SHUTTERING PROFILES MAGNET TECHNOLOGY ACCESSORIES





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ENGINEERED AND MADE IN GERMANY

"THE HIGHEST QUALITY OF PRODUC-TION HAS BEEN THE BENCHMARK FOR MORE THAN 60 YEARS. NO REASON TO CHANGE THAT."



What began in 1957 as a small metal engineering workshop has become one of the world's leading manufacturers of state-of-the-art production plants for precast concrete parts. The remarkable precision of the components plays a major role in this. To this day the Weckenmann engineers and mechanics still work meticulously on every plant, machine or component – down to the last detail.







DEVELOPMENT AND PRODUCTION KNOW-HOW

Weckenmann has over 60 years of growing development and production know-how which fuses with many years of experience in a comprehensive range of products. All products meet the highest quality standards and are designed and produced in Germany.

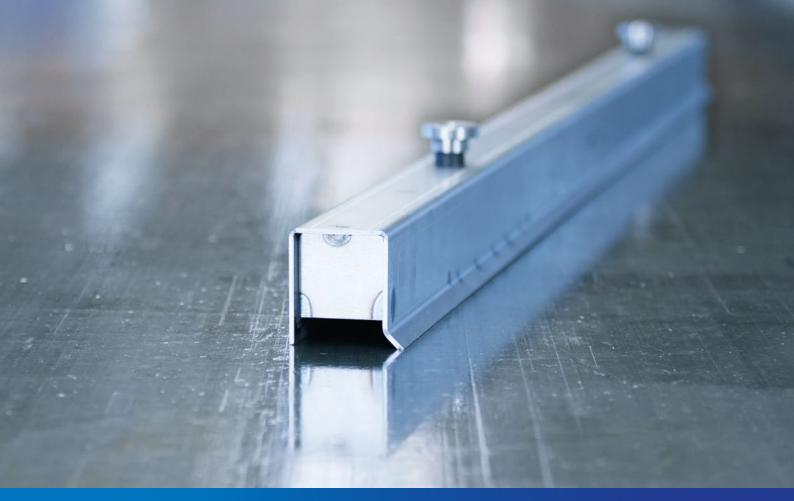
THE RIGHT SHUTTERING SYSTEM FOR EVEN BETTER QUALITY



WECKENMANN'S INNOVATIONS HAVE REVOLUTIONISED THE PRECAST CONCRETE INDUSTRY – AND THIS IS WHERE THEY ARE CREATED

Exceptionally well-trained metalworkers have cutting edge machines, tools and quality-tested materials at their disposal at the Weckenmann production plants. This allows dedicated employees to optimally combine their individual craftsmanship skills.

The result: Top quality from individual shuttering profiles to complete production plant.





ALL SHUTTERING
PROFILE SERIES ALSO
WITH KS COATING



CUSTOMISED SOLUTIONS –
FOR THE PERFECT PRECAST
CONCRETE ELEMENT

On request all Weckenmann shuttering profile series can be supplied with a highly resistant KS (corrosion protection) coating. The shuttering profiles are chemically pre-treated in the dipping process, and even cavities and sheet metal false edges are protected against corrosion. This makes the high-quality shuttering profiles already optimally equipped for a long life in the precast concrete plant straight from the factory.

Weckenmann has been developing and manufacturing plants, machines and shuttering for precast concrete plants for more than 60 years. These years of experience are evident in all its shuttering, from the consultation to the design, production and delivery to the customer.

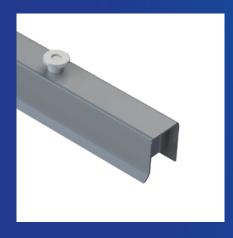
This means that Weckenmann always has the most ideal product for every application.

SHUTTERING PROFILE TYPES

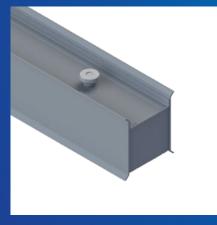
A-SERIES

M-SERIES

M-BASIS/ M-TOP-SERIES



Profiles that have been of tried and tested a thousand times over for the production of floor slabs, TT floor slabs and double walls. Easy to handle manually, optionally suitable for robot handling and available with integrated switchable magnets.



High-precision shuttering profiles that can be used on both sides for the production of columns and beams and solid elements, solid and sandwich walls, floor slabs and facades in standard thicknesses. Suitable for robot use and with integrated switchable magnets.



A modular system suited for robot use that can be used on both sides with attachment profiles based on the classic Weckenmann M-Series for the production of columns and beams, solid elements such as walls, floor slabs, sandwich elements and facades as well as special parts in varying shuttering heights.

X-MULTI

X-UNI-SERIES



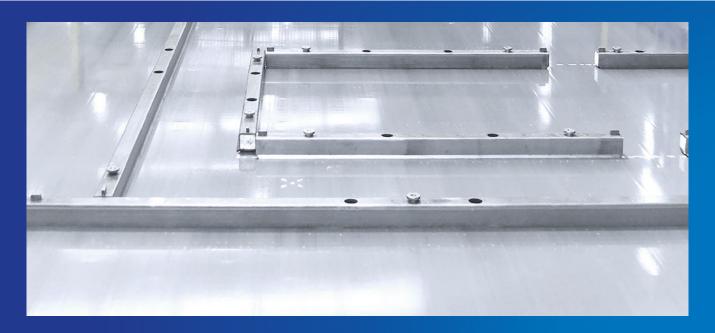


Modular system consisting of magnet boxes, connecting rails (X-MULTI Angles) and raising elements (X-MULTI Risers). In combination with wooden planking, X-MULTI enables to design a magnetically fixable shuttering system that is variable in length and height.

The most flexible, magnetic fastening system for wooden shuttering panels for the production of various products as per individual customer specifications. X-UNI consists of a universal bolt-on adapter combined with switchable magnets and toolless eccentric clamps.

A-SERIES

Special steel profiles that have been of tried and tested a thousand times over for the production of floor slabs, TT floor slabs and double walls. Easy to handle manually, optionally suitable for robot use and with integrated switchable magnets.



HIGHLIGHTS

- > Compatibility with previously used systems
- Usable on both sides
- → Fully automatic handling thanks to robot suitability
- Special button design prevents penetration of concrete into the formwork and ensures the longevity of the magnet

OPTIONS

- ightarrow Shuttering profiles for telescopic extension
- → In addition, KS coating for optimal corrosion protection
- X-QUICK as a shuttering supplement for polystyrene-free production

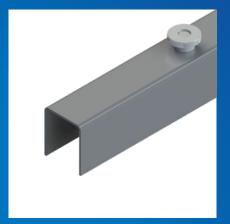
SHUTTERING FOR THE PRODUCTION OF FLOOR SLABS AND DOUBLE WALLS



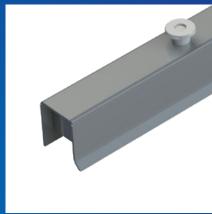
The tried and tested A-Series shuttering system allows the quick and precise shuttering of floor slabs and double walls. Integrated switchable magnets or separately positioned magnets ensure a firm connection with the shuttering table.

In the integrated switchable magnets, built-in spring assemblies prevent the profiles from floating, while optional pressed in locking canulars do the job in separately positioned magnets. The telescopic extension of the shuttering profiles up to a shuttering height of 80 mm is provided by the AU type top profiles.

CROSS-SECTIONS OF THE A-SERIES







One chamfer



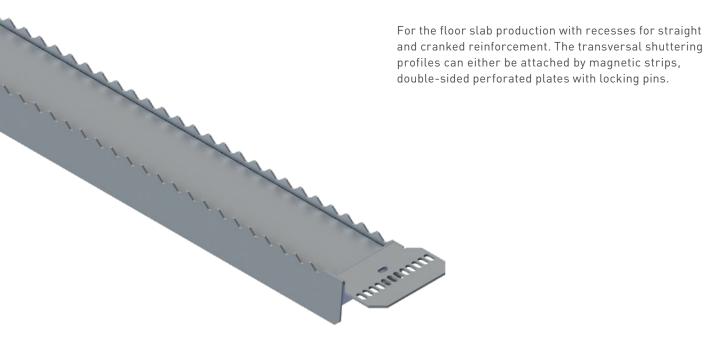
Two chamfers

DESIGN DIMENSIONS OF THE A-SERIES

A-SERIES	
Height (mm)	60, 65, 70
Width (mm)	60
Length (mm)	500-4,000
Chamfers (mm)	10 / 1 chamfer, 2 chamfers, no chamfer

Other dimensions are available on request

TRANSVERSAL SHUTTERING PROFILES FOR DIFFERENT REINFORCEMENT REQUIREMENTS





HIGHLIGHTS

- Can be automated
- Light, flexible profiles for easy handling
- Compatibility with previously used systems through perforated grid plates or magnets
- → The precise positioning through grid profiling reduces the effort required to align the reinforcement



For straight reinforcement with magnetic fixation



For cranked reinforcement with perforated plate



With integrated magnets

PLASTIC VERSION

The extruded plastic transversal shuttering profiles are lightweight and flexible. Ideal for manual shuttering handling with recesses for straight and cranked steel reinforcement.

STEEL VERSION

The sheet steel transversal shuttering profiles with a corrugated grid are intended for cranked reinforcement bars. Particularly suitable for machine positioning and storing using the MRP device.

STEEL VERSION WITH INTEGRATED MAGNETS

Activation and deactivation by means of integrated, switchable magnets.



DESIGN DIMENSIONS OF THE TRANSVERSE SHUTTERING PROFILES

60-80
160-200
500-3,500
500-3,500
32

M-SERIES

Lightweight and high-precision box profiles that can be used on both sides for the production of columns and beams and solid elements, solid and sandwich walls, floor slabs and facades in standard thicknesses. Many different cast joint formations. Suitable for robot use and with integrated switchable magnets. The MH series is also equipped with a reinforced outer shuttering shell for tough applications.



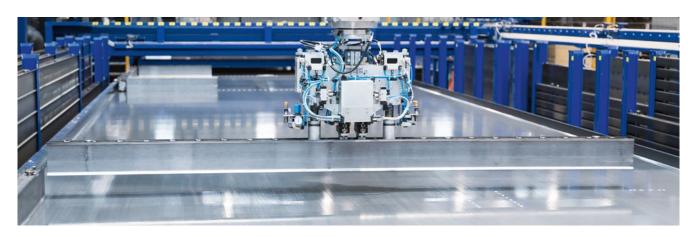
HIGHLIGHTS

- → Stability and durability due to solid profile
- Longitudinal and frontal profiling for various precast concrete elements
- → High rigidity for up to 8m long shuttering profiles
- > Fully automatic handling thanks to robot suitability

OPTIONS

- Additional reinforced outer shuttering shell as additional option, particularly robust (= MH series)
- → Additional KS coating

SHUTTERING FOR THE PRODUCTION OF SOLID ELEMENTS, PREFERABLY IN STANDARD THICKNESSES



Integrated switchable magnets are used for fixation; the number depends on the profile design and type of application. The profiles can be used on both sides, thereby doubling the

possible applications of the profile. The positioning of the profiles, the activation of the magnet units, as well as the demoulding can be done either by hand or by a shuttering robot.

The X-GAP and X-SMART shutteringextension systems are available to extend the M-Series shuttering system. These systems allow the profiles to be extended continuously and connect different overlapping profiles.

DESIGN OF THE M-SERIES



Longitudinal and end-face profiling are possible



Special profiles are possible



Production of smooth solid elements with a thickness of 60 mm

DESIGN DIMENSIONS OF THE M-SERIES

M-SERIES	
Height (mm)	60-500
Width (mm)	120
Length (mm)	750-8,000
Chamfers (mm)	10 / no chamfer, 1 chamfer, 2 chamfers, groove and tongue

Profiling of shuttering panels according to the profiling diagram of page 34-35

M-BASIS / M-TOP-SERIES

A modular system suited for robot use that can be used on both sides with attachment profiles based on the classic Weckenmann M-Series for the production of columns and beams, solid elements, solid and sandwich walls, floor slabs and facades as well as special parts in varying shuttering heights.



HIGHLIGHTS

- → Short changeover times due to flexible modular system for changing formwork heights
- Suitable for robots
- High rigidity for profiles up to 8 metres long
- Raise possible from a grid of 25 mm
- → A raise of up to four M-Top profiles on top of each other is possible due to high dimensional accuracy and precision
- Modular design allows a mutually changing combination of joints and chamfers of the M-Top profiles
- ightarrow Savings in profiles and reduced storage space

OPTIONS

- Grouting joints / grooves and chamfers
- KS coating

SHUTTERING FOR THE PRODUCTION OF SOLID ELEMENTS WITH VARYING SHUTTERING HEIGHTS





The M-BASIS / M-TOP-Series consists of a base mould with integrated switchable magnets and attachment profiles in a modular system. By using attachment profiles (M-TOP), the individual shuttering heights can be adjusted.

The advantages of the M-Series such as robot suitability, integrated switchable magnets and dual-sided usability are retained also when using the M-TOP attachment profile.

DESIGN OF THE M-BASIS / M-TOP-SERIES



M-TOP top profile



M-BASIS base profile with integrated switchable magnets



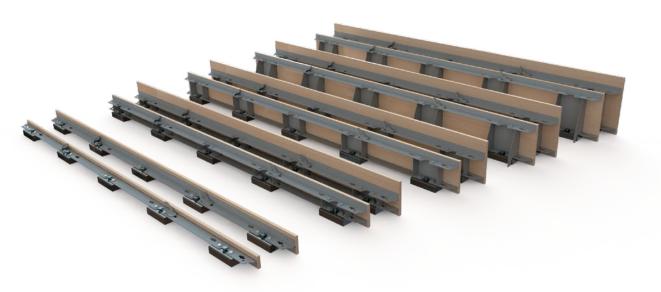
Basic (M-BASIS) and top profiles (M-TOP) are locked together as one stable unit

DESIGN DIMENSIONS OF THE M-BASIS / M-TOP-SERIES

	M-BASIS	M-TOP
Height (mm)	90-500	25-300
Width (mm)	120	120
Length (mm)	750-8,000	750-8,000
Chamfers (mm)	no chamfer, 1 chamfer, 2, 3 or 4 chamfers, groove and tongue	no chamfer, 1 chamfer, 2 chamfers, groove and tongue

X-MULTI

Individual shuttering system for shuttering with wooden planking. The main focus here is on different heights, lengths and easy transport.





HIGHLIGHTS

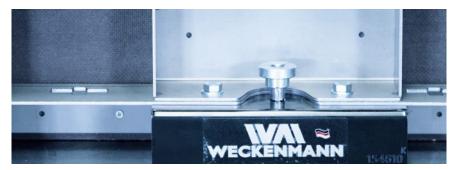
- → Individual heights due to modular system
- → Quick assembly due to few individual parts
- → Can be transported as a whole by crane

COMPONENTS AND ACCESSORIES

- → X-MULTI Angle
- → X-MULTI Riser
- → X-MULTI Lifter
- → Magnet box M1017, M2119 eco or M2421 eco
- → Magnet release lever

MODULAR MOUNTING SYSTEM FOR WOODEN FORMWORK OF DIFFERENT HEIGHTS





If the diversity of formwork variants does not allow the use of a steel shuttering profile system you do not have to do without a magnetic positioning system and fixing system.

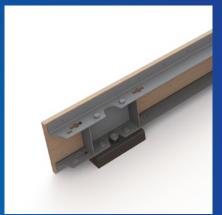
The system consists of one or two X-MULTI Angles and optional X-MULTI Risers for individual heights. For attachment, X-MULTI Risers are screwed to the lower X-MULTI Angle.

The wooden planking can be easily and efficiently screwed to the X-MULTI Angle. In addition, it is possible to transport this flexible system together with the screwed wooden planking with a crane, using the corresponding crane eyes.

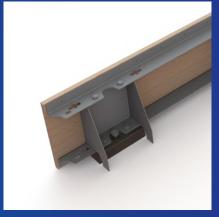
DESIGN OF THE X-MULTI



X-MULTI Riser 75 for shuttering heights of 200 - 300 mm



X-MULTI Riser 175 for shuttering heights of 300 - 400 mm



X-MULTI Riser 275 for shuttering heights of 400 - 500 mm

DESIGN DIMENSIONS OF THE X-MULTI SERIES

75-600
270-8,000

X-UNI

The most flexible magnetic fastening system for shuttering panels made of wood and steel for the production of various products as per individual customer specifications. Universal bolt-on adapter combined with switchable magnets for individual component thicknesses.







HIGHLIGHTS

- → Modular adapter system for flexible change between wood and steel planking
- → Wide range of formwork variants possible
- → Less storage space due to space-saving system

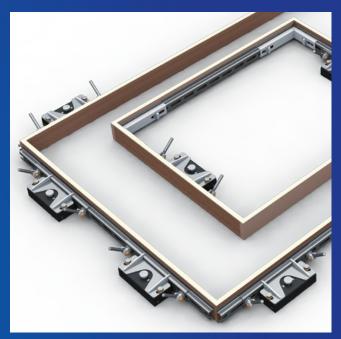
THE X-UNI FASTENING SYSTEM CONSISTS OF THE FOLLOWING COMPONENTS



- 1 X-UNI adapter
- 2 X-UNI eccentric clamp
- 3 X-UNI fastening profile / shuttering panel
- 4 Magnet box M1017, M2117, M2419
- 5 Wooden shuttering panel (provided by customer)



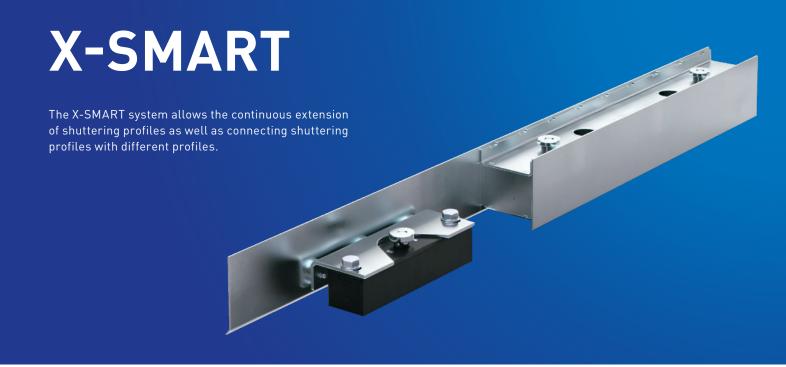




Precise recesses for doors and windows

DESIGN DIMENSIONS OF THE X-UNI SERIES

X-UNI	
Shuttering height (mm)	100-600
Length (mm)	450-8,000



THE X-SMART EXTENSION SYSTEM CONSISTS OF THE FOLLOWING COMPONENTS



- 1 X-SMART steel shutter as per the profiling diagram on pages 34-355
- 2 X-SMART universal adapter for the magnet box with integrated round magnets
- 3 Switchable Magnet Box M for magnetic fixation

DETAILS

- → Shaped shuttering sheet adapted to existing shuttering profiling
- ightarrow Easy fixing of the shaped shuttering sheets through magnetic holder
- ightarrow Magnet box M enables stable stand
- → Possibility to support curved sheets

COMPONENTS AND ACCESSORIES

SHUTTERING HEIGHT (mm)
65 - 100
100 - 200
200 - 300
300 - 400

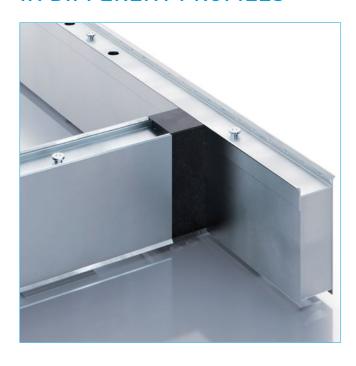
Profiling of shuttering panels according to the profiling diagram of page 34-35

X-GAP

X-GAP form elements are the efficient connecting elements between longitudinal and transversal shutters with different profiles.



THE CLEVER SOLUTION FOR CLOSING SHUTTERING GAPS IN DIFFERENT PROFILES



APPLICATION OF X-GAP

The connection of varying profiling pairs is made possible by the use of plastic form elements with integrated magnets.

DETAILS

- → Plastic from element with integrated magnets
- → Perfect bridging of different profiles
- → Fast and secure assembly on shuttering front sides
- → Optimal for frequently varying profiling pairs
- → Individual designs

DETAILS OF THE X-GAP CONNECTION SYSTEM

X-GAP	
Dimensions	As needed
Material	Plastic
Fastening	Magnetic

Profiling of shuttering panels according to the profiling diagram of page $34\mbox{-}35$



X-FLEX

The universal hold-down system for flexible shuttering construction, for fastening pans, for clamping shuttering rails and for positioning upstands.





THE X-FLEX MAGNET SYSTEM CONSISTS OF THE FOLLOWING COMPONENTS

- 1 Extension arm with rubberised pressure fingers or star grip screw
- 2 Extension arm with star grip screw
- 3 Column
- 4 Switchable Magnet Box M 2117 for magnetic fixation

COMPONENTS AND ACCESSORIES

DIMENSIONS (mm)
-
-
200
139 x 100 x 60
267 x 68 x 60
267 x 104 x 60

Other dimensions are available on request.

X-CORNER

Allows the quick measuring and fixing of upstands made of glass fibre reinforced concrete and cut-out frames made of wooden shuttering panels with angle stops of $45\,^{\circ}$ and $90\,^{\circ}$.



THE HOLD-DOWN SYSTEM FOR FIXING WOODEN SHUTTERING PANELS OR FIBREGLASS UPSTANDS

The universal adapter on the Magnet Box M 1017 consists of a height adjustable hold-down with pressure plate and holes for screwing or nailing of wooden shuttering panels, a square column, as well as a bottom stop bracket.



For holding down straight surfaces



For holding down angles

X-CORNER	
Clamping height (mm)	110 - 425
Built-in Magnet Box	M 1017
Weight (kg)	9.3



For holding down complete door and window frames

X-QUICK



REDUCE COSTS PROTECT THE ENVIRONMENT INCREASE QUALITY



The shuttering profiles made of thin shuttering steel sheet are cut to the exact length with the special shears during manual shuttering and then bent to match the corresponding shuttering cross-section. For this, the shuttering sheet is perforated along the bending edge so that an easily workable and correctly positioned folded edge can be produced either by hand or with the bending device available for this purpose. Positioning and fixing is done by special MXQ magnets on four sides.

This product can replace polystyrene as shuttering material. The shuttering extension profiles can be used once or several times and then recycled in the product lifecycle.

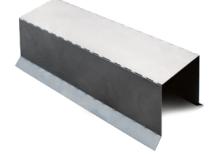
BENDING SEQUENCE FOR SHUTTERING PLATES











1

2

3

4





Application example Q-QUICK

THE X-QUICK SYSTEM CONSISTS OF THE FOLLOWING COMPONENTS



- 1 X-QUICK steel shuttering plates
- Worktable with stop and guillotine shear
- 3 Manual bending aid
- 4 Special MXQ magnet series



For information on the magnetic release lever, see page 33.

COMPONENTS AND ACCESSORIES

COMPONENTS	DIMENSIONS (mm)
X-QUICK shuttering plates, different dimensions	Length: 2,000
X-QUICK workplace system consisting of stop system with bending aid, lever shears, 500 mm measuring scale, optional substructure	-
X-QUICK special MXQ 70/60 magnet	59 x 59 x 17
Demoulding aid for X-QUICK special magnets	-

MAGNET BOX M

Magnet boxes are used for fast and secure fixing of shuttering profiles and mounting parts.



THE ALL-ROUNDER IN THE MAGNETIC FIXING OF SHUTTERING AND MOUNTING PART

They contain a switchable magnet unit. When not activated, the Magnet Box can be easily moved to the right position. The magnetic force is activated by pressing a switch button on the top.

The Magnet Boxes can be fitted with various adapters and hold-downs using the M12 or M16 threaded holes on the top.

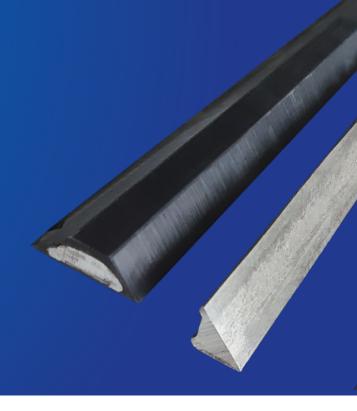


COMPONENTS AND ACCESSORIES

MAGNET BOX M	M818	M1017	M2119 eco	M2421 eco
Holding force (N)	8,000	10,000	21,000	24,000
Height (mm)	60	60	60	60
Width (mm)	100	68	104	104
Length (mm)	139	267	267	267
Thread (number)	2/M16	4/M16	2M12	2M12

Other dimensions are available on request.

MAGNETIC MOULDINGS



MAGNETIC MOULDINGS FOR THE ACCURATE FORMATION OF PRECAST CONCRETE PARTS

The magnetic mouldings allow the fast and accurate formation of exactly shuttered triangular chamfers, drip grooves or dummy joints in shuttering construction with steel shuttering. The built-in magnets hold the mouldings securely in position, no screwing, welding or gluing is required.



HIGHLIGHTS

- Quick and easy positioning
- No screwing, welding or gluing is required
- Design and execution depending on the application
- → Can be used several times
- → Special solutions are possible

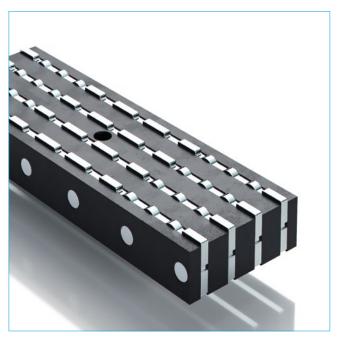
EXAMPLE OPTIONS

MOULDING					
			•	▼	•
	10 / 10	10 / 10	10 / 10	10 / 10 / 15	
	15 / 15	15 / 15	15 / 15	15 / 15 / 21	
Cross section	19 / 19	19 / 19	19 / 19	15 / 20 / 25	on request
				20 / 20 / 30	
				24 / 24 / 34	
Material	Steel / Plastic	Steel / Plastic	Steel / Plastic	Rubberized	Rubberized
Magnet holding	Cathetus	Both catheti	Hypotenuse	Bottom	Bottom

Other dimensions are available on request.

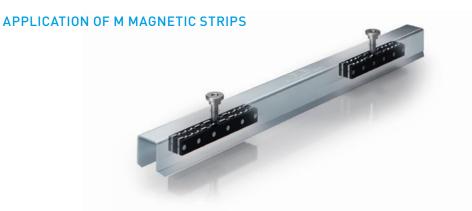
MAGNETIC STRIPS A AND M

ARE USED IN OUR A-/M-SERIES SHUTTERING PROFILES AND IN THE MAGNET BOXES



Built-in magnets for shuttering profiles, as well as for the custom shuttering construction.

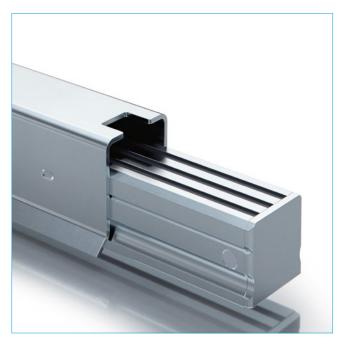
These magnets are used as highperformance, switchable magnets in Weckenmann shuttering profiles, as well as in the magnetic fixing of custom shuttering construction elements in precast concrete plants. The magnetic strips are developed in-house and equipped with a robust KS coating (corrosion protection) as standard.



BUILT-IN MAGNETS	M416	M1015	M1014	M2112	M2419
Holding force (N)	5,000	10,000	10,000	21,000	24,000
Height (mm)	30	30	30	30	30
Width (mm)	41	41	81	81	81
Length (mm)	150	240	150	240	240

ML MAGNETIC STRIPS

HAVE PROVEN THEIR WORTH IN FLOOR SLAB AND DOUBLE WALL PRODUCTION



The classic magnetic strip has been part of our range for more than 35 years for use in the production of floor slabs and double walls.

The A-Series shuttering profiles are securely fixed by these magnets. Positioning is profile-independent, i.e. the magnetic strips are measured, set by hand or placed on the shuttering table by the shuttering robot and then the shuttering profiles are put over the magnetic strips. To avoid the floating of the profiles during high-frequency vibration, the option exists to secure the shuttering profiles with the magnets by means of locking canulars.





Ferritic steel lamella magnet ML 3000 and MLR 5750-NR $\,$

HIGHLIGHTS

- → Profile-independent positioning
- > Can be used manually and automatically
- → Depending on the application, with positive locking connection for optimal grip
- → Compact design

BUILT-IN MAGNETS	ML-3000	MLR5750-NR
Holding force (N)	3,000	5,750
Height (mm)	50	50
Width (mm)	50	54
Length (mm)	140	260

MR MAGNETIC STRIPS

THE STRONG HOLDING FORCE ALTERNATIVE FOR FLOOR SLAB AND DOUBLE WALL PRODUCTION



The MR magnet series is the highperformance version for use in the production of floor slabs, doublewalls and solid elements.

The exceptional holding force is achieved by the rare earth magnet materials. This allows the A-Series shuttering profiles to be fixed even more securely by these magnets. Positioning is profile-independent, i.e. the magnetic strips are measured, set by hand or placed on the shuttering table by the shuttering robot. The shuttering profiles are then put over the magnetic strips. To avoid the floating of the profiles during high-frequency vibration, the option exists to secure the shuttering profiles with the magnets by means of locking canulars.



High-performance magnetic strip MR 1005-R in steel, stainless steel lamella construction with antimagnetic stainless steel housing

HIGHLIGHTS

- > Extremely high holding force with little installation space
- → Profile-independent positioning
- → The positioning with a robot is possible
- Positive-locking connection avoids floating during high-frequency shaking

BUILT-IN MAGNETS	M 1005-R	
Holding force (N)	10,000	
Height (mm)	50	
Width (mm)	54	
Length (mm)	260	

BUILT-IN MAGNETS

FOR FAST ATTACHMENT OF MOUNTING PARTS IN PRECAST CONCRETE PARTS

Our magnetic mounting systems make the secure fixing of mounting parts much easier. We provide readymade solutions or develop built-in magnets according to your requirements for the mounting of electrical sockets, cable loops, weld-on plates and threaded sockets for our customers, for example.



For the installation of threaded mounting sockets for double-wall production

APPLICATION OF BUILT-IN MAGNETS



For the mounting of weld-on plates in solid wall production $% \left(1\right) =\left(1\right) \left(1\right)$



For the formation of base steel eyelets or cable loops



For the mounting of electrical sockets

MAGNETIC RELEASE LEVER

FOR THE RELEASE OF OUR MAGNETIC BOXES, INTEGRATED MAGNETS AND MAGNETIC STRIPS



For unlocking magnetic boxes and profiles with integrated switchable magnets.



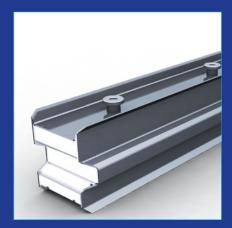
For unlocking magnetic strips of the ML and MR series

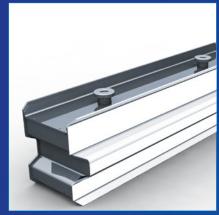
HIGHLIGHTS

- Simple deactivation of integrated magnets
- Robust construction for high durability

PROFILES

THE SHUTTERING SYSTEMS ARE AVAILABLE WITH THE FOLLOWING PROFILES





A A-SERIES
M M-SERIES
M M-BASIS
M M-TOP-SERIES

Front profiling

Longitudinal profiling

FRONT PROFILING

CHAMFER BOTTOM CHAMFER TOP / BOTTOM CHAMFER TOP / BOTTOM

LONGITUDINAL PROFILING



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