

**SB rolling shutter / rolling grille with innovative tension spring assembly  
and optional operator WA 300 R S4 with soft start and soft stop**



# Rolling Shutters and Rolling Grilles

Sturdy and reliable in tough daily use







better|worx

better|worx

better|worx

better|worx Verkauf





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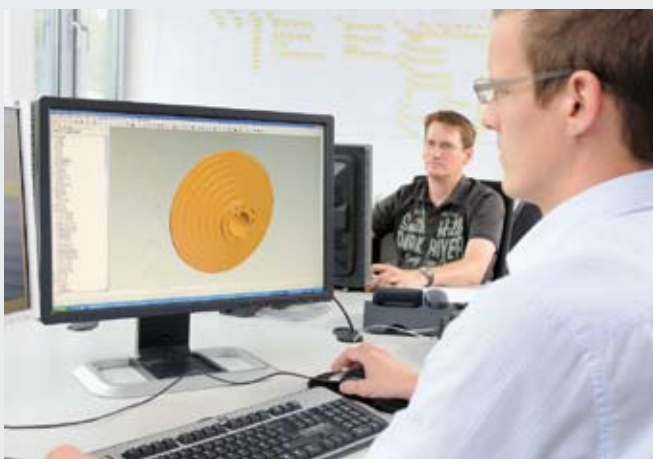
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Subject to changes. The doors shown are example applications – no guarantee.

# Brand quality from Hörmann

Reliable and oriented towards the future



Sennebogen Maschinenfabrik GmbH, Straubing



## In-house product development

At Hörmann, innovation is produced in-house – highly qualified employees of the development department are in charge of product optimisation and new developments. This results in high-quality products that are very popular around the globe.



## Modern manufacturing

All the essential door components, such as profiles, side guides, support brackets, fittings and control technology are developed and produced by Hörmann – not bought in from here, there and everywhere. This ensures greatest compatibility between the door, operator and control. The certified Quality Management System guarantees the highest level of quality from development, through production to shipping.

**This is Hörmann quality – Made in Germany.**





As Europe's leading manufacturer of doors, frames and operators, we are committed to high product and service quality. This is how we set standards on an international scale.

Highly-specialised factories develop and produce construction components that are marked by excellent quality, functional safety and a long service life.

Our presence in the global economy's key regions makes us a strong, future-oriented partner for industrial and public construction projects.



**Certified safety**  
Hörmann rolling shutters and rolling grilles are manufactured according to the current, stringent requirements of European standards and are, of course, certified.



It goes without saying that spare parts for doors, operators and controls are original Hörmann parts that come with a guaranteed availability of 10 years.



## Protecting the environment

We are committed to protecting our environment through environmentally-friendly production processes, by avoiding waste and through ecological disposal of waste. As a result, we have become a good example for avoiding processes and materials that used to have a negative impact on the environment.



## Competent advice

Experienced specialists within our customer-oriented sales organisation accompany you from the planning stage, through technical clarification up to the final building inspection. Complete working documentation, such as technical manuals, is not only available in printed form, but is always accessible and up-to-date at [www.hoermann.com](http://www.hoermann.com).

# Hörmann rolling shutters and rolling grilles

Economical, sturdy and reliable



## The strong one for large structural openings

We also supply rolling shutters in sizes up to 11.75 m wide and 9 m high for especially wide and high hall openings. Hall openings of up to 30 m can be covered by combining up to 3 rolling shutters. See page 32.

What normally ranks as a special solution has been standard at Hörmann for a long time. For example: swing-aside pass door assembly, also with wicket door, chamfered bottom profile, side door, etc.



## Rolling shutters and rolling grilles are space-saving

Rolling shutters and rolling grilles require very little headroom above the structural opening. They roll up compactly behind the lintel. No valuable hall space is lost at the sides or ceiling. Crane tracks can be used to the fullest extent. High-stacking forklift trucks can manoeuvre unimpeded, lifting platforms can be raised higher without the risk of collision.

We recommend installation as an external rolling shutter when there is no room for internal fitting or explosion protection is required.



## Economical and reliable thanks to a sturdy construction

Thanks to a simple construction with just a few components, Hörmann rolling shutters and rolling grilles are particularly sturdy and reliable. Winner of the Steel Innovation Award, our Decotherm S curtain made of “full hard” steel also contributes to this high level of efficiency.

In the simulated crash test shown, the shutter is not damaged. The rolling shutter curtain jumps back into its original position after the crash and the shutter remains ready for operation.



## A well thought-out system

With Hörmann, the door, operator and controls are a precisely matched system, ensuring high efficiency, reliable operation and security.

**It pays to choose Hörmann!**



# SB rolling shutters / rolling grilles

Manually operated or optionally with an operator WA 300 R S4



The front image shows an SB rolling shutter for manual operation; the variant with an optional operator WA 300 R S4 is shown in the rear



# Tension spring assembly

To easily open and close the door manually  
and for door travel that is gentle on the operator



## Tension spring assembly

The innovative tension spring assembly assists during manual opening and closing. Therefore roller garage doors and rolling grilles up to 5 x 4.5 m can be moved with little force.

## Faster fitting

The entire door construction, including support brackets and side guides, is completely fitted to the building structure. This makes fitting easier and shortens the fitting time. In addition, a smaller space requirement (only 165 mm sideroom) for the compact side guides facilitates fitting in the tightest of spaces. Plastic runners and brush seals in the side guides ensure quiet door travel.



## Chain hoist

The SB rolling shutter and rolling grille can also be easily opened and closed via the interior and exterior handle. Operation is particularly easy with an optional chain hoist, which we recommend for doors higher than 3.5 m.



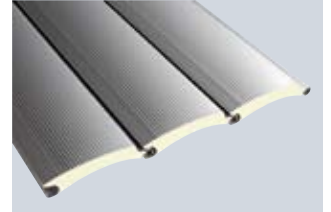
## Optional operator WA 300 R S4

The SB rolling shutter / rolling grille can be equipped with a compact operator with integrated control and push button DTH for increased convenience. **Easy retrofitting is possible at a later point.** No additional sideroom is required for fitting. Standard soft start and soft stop also ensure gentle and quiet door travel.

If the operator is disengaged, e.g. due to a power failure, the door can still be operated manually thanks to the counterbalance in the tension spring assembly.

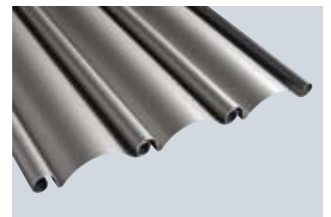
## Curtain variants

Size range (W x H, max.)



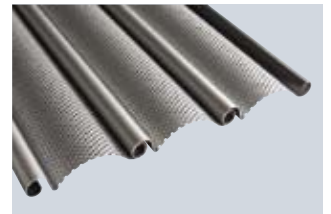
## Decotherm A / S

5000 x 4500 mm



## HR 120 A

5000 x 4500 mm



## HR 120 aero

5000 x 4500 mm



## HG-L

5000 x 4500 mm

# Basic rolling shutter / rolling grille

Ideal as a logistics door or store entrance door



Version shown with optional logistics glazing



# Compact design at an attractive price



## Support bracket

The support bracket made of galvanized sheet steel reduces the required sideroom on the bearing and operator side.

## Belt system for rolling shutter curtains

The belt system made of a fabric with special fibres, connects the curtain to the galvanized, octagonal barrel and does away with shutter profiles where these are no longer needed.



Rolling grille curtains are directly fastened to the barrel.



## Steel side guides for rolling shutter curtains

The robust construction in galvanized steel is mounted directly to the building structure. This saves both space and fitting time!

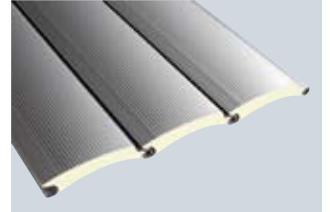


## Aluminium side guide for rolling grille curtain

An elegant construction in bright-rolled aluminium with a black slide profile. Thanks to a low height of 40 mm, blends in ideally with the fitting situation.

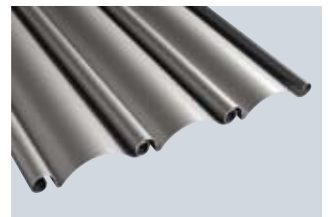
## Curtain variants

Size range (W x H, max.)



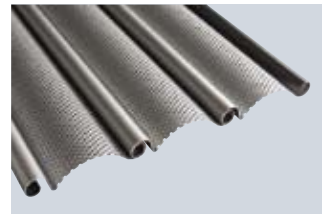
## Decotherm A/S

4000 x 4000 mm (A)  
5000 x 4500 mm (S)



## HR 120 A

4500 x 4500 mm



## HR 120 aero

4500 x 4500 mm



## HG-L

9000 x 5500 mm

# Classic rolling shutter / rolling grille

Proven technology for optimum door travel



Version shown with direct drive operator  
and ZAK system



# Sturdy and dependable

## With optional ZAK system



### Side guides

A Hörmann development: they are very stable and consist of 2 to 2.5 mm thick, galvanized steel. Plastic runners with integrated brush seals ensure quiet door travel.

### Articulated wind locks

The articulated design of the wind locks enables the rolling shutter to withstand extreme wind loads.



### Advanced anchor technology for variable support

Variable 30-mm increments, installation and service-friendly screw connections produce a close fit. A neat solution both visually and thermally.



### Weld-on spacer brackets for steel structures

The spacer brackets can be directly welded onto the steel structure. For steel construction halls, the weld-on spacer brackets optimally complement the anchor technology.

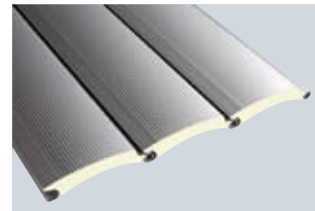


### Bend-resistant bottom profiles

A stable aluminium profile strengthens the rolling shutter curtain. A weather-resistant, flexible EPDM tubular seal prevents penetration of dirt and rain, compensates for unevenness in the floor and, in the end-of-travel position, does not produce any noise when it comes into contact with the floor.

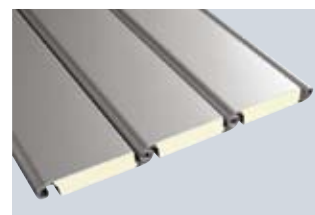
### Curtain variants

Size range (W x H, max.)



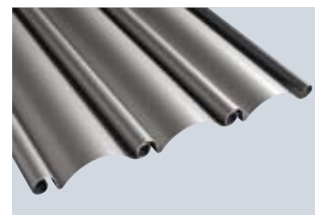
### Decotherm A/S

4000 x 4000 mm (A)  
10000 x 9000 mm (S)



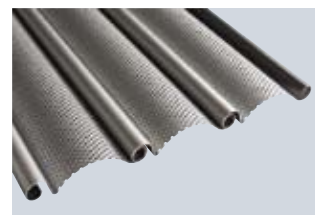
### HR 116 A

11750 x 9000 mm



### HR 120 A/S

11750 x 8000 mm



### HR 120 aero

11750 x 8000 mm

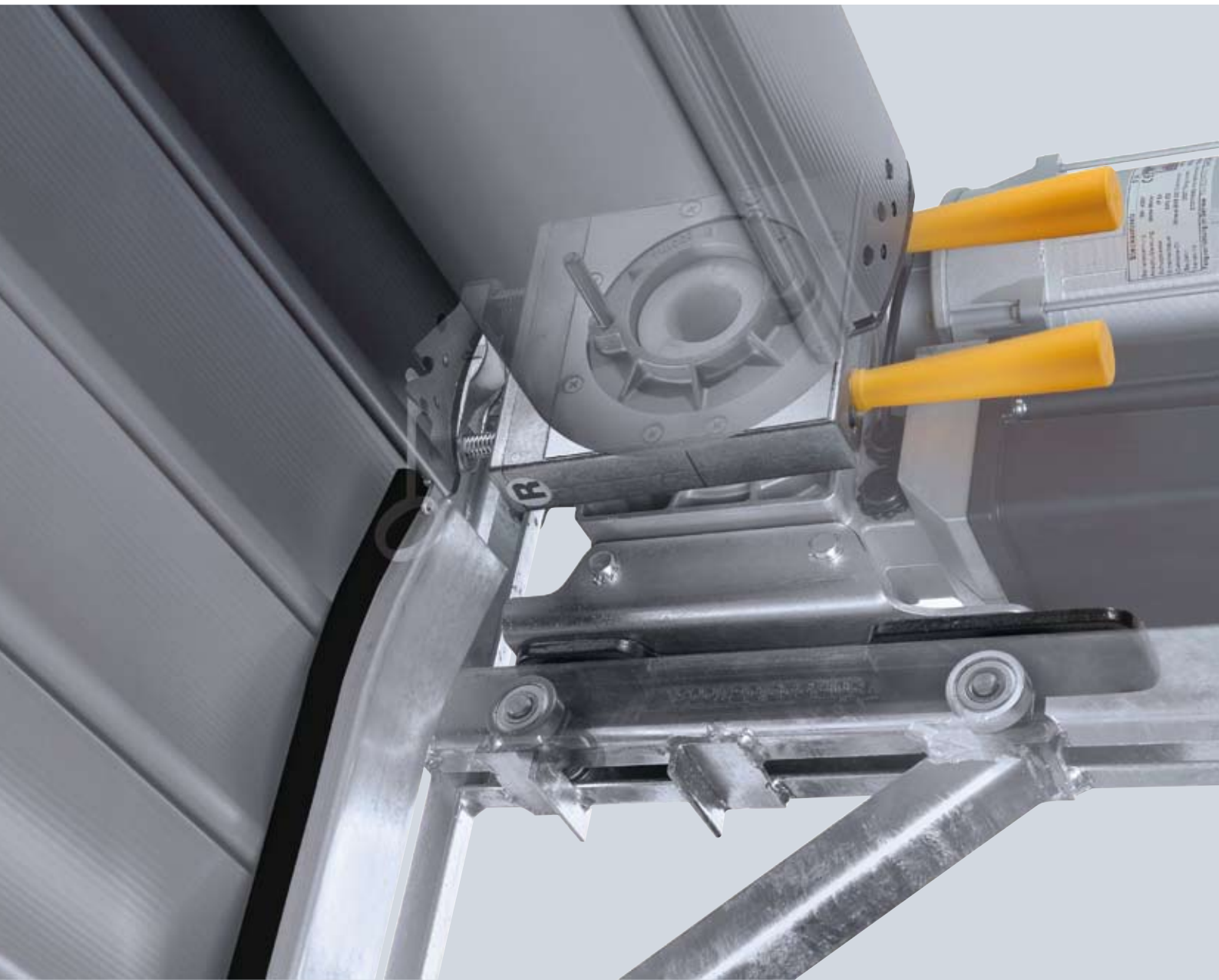


### HG-A, HG-V, HG-S

11750 x 8000 mm

# The ZAK systems

For classic rolling shutters / grilles



## The ZAK system for direct drive operators

- Standard in classic rolling grilles
- Optional for classic rolling shutters
- 80 mm less headroom required

## The ZAK XL system for large shutters with chain drive operators

- Optional for classic rolling shutters  
and classic rolling grilles
- Up to 255 mm less headroom required





# Doors close more tightly and have lower wear



The ZAK® system displaces the barrel on the support brackets when opening and closing and precisely manoeuvres the rolling shutter curtain vertically in the side guides.

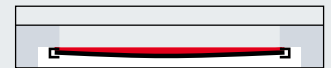
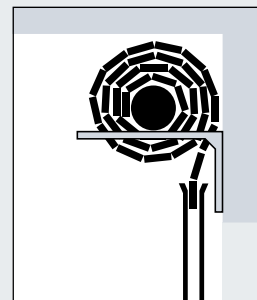
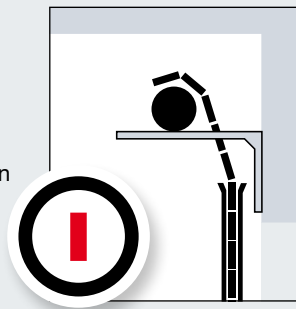
## The advantages of the ZAK system

- Low heat losses, as the gap between the rolling shutter curtain and lintel is closed
- Longer service life thanks to less abrasion and friction on the rolling shutter curtain
- Significantly reduced travel noise

### Without the roll-on system

The barrel does not alter its position. This produces distortion resulting in:

- Increased friction and wear
- Increased noise from the shutter action
- Increased headroom
- Poor seal along the lintel



Circular segment-shaped gap resulting from the distortion even without any wind load.

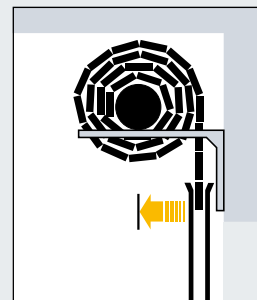
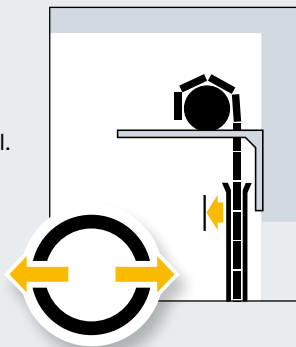


Under wind load, the circular segment-shaped gap increases and the shutter fits poorly.

### With roll-on system

#### but without precision-guidance

When the shutter is in operation, the barrel swings about uncontrollably. There is a risk of it colliding with the lintel.



Minimum distortion, small rectangular gap in the lintel region: slightly better fit.



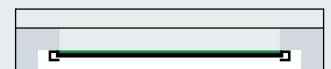
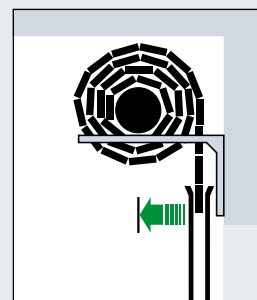
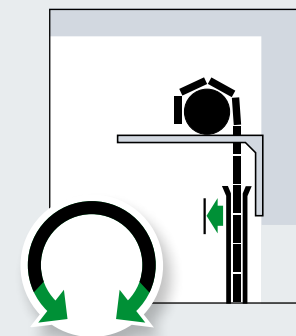
Wind load increases the gap, resulting in a poor fit.

### With the Hörmann ZAK system

With a ZAK gearbox on either side, the barrel moves

- Away from the lintel on opening
- Towards the lintel on closing

The door curtain always enters the side guide vertically and without distortion.



Without distortion, no gap in the lintel region: closest possible fit.



The barrel helps absorb the wind load, so the shutters remain tight-fitting.

# Decotherm A / S

The original in aluminium and in “full hard” steel



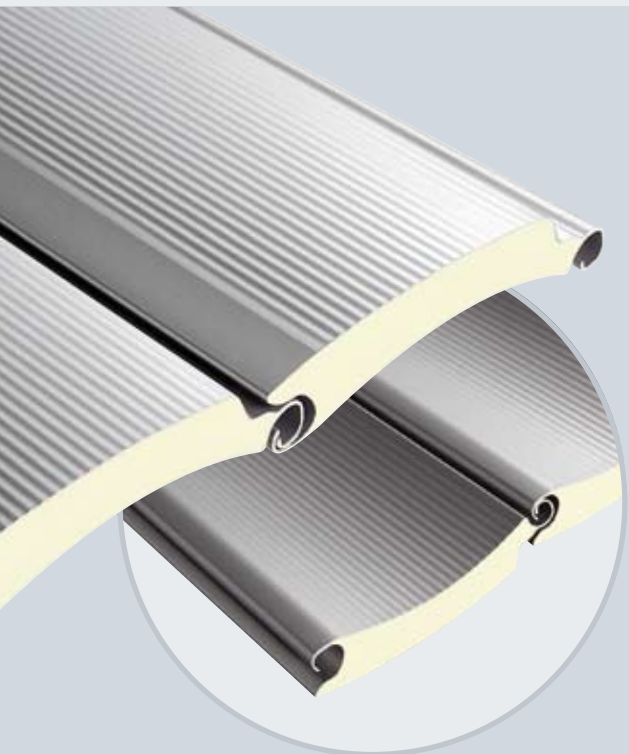
## Innovative profile technology

Hörmann has decisively improved its rolling shutters with the Decotherm profile. A combination of a thoroughly optimised profile geometry with special aluminium and steel alloys shows what is possible today in rolling shutter construction.

The concave interior and exterior surfaces of the Decotherm profiles ensure extremely good roll-up action. Optimally designed hinges reduce heat loss and enable a connection between the curtain and barrel, without the usual pressure and wear marks.







**Facetted inner profile face**  
 Identical to the micro-profiled outer face.  
 Only Hörmann offers this attractive design.



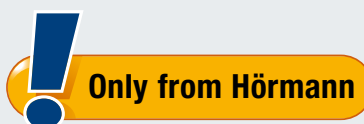
Rectangular



Logistics arrangement

**Window elements**

The double-skinned window elements consist of transparent, impact-resistant polycarbonate with high-quality cover frames in White aluminium (similar to RAL 9006).  
 The benefit of these frames: the PU foam is no longer visible, noise and abrasion are reduced.



# Decotherm A / S

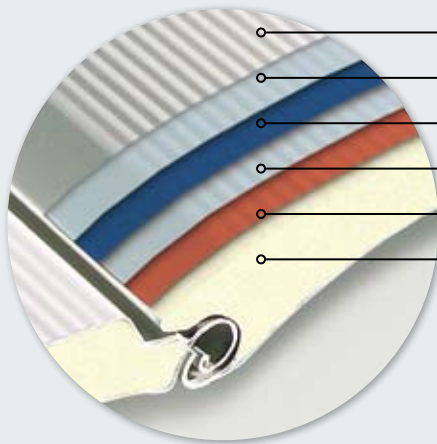
Innovative profile technology in two material variants



## Surface protection with a system for a consistently satisfying appearance

All coloured Decotherm profiles are coated with protective paint, which makes them resistant to adverse weather effects.

Polyamide particles embedded in the high-quality coil coating improve the sliding characteristics of the profiles and thus reduce abrasion and noise.



- Protective paint or colour coating
- Special galvanizing (Decotherm S)
- Profile material
- Special galvanizing (Decotherm S)
- Bonding agent
- Polyurethane



For more information on the preferred colours and standard colours, see page 28.

	Decotherm A	Decotherm S
Protective paint or colour coating	•	•
Special galvanizing		•
Profile material	Aluminium	“Full hard” steel
Special galvanizing		•
Bonding agent	•	•
Polyurethane	•	•





### Decotherm A

The intelligent lightweight profile made of aluminium, rolls up especially quietly and with minimum abrasion, either with a bright-rolled surface or colour coating, recommended for doors up to 4 x 4 m.

### Decotherm S

Special "full hard" steel makes these profiles especially resistant to damage caused by transport, fitting and operation. Either with or without colour coating. Available for door sizes up to 10 x 9 m.

Profile type	Decotherm A	Decotherm S
<b>Material</b>	Aluminium	Steel
<b>Surfaces without colour coating</b>	Bright-rolled with transparent protective paint	Galvanized with transparent protective paint
<b>Surfaces with colour coating</b>	Exterior and interior with identical colour coating to choose	Exterior and interior with identical colour coating to choose
<b>Standard colours</b>	RAL 9002 RAL 9006	RAL 9002 RAL 9006
<b>Preferred colours</b>	-	•
<b>Special colours</b>	-	•
<b>Profile height</b>	109 mm	109 mm
<b>Curtain weight</b>	Approx. 4.2 kg/m <sup>2</sup>	Approx. 10 kg/m <sup>2</sup>
<b>Wind load class 2 up to a door width of*</b>	4000 mm	10000 mm
<b>Heat transmission EN 12428 (single profiles)</b>	4.6 W/(m <sup>2</sup> K)	3.9 W/(m <sup>2</sup> K)
<b>Door type</b>	SB rolling shutter Basic rolling shutter Classic rolling shutter	SB rolling shutter Basic rolling shutter Classic rolling shutter
<b>Windows</b>	•	•

\* = Optional wind locks required in some cases

• = Optionally available

- = Not available

# HR 116 A

The strong one for large structural openings



## HR 116 A

### Two versions in aluminium

1. Stucco-textured aluminium (without colour coating)

This texture makes the rolling shutter curtain less sensitive to surface damage.

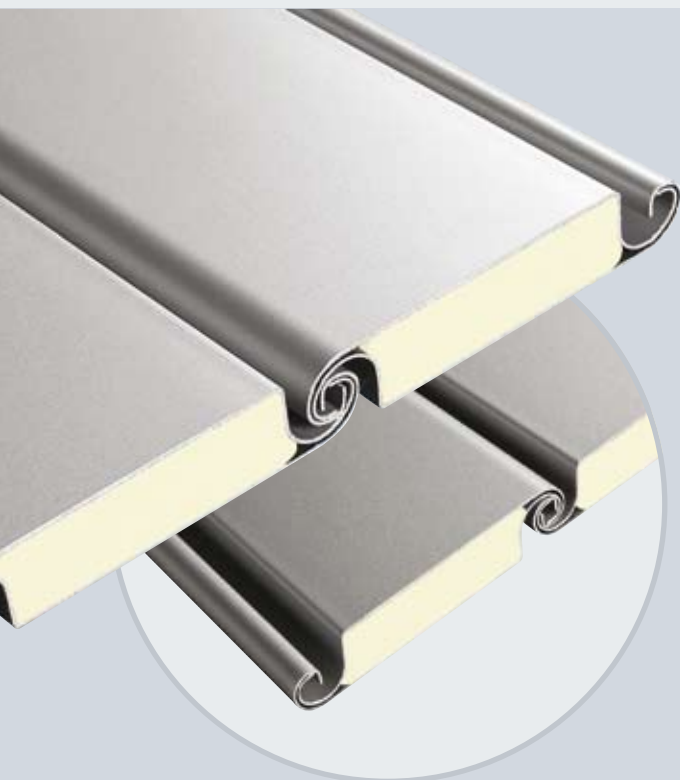
2. Coil-coated aluminium

This high-quality colour coating on both sides provides long-term protection against adverse weather effects and is reinforced through the application of protective paint with polyamide particles on both sides. This also reduces abrasion and noise.



For more information on the preferred colours and standard colours, see page 28.





**Profile interior**

With colour coating in a colour to choose, the interior always also matches the exterior.

<b>Profile type</b>	<b>HR 116 A</b>
<b>Material</b>	Aluminium
<b>Surfaces without colour coating</b>	Stucco-textured without protective paint
<b>Surfaces with colour coating</b>	Exterior and interior with identical colour coating to choose
<b>Standard colours</b>	RAL 9002 RAL 9006
<b>Preferred colours</b>	•
<b>Special colours</b>	•
<b>Profile height</b>	119 mm
<b>Curtain weight</b>	Approx. 10 kg/m <sup>2</sup>
<b>Wind load class 2 up to a door width of*</b>	10000 mm
<b>Heat transmission EN 12428 (single profiles)</b>	5.3 W/(m <sup>2</sup> K)
<b>Door type</b>	Classic rolling shutter
<b>Windows</b>	•
<b>Ventilation slots</b>	•

\* = Optional wind locks required in some cases

• = Optionally available

– = Not available

# HR 120 A / S

The classic profile for unheated buildings and rough day-to-day operation



## HR 120 A

### Two versions in aluminium

#### 1. Bright-rolled aluminium

The standard surface for unheated buildings.

#### 2. Coil-coated aluminium

High-quality colour coating as long-term weather protection on the outside of the profile, ensuring an attractive appearance over many years. The additional protective paint containing polyamide particles reduces friction and minimises the noise produced by the shutter action.

## HR 120 S

### The robust steel version

When robustness is a key factor, then this heavy steel door is perfect for the part.



For more information on the preferred colours and standard colours, see page 28.





#### Profile interior

Interior in Basalt grey (RAL 7012) if colour coated.

Profile type	HR 120 A	HR 120 S
Material	Aluminium	Steel
Surfaces without colour coating	Bright-rolled and without protective paint	Galvanized without protective paint
Surfaces with colour coating	Exterior: Colour coating to choose Interior: Basalt grey protective paint (similar to RAL 7012)	-
Standard colours	RAL 9002 RAL 9006	-
Preferred colours	•	-
Special colours	•	-
Profile height	119 mm	119 mm
Curtain weight	Approx. 6 kg/m <sup>2</sup>	Approx. 15 kg/m <sup>2</sup>
Wind load class 2 up to a door width of*	7500 mm	10000 mm
Heat transmission EN 12428 (single profiles)	-	-
Door type	SB rolling shutter Basic rolling shutter Classic rolling shutter	Classic rolling shutter
Windows	•	•
Ventilation slots	•**	•**

\* = Optional wind locks required in some cases

\*\* = Ventilation laths HR 120 aero

• = Optionally available

- = Not available

# HR 120 aero

The profile for extra light, ventilation and security



## The alternative for underground garages and arcades

This full-frontal single-skinned shutter consisting of concave, perforated profiles (perforation diameter approx. 3.2 mm) offers good ventilation qualities and improved visual transparency. The fine perforation keeps out dust, leaves, paper etc. and prevents rubbish from being thrown in.

## For increased security

The special shape of the shutter profiles makes it impossible for children to climb up the shutter or get caught up in it. In this way a potential injury hazard – and one that should never be underestimated – is effectively eliminated at the same time as protecting the shutter from damage.

## Weather-resistant aluminium profiles

### 1. Bright-rolled aluminium

The standard for simple applications.

### 2. Coil-coated aluminium

A high-grade external coating provides long-term protection against weathering. The additional protective paint containing polyamide particles reduces friction and minimises the noise produced by the shutter action.







**Profile interior**

Interior in Basalt grey (RAL 7012) if colour coated.

<b>Profile type</b>	<b>HR 120 aero</b>
<b>Material</b>	Aluminium
<b>Surfaces without colour coating</b>	Bright-rolled and without protective paint
<b>Surfaces with colour coating</b>	Exterior: Colour coating to choose Interior: Basalt grey protective paint (similar to RAL 7012)
<b>Standard colours</b>	RAL 9002 RAL 9006
<b>Preferred colours</b>	-
<b>Special colours</b>	-
<b>Profile height</b>	119 mm
<b>Curtain weight</b>	Approx. 5.5 kg/m <sup>2</sup>
<b>Wind load class 2 up to a door width of</b>	4500 mm
<b>Heat transmission EN 12428 (single profiles)</b>	-
<b>Door type</b>	SB rolling shutter Basic rolling shutter Classic rolling shutter
<b>Windows</b>	-
<b>Ventilation slots</b>	-

- = Not available

# HG-A /-V /-S /-L

Rolling grille curtain for good ventilation and visibility



## HG-A, standard aluminium

For small openings or if a shutter is operated only a few times each day, e.g. for night-time closures. Grille and honeycomb connections as standard in bright-rolled aluminium.

On request powder-coated in colours according to RAL and NCS or anodised in a natural finish (E6 / EV1) according to DIN 17611.

## HG-V, reinforced aluminium (not shown)

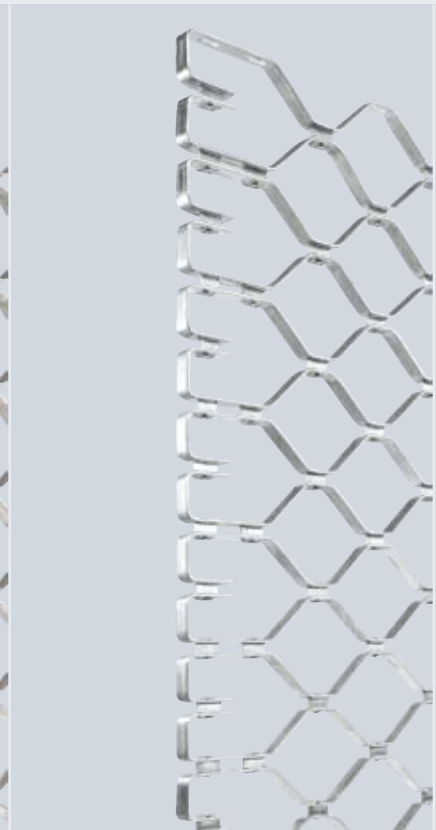
For wider structural openings or a higher number of operations per day, such as in underground garages or multi-storey car parks. Bright-rolled aluminium grille with reinforced honeycomb connections in bright-rolled stainless steel V2A. Lightweight yet offering high stability for wider openings (see table).

## HG-S, steel – robust and good value

The inexpensive version for wider openings and a high number of cycles. The grille and honeycomb connections are in galvanized steel as standard. On request powder-coated in colours according to RAL and NCS.

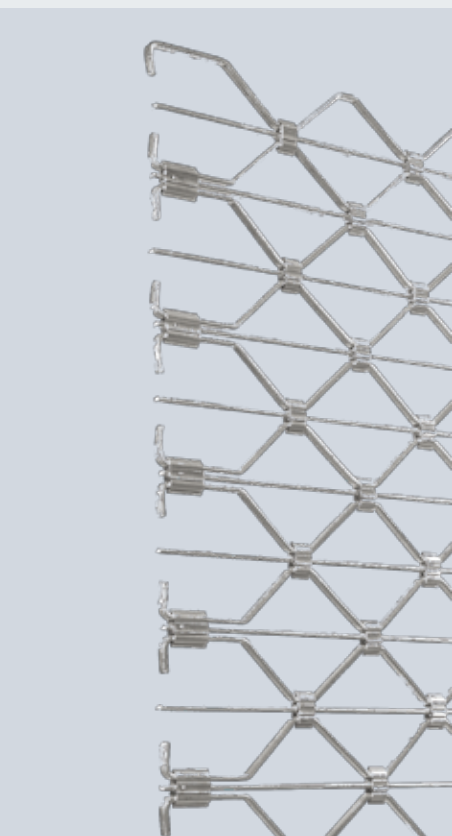


HG-A / HG-V  
Aluminium



HG-S  
Galvanized steel





**HG-L**  
Aluminium

**HG-L, lightweight and compact aluminium**

The elegant and space-saving version, particularly suitable for use in shopping arcades. Aluminium grille and honeycomb connections with crossbars to provide additional reach-through protection. On request in colours according to RAL and NCS or anodised in a natural finish (E6 / EV1) according to DIN 17611.

**When shutters are automated, a lintel trap guard and closing edge safety device prevent injuries to persons and damage to the actual curtain. For underground garages and forklift traffic, an optional through-traffic photocell is recommended.**

Curtain type	HG-A	HG-V	HG-S	HG-L
<b>Size range</b>				
<b>Width up to</b>	8000 mm	11750 mm	11750 mm	9000 mm
<b>Height up to</b>	8000 mm	8000 mm	8000 mm	5500 mm
<b>Own weight of curtain</b>	Approx. 6 kg/m <sup>2</sup>	Approx. 7 kg/m <sup>2</sup>	Approx. 14 kg/m <sup>2</sup>	Approx. 6.5 kg/m <sup>2</sup>
<b>Door type</b>	Classic rolling grille	Classic rolling grille	Classic rolling grille	SB rolling grille and basic rolling grille

# Coloured doors

Create attractive accents

**Price advantage  
for preferred colours**



## Coloured doors highlight your corporate design

Coloured shutters are increasingly used as design elements in modern industrial and commercial architecture. On account of their size alone, rolling shutters already play a key role in determining the visual appearance of the facade.

That's why Hörmann offers you rolling shutters and rolling grilles in more than 1000 colours based on the RAL and NCS colour charts.









The following components are coil-coated:  
Curtain without bottom profile for rolling doors and grilles.

The colours shown are subject to the limitations of the printing process and cannot be regarded as binding.

## Standard colours

RAL 9002   
RAL 9006 

## Preferred colours

RAL 3000   
RAL 5009   
RAL 5010   
RAL 6002   
RAL 7016   
RAL 7032\*   
RAL 8028   
RAL 9007 

## Special colours



\* Not for Decotherm



# Impossible to force open!

Increase the security of your property



The break-in-resistant locks secure the bottom profile to the side guides. A signal to the control system prevents operation of the shutter.



**Lockable bottom profile**  
With profile cylinder, actuation either from the interior and exterior or only from the interior.



**Shootbolt**  
Can be fitted to the left or right of the side guide. Lock can be secured with a padlock. Not suitable for external rolling shutters.



**Electromagnetic locking**  
Automatic locking in the Close position. Can be connected to the central control system.

# The safety of Hörmann rolling shutters and rolling grilles is certified

**Safety features in accordance with European standard 13241-1 Hörmann products are tested and certified for:**

- **Anti-fall safeguard**
- **Trap protection**
- **Trap guard**

Hörmann rolling shutters and rolling grilles work safely during all opening and closing phases – whether manually-operated or power-driven. In doors with an impulse control, the specified dynamic closing forces are reliably maintained through monitoring systems with an integrated self-test function.

At Hörmann, the door and operator are perfectly matched to each other, tested by TÜV for your safety and in compliance with the relevant standards. **It pays to compare!**



## **Rolling grilles in public, easily accessible areas**

Special safety equipment is required in areas frequented by children, who may hang on the rolling grille.

Rolling grilles with impulse control must always be equipped with lintel trap guards.

With the operator WA 300 R S4, the safety requirements specified in DIN 13241-1 are fulfilled by the standard power limit in the Open direction.

In order to comply with the special requirements for public areas, we also recommend using an additional lintel trap guard with the WA 300 R S4.

## **Anti-fall safeguard**

### **Integral safety device in direct drive operators**

The device offers especially good absorption, a large amount of power reserve and reliably prevents the door curtain from falling.

### **Separate catch safety device for chain drive and tubular operators**

Just like the integral version, this is a high-performance device that responds as soon as the speed limit is fractionally exceeded.

**With the SB rolling shutter, the tension spring assembly prevents the door from falling.**



## **Trap protection and trap guard**

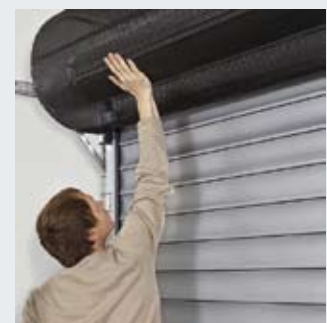
### **Trap protection**

Black plastic strips on the edges of the side guide protect against cuts.



### **Trap guard TES**

A cover made of a special rigid fabric prevents operators from reaching into the hazard area where the door rolls up.



### **Safety equipment**

Closing edge safety device, lintel trap guard and through-traffic photocell are self-testing before and during every shutter cycle. If a malfunction is detected in just one of the units, the shutter's control system automatically switches to press-and-hold operation.



**Safety requirements**  
**Please note the mandatory annual inspection for all power-driven doors.**



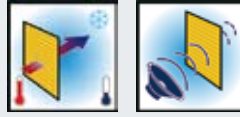
# Well thought-out designs with convincing performance properties

Performance characteristics  
in accordance with European  
standard 13241-1  
Hörmann products are tested  
and certified for:

- **Thermal insulation**
- **Acoustic insulation**
- **Sealing**
- **Wind load**

Thanks to innovations and continuous further developments, rolling shutter construction at Hörmann has been ahead of its time for years. Performance criteria in accordance with European standards have been integrated into these developments with convincing results.

## Thermal insulation and acoustic insulation

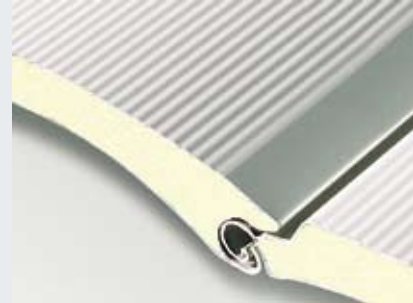


### Thermal insulation

Minimal thermal bridges and use of fine-pored PU rigid foam infill ensure good thermal insulation in all double-skinned door profiles.

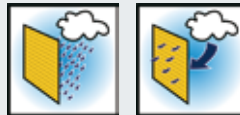
### Acoustic insulation

Curtain and sealing technology used around the entire shutter reduce noise from both outside and inside.



Decotherm

## Sealing

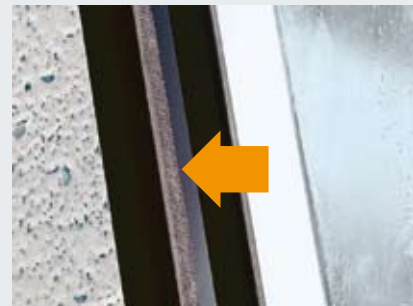


### All classic double-skinned rolling shutters have all-round sealing:

Frost-proof flexible lip seal along the bottom edge, flock-coated special lintel seal and bristle seals down the side guides.



Lintel seal



Bristle seal

## Wind load



Depending on the door type, wind lock end pieces, bend-resistant bottom profiles and the optional WPS ensure high stability.



WPS

# SSG system

Solutions for very large structural openings of up to 30 m



## SSG system

Up to three rolling shutters or rolling grilles can be coupled in the opening using the SSG system. Once the doors have been opened, the mullions are unlocked manually and slid over to the side park positions. As a result, openings of up to 30 m width and 6 m height are possible.

The exterior is attractively divided into segments with an identical size. Each door can also be operated individually if only a part of the opening is needed. SSG systems can be combined with all profile and grille curtains from the classic range.



# WPS

For high wind loads



## WPS

The WPS increases the rigidity of the door against wind load. An aluminium telescopic support reliably braces the closed door. On opening, it swings behind the lintel and bolts into the hall floor when the door is closed. As a result, wind load classes 2 and higher can also be achieved for door widths above 10 m.

# For unique solutions call on the specialist

Solutions for unique fitting situations and applications have long been a part of our day-to-day work at Hörmann.



## External rolling shutters

These are used when internal shutters cannot be fitted due to a lack of space. In contrast to internally fitted shutters, they often dispense with the need for expensive protection measures in explosion-proof buildings.

If there is no overhead covering, Hörmann offers a barrel casing in either galvanized sheet steel or stainless sheet steel.



## Chamfered bottom profile

Hörmann rolling shutters and rolling grilles can even be fitted on sloping ground. In such situations, a chamfered bottom profile compensates for the difference in height. The shutter can even be adapted to accommodate steps.

## Panels (not shown)

Panels bridge the gap between the lintel and the opening width. This can play a crucial role during renovations.



## Pass door assembly with side door

A fixed pass door assembly with side door is practical if no separate entrance is available.

A swing-aside pass door assembly with side door unifies two useful functions:

1. Maximum use of the clear hall opening
2. The door does not need to be opened for personnel traffic.





**Absolutely exemplary special solutions**

11 aluminium rolling shutters with rolling grilles fitted in front secure a structural opening almost 80 metres wide. When open, the entire turf can be driven out from the centre of the “Auf Schalke” arena to allow it to “recuperate” or save it from excessive wear during special events.

This is a unique solution that demonstrates the know-how and high competence of the specialist.

**ATEX certified**

Hörmann's rolling shutters and operators are available in an ATEX-certified version and thus can also be used in explosive areas.

## Precisely matched: Shutter, operator and control



### **Fully benefit from a perfect concept**

Hörmann rolling shutters and rolling grilles are a practice-orientated, cost-effective concept. They are geared towards a diverse range of operating sequences and a long, reliable service life.

For all shutters powered by a direct drive or chain drive, the operator and controls are individual components that are easy to install and ready to plug in.



# Operators

## Operating and controlling options



### Direct drive operator

The ideal operator for small to medium-sized rolling shutters and grilles. Equipped with integral catch safety device. Our recommendation: With the classic rolling shutter, combine a direct drive operator with the safe Hörmann ZAK system. See pages 14-15



### Chain drive operator

The powerful operator for large rolling shutters. Equipped with plug-in connections for mains cables and connection cables. With a separate catch safety device as standard. See page 30



### Tubular operator

The solution for small doors with especially limited fitting space at the sides and few door cycles per day. With a separate catch safety device as standard.



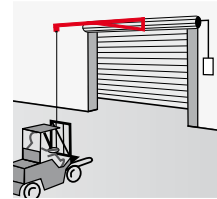
### WA 300 R S4

The compact operator with integrated control can be easily fitted / retrofitted to the SB rolling shutter or rolling grille.

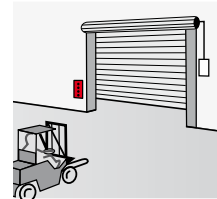
- Soft start and soft stop for quiet door travel
- No additional sideroom required
- Power limit in the Open direction
- Only approx. 1 watt power consumption in stand-by mode
- Standard maintenance release
- Standard DTH R push button

#### Optional

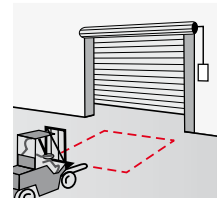
- SE secured release from the floor
- Exterior secured release, ASE in lockable diecast housing
- Emergency battery to bridge power outages



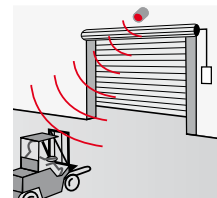
Pull switch



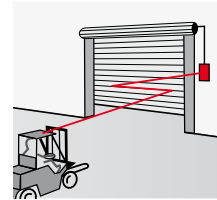
Push button / mushroom button



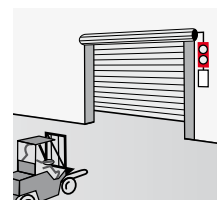
Induction loop



Radar movement detector, infrared movement detector and presence detector



Radio remote controls



Warning light, rotating warning light, flashing warning light

# Controls

## Compatible system solutions



### Basic control 435 R (400 / 230 V)

- Control and operator can be mounted separately
- Control and door leaf components in protection category IP 65 (jet-water protected). Connection with a CEE plug corresponds to protection category IP 44.
- Adjustments are no longer made on the motor but conveniently from the control via an electronic door position sensor
- With SKS: "Open / Close" with impulse
- Without SKS: "Open" with impulse, "Close" with press-and-hold operation
- Status and error display via LED

### Impulse control 445 R (400 / 230 V)

- Control and operator can be mounted separately
- Control and door leaf components in protection category IP 65 (jet-water protected). Connection with a CEE plug corresponds to protection category IP 44.
- Menu read-out from outside without removing the housing cover, thanks to a double 7-segment display
- Adjustments are no longer made on the motor but conveniently from the control via digital limit switches
- Service menu with maintenance, cycle and operating hours counters, as well as fault analysis.
- Collective malfunction signalling with on-site individual display (acoustic, visual, or e.g. via mobile phone).
- Function lock via miniature lock (convertible to profile half cylinder)
- Can be upgraded to control 460R so there is no need to replace the entire module

### Comfort control 460 R (400 / 230 V)

- Control and operator can be mounted separately
- Additional button on housing cover for 2nd opening height and integral connecting terminals for further command units
- Control and door leaf components in protection category IP 65 (jet-water protected). Connection with a CEE plug corresponds to protection category IP 44.
- Menu read-out from outside without removing the housing cover, thanks to a double 7-segment display
- Adjustments are no longer made on the motor but conveniently from the control via digital limit switches
- Service menu with maintenance, cycle and operating hours counters, as well as fault analysis.
- Collective malfunction signalling with on-site individual display (acoustic, visual, or e.g. via mobile phone).
- Function lock via miniature lock (convertible to profile half cylinder)

### Comfort control B 455 R (230 V)

- Control and operator can be mounted separately
- Control and door leaf components in protection category IP 65 (jet-water protected). Connection with a CEE plug corresponds to protection category IP 44.
- Menu read-out from outside without removing the housing cover, thanks to a double 7-segment display
- Adjustments are no longer made on the motor but conveniently from the control via digital limit switches
- Service menu with maintenance, cycle and operating hours counters, as well as fault analysis.
- Collective malfunction signalling with on-site individual display (acoustic, visual, or e.g. via mobile phone).
- Function lock via miniature lock (convertible to profile half cylinder)
- With SKS: "Open / Close" with impulse
- Without SKS: "Open" with impulse, "Close" with press-and-hold operation



# Hörmann is your partner for special solutions

Hörmann offers you a complete individual control concept from a single source. From the integration of the Hörmann special control into your control concept, via a complete central control for all functional processes, up to PC-based visualisation of all door and loading components.



**Optional profile half cylinder**

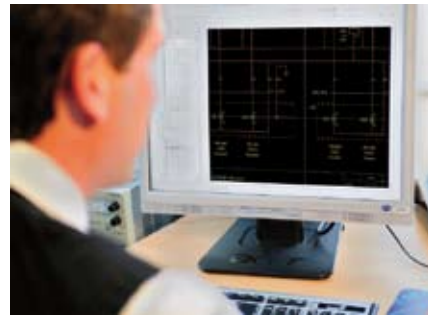
For controls 445 R, 460 R and B 455 R



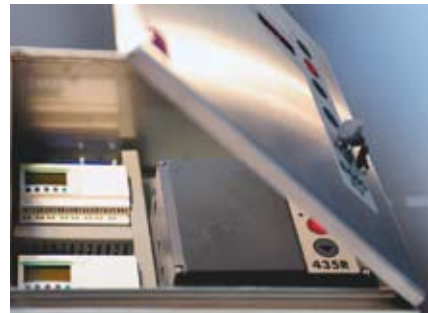
**Optional main switch**

For all controls

**Optional post STI 1**  
 For installing a maximum of 2 control units with additional housing.  
 Colour: White aluminium (similar to RAL 9006)  
 Dimensions: 200 x 60 mm, height 1660 mm



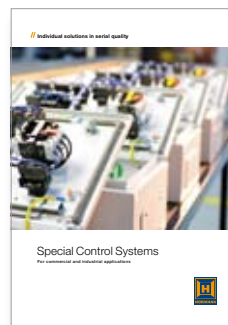
**Individual in-house project development**



**Modular solutions, compatible with the Hörmann operator technology**



**Controlled processes through visualisation on a control panel or web application**



**More information can be found in the Special control systems brochure.**

# Accessories

## Radio control, receivers



### Industrial hand transmitter HSI

This hand transmitter can control up to 1000 doors. It is equipped with a display and convenient quick selection buttons. Extra-large keys facilitate handling with work gloves. As a time-saving feature, the coding for a hand transmitter can also be transferred via cable to other transmitters.





**4-button hand transmitter HS 4**

**1-button hand transmitter HS 1**

**4-button security hand transmitter HSS 4**  
Additional function: copy protection for hand transmitter coding

**Radio code switch FCT 10b**  
For up to 10 radio codes (868 MHz). The keypad illuminates when pressed for the first time.

**Radio finger-scan FFL 12**  
For up to 12 radio codes (868 MHz). The keypad illuminates when pressed for the first time.



**1-channel receiver HEI 1**

**2-channel receiver HEI 2**



**1-channel relay receiver HER 1**  
With volt-free relay output, frequency: 868 MHz, IP 65, operating voltage: 24 V DC / 230-240 V AC, without connecting lead

**2-channel relay receiver HER 2**  
With 2 volt-free relay outputs, frequency: 868 MHz, IP 65, operating voltage: 24 V DC / 230-240 V AC, separate antenna for exterior use (IP 65), in a tamper-proof aluminium housing with 7 m connecting lead, 3-wire, decoder unit for interior

**4-channel relay receiver HER 4**  
With 4 volt-free relay outputs, frequency: 868 MHz, IP 65, operating voltage: 24 V DC / 230-240 V AC

# Accessories

## Push button



### Push button DTH R

For separate control of both operational directions, with separate stop button.

Protection category: IP 65

Dimensions:

90 × 160 × 55 mm (W × H × D)

#### For controls

**435 R, 445 R, 460 R, B 455 R and integrated control WA 300 R S4**



### Push button DTH RM

For separate control of both operational directions, with separate stop button.

With miniature lock: Operator is deactivated. The operator can no longer be actuated (2 keys included in the scope of delivery).

Protection category: IP 65

Dimensions:

90 × 160 × 55 mm (W × H × D)

**For controls 435 R, 445 R, 460 R, B 455 R and integrated control WA 300 R S4**



### Push button DTH I

To move the door into the Open / Close positions.

Separate stop button to stop door travel.

1/2-open button to open the door up to the programmed intermediate travel limit.

Protection category: IP 65

Dimensions:

90 × 160 × 55 mm (W × H × D)

**For controls 460 R and integrated control WA 300 R S4**



### Push button DTH IM

To move the door into the Open / Close positions.

Separate stop button to stop door travel.

1/2-open button to open the door up to the programmed intermediate travel limit.

With miniature lock: Operator is deactivated. The operator can no longer be actuated (2 keys included in the scope of delivery).

Protection category: IP 65

Dimensions:

90 × 160 × 55 mm (W × H × D)

**For controls 460 R and integrated control WA 300 R S4**



### Push button DT 02

Open or close via a command button, separate stop button.

Dimensions:

65 × 112 × 68 mm (W × H × D)

Protection category: IP 65

#### For controls

**435 R (only with SKS), 445 R, 460 R and B 455 R**



### Push button DT 04

For separate control of both operational directions, with separate stop button. Full or partial door opening (via separate button).

Dimensions:

69 × 185 × 91 mm (W × H × D)

Protection category: IP 65

#### For controls

**460 R and B 455 R**



### Push button DTN A 30

For separate control of both operational directions. The stop button is a push-to-lock button which, once pressed, stays depressed in order to prevent unauthorised operation. Further operation is then only possible once the stop button has been unlocked with a key (2 keys included in the scope of delivery).

Dimensions:

66 × 145 × 85 mm (W × H × D)

Protection category: IP 65

#### For controls

**435 R, 445 R, 460 R and B 455 R**





**Push button DTP 02**

Open or close via a command button, separate stop button and operation control light for control voltage. Lockable with profile half cylinder (available as an accessory).

Dimensions:

86 × 260 × 85 mm (W × H × D)

Protection category: IP 44

**For controls**

**435 R, 445 R, 460 R and B 455 R**

**Push button DTP 03**

For separate control of both operational directions. Separate stop button and operation control light for control voltage. Lockable with profile half cylinder (available as an accessory).

Dimensions:

68 × 290 × 74 mm (W × H × D)

Protection category: IP 44

**For controls**

**435 R, 445 R, 460 R and B 455 R**

**Emergency-off button DTN 10**

To quickly disable the door system.

Push-to-lock button (mushroom button)

Surface-mounted

Dimensions:

93 × 93 × 95 mm (W × H × D)

Protection category: IP 65

**For controls**

**435 R, 445 R, 460 R, B 455 R and integrated control WA 300 R S4**

**Emergency-off button DTNG 10**

To quickly disable the door system.

Push-to-lock mushroom button

Surface-mounted

Dimensions:

93 × 93 × 95 mm (W × H × D)

Protection category: IP 65

**For controls**

**435 R, 445 R, 460 R, B 455 R and integrated control WA 300 R S4**

The lockable function serves to isolate the control voltage and immobilises the command units. Profile half cylinders are not included in the scope of delivery for the push buttons.

# Accessories

## Code switch, key switch, key switch post



### Code switch CTR 1b, CTR 3b

The code switches CTR 1b and CTR 3b offer a high level of security against unauthorised opening. You simply enter your own personal code – a key is no longer needed. The deluxe version CTR 3b allows you to open a second door and switch on the outside lighting or operate a door in your choice of direction.

#### Dimensions:

80 × 110 × 17 mm (W × H × D)

#### Decoder housing:

140 × 130 × 50 mm (W × H × D)

Keypad protection category: IP 65

Decoder housing protection category: IP 54

Switching capacity: 2.5 A / 30 V DC

500 W / 250 V AC

### Finger-scan FL 12, FL 100

A fingerprint is enough to securely and conveniently open your rolling shutter / rolling grille.

The finger-scan is available in two versions, as an FL 12 or FL 100 to store 12 or 100 fingerprints, respectively.

#### Dimensions:

80 × 110 × 39 mm (W × H × D)

#### Decoder housing:

70 × 275 × 50 mm (W × H × D)

Reader protection category: IP 65

Decoder housing protection category: IP 56

Switching capacity: 2.0 A / 30 V DC

### Transponder key switch TTR 100 / TTR 1000

The convenient solution when several persons require access to the building. You simply hold the transponder key with your personal security code approx. 2 cm in front of the reader. A non-contact system! A major benefit in the dark. 2 keys are included. Suitable for max. 100 transponder keys (TTR 100) or 1000 transponder keys (TTR 1000).

#### Dimensions:

80 × 110 × 17 mm (W × H × D)

#### Decoder housing:

140 × 130 × 50 mm (W × H × D)

Transponder pad protection category: IP 65

Decoder housing protection category: IP 54

Switching capacity: 2.5 A / 30 V DC

500 W / 250 V AC



### Key switch ESA 30

#### with 3 keys

Surface-mounted version

Impulse or

OPEN / CLOSE

function selectable

#### Dimensions:

73 × 73 × 50 mm

(W × H × D)

Protection category:

IP 54

### Key switch ESU 30

#### with 3 keys

Recessed version

Impulse or

OPEN / CLOSE

function selectable

#### Dimensions of switch box:

60 mm (d), 58 mm (D)

Dimensions of cover:

90 × 100 mm (W × H)

Wall recess:

65 mm (d), 60 mm (D)

Protection category:

IP 54

### Key switch STAP

#### with 3 keys

Surface-mounted version

Impulse or

OPEN / CLOSE

function selectable

#### Dimensions:

80 × 110 × 68 mm

(W × H × D)

Protection category:

IP 54

### Key switch STUP

#### with 3 keys

Recessed version

Impulse or

OPEN / CLOSE

function selectable

#### Dimensions of switch box:

60 mm (d), 58 mm (D)

Dimensions of cover:

80 × 110 mm (W × H)

Wall recess:

65 mm (d), 60 mm (D)

Protection category:

IP 54

### Key switch post STS 1

With adapter for fitting TTR 100, FCT 10 b, CTR 1b / CTR 3 b or STUP.

The command units must be ordered separately.

Top and bottom end of post in

Slate grey (similar to RAL 7015).

The post is stove-enamelled in

White aluminium (similar to

RAL 9006).

#### Dimensions:

300 mm (d), 1250 mm (H)

Protection category: IP 44

Version with fitted key

switch STUP (accessory).





# Accessories

## Photocells, light grilles, key switch posts



### Photocell RL 50

Reflection photocell with transmitter / receiver unit and reflector.

The photocell is tested by the control prior to each closing cycle. Connected via a system cable (length 2.0 m).

Max. range 6.0 m

Dimensions:

68 × 97 × 33 mm (W × H × D)

Reflector:

85 × 85 mm (W × H)

Protection category: IP 65

### One-way photocell EL 51

Photocell with separate transmitter and receiver.

The photocell is tested by the control prior to each closing cycle. Connected via a system cable.

Max. range 8.0 m

Dimensions with fitting bracket:

60 × 165 × 43 mm (W × H × D)

Protection category: IP 65

### ZT 2 pull switch with cord

Impulse generation to open or close the door.

Dimensions:

60 × 90 × 55 mm (W × H × D)

Pull cord length: 3.2 m

Protection category: IP 65

KA 1 cantilever arm (not shown)

Extension 1680 - 3080 mm.

Can be used with ZT 1

### Light grille ELG

The light grille monitors the entire closing zone of the door up to a height of 2500 mm. If vehicles with trailers are standing in the door area, they are reliably detected, helping to avoid damage to the vehicle and door. Simple fitting to the door frame and trouble-free aligning of sensors make the light grille especially economic in use. In addition, the ELG 1 light grille can be easily integrated in the STL post set.

Voltage supply: 24 V DC

Power consumption: 100 mA each

Range: 0 to 12 m

Protection category: IP 65

Sun suppression: 150,000 lux

Operating temperature:

-25 °C to +55 °C

Resolution: 60 mm crossed

Light source: LED infrared

Transmitter lead length: 10 m

Receiver lead length: 5 m

Height: ELG 1 = 1380 mm,

ELG 2 = 2460 mm

### Post set STL

The key switch post set consists of weather-resistant anodised aluminium and is prepared for installation of an ELG 1 light grille. The covers and foot cladding are made of Slate grey plastic (similar to RAL 7015).



# Accessories

## Optional extras, special controls



**Multi-function circuit board in a separate additional housing or for fitting in an existing housing**  
Limit switch reporting, momentary impulse, collective malfunction signalling  
Extension unit for controls 445 R, 460 R, B 455 R  
Dimensions of additional housing: 202 × 164 × 130 mm (W × H × D)  
Protection category: IP 65  
A circuit board can be optionally mounted in the control.

**Digital weekly timer in a separate additional housing**  
The timer can switch command units on and off via a volt-free contact.  
Extension unit for controls 460 R, B 455 R  
Switching capacity: 230 V AC 2.5 A / 500 W  
Can be switched over to summer / winter time  
Manual switching:  
Automated operation, switching preselection for ON / OFF times  
Dimensions of additional housing: 202 × 164 × 130 mm (W × H × D)  
Protection category: IP 65

**Summer / winter activating kit in an additional housing**  
Function for full opening of door and individually programmable intermediate travel limit  
Extension unit for controls 460 R, B 455 R  
Dimensions of additional housing: 202 × 164 × 130 mm (W × H × D)  
Protection category: IP 65

**DI 1 induction loop in a separate additional housing**  
Suitable for one induction loop. The detector has a normally open contact and a change-over contact.

**DI 2 induction loop (not shown) in a separate additional housing**  
Suitable for two separate induction loops. The detector has two volt-free normally open contacts. Can be set for impulse or permanent contact. Directional recognition possible.  
Dimensions of additional housing: 202 × 164 × 130 mm (W × H × D)  
Switching capacity:  
DI 1: low voltage 2 A, 125 V A / 60 W  
DI2: 250 V AC, 4 A, 1000 VA, (resistive load AC)  
Supplied without loop cable



**UAP 300 for WA 300 R S4**  
For impulse selection, partial opening function, limit switch reporting and activating kit for warning light with 2 m system cable  
Protection category: IP 65  
Max. switching capacity: 30 V DC / 2.5 A (resistive load) 250 V AC / 500 W (resistive load)  
Dimensions: 110 × 45 × 40 mm (W × H × D)

**HOR 300 (not shown) for WA 300 R S4**  
To control limit switch reporting or warning lights with 2 m connecting lead  
Protection category: IP 44  
Max. switching capacity: 30 V DC / 2.5 A (resistive load) 250 V AC / 500 W (resistive load)  
Dimensions: 110 × 45 × 40 mm (W × H × D)



**Radar movement detector RBM 2**  
For impulse "Open" with directional recognition  
Max. fitting height: 6 m  
Dimensions: 155 × 132 × 58 mm (W × H × D)  
Contact load: 24 AC / DC, 1 A at resistive load  
Protection category: IP 65

**Optional remote control for radar movement detector**



**Loop cable for induction loop**  
50.0 m roll  
Cable designation: SIAF  
Cross-section: 1.5 mm<sup>2</sup>  
Colour: brown

# Accessories

## Activating kit for warning lights, LED warning lights



**Activating kit for warning light for fitting in an existing housing or optionally in a separate extension housing, incl. 2 yellow warning lights**

Extension unit for control 445 R, 460 R, B 455 R. The activating kit for warning lights serves as a visual indicator while the door is moving (weekly timer, optional for 460 R, B 455 R).

Application fields:

Start warning (for 445 R, 460 R, B 455 R), automatic timer (460 R, B 455 R).

After the set hold-open phase has elapsed (0-480 s), the warning lights flash during the set pre-warning phase (0-70 s).

Traffic light dimensions:

180 × 250 × 290 mm (W × H × D)

Dimensions of additional housing:

202 × 164 × 130 mm (W × H × D)

Contact load: 250 V AC: 2.5 A / 500 W

Protection category: IP 65

Traffic light material: High-grade, powder-coated aluminium housing

**Traffic control in a separate additional housing or for fitting in an existing housing, incl. 2 red / green warning lights**

Extension unit for control 460 R and B 455 R.

The activating kit for warning lights serves as a visual indicator for regulating the entrance and exit (optional weekly timer).

Duration of green phase:

Adjustable from 0-480 s.

Duration of clearance phase:

Adjustable from 0-70 s.

Traffic light dimensions:

180 × 410 × 290 mm (W × H × D)

Dimensions of additional housing:

202 × 164 × 130 mm (W × H × D)

Contact load: 250 V AC: 2.5 A / 500 W

Protection category: IP 65

Traffic light material: High-grade, powder-coated aluminium housing



# Overview of door types

## Construction and quality features

- = Standard  
○ = Optional

		SB rolling shutter			
		Decotherm		HR 120	
		A	S	A	aero
<b>Wind load EN 12424</b>	Class 2 up to door width in mm	5000	5000	5000	5000
	Higher wind loads on request	○	○	○	○
<b>Water tightness EN 12425</b>		0	0	0	0
<b>Acoustic insulation EN 717-1</b>	R = ... dB	19	19	-	-
<b>Thermal insulation</b>	Appendix B EN 12428 Individual shutter section $U = W/(m^2 \cdot K)$	4,6	3,9	-	-
	Shutter 4 x 4 m, fitted $U = W/(m^2 \cdot K)$	-	-	-	-
<b>Door sizes</b>	Max. width (LZ) mm	4000	4000	4000	4000
	Max. height (RM) mm	4000	4000	4000	4000
<b>Space requirement</b>	See the technical manual				
<b>Curtain material</b>	Single-skinned aluminium	-	-	●	●
	Double-skinned aluminium	●	-	-	-
	Single-skinned steel	-	-	-	-
	Double-skinned steel	-	●	-	-
<b>Curtain surface</b>	Bright-rolled aluminium	●	-	●	●
	Stucco-textured aluminium	-	-	-	-
	Aluminium coated in RAL 9002	○	○	○	○
	Aluminium coated in RAL 9006	○	○	○	○
	Aluminium coated in RAL to choose	○	○	○	-
	Anodised aluminium E6 / EV1	-	-	-	-
	Galvanized steel	-	●	-	-
	Galvanized steel coated in RAL 9002	-	○	-	-
	Galvanized steel coated in RAL 9006	-	○	-	-
Galvanized steel coated in RAL to choose	-	○	-	-	
<b>Own weight of curtain</b>	kg/m <sup>2</sup> approx.	4.2	10	6	5.5
<b>Wicket door</b>	With threshold	-	-	-	-
<b>Side door</b>	Matching the door	-	-	-	-
<b>Glazing</b>	Standard arrangement	-	○	○	-
	Logistics arrangement	○	○	○	-
<b>Seals</b>	All-round on 4 sides	○	○	○	-
<b>Locking systems</b>	Internal locking	○	○	○	○
	External / internal locking	○	○	○	○
<b>Arrestor kit</b>		-	-	-	-
<b>Safety equipment</b>	Finger trap protection	●	●	●	●
	Side trap guard	○	○	○	○
	Safety catch	●	●	●	●
<b>Fastening options</b>	Concrete	●	●	●	●
	Steel	●	●	●	●
	Brickwork	●	●	●	●
	Timber	●	●	●	●

	Basic rolling shutter				Classic rolling shutter					
	Decotherm		HR 120		Decotherm		HR 116	HR 120		
	A	S	A	aero	A	S	A	A	S	aero
	4000	5000	4500	4500	4000	10000	10000	7500	10000	4500
	○	○	○	○	○	○	○	○	○	○
	0	0	0	0	0	0	0	0	0	0
	19	19	-	-	19	19	19	-	-	-
	4.6	3.9	-	-	4.6	3.9	5.3	-	-	-
	-	-	-	-	-	4.3	5.8	-	-	-
	4000	5000	4500	4500	4000	10000	11750	11750	11750	11750
	4000	4500	4500	4500	4000	9000	9000	8000	8000	8000
	-	-	●	●	-	-	-	●	-	●
	●	-	-	-	●	-	●	-	-	-
	-	-	-	-	-	-	-	-	●	-
	-	●	-	-	-	●	-	-	-	-
	●	-	●	●	●	-	-	●	-	●
	-	-	-	-	-	-	●	-	-	-
	○	-	○	○	○	-	○	○	-	○
	○	-	○	○	○	-	○	○	-	○
	○	-	○	-	○	-	○	○	-	-
	-	-	-	-	-	-	-	-	-	-
	-	●	-	-	-	●	-	-	●	-
	-	○	-	-	-	○	-	-	-	-
	-	○	-	-	-	○	-	-	-	-
	-	○	-	-	-	○	-	-	-	-
	4.2	10	6	5.5	4.2	10	10	6	15	5.5
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	○	○	○	○	○	○
	-	○	○	-	-	○	○	○	○	-
	○	○	○	-	●	●	●	●	●	-
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	-	-	-	-	-	-	-	-	-	-
	●	●	●	●	●	●	●	●	●	●
	○	○	○	○	○	○	○	○	○	○
	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●

# Overview of door types

## Construction and quality features

● = Standard  
○ = Optional

		SB rolling grilles	Basic rolling grilles	Classic rolling grilles		
		HG-L	HG-L	HG-A	HG-V	HG-S
<b>Wind load EN 12424</b>	Class 2 up to door width in mm	–	–	–	–	–
	Higher wind loads on request	–	–	–	–	–
<b>Water tightness EN 12425</b>		0	0	0	0	0
<b>Acoustic insulation EN 717-1</b>	R = ... dB	–	–	–	–	–
<b>Thermal insulation</b>	Appendix B EN 12428 Individual shutter section $U = W/(m^2 \cdot K)$	–	–	–	–	–
	Shutter 4 x 4 m, fitted $U = W/(m^2 \cdot K)$	–	–	–	–	–
<b>Door sizes</b>	Max. width (LZ) mm	5000	9000	8000	11750	11750
	Max. height (RM) mm	4500	5500	8000	8000	8000
<b>Space requirement</b>	See the technical manual					
<b>Curtain material</b>	Single-skinned aluminium	●	●	●	●	–
	Double-skinned aluminium	–	–	–	–	–
	Single-skinned steel	–	–	–	–	●
	Double-skinned steel	–	–	–	–	–
<b>Curtain surface</b>	Bright-rolled aluminium	●	●	●	●	–
	Stucco-textured aluminium	–	–	–	–	–
	Aluminium coated in RAL to choose	○	○	○	–	–
	Anodised aluminium E6/EV1	○	○	○	–	–
	Galvanized steel	–	–	–	–	●
	Galvanized steel coated in RAL 9002	–	–	–	–	○
	Galvanized steel coated in RAL 9006	–	–	–	–	○
	Galvanized steel coated in RAL to choose	–	–	–	–	○
<b>Own weight of curtain</b>	kg/m <sup>2</sup> approx.	6.5	6.5	7	8	14
<b>Wicket door</b>	With threshold	–	–	–	–	–
<b>Side door</b>	Matching the door	–	○	○	○	○
<b>Glazing</b>	Standard arrangement	–	–	–	–	–
	Logistics arrangement	–	–	–	–	–
<b>Seals</b>	All-round on 4 sides	–	–	–	–	–
<b>Locking systems</b>	Internal locking	○	○	○	○	○
	External/internal locking	○	○	○	○	○
<b>Arrestor kit</b>		–	●	●	●	●
<b>Safety equipment</b>	Finger trap protection	–	–	–	–	–
	Side trap guard	○	○	○	○	○
	Safety catch	●	●	●	●	●
<b>Fastening options</b>	Concrete	●	○	●	●	●
	Steel	●	●	●	●	●
	Brickwork	●	○	●	●	●
	Timber	●	○	●	●	●



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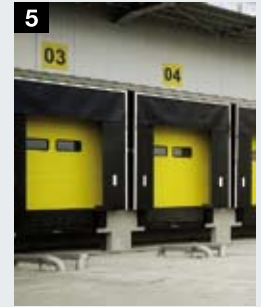
2 Rolling shutters and rolling grilles



3 Steel and aluminium folding doors



4 High-speed doors



5 Loading technology



6 Fire sliding doors



7 Multi-function doors and reinforced internal doors



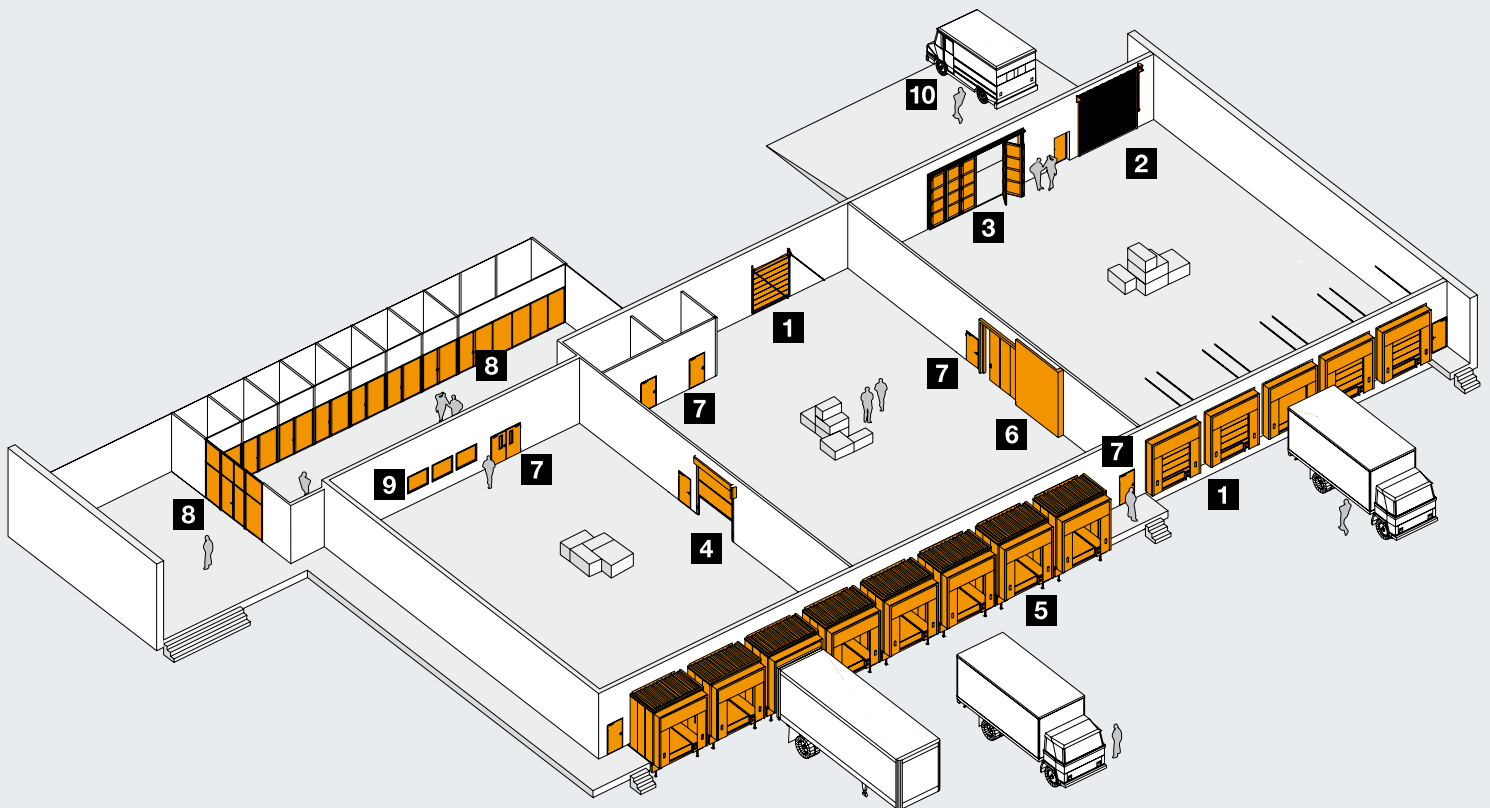
8 Fire and smoke-protection box frame parts



9 Visibility window



10 Service



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