 2G
Article no.	00474	00530
L (mm)	320	300
W1 (mm)	84 -0.2	54 -0.2
W2 (mm)	75 –0.2	44 –0.2
H (mm)	35 -0.2	35 –0.2
Weight (kg)	4.6	2.5
Retaining force (kg)	1800	900

### Accessories

#### Lifting tool



Article no.	00204	05116
For	All EURO RTM, except Art. no. 00474	EURO RTM Art. no. 00474 "the flat one"

#### Universal adapter H

Universal adapter, as a set incl. EURO RTM 250–900 or individually for fast stepless, right-angled fastening of plywood shuttering.



Article no. as set	10696	02724	10805	25874
Article no. without EURO RTM	25965	03516	25966	25967
H (mm)	240	300	350	400

#### Universal adapter GF

Universal adapter incl. EURO RTM 250–900 or single, with clamping clips for stepless, right-angled fastening of shuttering and fibre concrete upstands of all kinds.



Article no. as set	10714	25858	10713	25869
Article no. without EURO RTM	25959	11497	25963	25964
H (mm)	240	300	350	400

#### RATEC U-shuttering slip-on profile

RATEC U-shuttering works based on the original pressure-point effect, in which the pressure points on the inside of the shuttering grip the conical slope of the EURO RTM magnets. This makes all RATEC U-shuttering shake-proof and vibration-proof.



Article no.	On request
L (mm)	On request
W (mm)	60
H (mm)	60-100

Different chamfering is possible. Draft angles can be realised as required. Magazine recesses and receptacles for all common robot systems are possible.

#### Corner slip-on profile

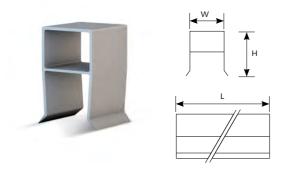


Article no.	On request
L (mm)	300×300
W (mm)	60
H (mm)	60-100

Different chamfering is possible.

#### Plastic RTU profiles RT K60

The economic, reusable shuttering supplement serves as a substitute for polystyrene. Easy individual trimming to the desired length and height is possible by means of a chop saw.



Article no.	On request
L (mm)	1000-3000
W (mm)	60
H (mm)	85

## Standard magnets



## Tailor-made retaining force

Thanks to the high retaining force, the standard magnet series is perfectly suitable for stabilising shuttering formworks of all types.

All series are available with or without handlebar grip and with or without additional holes to accommodate angles.

The usage possibilities of the standard magnets can be extended individually through accessories such as longitudinal or frontal suppressing or clamping adapters.

#### **PROPERTIES**

- Magnetic rubber (series A) or neodymium magnets (series P and PDA)
- → Temperature exposure up to 60°C, series P and PDA on request up to 80°C
- → Eccentric removable
- → Smooth surfaces, easy to clean

#### Standard magnets series A



→ Retaining force 600 – 2000 kg\*

#### Standard magnets series P



→ Retaining force 1200-3000 kg\*

#### Standard magnets series PDA



→ Retaining force 1200-3000 kg\*

Please contact us for additional product information and a tailor-made offer.

## Block magnets for fixing



### Pin-point accuracy

The magnetic strips of the MLU series are particularly suitable for installation in U-shaped longitudinal and transversal shuttering in the production of girder slabs.

#### **PROPERTIES**

- Magnetic rubber or neodymium magnets
- → Temperature exposure up to 60°C, on request up to 80°C
- 7 Can be delivered with or without chamfer
- → Partially available with and without groove
- → The adhesion side is polished
- → The open design is also available with aluminium caps screwed to the front
- → The magnet is released with a separate lifting tool

#### Magnetic strips MLU-0300K

Fig. example



- With chamfer on top
- → Retaining force 300-550 kg
- Open design

#### Magnetic strips MLU-1000

Fig. example



- Without chamfer
- → Retaining force 750-1200 kg
- → Open design

#### Magnetic strips MLU-1400WN

Fig. example

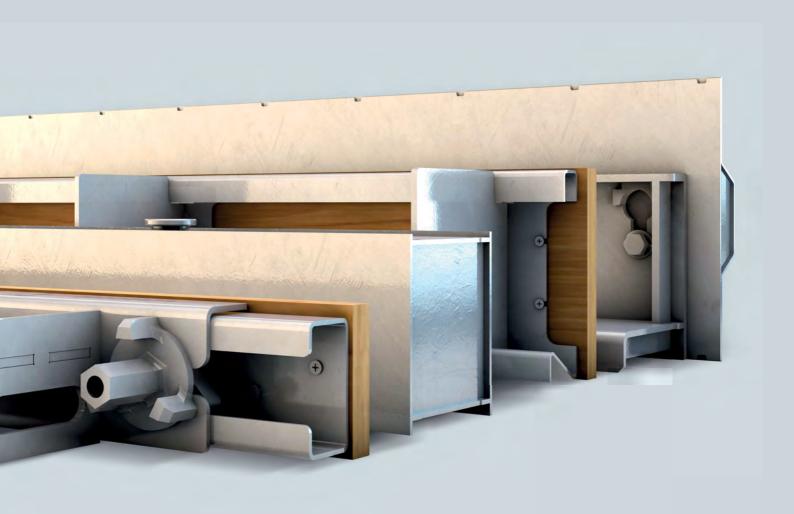


- → One-piece with groove
- → Retaining force 900 1400 kg
- → Closed design

## 03 MAGNETIC SHUTTERING SYSTEMS FOR EFFICIENT PRODUCTION

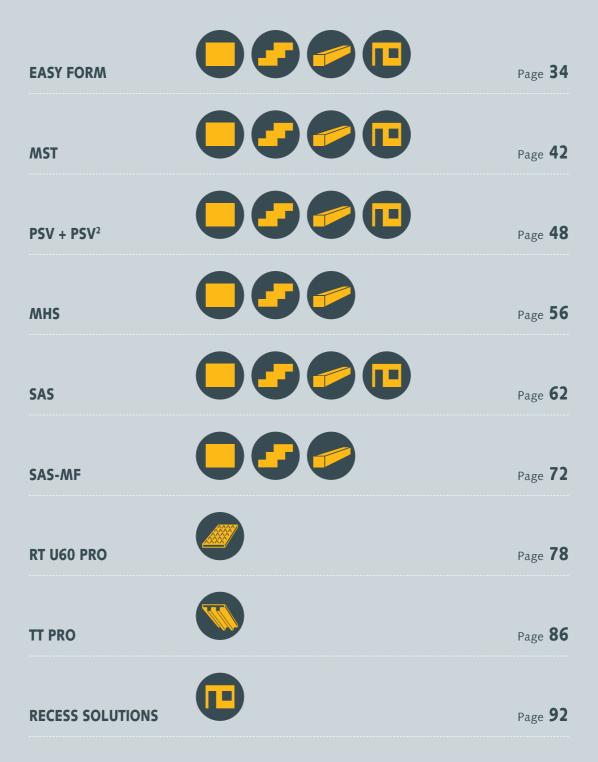
Our complete range of products for all shuttering tasks

RATEC magnetic shuttering systems have set the standard for horizontal production in precast concrete plants. Whether for stationary production or automated circulation systems – we have the right solution for your specific requirements. Our standard solutions cover most issues encountered in plants, and our experience from hundreds of projects worldwide allows us to suggest or develop the suitable solution for you.



#### **SYSTEM SUITABILITY FOR:**

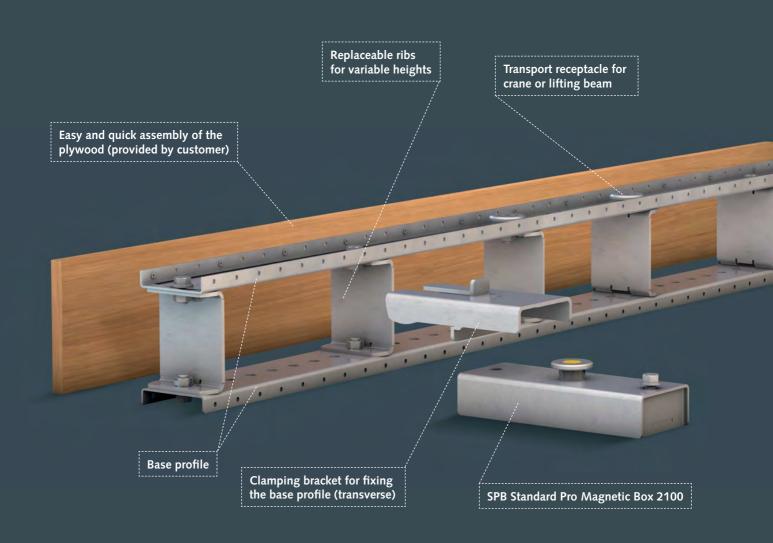




## Easy Form

## From simple to complicated – always the right answer with Easy Form

Practical and flexible – with the new "Easy Form" shuttering system, even the most difficult shuttering situations can be dealt with quickly and easily. Different ribs allow for the shuttering height to be adapted seamlessly. With the flat base, protruding reinforcements from a height of 25 mm are possible. Easy Form is designed as a modular system, which can be easily expanded, supplemented and flexibly used even with just a few components. In combination with the vast range of accessories, this system always has the right answer for any shuttering situation.



#### **APPLICATION**

Longitudinal or transversal shuttering for all planar precast concrete elements with wall thicknesses of 45-400 mm and recesses.

#### **ESPECIALLY SUITABLE FOR**

- Stationary production
- 7 Low level of automation
- Manual shuttering handling
- High number of variants of produced precast concrete elements

- Protruding reinforcement
- Field factories
- → Complex contours of precast concrete elements

#### **FEATURES**



Extendable in height



Suitable for lifting beam



Wooden shuttering skin



Steel shuttering skin





#### **DETAILED PROPERTIES**

#### **Elements**

- → SPB Standard Pro Magnetic Box 1800/2100
- Clamping bracket
- Base profile
- Transport receptacle
- → Shuttering skin (provided by customer)

#### Handling

→ Handling by crane or lifting beam

#### **Dimensions**

- → Standard length 1000 mm, 2000 mm, 3000 mm, 4000 mm
- → Special lengths on request
- → The plywood can protrude 125 mm in length
- → Standard width 120 mm (with SPB 305 / 445 mm)
- → Standard heights 98 mm, 148 mm, 198 mm, 248 mm, 298 mm
- → Max. shuttering height/
  element thickness 400 mm

#### Highlights

- → Excellent stability and shape retention no bending
- → Simple and quick installation
- Quick and easy fixing
- Quick and easy height adjustment by replacing the ribs
- → Space saving storage
- Special closure parts for your rebar diameter available in the accessories catalogue

#### **NOTES**

Lateral protrusion of plywood up to 125 mm, vertically up to twice the height of the base, but not exceeding 100 mm

#### **EXPANDABILITY**



Height-adjustable (by changing the ribs)



Extendable (jointing plate sold separately)



With UAR adapter for concreting upstands or supports

## Application examples



Easy Form with continuous reinforcement



Combination of two Easy Form shutterings with one SPB



Easy Form in combination with UAR adapter



Easy Form in combination with UAR adapter for continuous reinforcement and upstand in the element



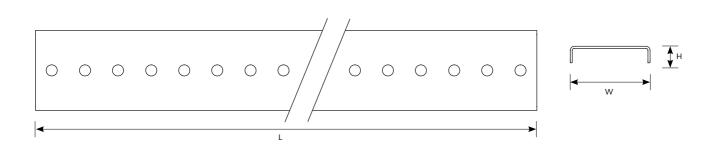
Easy Form with continuous reinforcement

## **Products**

## Easy Form base profile

Base profile as floor and cover plate.



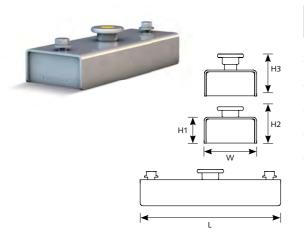


Article no.	64276	64129	64128	64290
L (mm)	1000	2000	3000	4000
W (mm)	120	120	120	120
H (mm)	25	25	25	25

## Accessories

#### SPB Standard Pro Magnetic Box 2100

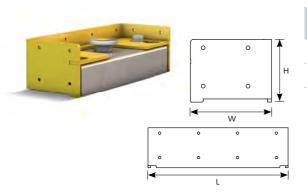
The basis for all applications in shuttering construction.



Article no.	03232			
L (mm)	320			
W (mm)	120			
H1 casing (mm)	60			
H2 switched (mm)	84			
H3 released (mm)	94			
Retaining force (kg)	2100			

### 3-sided attachment combo angle

For longitudinal or frontal fixing of plywood, suitable for SPB 2100.



Article no.	46441	69531	46446	69532	40336
L (mm)	342	342	342	342	342
W (mm)	126	126	126	126	126
H adapter (mm)	98	148	198	248	298

For bridging of intermediate lengths up to 600 mm.

### Clamping bracket for fixing the base profile (longitudinal)

Clamping bracket for attachment to the SPB 2100 for fixing the base profile.



Article no.	64516
Article no.	64516

## Clamping bracket for fixing the base profile (transverse)

Clamping bracket for attachment to the SPB 2100 for fixing the base profile.



Article no.	65107

### Easy Form ribs

Ribs for individual configuration of the shuttering height.



Recommendation for number of ribs:

Length of base profile in mm	Number of ribs
1000	4
2000	6
3000	8
4000	10

Article no.	64277	69640	64131	69641	64517
For shuttering height H in mm	100-200	150-250	200-300	250-350	300-400

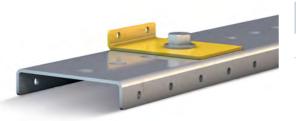
### Transport receptacle, gripping knobs

Gripping knobs for handling the shuttering with the RATEC lifting beam.

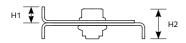


### → Angle adapter H = 45 – 60 mm for base profile

With screw holes for direct fixation of the wooden shuttering skin on the base profile.



Article no.	64307
H1 (mm)	20
H2 (mm)	45



### Coupling sheet

For longitudinal butt joint of two Easy Forms.



Article no.	64301
L (mm)	400
H (mm)	110



### Steel sleeves for rebar



Article no.	64311	64310	64313	64314
For rebar Ø (mm)	32	25	20	16

## Lifting beams for handling

For manipulating the shuttering.



#### Window corners steel/wood

Corner angle for fixing and fracture-free demoulding in recesses.



An overview of all solutions for recesses is available from page 92.

### Lifting tool for SPB 2100



Article no.	03292
For	SPB 2100

### Transport receptacle lifting eye bolt M16x27

Lifting eye bolt for handling the shuttering with a crane.

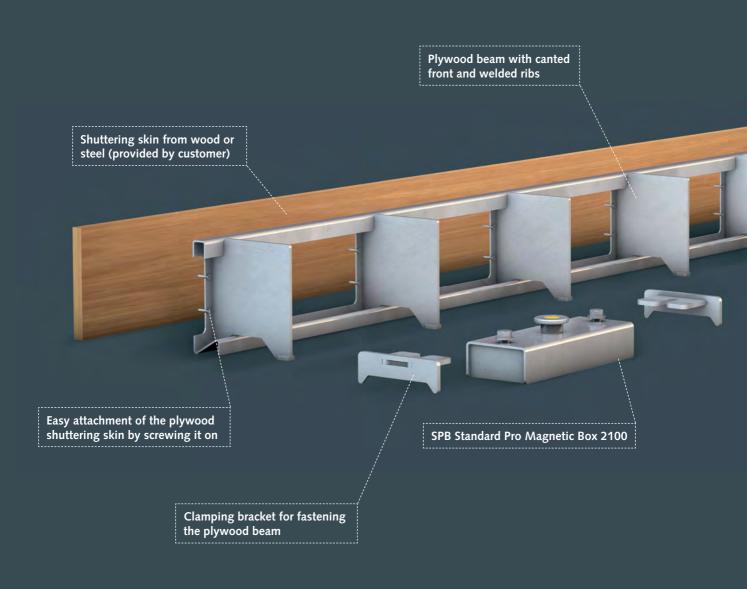


Article no.	SC042085

## MST Universal Plywood Beam

# Lightweight magnetic shuttering for manual handling

Simple and versatile – a wide variety of shuttering tasks can be easily accomplished with the MST. Thanks to its low weight, the MST is very easy to handle without a crane. The system's excellent static properties and flexibility make the MST a true all-rounder for manual operation.



#### **APPLICATION**

Longitudinal or transversal shuttering for all planar precast concrete elements with wall thicknesses of 100-500 mm.

#### **ESPECIALLY SUITABLE FOR**

- Stationary production
- 7 Low level of automation

- Manual shuttering handling
- → High number of variants of produced precast concrete elements



Double-sided version



Stackable, extendable in height







#### **Elements**

- → SPB Standard Pro Magnetic Box 1800/2100
- Clamping bracket
- 7 Plywood beam

#### Handling

- Easy to position
- Easy attachment and removal of the shuttering skin
- → Setup time of 10 minutes
- → Insert parts can be attached to the plywood

#### **Dimensions**

- → Standard length 2980 mm we will gladly trim the MST to a shorter length
- Standard width 178 mm
- → Shuttering skin (provided by customer) → Standard heights 98 mm, 148 mm,
  - → Max. shuttering height/element thickness 500 mm, can be realised with two MSTs with a height of 198 mm each

#### Highlights

- → Excellent stability and shape retention - no bending
- → Stackable or couplable for double-sided use
- Quick and easy fixing
- → Easy manual handling, no crane necessary

#### **NOTES**

- 7 The plywood may protrude laterally up to 125 mm and in height up to 100 mm
- → A maximum of two plywood beams can be stacked
- 7 You may trim the plywood beam to your individual needs
- 7 Detailed cutting and operating instructions are available on request

#### EXPANDABILITY



Stackable for wall thicknesses of 100-500 mm



Can be coupled for double-sided use



Suitable for steel front (fixing set sold separately)

## Application examples



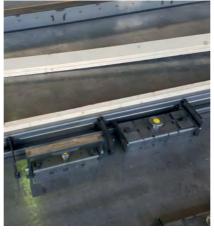




MST in combination with HT stop adapter for easy repositioning after stripping

MST stacked



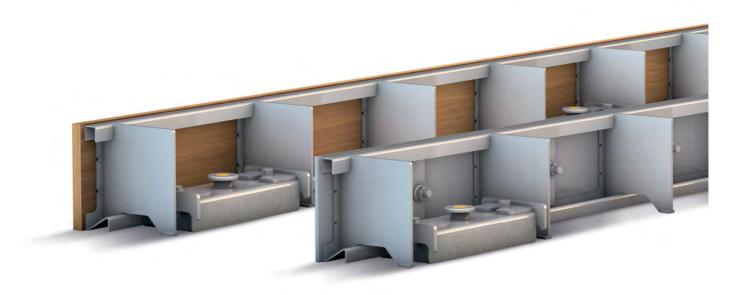


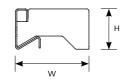
MST with HT stop adapter

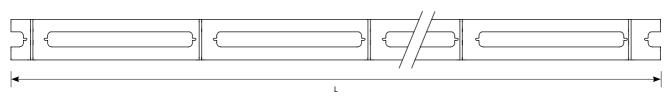
## **Products**

## MST base profile

Base profile for cladding with wood or steel.





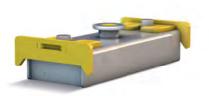


Article no.	63741	63807	63809
L (mm)	2980	2980	2980
W (mm)	178	178	178
H (mm)	98	148	198

## Accessories

### Pair of clamping brackets for MST base profile

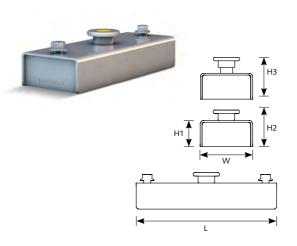
Clamping bracket for attachment to the SPB 2100 for fixing the MST base profile.



Article no.	53642

### SPB Standard Pro Magnetic Box 2100

The basis for all applications in shuttering construction.



Article no.	03232
L (mm)	320
W (mm)	120
H1 casing (mm)	60
H2 switched (mm)	84
H3 released (mm)	94
Retaining force (kg)	2100

#### Attachment set for steel front



Article no.	63817	63827	63831
H (mm)	98	148	198

### MST connection plate

For longitudinal butt joint of two MST base profiles.



Article no.	63844	63843	63841
H (mm)	98	148	198

#### Window corners steel/wood

Corner angle for fixing and fracture-free demoulding in recesses



Article no.	On request
	·

An overview of all solutions for recesses is available from page 92.

### Lifting tool for SPB 2100

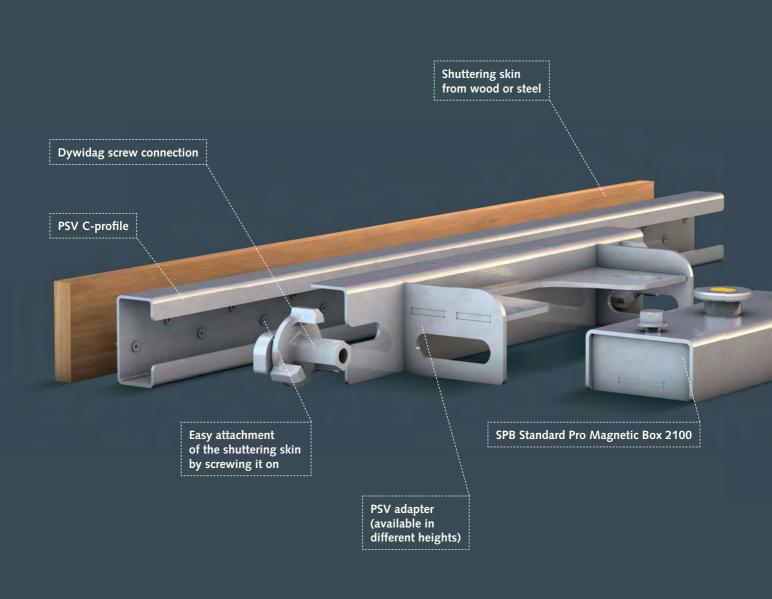


Article no.	03292
For	SPB 2100

## **PSV Pro System Vario**

## The versatile classic

The PSV Pro System Vario is the classic all-rounder among adapter systems for the SPB Standard Pro Magnetic Box. Above all, customers benefit from its versatility and quick and easy manual handling. As a modular system, it is ideally suited for complex or frequently changing shuttering tasks, and it can be used very flexibly. Ideal areas of application are recesses for doors and windows, as well as transversal shuttering in support of other systems or a fixed side shuttering.



#### **APPLICATION**

- → Longitudinal or transversal shuttering for all planar precast concrete elements with wall thicknesses of 100-500 mm.
- Door and window recesses
- 7 Ideal in addition to SAS, MHS, MST and Easy Form

#### **ESPECIALLY SUITABLE FOR**

- Complex and/or frequently changing geometries
- Stationary production
- Low level of automation
- Manual shuttering handling

#### **FEATURES**







#### **DETAILED PROPERTIES**

#### **Elements**

- → SPB Standard Pro Magnetic Box 1800/2100
- → PSV upper part with Dywidag screw connection
- C-profile
- → Shuttering skin (provided by customer)

#### Highlights

→ Gapless longitudinal shuttering

#### **Dimensions**

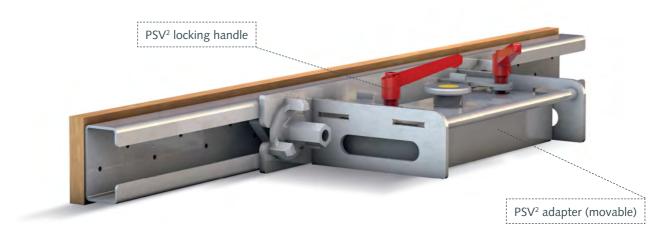
- → Flexible shuttering lengths, gapless from 550-3500 mm through our standard C-profile length grid

#### Handling

- Easy positioning by fixing and releasing at the push of a button
- Easy attachment and removal of the shuttering skin
- No crane required
- ➢ Easy assembly with the wood-clad C-profiles by means of Dywidag coarse-thread screws

#### **EXPANDABILITY**

PSV<sup>2</sup> adapter for fast stripping and encasing. More information on page 53.



## Application examples



PSV in action

 $\ensuremath{\mathsf{PSV}}$  for transversal shuttering in combination with  $\ensuremath{\mathsf{MHS}}$ 



PSV<sup>2</sup> adapter



PSV in action

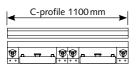


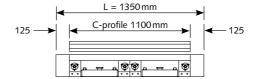
PSV<sup>2</sup> adapter

## Length diagram

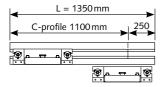
Any shuttering length from 550 mm to 3500 mm can be implemented seamlessly with the standard length grid of the C-profiles of 250, 1100, 2000 and 3000 mm.

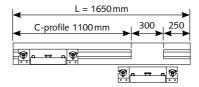
#### → Lengths from 1100 – 1350 mm



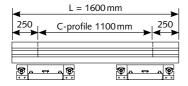


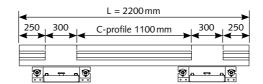
#### **→** Lengths from 1350 – 1650 mm



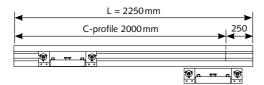


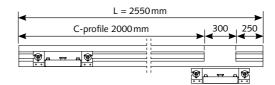
### **➣** Lengths from 1600 – 2200 mm



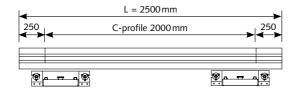


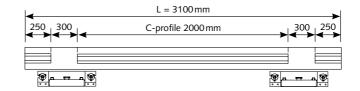
#### Lengths from 2250-2550 mm



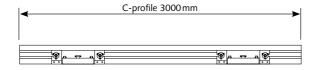


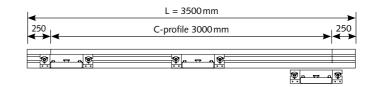
#### → Lengths from 2500 – 3100 mm





#### **ブ** Lengths from 3000−3500 mm



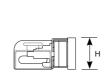


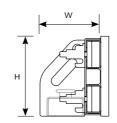
## **Products**

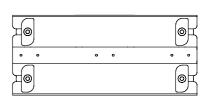
## **7** PSV adapter

Upper part for SPB Standard Pro Magnetic Box 2100 for fixing the C-profile, one-sided version.







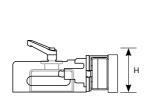


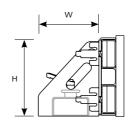
	Adapter 100/200	Adapter 150/250	Adapter 200/300	Adapter 250/350	Adapter 300/400	Adapter 400/500
Article no.	04471	04420	02383	05321	01966	10054
H adapter (mm)	100	150	200	250	300	400
B adapter (mm)	169	169	189	189	189	250
For shuttering skin with the height (mm)	100-200	150-250	200-300	250-350	300-400	400-500
Number of C-profiles	1	1	1	2	2	2

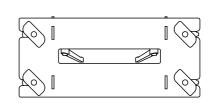
## PSV<sup>2</sup> adapter

Upper part for SPB Standard Pro Magnetic Box 2100 for fixing the C-profile. What makes the PSV<sup>2</sup> adapter unique is that it can be retracted on the active magnetic box for demoulding without having to move the magnetic box. This means that the SPB Standard Pro Magnetic Box does not have to be re-measured and repositioned in the next production step.





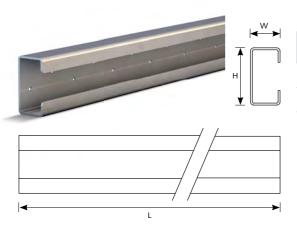




	Adapter 100/200	Adapter 150/250	Adapter 200/300	Adapter 250/350	Adapter 300/400	Adapter 400/500
Article no.	18771	18772	18773	18775	18776	18777
H adapter (mm)	100	150	200	250	300	400
B adapter (mm)	203	203	203	203	209	209
For shuttering skin with the height (mm)	100-200	150-250	200-300	250-350	300-400	400-500
Number of C-profiles	1	1	1	2	2	2

## Accessories

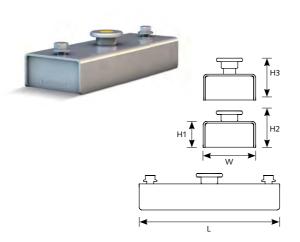
### PSV C-profile



Article no.	04472	05398	04495	04478
L (mm)	250	1100	2000	3000
W (mm)	46			
H (mm)	87			

### SPB Standard Pro Magnetic Box 2100

The basis for all applications in shuttering construction.



Article no.	03232
L (mm)	320
W (mm)	120
H1 casing (mm)	60
H2 switched (mm)	84
H3 released (mm)	94
Retaining force (kg)	2100

### Positioning aid for C-profile

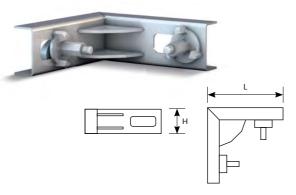
Attachment aid for exact positioning of the C-profile on the plywood.



Article no.	For PSV adapter
52114	100/200
52112	150/250
52116	200/300
51742	250/350
51747	300/400
51749	350/450
51750	400/500

#### PSV corner bracket

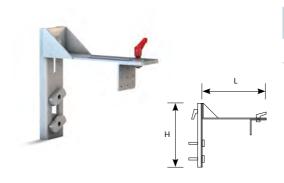
For secure connection of the C-profiles when stripping recesses.



Article no.	26673
L leg (mm)	300
H (mm)	98

#### Extension for PSV

For attachment to the C-profile for fixing insert parts or upstands in the element.



Article no.	49193
L (mm)	400
H (mm)	400

Other heights and lengths are available upon request.

#### PSV storage rack

For storage of SPB 2100 with mounted PSV adapter 100/200, 150/250 or 200/300.

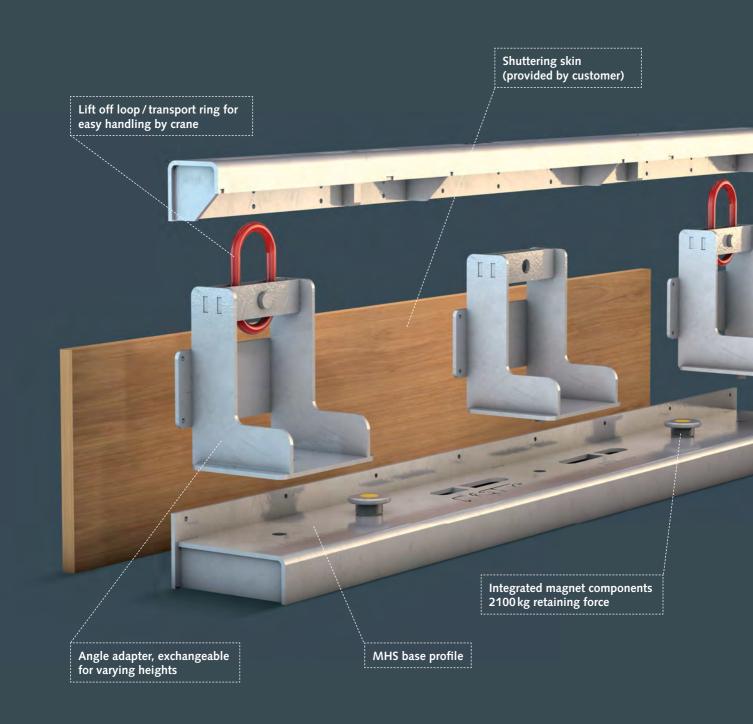


Article no.	08919	12552
For adapters	100/200 150/250	200/300
Rack spaces	14	12

## MHS Modular Wood Shuttering

## The robust all-rounder

The MHS is one of our standard solutions for the production of solid and sandwich elements up to 8000 mm in length. The MHS base profile features integrated magnets with a retaining force of 2100 kg and gives the shuttering stability and reliability. The combination of a base profile made from a sturdy, canted 6 mm steel plate and plywood makes the system reliable and allows it to be used flexibly. If needed, the MHS can be quickly and easily converted.



#### **APPLICATION**

As longitudinal and transversal shuttering for the production of solid and sandwich elements with up to 500 mm wall thickness, e.g. solid/sandwich walls, solid/sandwich ceilings, columns, binders, special beams.

#### **ESPECIALLY SUITABLE FOR**

- Use as longitudinal shuttering
- → Use as side shuttering in staircase formwork
- Stationary production

- 7 Low level of automation
- 7 Manual shuttering handling

#### **FEATURES**





Integrated, switchable magnets





#### **DETAILED PROPERTIES**

#### **Elements**

→ Integrated high-performance magnet

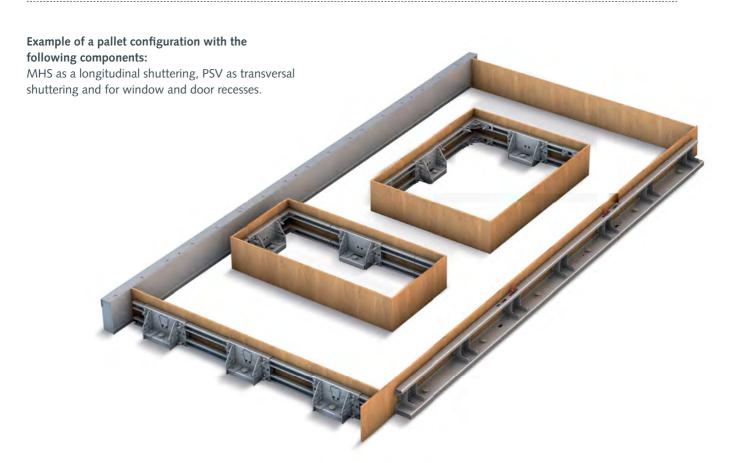
#### Highlights

- → Continuously adjustable from 100–500 mm
- Easy removal and attachment of the shuttering skin
- → Easy handling by crane

#### **Dimensions**

- → Shuttering lengths: 2000–8000 mm
- 7 Base width: 180 mm

#### **EXPANDABILITY**



## Application examples



MHS as transversal shuttering





MHS in use



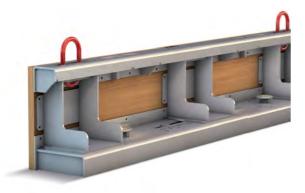
MHS as longitudinal shuttering



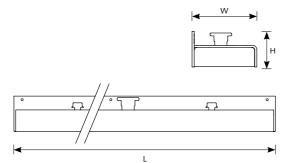
## **Products**

## MHS base profile

Base profile with upper part made of stable canted 6mm steel plate with integrated high-performance magnets with a retaining force of 2100 kg each (the number of magnets depends on the length of the base profile).



Article no.	L (mm)	W (mm)	H (mm) Base	No. of angles*
13425	1480	180	98	3
02336	1980	180	98	3
13427	2480	180	98	4
04176	2980	180	98	4
22823	3480	180	98	5
03888	3980	180	98	5
23360	4480	180	98	5
11743	4960	180	98	6
18254	5460	180	98	6
02086	5980	180	98	7
26028	6480	180	98	7
02335	6960	180	98	7
22043	7480	180	98	8
02143	7980	180	98	8



<sup>\*</sup>Of which always two angle adapters with transport ring. No angle is required for plywood heights from 100–200 mm.

### MHS angle adapter

MHS angle adapters with or without lift off loop / transport ring for easy handling by crane.



Article no.	H shuttering skin (mm)	Transport ring	
02093	200/300	No	
02094	200/300	Yes	
02091	300/400	No	
02092	300/400	Yes	
19649	400/500	No	
19650	400/500	Yes	

## Accessories

## Lifting tool for MHS



### MHS rail slider

Transport trolley for detaching the MHS and for easy transport on the pallet.



Article no.	On request
L approx. (mm)	1600
Weight (kg)	6.8

## Special solutions

Examples of customised special solutions with MHS.

### MHS concretable on both sides, with integrated SPB

Special double-sided version with base profile and angle adapter.

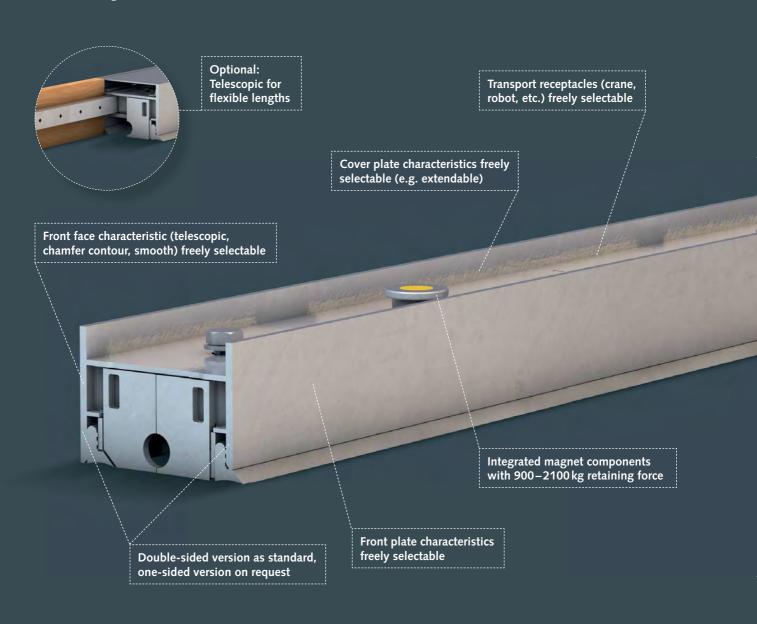


We would be happy to devise a tailor-made solution for you.

## SAS Standard Automatic Shuttering

# The system for individual configuration to your needs

The SAS Standard Automatic Shuttering is as unique as the shuttering challenges of our customers. We cut the system precisely to your requirements. The SAS is suitable for robots and can be configured for each shuttering robot. This makes it the perfect shuttering solution for automated operation, particularly in circulation systems. With integrated magnetic components with a retaining force of 900–2100 kg, it reduces the shuttering work steps to mere positioning and activation of the magnets.



#### **APPLICATION**

Can be used as a complete system for the production of solid elements from 80 mm high as well as for columns, binders, special beams, stationary production as well as for circulation systems with and without shuttering robots. Can be used in recesses which are set by robots.

#### **ESPECIALLY SUITABLE FOR**

- Circulation systems
- Jobs with shuttering robots
- Jobs with a high degree of automation

#### **FEATURES**



Double-sided version



Integrated, switchable magnets



Extendable in height



Steel shuttering skin



Profilable according to customer requirements



Suitable for lifting



Suitable for robots



Can be manipulated with a crane

#### **DETAILED PROPERTIES**

#### **Elements**

Integrated high-performance magnets

#### **Highlights**

- → High-precision laser-cut design
- → SAS is configured according to customer requirements
- → Handling with lifting beam, crane and robot possible.
- → Extendable on request
- → Telescopic on request

#### Dimensions

- → Shuttering lengths from 500–8000 mm
- → Shuttering heights up to 500 mm

#### **EXPANDABILITY**



Upper parts for height flexibility



UAR adapter for upstands or offsets

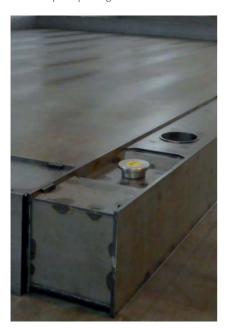


Magnetic solutions for grouting groove with loops

## Application examples



 $\ensuremath{\mathsf{SAS}}$  with special profiling of the frontshell



SAS special version with recessed automatic component SAS window solution



SAS can be configured for all common shuttering robots





SAS storage



SAS profile

## Standard versions

#### Application





One-side version

Double-sided version

### SAS front plate characteristics



SAS front plate characteristics smooth on one or both sides



SAS front plate characteristics chamfer on top and/or bottom



SAS front plate characteristics with grouting groove and shear key



SAS front plate characteristics for slab support

#### SAS cover panel characteristics



Transport receptacle, gripping knobs



Keyhole, receptacle for plug lifting beam



Crane attachments



Screw connection for upper parts

#### SAS front face characteristics



Smooth



Chamfer on top and/or bottom



Profile



Telescopic for flexible lengths

## Accessories

### Lifting tool for SAS



Article no. 03292

### Lifting beams for handling

Depending on the design, the SAS can be handled with various RATEC lifting beams.



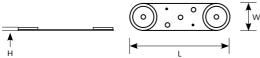
Article no.	On request
-------------	------------

All lifting beams for handling can be found from page 98.

### Adapter plate for attaching a wooden front



Article no.	50413
H (mm)	16
W (mm)	40
L (mm)	150



#### Upper parts

We would be happy to realise different upper parts (double or one-sided versions) for the extendable SAS pursuant to your requirements.



Article no.	On request

Max. height of the structure = double height of the base up to max.  $200\,\text{mm}$ 

### Magnetic chamfer strip

For quick and clean formation of chamfers, drip moulds or dummy joints, suitable for attachment to a steel shuttering or on the pallet.



Article no.	On request

Our complete chamfer strip and trapezoidal strip range of products is available from page 106.

#### Cover sheet

For covering the shuttering during concreting.



### Magnetic vinyl

To cover openings in the shuttering's cover panel, such as keyholes, and to protect against the ingress of concrete.



Article no.	On request
Dimensions	By request
Material	Magnetic vinyl PF 518, magnetised multi-pole on single side

### Corner magnet

Corner magnet for recesses, including automatic magnet component with a retaining force of approx. 450 kg.



Article no.	On request

### Recess solutions

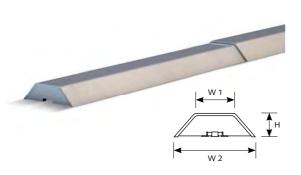
We are pleased to offer robot-compatible recess solutions based on SAS.



Article no.	On request
-------------	------------

#### Telescopic grouting groove

Magnetic trapezoidal profile with telescopic slip-ons to implement grouting grooves. Can be place on the shuttering or on the pallet.



Article no.	60717
W 1 (mm)	50
W 2 (mm)	110
H (mm)	30

Telescopic length: from min. 1730 mm to max. 3550 mm

Other dimensions and lengths are available upon request!

### Magnetic holder for cable loops

Magnetic recess body for cable loops to attach to a grouting groove.



Article no.	On request

### SAS demoulding device

For fracture-free stripping of elements with grouting groove.



## Special solutions

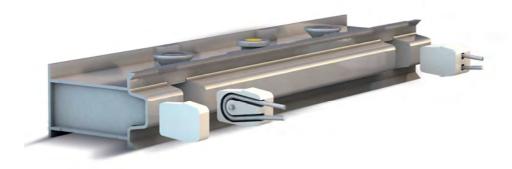
Customised special solutions with the SAS standard automatic shuttering.

### Support boxes

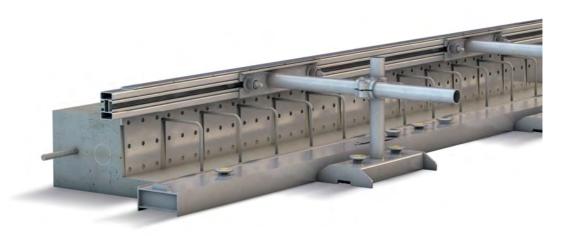
For fixing to an SAS for the production of floor bearings in the element.



### **尽** SAS with integrated loop solution



## UAR adapter with SAS



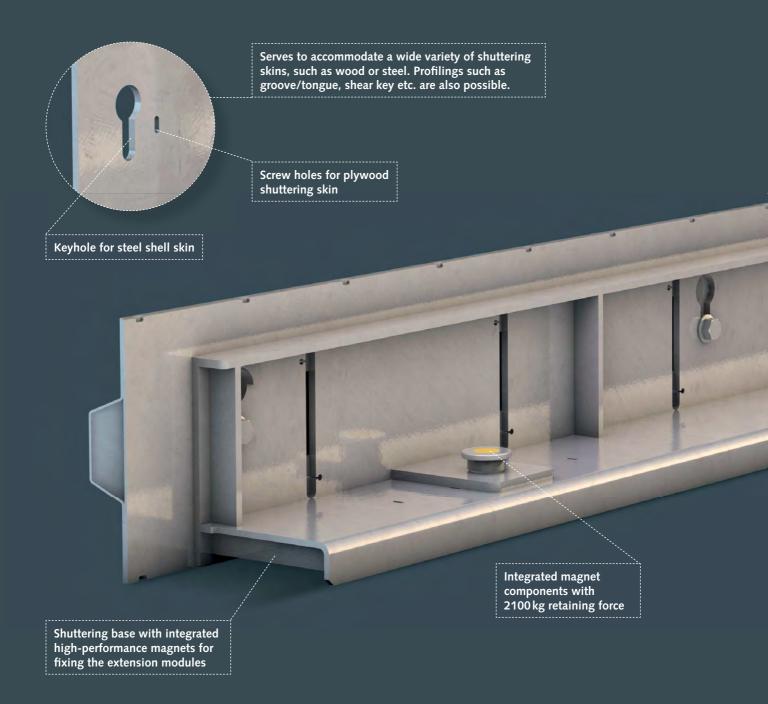
## → Installation boxes for protruding reinforcement



## SAS-MF Module Flex Shuttering

## The foundation for any application

The SAS-MF Module Flex shuttering system for solid and sandwich wall and ceiling panels is available in lengths of 500 mm to 8000 mm and features a modular variable height from 100 mm to 500 mm. The SAS-MF is optimised for quick shuttering skin changeovers and is suitable for many different types of shuttering skin (wood, alkus, smooth steel, tongue and groove, shear key, steel or rope connection loops). With a base, it is possible to implement various heights and shuttering shapes by changing the front plate. Even complicated element geometries and protruding reinforcements are possible.



#### **APPLICATION**

Complete system for the production of bar, solid and sandwich elements with heights from 100-500 mm.

#### **ESPECIALLY SUITABLE FOR**

- Frequently changing and/or complex shuttering skin geometries
- Protruding reinforcement
- → Handling by crane or lifting beam
- → The production of bar, solid and sandwich elements

#### **FEATURES**



Integrated, switchable magnets



Steel shuttering skin



Wooden shuttering skin



Extendable in height



Suitable for lifting beam



Can be manipulated with a crane



Profilable according to customer requirements

#### **DETAILED PROPERTIES**

#### **Elements**

- Integrated high performance magnets with 2100 kg retaining force each
- → Sturdy 8 mm frontshell with 6 mm canted back
- → Features screw holes for plywood, keyholes for steel shell skin and slots for protruding reinforcement as standard

#### **Highlights**

- Easy handling by crane and lifting beam
- → Flexible modular design through the use of extension modules for shuttering base in heights from 100–400 mm.

#### **Dimensions**

- → Shuttering lengths: 500 8000 mm
- → Width of the shuttering base: 
  100–200 mm

# Application examples



Pile shuttering based on the SAS-MF



SAS-MF with recesses





SAS-MF in solid wall production

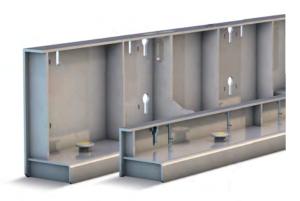


SAS-MF with extension modules for protruding reinforcement

## **Products**

## SAS-MF shuttering base

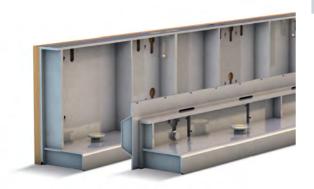
The shuttering base for attaching various extension modules is manufactured individually pursuant to your specifications.



Article no.	On request
L (mm)	500-8000
W (mm) of the shuttering base dependent on H	100-200
H (mm)	100-400

## Extension modules for SAS-MF shuttering base

Examples of wood front and steel front. The plywood shuttering skin is screwed to the shuttering base via screw holes. Steel extension modules are suspended on the keyholes. We produce extension modules individually pursuant to your wishes.



Article no.	On request
-------------	------------

## Accessories

## Lifting tool for SAS-MF



Article no. 03292

## Lifting beams for handling

Special lifting beam for easy handling of the SAS-MF. It is held by special receiving lugs on the shuttering.



Article no.	On request

An overview of lifting beams is available from page 98.

#### Recess solutions

You can rely on our vast solutions for window and door recesses.



Article no. On request

An overview of our recess solutions is available from page 92.

# Special solutions

Intelligent special solutions for the SAS-MF Module Flex shuttering.

Complex frontshell shapes



Pile shuttering

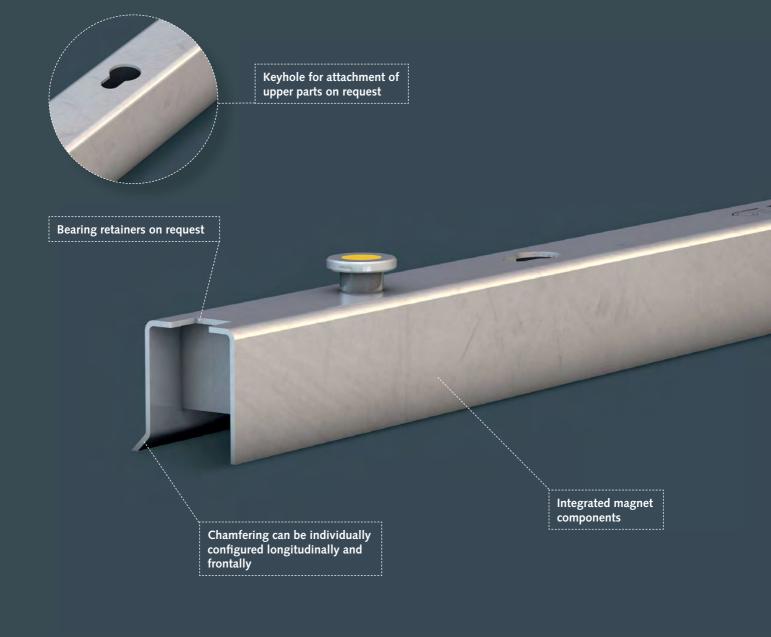


# RT U60 Pro

# The quick and economical system for the production of girder slabs and double walls

Proven over many years and used in leading plants.

The RT U60 Pro shuttering system for the production of girder slabs and double walls is tailor-made pursuant to all customer requirements, such as robot handling, chamfering options, bearing fixtures and much more. With built-in magnetic automatic components based on our "Made in Germany" Pro Magnet series, the RT U60 Pro is extremely reliable and durable.



#### **APPLICATION**

Turnkey system for the production of girder slabs and double walls with element heights of 50–100 mm.

#### **ESPECIALLY SUITABLE FOR**

- Circulation systems
- Jobs with shuttering robots

- 7 Jobs with a high degree of automation
- → High quality requirements on chamfering precision

#### **FFATURES**



Integrated, switchable magnets



Double-sided version







#### **DETAILED PROPERTIES**

#### **Elements**

Canted 3 mm U-profile with machined contact surface for clean shuttering edges

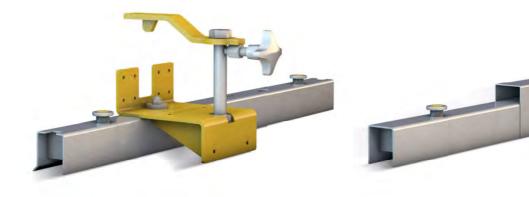
#### Highlights

- → Easy to position
- → Easy removal and attachment of the shuttering
- Compatible with robots from all robot manufacturers
- → Easy handling, also manually
- Suitable for the production of girder slabs and double walls

#### **Dimensions**

- → Shuttering lengths: 450–3980 mm
- → Height: 50 100 mm

#### **EXPANDABILITY**



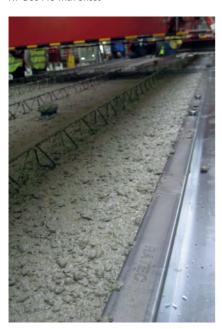
Keyhole adapter for fixing wooden shuttering or glass fibre upstands

Slip-on profile for extending the shuttering

# Application examples



RT U60 Pro with offset



Girder slab production



Suitable for space-saving storage

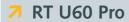


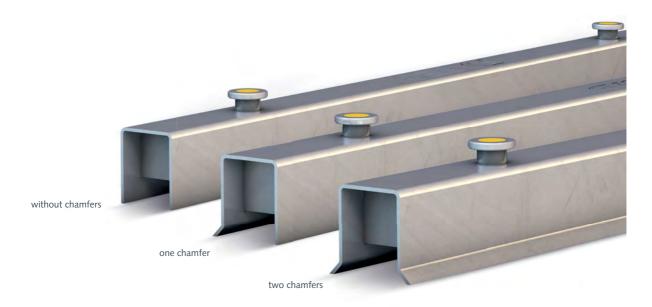


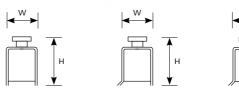


RT U60 Pro with mounting adapters for glass fibre upstands

# Standard versions





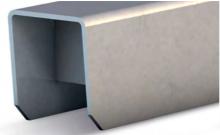


Article no.	On request
Steel plate (mm)	3
W (mm)	60
H (mm)	60, 65, 70, 75, 80, 85, 90, 95, 100

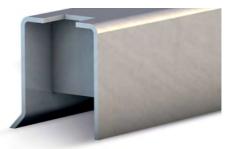
#### Options:



Keyhole for mounting adapter



Front chamfer and/or draught angle



Bearing retainer

## Accessories

### Lifting tool for RT U60 Pro



## Keyhole adapter

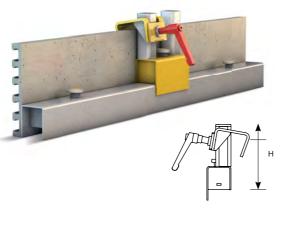
For shuttering heights up to 160 mm, e.g. for partition walls or glass fibre upstands. Variants: clampable or tensionable, custom heights.



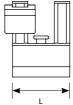
Article no.	On request
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#### Glass fibre attachment

Space-saving attachment solution for the RT U60 Pro for holding down glass fibre upstands, with integrated SPB Standard Pro Magnetic Box 550 kg. The attachment consists of two upstand-stabilising pipe profiles and is easy to fix to the shuttering by means of an elongated stopper plate.



Article no.	68363
L (mm)	150
H (mm)	170
Speedy attachment	1 head Speedy GFS incl.



## Slip-on profiles

To extend the shuttering with or without integrated magnets.



## Magnet clip

For bridging a frontal chamfer.

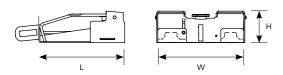


Article no.	On request
Alticle IIO.	On request

## Double wall adapter

For holding down pre-cut shims when turning for double-wall production. Clamping range from  $60-85\,\mathrm{mm}$ , with milling plate from  $55\,\mathrm{mm}$ .





Article no.	61953
L approx. (mm)	300
H approx. (mm)	110
W approx. (mm)	300
Retaining force (kg)	2100
Permissible retaining force element approx. (kg)	250
Placement approx.	1 adapter per running meter

#### Speedy H, Speedy GF, Speedy GFS

For fixing window shuttering, glass fibre upstands or plywood shuttering.



	Speedy H	Speedy GF	Speedy GFS
Article no.	03118	02858	48029
Max. H (mm)		400	

#### Quicky anchor socket

The compact single piece precast dowel. Assembling and disassembling parts is not required. The threadless sleeve allows for the anchoring screw to be turned in and out with an electric screwdriver in seconds.



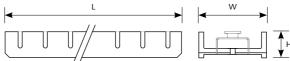
	Quicky	Quicky TSI	Quicky light concrete
Article no.	01250	05832	02150

### Tooth comb / shuttering with reinforcement slots

As transversal shuttering for elements with protruding reinforcement, from TIVAR or steel. Optionally with integrated SPB Standard Pro Magnetic Box.

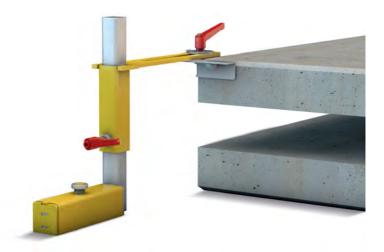


Article no.	On request
Design L, W, H	According to your specifications



# Special solutions

→ Speedy GFS for fixing of thermal walls



→ Two-part RT U60 Pro for protruding reinforcement



RTU corner shuttering

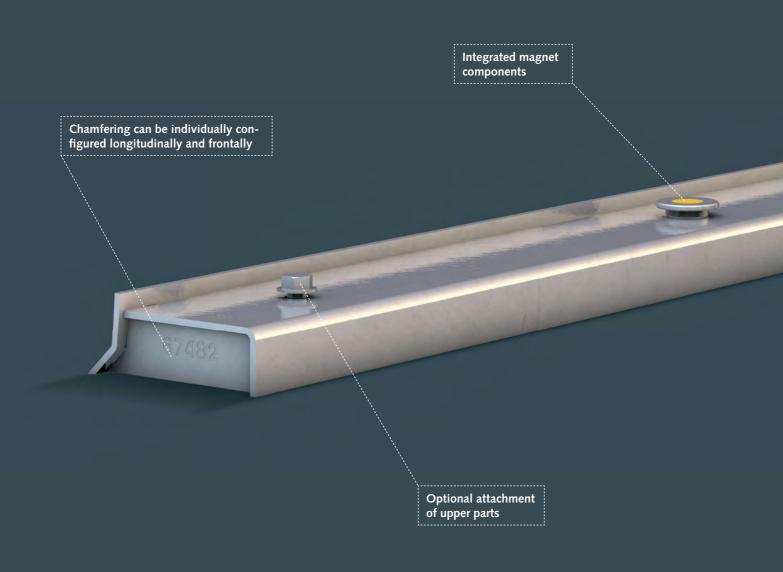


# TT Pro slab shuttering

# Safe and efficient: the fastest shuttering system for TT slabs

The TT Pro slab shuttering system from RATEC makes shuttering and demoulding of TT ceiling elements as easy as it gets. The system reduces the setup and retooling time by more than 5%. No crane is needed.

When combined with the SPB 900 and the clamping adapter for the top header as well as the EURO RTM 900 for side shuttering, no welding is necessary, which reduces the setup time even further. The economy of scale is unbeatable.



#### **APPLICATION**

Production of TT slab elements.

#### **ESPECIALLY SUITABLE FOR**

- Stationary production
- → Low level of automation
- Manual shuttering handling

#### FFATIIRES



Integrated, switchable magnets





#### **DETAILED PROPERTIES**

#### Highlights

- → Integrated high-performance magnet
- ➤ Low intrinsic weight for easy handling of the shuttering
- Customised production in terms of lengths, heights and shape

#### **Dimensions**

- → Standard length 500 3980 mm
- → Standard width 60–200 mm
- → Standard height 45 120 mm

#### Handling

- → Easy to position
- Easy attachment and removal of the shuttering
- → Low intrinsic weight (no crane needed)

# Application examples



TT slab production



TT Pro with special profiling



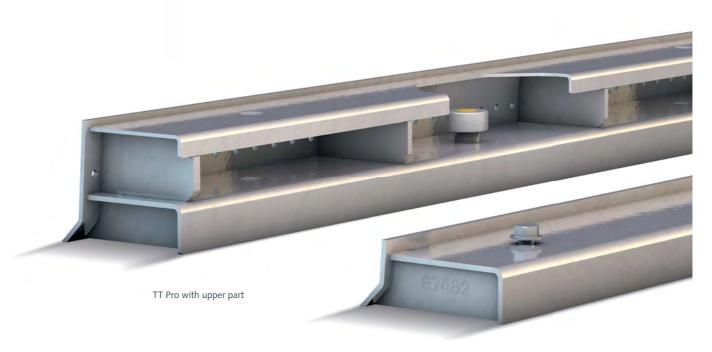


Special solution for TT Pro with foldable top

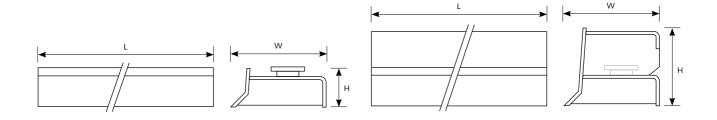


# Standard versions

## TT Pro longitudinal shuttering



TT Pro Standard



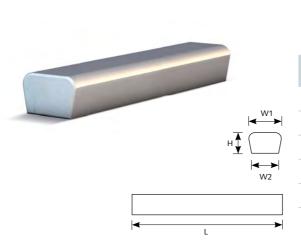
Article no.	On request
L (mm)	500-3980 mm
W (mm)	60-200 mm
H (mm)	45-120 mm (via upper parts)

## Accessories

## Lifting tool for TT Pro



### **▼** EURO RTM 250-900 - the all-rounder



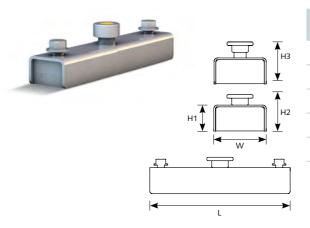
	250–900	RTM 250-900*
Article no.	00202	25513
L (mm)	250	250
W1 (mm)	54-0.2	54-0.2
W2 (mm)	45-0.2	45-0.2
H (mm)	35-0.2	35-0.2
Weight (kg)	2.2	2.2
Retaining force (kg)	900	900

Aluminium EURO

<sup>\*</sup>With integrated Pro-Magnet 900.

## SPB Standard Pro Magnetic Box 900

The basis for all applications in shuttering construction.



Article no.	03255
L (mm)	280
W (mm)	60
H1 casing (mm)	40
H2 switched (mm)	69
H3 released (mm)	79
Retaining force (kg)	900

## → Wood tensioner with clamping adapter suitable for SPB 900

For safe holding down of shuttering profiles of all types.

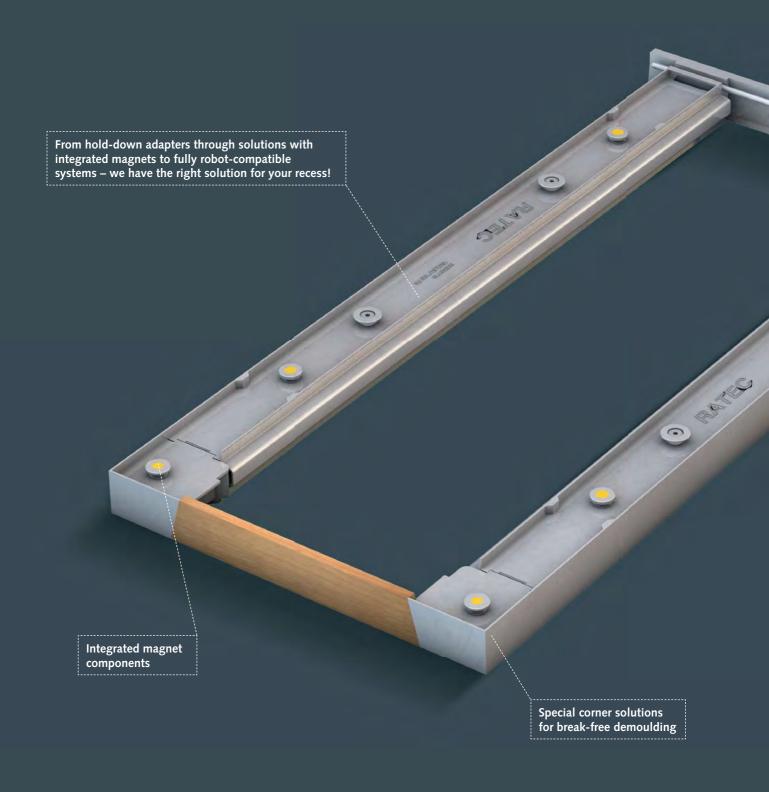


	Hold-down rod	Wood tensioner
Article no.	04399	04400
For	SPB 900	all
L (mm)	365	180

Other heights are available upon request.

## **Recess solutions**

Whether standard or tailor-made, for manual handling or robot operation, wood or steel – we have just the right solution for your window, door or other recesses.



## **Versions**

#### Speedy adapter for wood recesses

Speedy H for holding down wooden recesses on the pallet.



Article no.	03118
H (mm)	Steplessly flexible up to 400

#### PSV Pro System Vario for wood recesses

The sides of the recess are securely held in place with C-profiles via the PSV shuttering system. The PSV corner bracket provides a reliable 90° angle in the corners.



Article no.	On request
H (mm)	According to the selection of PSV adapters

The plywood can protrude up to 100 mm at the top. Accessories: SPB, PSV, PSV corner angle

#### RATEC wooden corner for break-free demoulding of recesses

The special corner bracket is used for planking with wood. After concreting, the corner can be loosened and the legs of the corner can be easily demoulded upwards. The wood-planked corner remains in the element and can be removed at the end. It is combinable with all wood-clad shuttering solutions. The wood must be mitred.



Article no.	On request
H (mm)	98, 148, 198, 248, 298

The plywood can protrude up to 100 mm at the top. Other heights on request.

#### RATEC steel corner for break-free demoulding of recesses

The legs are inserted into the corner via a bolted adapter plate and screwed on. After concreting, the screw can be loosened and the legs of the corner can be easily demoulded upwards. The steel corner remains in the element and can be removed at the end. It is combinable with all wood-clad shuttering solutions.



Article no.	On request
H (mm)	100, 150, 200, 250, 300, 350

Other heights on request.

#### Crane-ready steel windows for holding SPB

Massive steel windows as a welded construction with holders for crane handling, as well as holders for the SPB Standard Magnetic Box for fixing the windows on the pallet.



#### Highlights

- Welded steel construction
- → Slightly conical for easy demoulding

Article no.	On request
Dimensions	On customer request

Accessories: SPB 2100

#### System shuttering for windows/doors on SAS basis

The sides of the recess are first positioned and then completed with a corner magnet. For stripping, first the corner is removed and then the sides. The corner magnet can be combined with robot- or crane-capable steel shuttering as well as with wood-clad shuttering. The leg shuttering can be set by robot. The corner magnet is set and released manually.



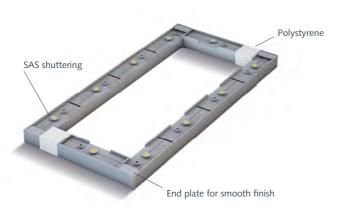
Article no.	On request
H (mm)	100-400

Accessories: SAS corner magnet, SAS shuttering for the legs (or plywood shuttering)

#### 7

#### SAS system windows

Robot-capable system window on SAS basis, consisting of SAS shuttering in unit length of 450 mm. These are set manually or by robot. Intermediate pieces that are shorter than the 450 mm grid are lined with polystyrene. The end pieces of the shuttering are closed with a cover plate to guarantee clean edges.



Article no.	On request	
L (mm)	450	

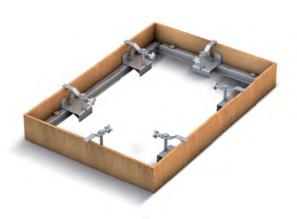
Other lengths on request; polystyrene must be set manually.

#### 7

#### **RT U60 Pro for recesses**

Robot-compatible system window based on RT U60 Pro, ideal for fibreglass upstands and window recesses in double walls.

RT U60 Pro + shutterings are set by hand or by robot. Subsequently, RATEC mounting adapters are clamped on the shuttering using the keyhole principle. The plywood shuttering can either be bolted to the adapter or clamped down by a tensioning arm.



Article no.	On request	
H (mm)	60, 65, 70, 75 or 80	
W (mm)	60	
Shell height (mm)	Max. 140	

Accessories: for RT U60 Pro from page 84

# 04 ACCESSORIES AND ADDITIONAL PRODUCTS

Supplementary components for our shuttering products

Everything you need to round out the RATEC magnetic shuttering product range: Lifting beams for handling and additional components for fixing shuttering or upstands. Also available here is our extensive range of magnetic strips and insert parts. Do you need a special solution? Contact us – we are up for any challenge!



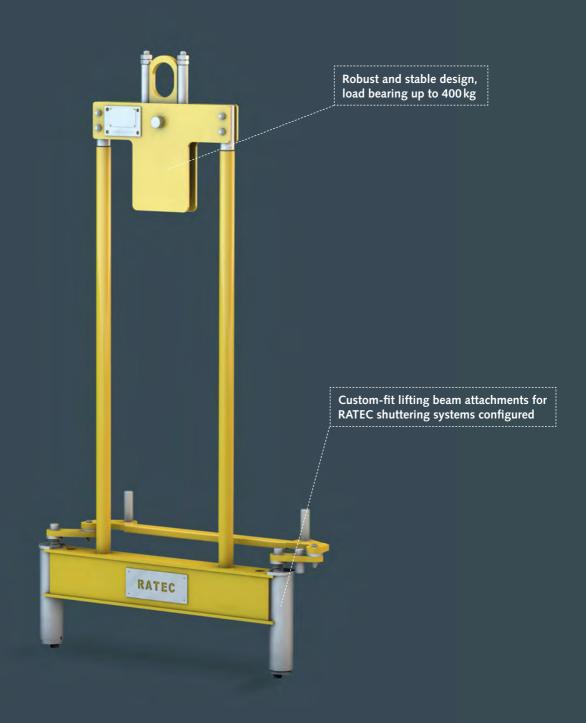
LIFTING BEAMS	Page	98
ADAPTER	Page	100
MAGNETIC TRAPEZOIDAL AND TRIANGULAR CHAMFER STRIPS	Page	106
INSERT MAGNETS FOR MOUNTING AND ASSEMBLY	Page	112
ELECTRICAL BOX MAGNETS	Page	122
QUICKY	Page	126

# Lifting beams

# For efficient handling of shuttering

In addition to the various possibilities of using robots, we also offer different lifting beams for demoulding and easy handling, both for use with RATEC shuttering within and outside the centre of gravity.

Our lifting beams are tailored to our shuttering by means of intelligent attachment solutions, allowing for safe and straightforward handling in the plant.



# **Products**

## Plug lifting beam



Article no.	On request	
For	SAS	
Crossbeam receptacle	Keyholes	
Max. load capacity	300 kg	
Unladen weight	40 kg	

## Fork lifting beam



Article no.	On request	
For	SAS-MF	
Crossbeam receptacle	Horizontal attachment lugs	
Max. load capacity	400 kg	
Unladen weight	171 kg	

## Hook lifting beam



Article no.	On request	
For	SAS, Easy Form	
Crossbeam recepta- cle	Gripping knobs (knob distance fixed)	
Max. load capacity	300 kg	
Unladen weight	21 kg	

## Lifting beam for handling



Article no.	On request	
For	SAS, Easy Form	
Crossbeam receptacle	Gripping knobs (lifting beam suitable for different knob distances)	
Max. load capacity	300 kg	
Unladen weight	97 kg	

# Adapter

# Always on the safe side with the flexible all-rounders

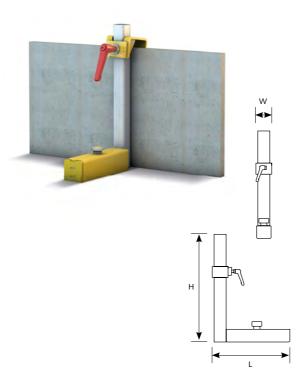
The quick and economical shuttering adapters from RATEC allow for efficient and safe fixing of shuttering elements. Our adapters feature integrated Pro-Magnets and can be combined to make the perfect addition to any shuttering system, for example for recesses, additional upstands in every corner or for fixing insert parts. Find out for yourself what our multitalents can really do. We would also be happy to develop individual adapter solutions for you.



# **Products**

#### Speedy GFS

For stepless, rectangular fixing of a shuttering skin up to 400 mm in height. The Speedy GFS is suitable for almost all shuttering materials, e.g. bre concrete upstands, wood and many others.



#### The advantages

- Quick attachment by clamp lever
- Space-saving can be positioned transversely and longitudinally to the shuttering
- → Easy positioning and removal by push-button activation of the integrated high-performance magnet
- → Clamping clip for secure fixing of the shuttering skin

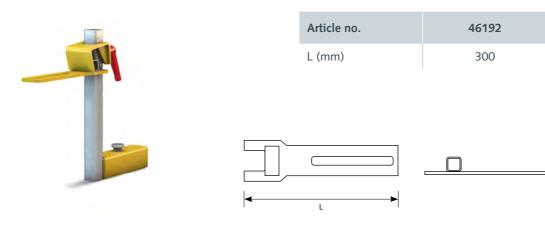
Article no.	48029	
L (mm)	264	
W (mm)	60/40	
H (mm)	400	
Retaining force (kg)	900	
Clamping range (mm)	0-30	

48262

400

### Extension for Speedy GFS

The extension is used to facilitate the positioning of insert parts, among other things.



## → Head for Speedy GFS, clamping range 30-80 mm

Separate head for use with formwork elements with a thickness of 30-80 mm.



## Head for Speedy GFS with extension arm

The separate head with extension is used for easy positioning of insert parts, for example.



Article no.	50400	
L (mm)	300	

## Positioning angle for Speedy GFS

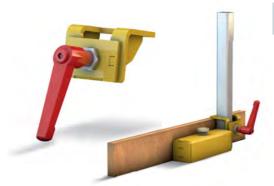
Angle for attachment to the extension for Speedy GFS.



Article no.	48248	48249
Туре	Single	Double angle

## Head for Speedy GFS for wood shuttering

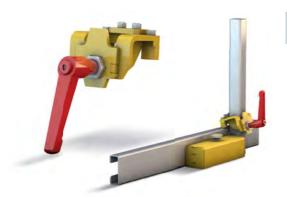
For holding down shuttering profiles made of wood.



Article no. 65066

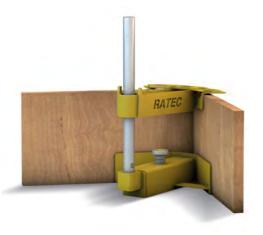
### Universal clamping adapter head for Speedy GFS

For holding down the most varied shuttering profiles of all materials.

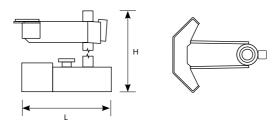


## Speedy H

For stepless mounting of Betoplan, Doka or wood. The shuttering can be set straight, at right angles or at an angle of 135°.



Article no.	03118	
H (mm)	Up to 400	
L (mm)	224	



### Speedy GF

For stepless, right-angled mounting of fibreglass upstands, shuttering board, demoulding and demoulding elements ASE.



Article no.	02858
H (mm)	Up to 400
L (mm)	224

On request

### UAR adapter

The all-rounder for upstands and special elements as a supplement for all RATEC shuttering systems. The adapter is flexibly adjustable in height and can be used for the attachment of steel, wood, rake systems and various other things.

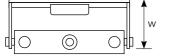


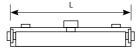
## HT stop adapter

Positioning aid: for stripping the adapter is folded backwards so that the shuttering can be pulled back. For shuttering it is folded forward again. This means that additional levelling is not required.



Article no.	02199
Retaining force (kg)	900
L (mm)	310
W (mm)	140
H (mm)	69







# Accessories

## Speedy lifting tool



Article no.	02860	
For	Speedy H, Speedy GF, Speedy GFS	

# Magnetic trapezoidal and triangular chamfer strips for clean chamfers and joints

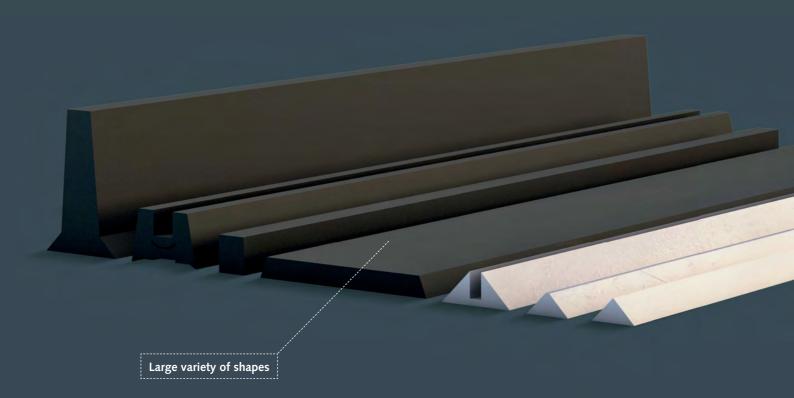
RATEC magnetic strips for the quick and clean formation of chamfers, drip moulds or dummy joints. Our strips are made of high quality steel (some encased in rubber) with built-in magnets. This means that screwing or welding on the table or on the formwork can be omitted.

#### **ESPECIALLY SUITABLE FOR**

Attachment to steel shuttering skins and steel tables.

#### **DETAILED PROPERTIES**

- → Large variety of shapes for a wide variety of applications
- Profiles with magnetic cores for attachment to steel shuttering
- Reusable, high retaining force, replaced polystyrene mouldings (environmentally friendly)
- → Versions in solid steel, steel with rubber coating and solid rubber (flexible)
- → Special solutions on request

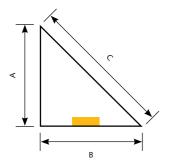


Special requests, dimensions and lengths can be accommodated. Simply ask us about it.

# Magnetic chamfer strips

Magnetic chamfer strips made of rubber (with steel core) – magnetised on one side

Standard lengths: 2000 mm and 3000 mm

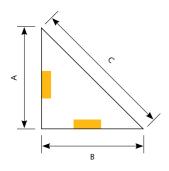


Excerpt from our range of products:

Article no.	Dimensions AxBxC (mm)	Magnetised
02123	15 x 15 x 21	50%
03205	20x20x28	50%
02126	15 x 15 x 21	100%
03206	20x20x28	100%
06440	25 x 25 x 35	100%
04372	30×30×45	100%

Magnetic chamfer strips made of rubber (with steel core) – magnetised on both sides

Standard lengths: 2000 mm and 3000 mm

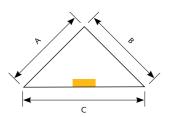


Excerpt from our range of products:

Article no.	Dimensions AxBxC (mm)	Magnetised
03207	20×20×28	50%
05463	50×50×71	50%
03208	20×20×28	100%
11645	25 x 25 x 35	100%
10777	30×30×45	100%

# Magnetic chamfer strips made of rubber (with steel core) – magnetised on the bottom

Standard lengths: 2000 mm and 3000 mm

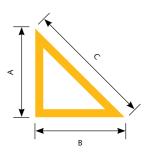


Article no.	Dimensions AxBxC (mm)	Magnetised
03209	20x20x28	50%
05266	25 x 25 x 35	50%
03210	20×20×28	100%
06857	25 x 25 x 35	100%
10172	30×30×42	100%

### Magnetic chamfer strips made of solid rubber (flexible)

Standard lengths: 2000 mm and 3000 mm

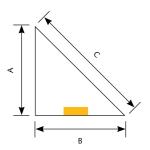
Bending radius: min. 500 mm (300 mm for Article no. 11442)



Article no.	Dimensions AxBxC (mm)	Magnetised
11442	10x10x15	Single side 2-pin
11957	15 x 15 x 21	Single side 2-pin
02155	20×20×28	Single side 2-pin
19855	20x20x28	on bottom 2-pole

## Magnetic chamfer strips made of steel – magnetised on one side

Standard lengths: 2000 mm and 3000 mm

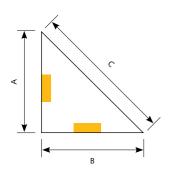


Article no.	Dimensions AxBxC (mm)	Magnetised
03119	10x10x14	50%
03035	15 x 15 x 21	50%
03102	10 x 10 x 14	100%
02901	15 x 15 x 21	100%
05341	20x20x28	100%
02075	25×25×35	100%

Other dimensions and lengths are available upon request.

## Magnetic chamfer strips made of steel – magnetised on both sides

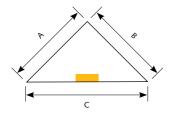
Standard lengths: 2000 mm and 3000 mm



Article no.	Dimensions AxBxC (mm)	Magnetised
02547	10 x 10 x 14	50%
03141	15 x 15 x 21	50%
03138	10×10×14	100%
03142	15 x 15 x 21	100%
05343	20x20x28	100%

## Magnetic chamfer strips made of steel – magnetised on the bottom

Standard lengths: 2000 mm and 3000 mm

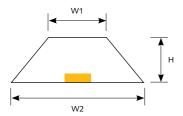


Article no.	Dimensions AxBxC (mm)	Magnetised
03139	10x10x12	50%
04143	10 x 10 x 14	50%
03143	15 x 15 x 21	50%
05344	20x20x28	50%
03140	10x10x12	100%
04142	10 x 10 x 14	100%
03144	15 x 15 x 21	100%
00109	20×20×28	100%

# Magnetic trapezoidal strips

## Trapezoid magnetic strip made of rubber

Standard lengths: 2000 mm and 3000 mm

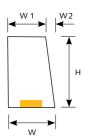


Article no.	Dimensions HxW1xW2 (mm)
10700	8x32x37
07491	8x18x20
00437	10×20×40
10317	10x16x36
05910	10x15x20
00836	10x10x30
06565	12×16×40
10887	15 x 40 x 60
12071	15 x 20 x 50
00702	15 x 20 x 40
10383	20x8x18
06395	20x50x30
03277	20x30x40

Article no.	Dimensions HxW1xW2 (mm)
12175	20x22x50
10318	20×20×60
11684	20x18x24
06951	20x16x26
00663	24×20×19
11953	30x80x90
06344	30x70x80
05898	30x16x36
07052	30x10x20
10307	30x10x15
08610	35 x 20 x 80
27098	10x16x22
03733	10×10×15

# Trapezoidal magnetic strips made of rubber, one-sided slant

Standard lengths: 2000 mm and 3000 mm

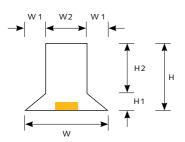


Article no.	Dimensions HxW1xW2xW (mm)	Magnetised
08420	10×50×10×60	100%
12172	10x35x10x45	100%
11517	10x20x10x30	100%

Other dimensions and lengths are available upon request.

### Trapezoidal magnetic strips made of rubber, straight with chamfer

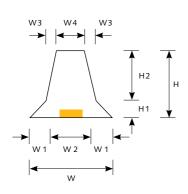
Standard lengths: 2000 mm and 3000 mm



Article no.	Dimensions $HxH1xH2xWxW2xW1$ (mm)
10057	70×10×60×45×25×10
07855	30×10×20×60×40×10
07433	65×10×55×38×18×10
07434	80×10×70×38×18×10
07465	100×10×90×40×20×10
07234	15×10×5×40×20×10

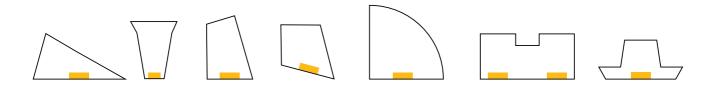
## Trapezoidal magnetic strips made of rubber, slanted with chamfer

Standard lengths: 2000 mm and 3000 mm



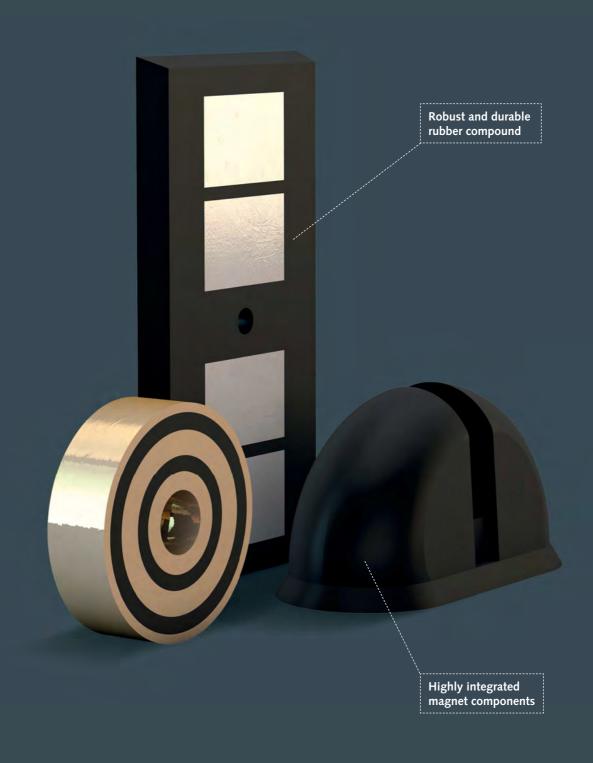
Article no.	Dimensions H x H1 x H2 x W x W1 x W2 x W3 x W4 (mm)
03580	70×10×60×38×10×18×4×10
08245	70×10×60×40×10×20×2,5×15
09034	80x10x70x40x10x20x2,5x15

## We will gladly produce special solutions for you on request!



# Insert Magnets for Mounting and Assembly

Insert magnets for mounting and assembly from RATEC have been used for years in the precast concrete industry. They have proven themselves in tough everyday conditions. And through the combination of rubber bodies with integrated magnets, they can be produced in almost any geometry. Simple solutions make efficient work possible. The strong, integrated magnet fixes the insert part in the exact position.



### **APPLICATION**

For fixing threaded sleeves, anchor plates, anchor channels, pipes, loop boxes and lifting anchors of all common manufacturers.

### **ESPECIALLY SUITABLE FOR**

All types of concrete products

### **DETAILED PROPERTIES**

- → Very high retaining force
- → Can be used directly in concrete

- → Simple and safe positioning of insert parts without slipping
- → Simple, break-free stripping

# Application examples



Magnetic holder for corrugated pipe



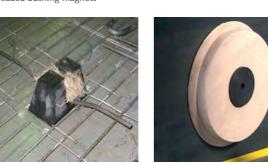
Pipe magnet



Threaded bushing magnets



Anchor plate with magnetic holder



Universal magnet with plastic plate

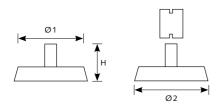
# Threaded bushing magnets

All our threaded bushing magnets are available with metric, round and KO threads.

## Steel thread G (rubber)

With hex socket M8 (Allen M6 on request) for mounting of steel thread support M12-M36.





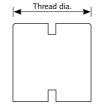
### Excerpt from our range of products:

Article no.	Ø1 (mm)	Ø2 (mm)	H (mm)
06739	46	50	10
00898	50	60	10
05434	54	58	12
04836	57	69	23
06616	64	69	10
05422	64	69	12

## Steel thread support (accessory for steel thread)

With internal thread M8 for steel thread.





Excerpt from our range of products:

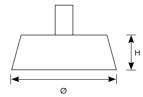
Article no.	Thread Ø
04835*	M10
04837	M12
04838	M14
04839	M16
04840	M18
04841	M20
04842	M24
04843	M30
06588	M32
05097	M36

<sup>\*</sup>Steel thread with Allen M6 required.

## Threaded bushing magnet G (rubber)

Hexagon socket screw with threaded attachment firmly welded, the threaded attachment is freely rotating. Round system, conical.



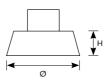


Article no.	On request				
Thread	M8-M36	M8-M36	M8-M36	M8-M36	M8-M36
Ø (mm)	60	69	42	69	69
H (mm)	10	10	12	12	23

## 7 Threaded bushing magnet S (steel)

 $Hexagon \, socket \, screw \, with \, threaded \, attachment \, firmly \, welded, \, the \, threaded \, attachment \, is \, freely \, rotating. \, Round \, system, \, conical.$ 





Article no.	On request	On request	On request	On request
Thread	M10-M36	M10-M36	M10-M36	M10-M36
Ø (mm)	55	70	85	105
H (mm)	15	15	15	15
Retaining force (kg)	105	190	290	450

Article no.

## 7 Threaded bushing magnet G (rubber) internal thread

With various internal threads, round system, conical.



Thread	M5-M16
Ø (mm)	Variable
H (mm)	Variable
Retaining force (kg)	Depending

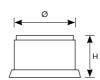
On request

# Pipe magnets

## Magnets for corrugated pipe G (rubber)

Pipe magnet for fixing pipes.

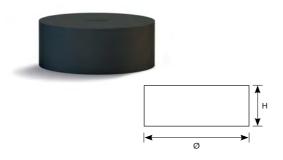




Article no.	Ø (mm)	H (mm)
12528	27	30
12444	37	70
06757	50	62
02096	50	64
12453	54	48
02097	65	57
07085	69	64
01979	80	62
11846	100	68
12529	150	105

## Pipe magnet G (rubber)

Pipe magnet for fixing pipes in columns, binders, joists.



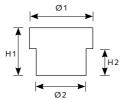
Article no.	Ø (mm)	H (mm)	Retaining force (kg)
06879	50	15	120
07710	70	27	200
03258	100	27	350
00236	114	27	700

## Universal magnet G (rubber)

Universal magnet for recesses and dummy tubes.



Article no.	Ø1 (mm)	Ø2 (mm)	H1 (mm)	H2 (mm)
00394	45	35	34	19
00386	70	55	29	19



# Plastic plate for universal magnets

Special dimensions for the plastic plates are available.



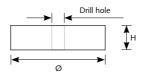
Article no.	Thread Ø
12523	75
07096	103
07095	119
07097	152
07995	200

# Mounting magnet system

## Round magnet series type R/Z

Round magnet for installation in recyclable recess bodies. Features: Sealed adhesive side and high retaining force.





	Type R/Z-105	Type R/Z-150	Type R/Z-190	Type R/Z-290	Type R/Z-450	Type R/Z-600	Type R/Z-700
Article no.	20747	20736	20738	20740	20742	20743	20745
Ø (mm)	50	60	65	80	100	115	120
H (mm)	11	15	15	15	15	15	15
Drill hole (mm)	20	16.5	16.5	16.5	16.5	16.5	16.5
Retaining force (kg)	90	150	190	290	450	600	700

## Magnetic holder for loop box

Magnetic holder for all common steel loop boxes (Peiko, Philipp etc.).

Article no. On request



# Lift off anchor

## Flat steel lift off anchor (rubber)

Delivery without lift off anchor



Article no.	02997	02998	02617
Lift off anchor (t)	2.5	5	7.5/8/10





## Ball head lift off anchor (rubber)

Magnet for fixing a ball-type transport anchor according to the load class.



Article no.	04967	01041	01042	01561	03706
Lift off anchor (t)	1.3	2.5	5	7.5	10





# Ball head lift off anchor (steel)

Magnet for fixing a ball-type transport anchor according to the load class.



Article no.	20756	20758	20759	20760
Lift off anchor (t)	1.3	2.5	5	7.5/10





# Anchor channels

## Anchor channels magnet G (rubber)

For fixing all common anchor channels HTA/HZA, for easy hooking into the channel.



## Anchor channels magnet S (steel)

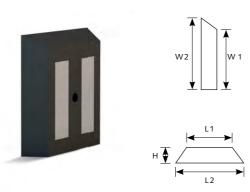
For fixing steel anchor channels HTA/HZA, for easy insertion into the channel (magnetic top and bottom).



# Anchor plates

## Anchor plate magnet G (rubber)

For fastening steel anchor plates.

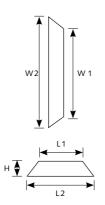


Article no.	L1 (mm)	L2 (mm)	W1 (mm)	W2 (mm)	H (mm)
04149	100	170	105	115	35
11914	100	140	100	120	20
12286	100	160	90	120	20
12287	200	240	100	120	80
08401	120	150	90	105	25

## Anchor plate magnet G (rubber)

For fastening steel anchor plates.



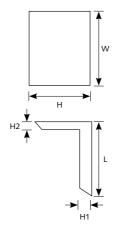


Article no.	L1 (mm)	L2 (mm)	W1 (mm)	W2 (mm)	H (mm)
12325	100	120	100	120	20
07483	105	145	100	125	35
08284	120	150	60	90	20
06861	120	160	120	160	20
11915	160	180	120	140	10

# Magnet holder edge S (steel)

For fastening steel anchor plates.



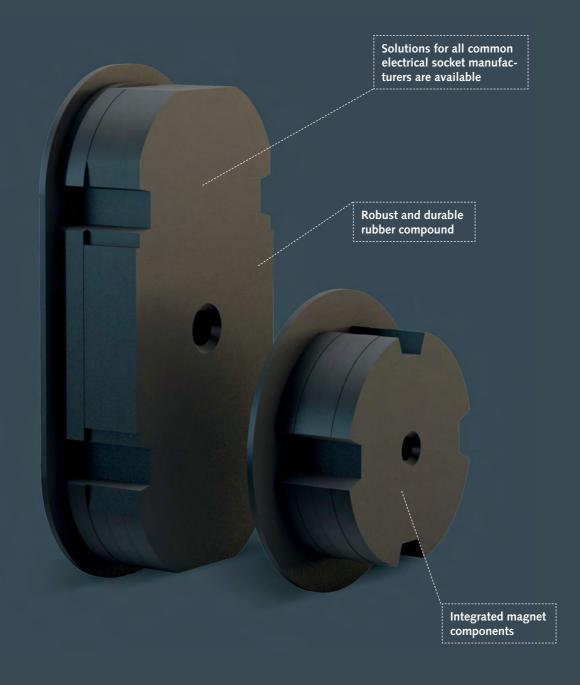


Article no.	L (mm)	W (mm)	H (mm)	H1 (mm)	H2 (mm)
12448	270	150	155	15	15
11936	115	50	155	10	10
00838	150	160	195	30	20
00837	80	140	195	10	20

# **Electrical Box Magnets**

# To make sure the current is in the right place!

Electrical Box Magnets from RATEC have been used for many years in the precast concrete industry and have proven their worth in practice. Through the combination of rubber bodies with integrated magnets, almost all geometries and solutions can be realised. Easy installation and removal in the electrical boxes facilitates a efficient and streamlined process. The strong, integrated magnet fixes the insert part in the exact position. With empty conduit magnets, the magnet body leaves a recess in the concrete after removal.



### **APPLICATION**

For attachment of electrical boxes of all common manufacturers.

### **ESPECIALLY SUITABLE FOR**

Our product range features a wide variety of insert magnets. We also gladly offer customised solutions for you! Please send us your requirements, drawing or type. We will surely have the right solution for you.

### **DETAILED PROPERTIES**

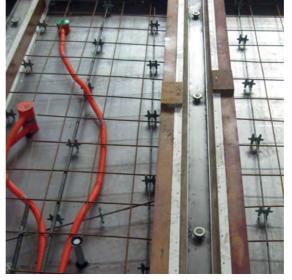
- → Very high retaining force
- → Can be used directly in concrete
- → Simple and safe positioning of components without slipping

# Application examples









# **Product**





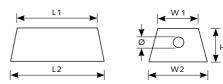
We offer the right magnet solutions for your electrical boxes from the following manufacturers:

ABB	FUGA	PRIMO
AGRO	KAISER	OPUS
ATTEMA	SPELSBERG	

# Accessories for empty conduit attachment

## Empty conduit end attachment single 1-H

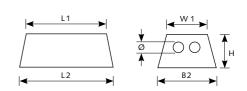




Article no.	27285
L1 (mm)	85
L2 (mm)	100
W1 (mm)	40
W2 (mm)	70
H (mm)	40
Ø (mm)	19

## Empty conduit end attachment double 2-H





Article no.	03000
L1 (mm)	115
L2 (mm)	135
W1 (mm)	90
W2 (mm)	120
H (mm)	50
Ø (mm)	22

# Quicky

# The ultimate precast dowel

Quicky is a compact precast dowel made from a single piece. Assembling and disassembling parts is not required. Quicky is injection-moulded from high-quality branded HDPE plastic and is therefore cheaper than metal-plastic sleeves. The threadless sleeve allows for the anchoring screw to be turned in and out with an electric screwdriver in seconds. The days of risky unscrewing of threaded parts (breakage!) and cumbersome manual screwing of the anchoring screw into threads that are frequently soiled with cement paste are gone at last!



Compact precast dowel made from a single piece

# **Products**

## Quicky

Tested by the Materials Testing Institute of the University of Karlsruhe. For use with wood screws 12 x 80 mm or 12 x 50 mm.



Article no.	01250		
Material	Branded plastic HDPE "Made in Germany"		
L (mm)	60		
Disk Ø (mm)	56		
Packaging unit	1100 pcs.		

Wood screws and washers are not included in the scope of delivery.

## Quicky TSI

Quicky TSI is universally usable in double walls, solid parts and double walls with thin fibre concrete shells. For use with wood screws 12 x 80 mm or 12 x 50 mm. Tested by the Technical University of Darmstadt, Institute for Concrete Structures (according to the latest European guidelines ETAG 001).



Article no.	05832		
Material	Branded plastic HDPE "Made in Germany"		
L (mm)	74		
Disk Ø (mm)	46		
Packaging unit	1700 pcs.		

Wood screws and washers are not included in the scope of delivery.

## Quicky light concrete

Quicky light concrete is a compact precast dowel in one piece with three holes  $\emptyset = 7$  mm for sewing. **Attention**: When using Quicky light concrete, a suitability test must be carried out by the plant depending on the quality of the concrete and additives used.



Article no.	02150	
Material	Branded plastic HDPE "Made in Germany"	
L (mm)	60	
Disk Ø (mm)	56	
Packaging unit	900 pcs.	

Customer-specific suitability test (plant test).

# 05 SHUTTERING SYSTEMS FOR VERTICAL PRODUCTION

Products for the production of high-quality, flat and volumetric elements

Our product range comprises battery systems with up to 20 pockets which can be filled individually. For volumetric elements such as room modules, stairs, supports etc., we can develop a suitable solution based on your requirements. All of our vertical shuttering solutions are suitable both for filling from the top or by means of the upcrete® procedure, i.e. pressurised filling from below or from the side.

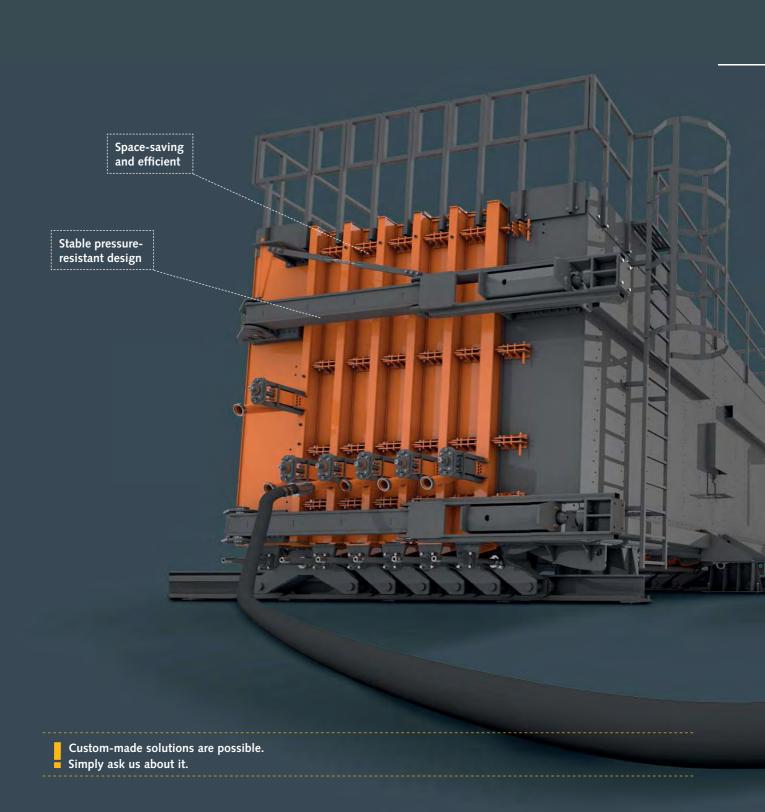


RATEC BATTERY SYSTEM	Page <b>130</b>
3D SHUTTERINGS	Page <b>134</b>

# RATEC battery system

Cost-effective production of complex, smooth and extremely high-quality precast concrete elements.

The pocket battery moulds from RATEC incorporate all the creativity and engineering know-how of more than 40 years of experience in the development and rationalisation of precast concrete plants. Together with the proven upcrete® technology, our pocket battery moulds prove their high quality and cost-effectiveness day in and day out on three continents. The end product is characterised by smooth surface concrete on all sides as well as by the smallest geometric tolerances. The shutterings also impress with their ease-of-use and sturdiness.



### **PROPERTIES**

- → Space-saving and efficient
- Stable pressure resistant design each pocket can be completely filled separately
- → Can be filled from above with a concrete spreader or by means of the UPP 100 (upcrete® process) from below or from the side
- → Walls can be clamped hydraulically or mechanically
- → Available as single or twin battery, expandable to 2 x 10 pockets on request

# Application examples



Hydraulic battery mould with pump car





Highest quality of concrete elements



With UCI Square

# RATEC battery system Application examples

The range of previous projects showcases the wide variety of application possibilities and performance of our battery systems. RATEC battery systems have proven their worth where absolute dimensional accuracy and surface quality matter, or where the complexity of an element does not permit for any other production method.

The usage applications also demonstrate that the RATEC battery systems can be used in a space-saving and effective manner, both as a stand-alone solution and to supplement existing production.

### **PROJECT IN USA**

### **NOISE BARRIERS IN ALL-ROUND HIGH SURFACE QUALITY**

Due to contouring of the elements and matrices partially on both sides, the customer decided in favour of the RATEC battery systems.

#### **Project scope**

A total of three battery moulds were installed:

- → Type A: 1 x 10 pockets, size 6 x 1.8 m
- → Type A: 1x5 pockets, size 6x2.4m
- → Type B: 1 x 10 pockets, size 6 x 3.6 m

#### Additional information

- → All battery systems are designed as twin systems and can be supplemented with additional pockets.
- → An upcrete<sup>®</sup> pump station UPP 100 is used for filling.
- → The production capacity of the plant is 300 m² or 150 running wall meters per day in single-shift operation.







Noise barriers in USA 2017 Press articles (PDF) Scan QR code



### **PROJECT IN INDONESIA**

### PRODUCTION OF FACADE ELEMENTS SIZED 3.9X9 M

One of the leading Indonesian precast concrete manufacturers relies on the battery system from RATEC in combination with the upcrete® process

### **Product scope**

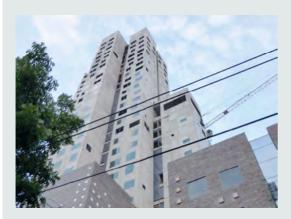
- → Product: Facade elements for new hotel construction
- → Battery moulds with 4 pockets of 9x3.9m each
- 7 UPP 100 pump station

### Unique challenges

- → element size
- → limited production area
- short construction time
- highest exposed concrete quality



Hotel construction
in Indonesia
Press articles (PDF)
Scan QR code







### **PROJECT IN ITALY**

### **ITALY'S PAVILION AT EXPO 2015 IN MILAN**

A majority of the facade elements were manufactured in a RATEC battery mould using the upcrete® process. Filling from top was not logical due to the element geometry.

### Unique challenges

- → Very complex elements, each with an in individual design
- → Reliable shaping of filigree "branches"

### **Project scope**

- ₹ 9000 m² facade
- 7 2200 t cement
- made from 80% recycled material
- → battery mould with 6 pockets of 6x4m each
- UPP 100 pump station
- UCI filling connections







Country pavilion at
Expo 2015

Press articles (PDF)

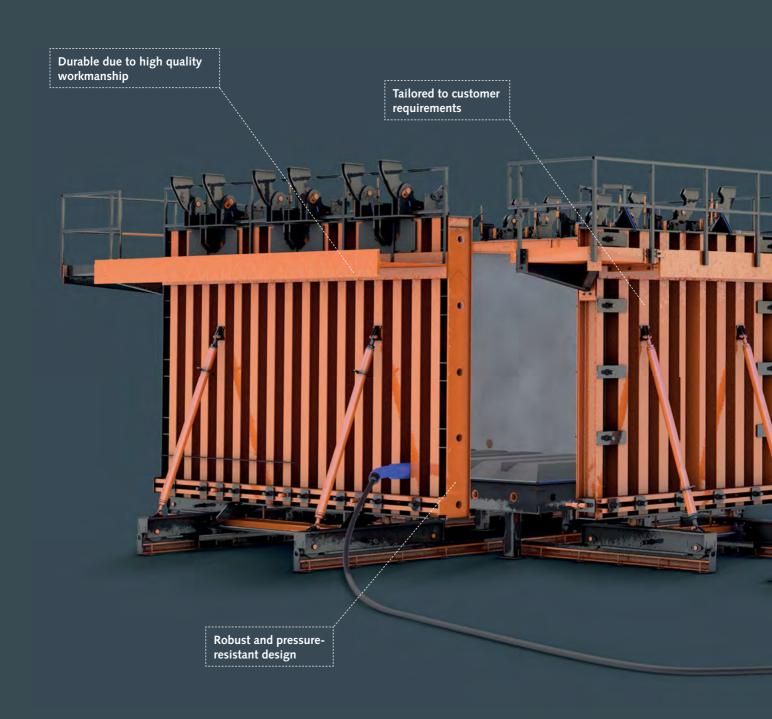
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# 3D shuttering

# Tailor-made precision

On request, we develop and manufacture special formwork for volumetric precast concrete elements, such as room modules, stairs, balconies, roofs and much more according to your specifications. Together with you, we develop an economic formwork solution tailored to your needs – customised based on your individual requirements and manufactured with the highest accuracy. We focus on optimising the production process, achieving a high surface quality of the element as well as the highest dimensional accuracy. Beyond that, we also take into account your specifications – the focus is always on finding the most efficient solution in close coordination with the customer.



Shuttering systems | 3D shuttering | 134 | 135

### **PROPERTIES**

- → Solid steel construction, upcrete®-capable through optional pressure-resistant construction
- → High level of workmanship "Made in Germany"
- Durability and high quality of the materials used and precise execution

Our developments are always based on the component drawings and the existing production concept. Based on this we design the appropriate shuttering and also verify the logistical and economic efficiency. Only then will we propose the best possible solution for you.

### **APPLICATIONS**



Room module shuttering





Roof mould



Special shuttering for track roller boxes

# 3D-shuttering Application example

Our high-quality room module moulds are used where excellent surface quality is needed. This is particularly useful in conjunction with the upcrete® process, i.e. pressure filling of the shuttering by means of a UPP concrete pump in a rising stream from below.

Current developments in the context of customer projects focus on variability and flexibility of the shuttering as well as alternative filling options for maintaining the same surface quality.

### **PROJECT IN PERU**

### **MODULAR HOUSING PROJECT ICA**

The side shuttering, inner core and cover can be reused immediately for concreting the next room module. This saves valuable production and working time and prevents downtime. The monolithic mode of production proves to be material-saving and particularly economical.

Since upcrete® room modules do not have to be turned after concreting but are on the ground level with the sub-formwork, this offers a significant advantage in that the freshly concreted finished part can be quickly unmoulded and transported or processed further.

### **Product scope**

- 73 Room modules 3x6x3m (WxLxH)
- → 1 Battery mould with 6 pockets 8 x 3 m
- **7** 2 Stair moulds
- 7 2 Balcony moulds
- 2 PumpCars based on UPP 100

### Unique challenges

Modular housing – A system for creating earthquake-proof living space

- → Surface area of 1000 000 m²
- 7 In only 60 months
- 7 3600 houses with garden
- 770 m<sup>2</sup> living space with three rooms spread over two levels



Modular Housing Project in Peru 2014 Press articles (PDF) Scan QR code





Module and roof shelling in the newly built plant in Ica





From design through modelling to loading of the individual parts – everything is "Made in Hockenheim"





Modular housing with upcrete® is earthquake-proof, climate-friendly, material-efficient and economically sensible

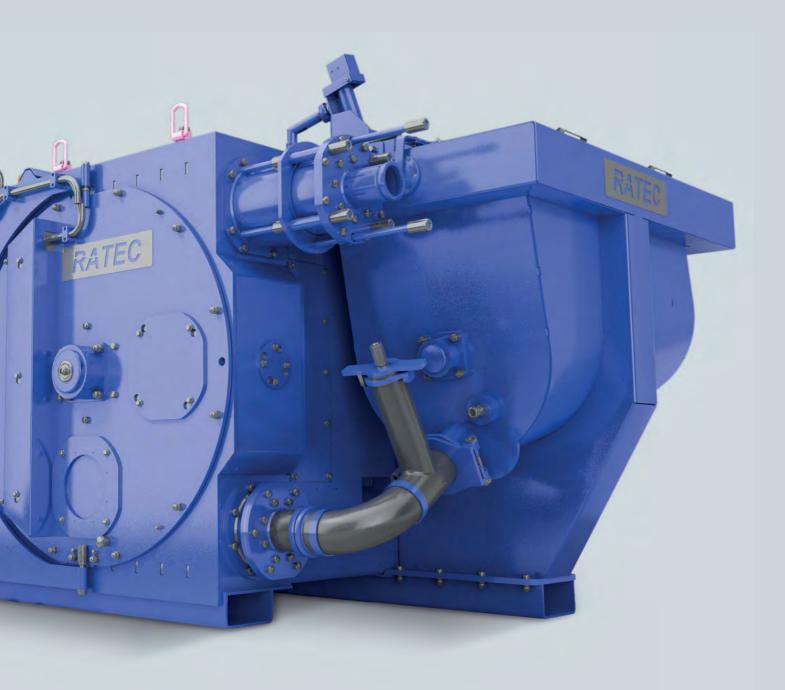


80 hours from start to finish

# 06 PUMPS, CONCRETE SPREADERS AND ACCESSORIES

The product range for a customised supply of concrete

RATEC solutions for efficient supply of concrete and smooth shuttering on the element. Our professional products for concrete delivery allow you to fill your shuttering cleanly and completely with little wear on the material.



UPP PUMP STATION	Page	140
UCI CONCRETE FILLING CONNECTION	Page	144
KBV CRANE CONCRETE DISTRIBUTOR	Page	146

# **UPP** pump station

# The compact all-rounder for concrete delivery

The UPP Pump Station is suitable for the realisation of complex, smooth and high quality precast concrete parts. As the centrepiece of the upcrete® technology, the UPP creates possibilities where other filling techniques are out of the question for reasons of quality or feasibility.

The most important technical data	UPP 100	UPP 125
Capacity	Up to 22 m³/h	Up to 33 m³/ h
Conveyor hose Ø	100 mm	125 mm
Power input	33 kW / electr.	48 kW / electr.
Connector on housing	CEE 63 A	CEE 125 A



Further specifications on request.

### **BENEFITS AT A GLANCE**

- → Easy to clean
- 7 Finely dosed
- → Suitable for concrete plants
- → Fast intermediate cleaning
- → Continuously adjustable feed from 0-20 m³/h
- → Radio remote control included
- Software interface for automatic concrete delivery as standard
- → Modular pre-hopper from 600-2000 I
- Mixer in pre-hopper
- → Automatic residual concrete level indicator
- 7 Maintenance friendly due to fixed central lubrication
- → Compact and enclosed design
- → Suitable for many thixotropic media

### **DETAILED PROPERTIES**



### **尽** Easy to clean

Lockable valve in pre-hopper for quick and easy cleaning of the rotor. Includes slewable pipe-bow for easy accessibility and ease of cleaning.



#### Modular pre-hopper

If required, the standard pre-hopper with a volume of 600 l can be replaced with a 2000 l volume pre-hopper.



### Continuously adjustable feed

Low-wear and very accurate filling of the moulds is ensured through the continuously adjustable feed from 0–20 m<sup>3</sup>/h.



### → Integrated mixer

The integrated mixer mixes the concrete again before pumping. The resulting venting of self-compacting concrete (SCC) saves time and effort.



### → Radio remote control

The compact duplex radio remote control is available for precise operation of the pump from different locations.



# Automatic residual concrete fill level indicator

The level indicator automatically and reliably displays the remaining volume of residual concrete, thus guaranteeing maximum process reliability.



### → Interface for concrete supply

The scope of supply includes a permanently programmed interface with attached plug for communication with a mixer and/or a bucket conveyor.



### Low maintenance

The permanently installed central lubrication ensures long-term safe operation and long maintenance intervals.



### → Standardised power input

With 33 kW power input and attached CEE three-phase plug, the UPP 100 is perfectly matched to the standard CEE 63 A connection available in every concrete factory.



### → Flexible use of media

Due to the overall design, the pump is suitable for almost all thixotropic media.



### Pump car

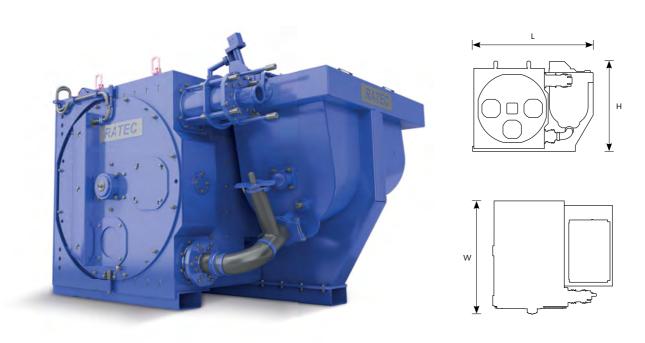
On request also available as a mobile pump solution with larger buffer.

# **Products**

# Pump UPP 100



Compact pump station with  $100\,\text{mm}$  conveyor hose diameter for delivery rates up to  $22\,\text{m}^3/\text{h}$ .



Article no.	UPP 100		
Power input	33 kW electrical, device connector CEE 63 A directly at the pump		
Compact duplex radio remote control with the following functions:	on/off, speed selector, reverse switch, feedback on graphic display of the remote control		
Capacity (max.)	22 m³/h		
Hopper volume (l)	600		
Electric drive	400 V / 50 Hz		
Filling possible over	individual large reservoir (feeding via bucket conveyor or similar), ready-mix concrete truck, crane bucket		
Filling height (mm)	1620		
Approx. dimensions (LxWxH) in mm	2400×2300×1800		
Approx. weight (kg)	5800		
Conveyor hose diameter (mm)	100		

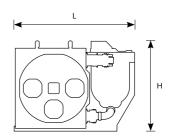
Custom-made products are possible: Simply ask us about it.

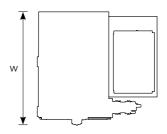
# Pump UPP 125



Compact pump station with  $125\,\mathrm{mm}$  conveyor hose diameter for delivery rates up to  $33\,\mathrm{m}^3/\mathrm{h}$ .







Article no.	UPP 125		
Power input	48 kW electrical, device connector CEE 125 A directly at the pump		
Compact duplex radio remote control with the following functions:	on/off, speed selector, reverse switch, feedback on graphic display of the remote control		
Capacity (max.)	33 m³/h		
Hopper volume (l)	600		
Electric drive	400 V / 50 Hz		
Filling possible over	individual large reservoir (feeding via bucket conveyor or similar), ready-mix concrete truck, crane bucket		
Filling height (mm)	1595		
Approx. dimensions (LxWxH) in mm	2400×2300×1800		
Approx. weight (kg)	5800		
Conveyor hose diameter (mm)	125		

# UCI pump connection

UCI – advantages at a glance.

- → Enables the supply of concrete with a smooth finish
- → No after-treatment necessary
- → Clean filling process without concrete residue
- → Simple manual or semi-automatic operation
- → Easy to use with crank or torque wrench
- → No leakage during closing

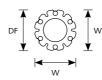
- → Easy flushing process, thus no time-consuming maintenance work
- → Static end stops prevent incorrect operation
- → Can be mounted on steel and wooden shuttering

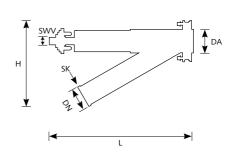
### UCI Basic



Our standard for shuttering filling, wear-resistant and clean.







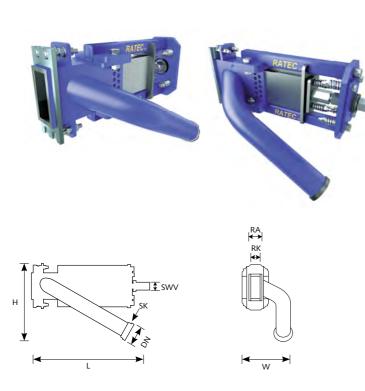
	UCI.70 Basic 3	UCI.100 Basic 3	UCI.125 Basic 3
Article no.	On request	On request	On request
DN Nominal diameter	70	100	125
DA Outlet diameter	90	135	165
DF Flange diameter	190	230	260
SK quick release coupling size	3 1/4 "	41/2"	5½"
(SWV) Wrench width lock	SW 36	SW 36	SW 36
L (mm)	764	920	1095
W (mm)	190	235	265
H (mm)	370	482	515
Approx. weight (kg)	27	44	58

# UCI Square



Our slim specialist for narrow inlets. With or without flange or completely customised.

## UCI.70 SQUARE



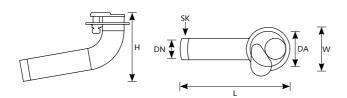
Article no.	On request	
DN Nominal diameter	70	
RA Rectangular dimension outlet	70×140	
RK Rectangular dimension piston	50×120	
SK quick release coupling size	SK 31/4"	
(SWV) Wrench width lock	36	
L (mm)	660	
W (mm)	250	
H (mm)	400	
Approx. weight (kg)	26	

# UCI Compact



The compact filling connection for fixing to the bottom shuttering.





	UCI.70 C	UCI.100 C
Article no.	On request	On request
DN Nominal diameter	70	100
DA Outlet diameter	130	180
SK quick release coupling size	31/4"	41/2"
(SWV) Wrench width lock	30	36
L (mm)	515	582
W (mm)	175	230
H (mm)	300	370
Approx. weight (kg)	7,5	14,5

# KBV crane concrete distributor

# For effective concreting

# **ADVANTAGES**

- → Saves material
- → Lowers labour costs

- 7 Makes work easier
- 7 Improves the quality of your finished parts

# **TECHNICAL DETAILS**

- → Transport system from the mixing plant to the production area
- → Forklift cradle
- → Electronically controlled distribution roller
- → Electronically controlled segment closure (optional)
- → Vibrator for stuck concrete (optional)
- → Discharge width 1200 mm
- → Installed power approx. 4 kW

- Protection system IP 55
- → Operating voltage 400 V (50 Hz)
- → Spring cable drum for energy supply from the hall crane
- → Length 1700 mm
- → Width 2000 mm
- 7 Height 1900 mm
- → Empty weight 1780 kg
- → Load capacity 2 m³



# Application examples



Support elements for Skyrail





Mast elements for wind farm



UPP 100 with column shuttering



Shaft element pumped with UPP



UPP with pump truck



Concrete filling connection UCI Square



Crane-mounted concrete spreader



UPP 100 with pipe casing



We are always here for you

Our philosophy is based on customer proximity and working closely together in all regards. With four own branches in Germany, Spain, the USA and Singapore, we are available where you need us. We also have numerous representatives on site. Our team of precast concrete specialists, engineers and on-site representatives collaborate to find the right solution for you. This is how we have come up with "better ideas" for more than 20 years.





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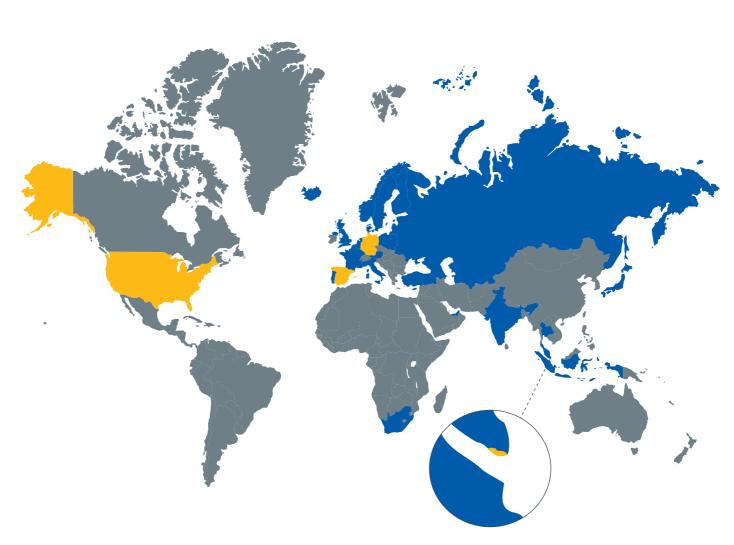
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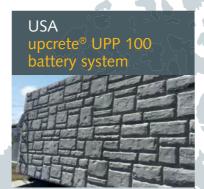
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■ Headquarters
■ Distributors



Examples of RATEC Reference Objects

Worldwide





Peru
3D module shuttering























Malaysia Easy Form, SAS



Philippines Battery system



Australia SAS tower special shuttering









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