

Product variety

Multifunctional Room Closures



At top
At bottom

Atzbach site: EI,90
Fraham site: EI,90

“The highest levels of quality combined with versatile designs and speed of production and processing are what make Peneder safety products so unique.

Ranging from classical swing doors through extremely strong gates up to fixed glazing and virtually invisible solutions, all our structures adapt to the architecture of the building and offer the highest degree of safety.”

Christian Peneder, CEO

Innovative Room Closures – 35 Years of Experience

Contents

06-65 SAFETY MADE FROM STEEL

- 08 PENEDERclassic
- 22 PENEDEReasy
- 28 PENEDERforce
- 38 PENEDERrail
- 52 PENEDERrun
- 60 PENEDERlift

66-103 SAFETY MADE FROM ALUMINIUM GLASS

- 68 PENEDERtherm
- 74 PENEDERlight
- 80 PENEDERpro
- 86 PENEDERbasic
- 90 PENEDERstrong
- 96 Door designs
- 100 PENEDERnurglas
- 102 PENEDERhorizontal

104-109 FIRE PROTECTION MADE OF WOOD

- 106 PENEDERwood

110-123 TEXTILE PROTECTION

- 112 PENEDERtextil

EVERYTHING FROM A SINGLE SOURCE

Assembly, service and maintenance

Our certified assembly team installs our product in a professional manner. After installation our subsidiary FIX Gebäudesicherheit + Service GmbH will be glad to offer you post-sales service and maintenance support.

Complete offering

Our ISO 9001:2015-certified offering provides a complete range. Starting from consulting through development, design and production and installation, right up to service and maintenance.

Product variety

Our comprehensive range made from steel, aluminium glass, wood and textiles guarantees a variety of designs, sizes and implementations.

Speed

We manufacture our products at two in-house manufacturing facilities at Atzbach and Fraham in Upper Austria, which guarantees rapid delivery.

Material perfection

All doors and gates are supplied with a final coating and a finished surface. The frame fillings are installed at the factory and they can be built-in in dry construction at the latest possible time.

Consulting and project management

Our long-serving staff members offer you their professional advice on a personal basis. You always have a contact who manages your project on an end-to-end basis. We take the actual measurements and carry out production with millimetre precision.

Quality management

Our comprehensive quality management system guarantees product quality, customer focus, resource efficiency and legal compliance on an international basis.

Safety made from steel

At our production facility in Fraham (Upper Austria), we manufacture all our steel PENEDER fire protection doors and gates in record time.

It is possible to implement our fire protection doors and gates in a wide range of designs, and versions, which means that we can find the perfect solution for any application.



Manufacturing shop at the **Fraham** site



PENEDERclassic

The functional all-rounder

PENEDERclassic is a versatile swing door made from steel. Regardless of whether it's an inside or outside door, single- or double-leaf, with fire, smoke, noise or burglary protection, this high-quality building or multifunctional door embodies everything that PENEDER stands for with regard to fire protection. It is available at unparalleled speed and in large dimensions.

Sizes (clearance)

- Width* single-leaf up to 1,490 mm
- Width* double-leaf up to 3,000 mm
- Height* up to 3,470 mm, with glass skylight up to 4,100 mm,
- With sheet metal top section up to 4,400 mm
- Surface* 10 m²
- Glazing* up to 1.95 m² per leaf



EXTERNAL DOORS: With the European CE mark according to EN 16034 and/or EN 14351-1



INTERNAL DOORS: With Austrian certificate of registration according to ÖNORM B 3850/51

Facts

* The actual sizes depend on the class and version

	classic-00 single/ double-leaf	classic-30 single/ double-leaf	classic-90 single/dou- ble-leaf	classic-00-RC single-leaf	classic-30-RC single-leaf
E _{l,30} fire-retardant		✓			✓
E _{l,90} fire-resistant			✓		
S ₂₀₀ smoke-shielding	✓	✓	✓	✓**	✓**
Up to 45 dB Sound-deadening	✓*	✓*	✓*		
RC2 anti-burglary protection				✓	✓
RC3 anti-burglary protection				✓	✓
External door	✓	✓	✓	✓	✓
Escape and emergency routes	✓	✓	✓	✓	✓
Stainless steel door and frame	✓	✓			
Flush-mounting on hinge side is possible	✓	✓	✓		
Top section/skylight	✓	✓			
Ventilation grille	✓	✓			
Glass cutout	✓	✓	✓		

Combination options depending on the size, class and version

* 45 dB with protective shell

** Except for escape and emergency routes with RC3



Special features:

- Delivery all over Austria in five business days
- Wide range of frames
- Refurbishment frame with no constructional measures and without reducing the effective clear opening
- Three-dimensional adjustable, maintenance-free building hinges
- Glazing with glazing bar or flush-mounted
- U-value from 1.6 W/(m²K) depending on the class, size and version
- Installation in shaft walls also possible
- C5 self-closing

High-quality appearance for any building concept

Functional all-rounder



- 1 Flush-mounting on both sides
- 2 Shaft wall function
- 3 Flush-mounted glazing

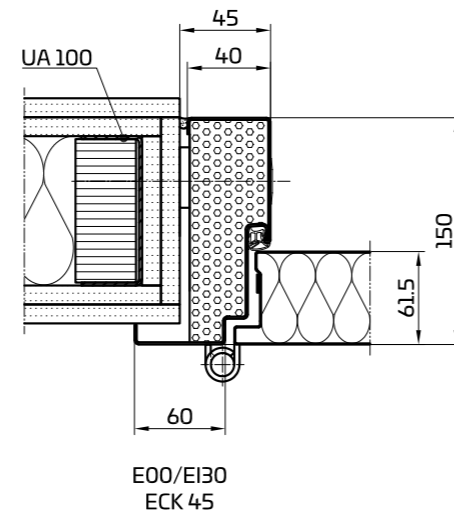
PENEDERclassic

Selection of flush-mounted frames

Corner frame



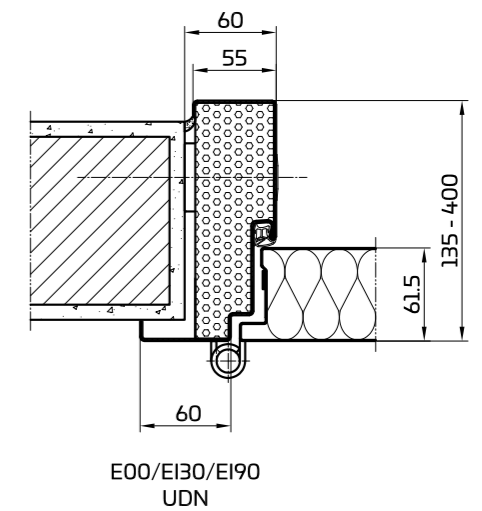
Example: Lightweight construction wall



Corner frame reveal-deep



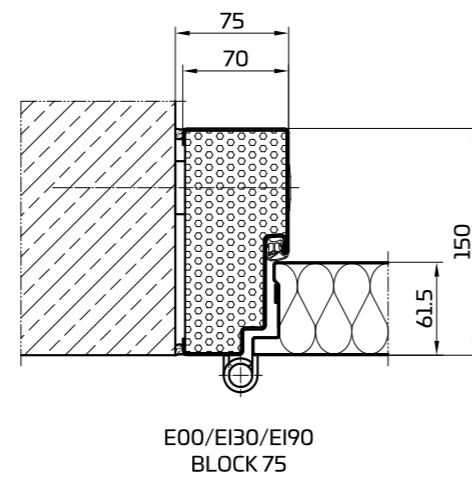
Example: Brick wall



Block frame



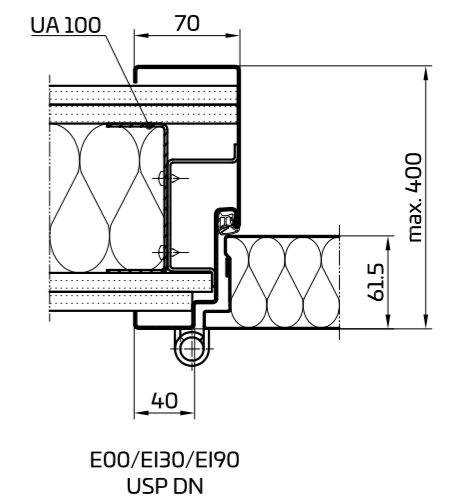
Example: Concrete wall



Closed frame

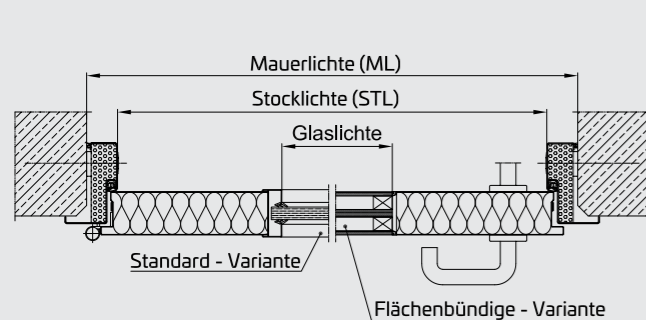


Example: Lightweight construction wall

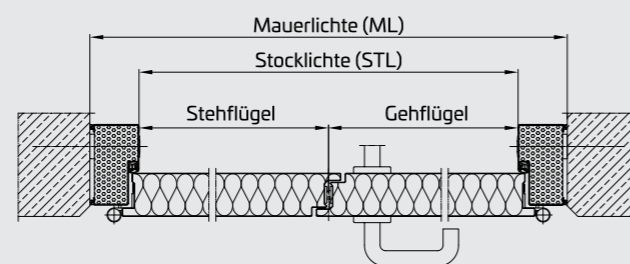


Frame filling according to requirements

Single-leaf swing door with corner frame



Double-leaf swing door with block frame

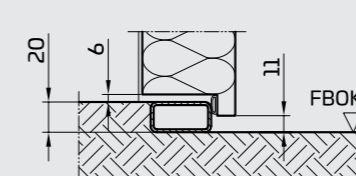


Without sill construction

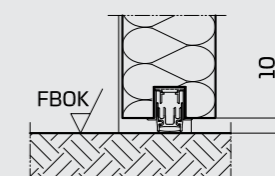


Sill construction

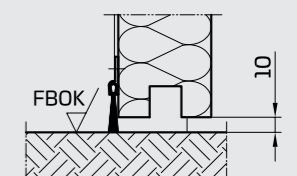
20 mm shaped tube +
Four-sided door leaf,
angle as an alternative



Drop-down seal



Brush sealing



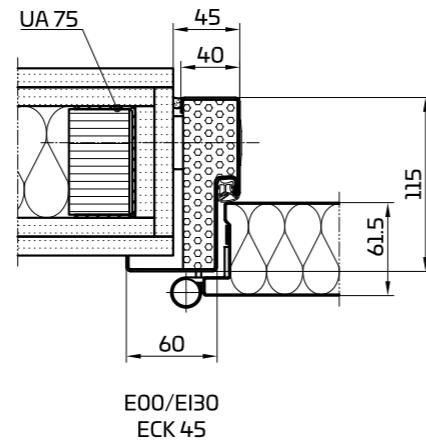
PENEDERclassic

Selection of rebated frames

Corner frame



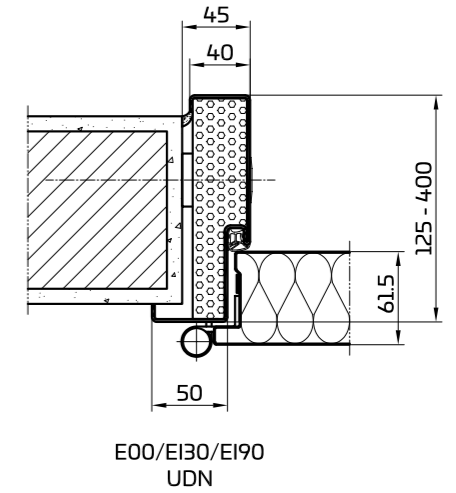
Example: Lightweight construction wall



Corner frame reveal-deep



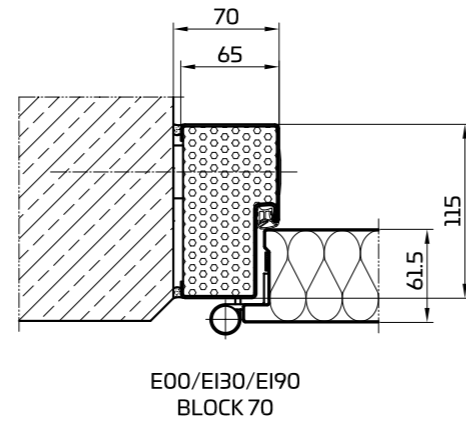
Example: Brick wall



Block frame



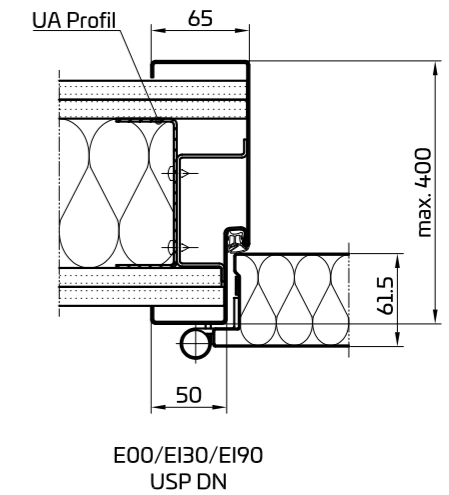
Example: Concrete wall



Closed frame



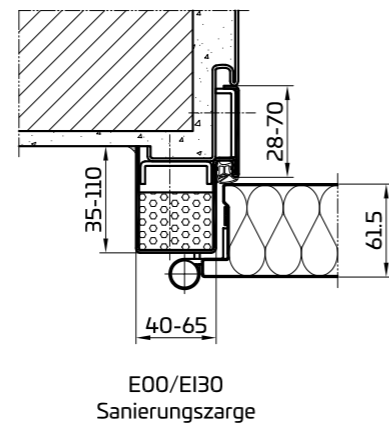
Example: Lightweight construction wall



Refurbishment frame



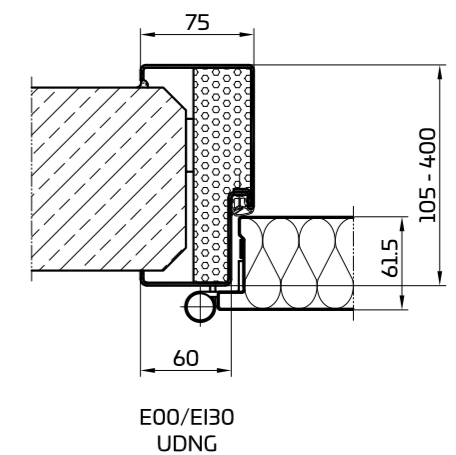
Example: Brick wall



Two-piece closed frame



Example: Concrete wall



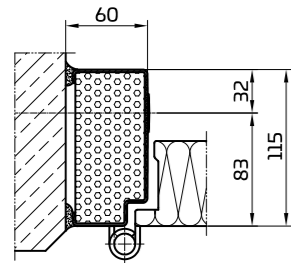
Frame filling according to requirements

PENEDERclassic

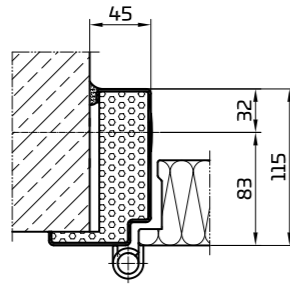
Selection of flush-mounted frames

Selection of rebated frames

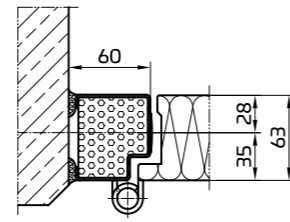
Block 60
00/30



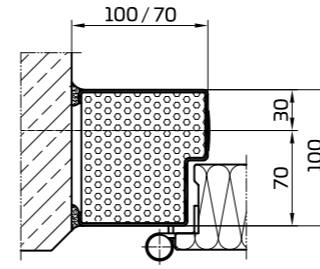
Corner 45
00/30



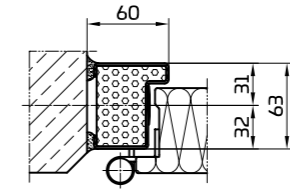
Flush 60
00/30



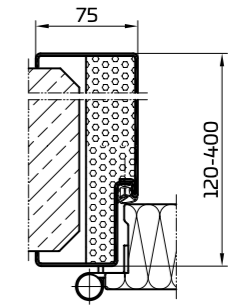
Block 100/70
00/30



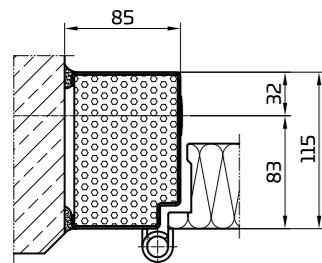
Flush 60
00/30



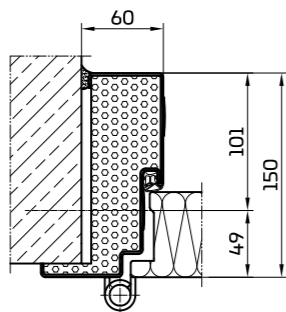
Two-piece closed frame
00/30
 S_a/S_{200}



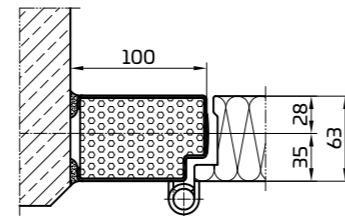
Block 85
00/30



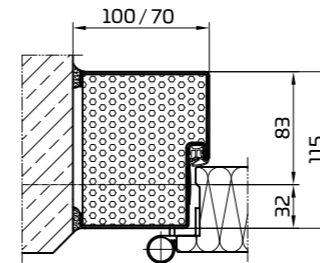
Corner 60
00/30/90
 S_a/S_{200}



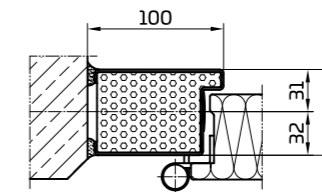
Flush 100
00/30



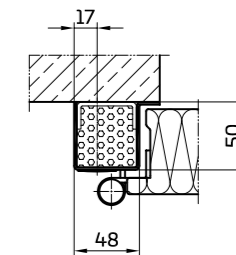
Block 100/70
00/30/90
 S_a/S_{200}



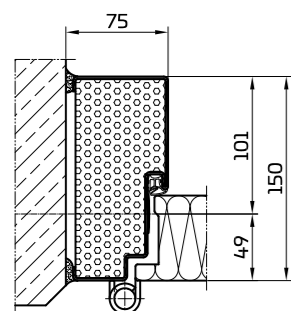
Flush 100
00/30



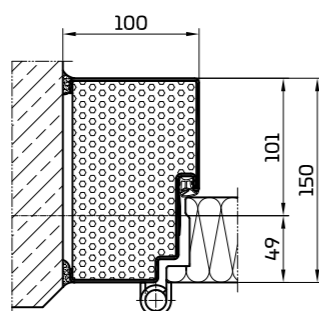
Attachment frame
00/30/90



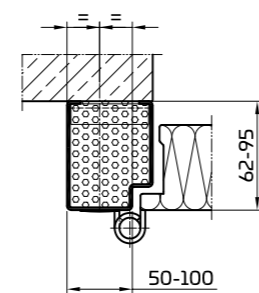
Block 75
00/30/90
 S_a/S_{200}



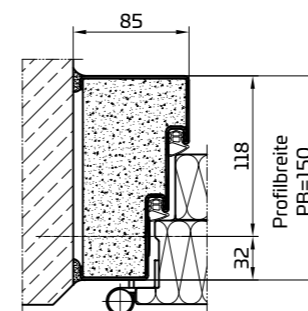
Block 100
00/30/90
 S_a/S_{200}



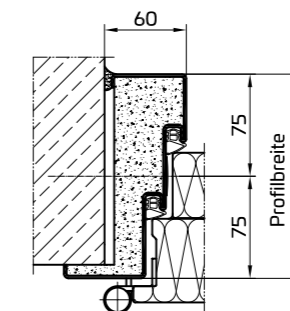
Variable attachment frame
00/30



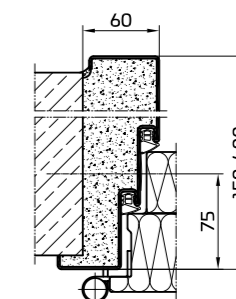
Block 85
00/30/90
45 dB



Corner 60
00/30/90
45 dB



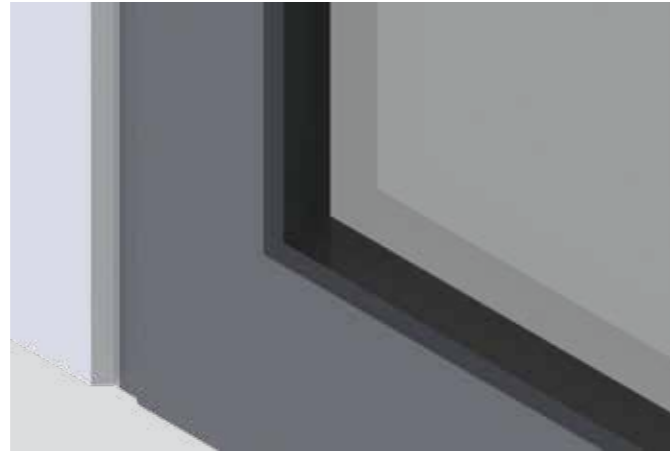
Closed frame
00/30/90
45 dB



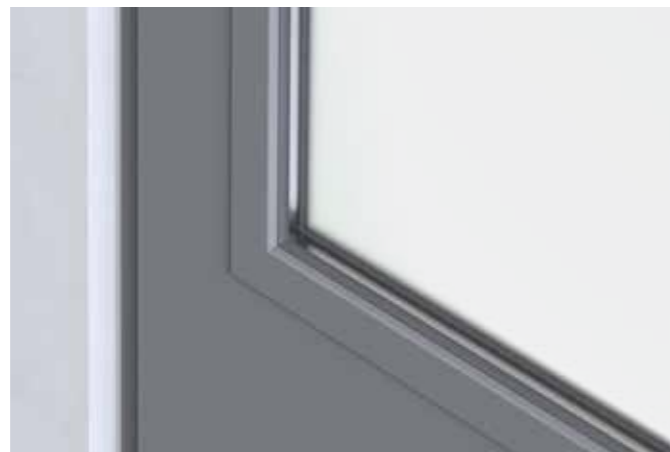
Frame filling according to requirements

Door glazing

Our range includes all shapes of door glazing, which are always tailored to the individual requirements of our customers. Regardless of whether PENEDER glass cutouts are rectangular, circular or of special shapes, there are virtually no limits to their possible designs.



Flush-mounted glazing of door leaf thickness



Clipped glazing bar in stainless steel or powder-coated, choice of RAL colours



Screw-on glazing bar in stainless steel or powder-coated, choice of RAL colours

Building hinges

We can supply 3D-adjustable building hinges either in stainless steel or powder-coated in a choice of RAL colours.



Flush-mounted



Rebated

Door locking systems

Our door closers are absolutely reliable and quiet. From our wide range of technical and visual products you can choose the ones that are tailor-made for your requirements.



Door coordinator



Slide rail door closer



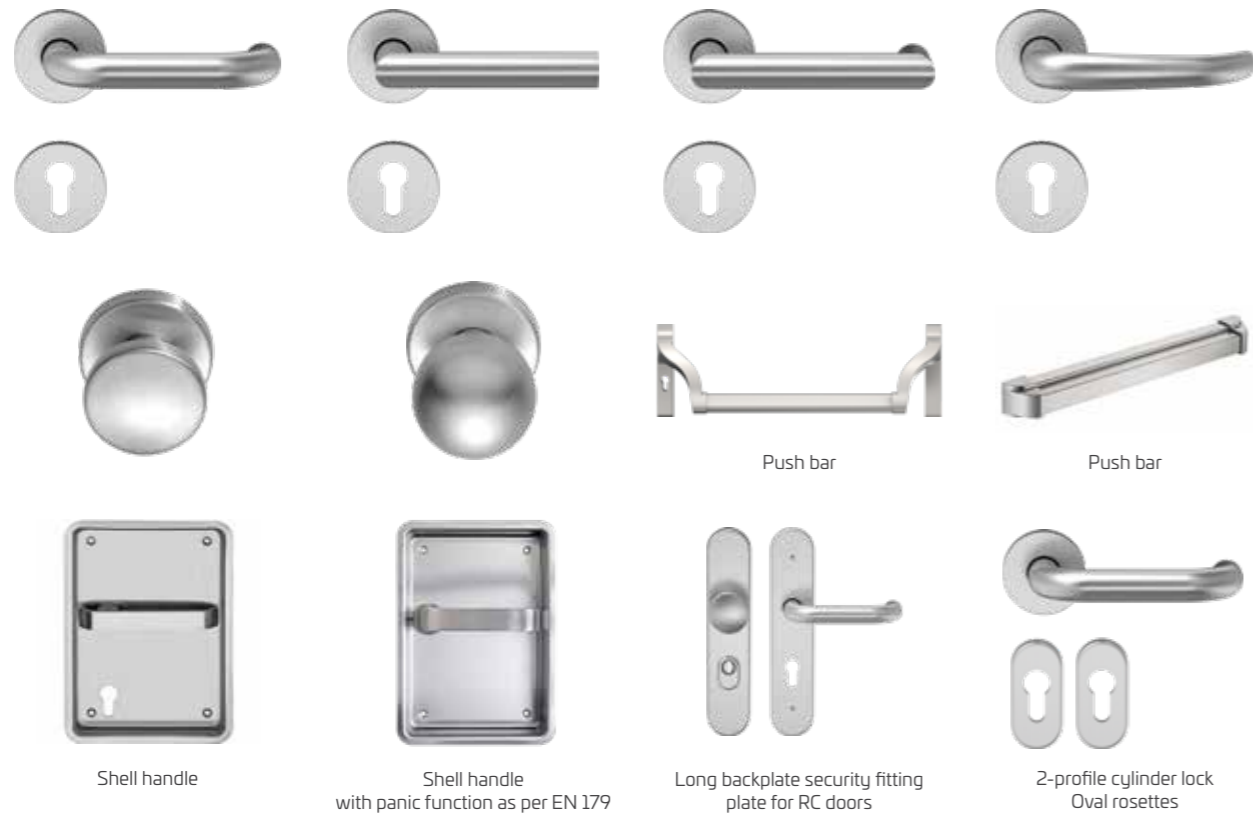
Integrated door closer



Secondary leaf locking
Snap-action bolt or rebate bolt lock

Fitting technology

Make your own mind up about our wide selection of different fittings that are available in stainless steel, aluminium or plastic.



Frame installation
in record time

Our depth-adjustable assembly bushes make possible rapid and uncomplicated fixing of frames on concrete or brick walls or dry wall constructions.

The discreet jointing provides an elegant transition on any background.

Representation of frame installation

PENEDEReasy

The simple standard door

A steel door that contains the concentrated force of PENEDER fire protection technology. Produced with an eye for quality with a closed frame for dry wall construction, a corner and block frame for wall plug mounting as well as tried and tested hinges, closers and fittings, PENEDEReasy is the quick solution for simple standard doors.

Sizes (clearance)

- Width: 800, 850, 900, 1,000 and 1,200 mm
- Height: 2,000 and 2,100 mm

Frames

- Corner and block frame (wall plug mounting)
- Closed frame with profile width of 145 and 170 mm (dry wall construction)



Fittings

- Plastic, aluminium or stainless steel
- Panic lock as per EN 179



With Austrian certificate of registration according to ÖNORM B 3850/51

Facts

	easy-00 single-leaf	easy-30 single-leaf
 EI ₃₀ fire-retardant		✓
 Escape and emergency routes as per EN 179	✓	✓

Special features:

- Single-leaf steel door for indoor areas
- Delivery all over Austria in five business days
- Also available without fire protection function
- Surface including building hinges galvanised or powder-coated as standard in RAL 9010 or choice of RAL colours
- Rebated door leaf
- C5 self-closing

The quick solution for simple standard doors



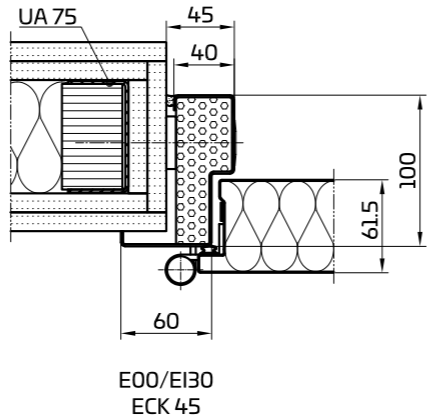
PENEDEReasy

Selection of rebated frames

Corner frame



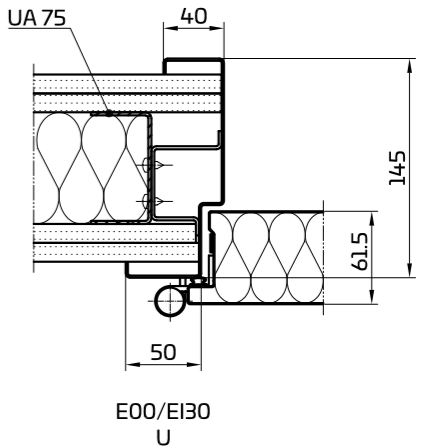
Example: Lightweight construction wall



Closed frame



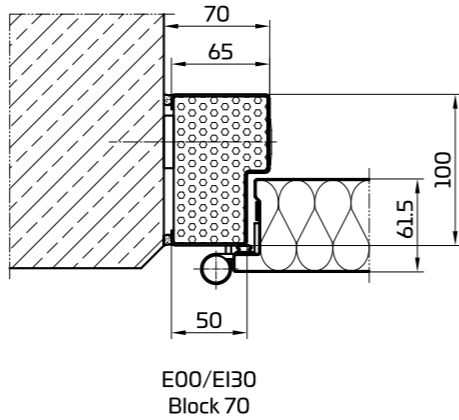
Example: Lightweight construction wall



Block frame



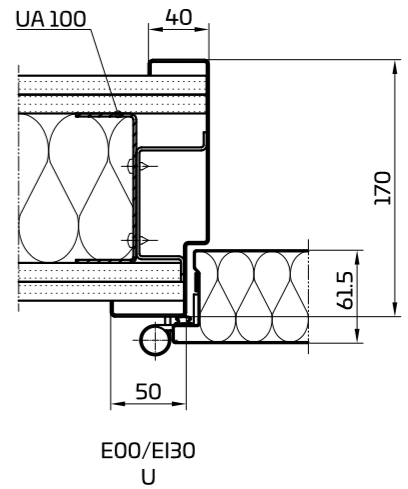
Example: Concrete wall with wall plug mounting



Closed frame

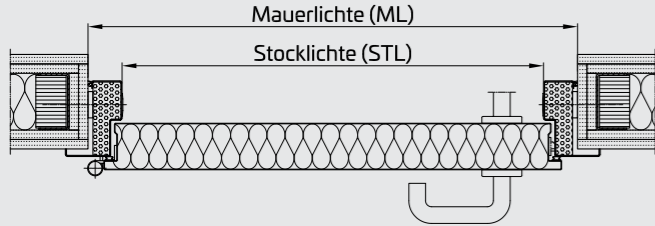


Example: Lightweight construction wall

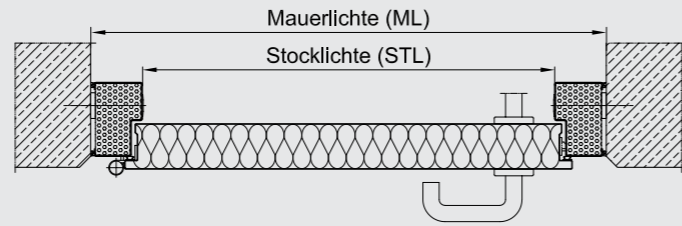


Frame filling according to requirements

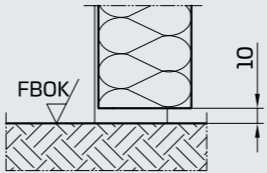
Single-leaf swing door with corner frame



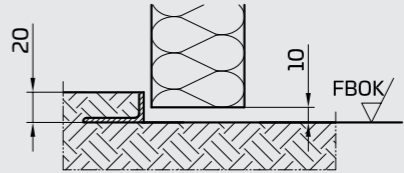
Single-leaf swing door with block frame



Without sill construction



Sill construction
20 mm angle in the clearance



Fitting technology

Door lever or knob made of stainless steel, aluminium or plastic with panic lock as per EN 179 as an option.



Building hinges

3D-adjustable building hinges, powder-coated in choice of RAL colours.



Rebated door leaf

Door locking systems

Our door closers are absolutely reliable and quiet. We can offer the right product for any requirements.



Slide rail door closer



Frame installation
in record time

Our depth-adjustable assembly bushes make possible rapid and uncomplicated fixing of frames on concrete or brick walls or dry wall constructions.

The discreet jointing provides an elegant transition on any background.

Representation of frame installation



PENEDERforce

Manifest force

PENEDERforce is a symbol for strength and design. The powerful swing door is permitted for large dimensions and looks very impressive. The swing door appears very imposing due to a wide variety of different functional and design elements, including, for example, a built-in pedestrian door (with an electrical opener and Reed contacts), specially developed hinges, glass cut-outs and particularly attractive joints.

Whether the swing door is supplied with fire protection and/or smoke shielding, you won't find a more resistant swing door in its class. And despite its size and stability, PENEDERforce is particularly easy to install due to its pre-fabricated elements. Other unique features of the swing door are short delivery periods of just a few weeks and its long life.

Sizes (clearance)

Width* up to 5,600 mm
 Height* up to 6,100 mm
 Surface* up to 28.8 m²



With the European CE mark according to EN 16034 and/or EN 13241

Facts

* The actual sizes depend on the class and version



Special features:

- Particularly robust design
- Extremely strong 3D building hinges developed in-house
- Can be installed in cramped conditions
- Built-in pedestrian door and glass cut-outs
- Simple installation
- C2 self-closing

Unique size and stability

	force-00 single/double-leaf	force-30 single/double-leaf	force-90 single/double-leaf	force-120 single/double-leaf
EI ₂ 30 fire-retardant		✓		
EI ₂ 90 fire-resistant			✓	
EI ₂ 120 highly fire-resistant				✓
S _a smoke-shielding	✓	✓	✓	✓
Escape and emergency routes with built-in pedestrian door	✓	✓	✓	✓
Built-in pedestrian door	✓	✓	✓	✓
Glass cutout	✓	✓	✓	✓

Combination options depending on the size, class and version

Manifest force



- 1 Double-leaf with an 18.5 m² gate surface
- 2 Built-in emergency exit function

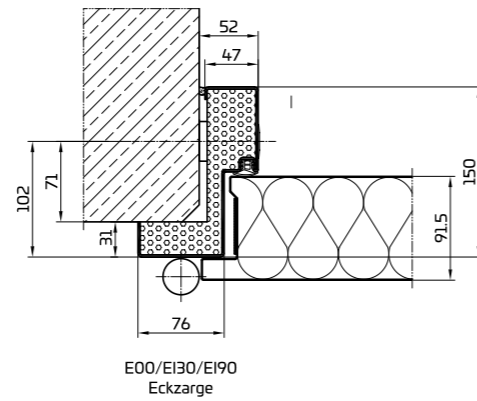
PENEDERforce

Sectional drawings (selection)

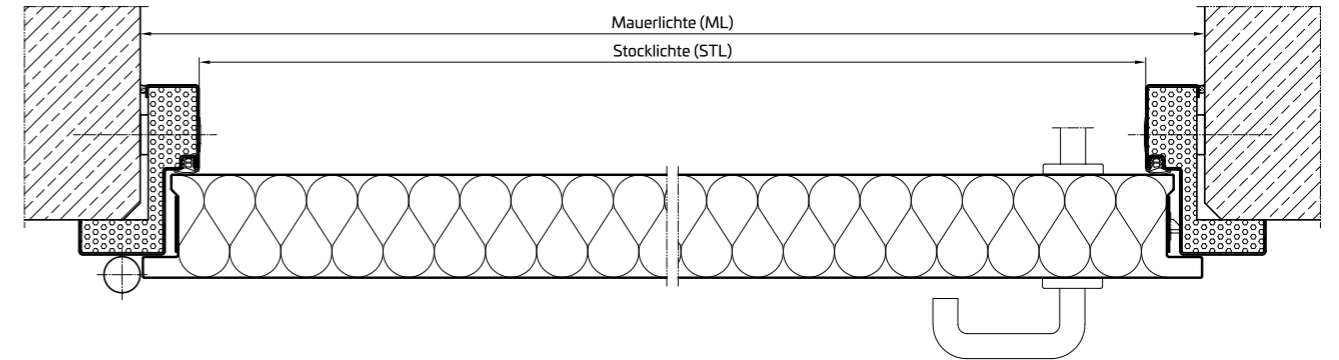
Corner frame



Example: Concrete wall



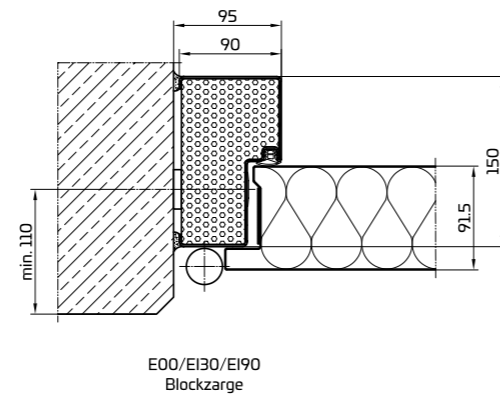
Single-leaf swing door with corner frame



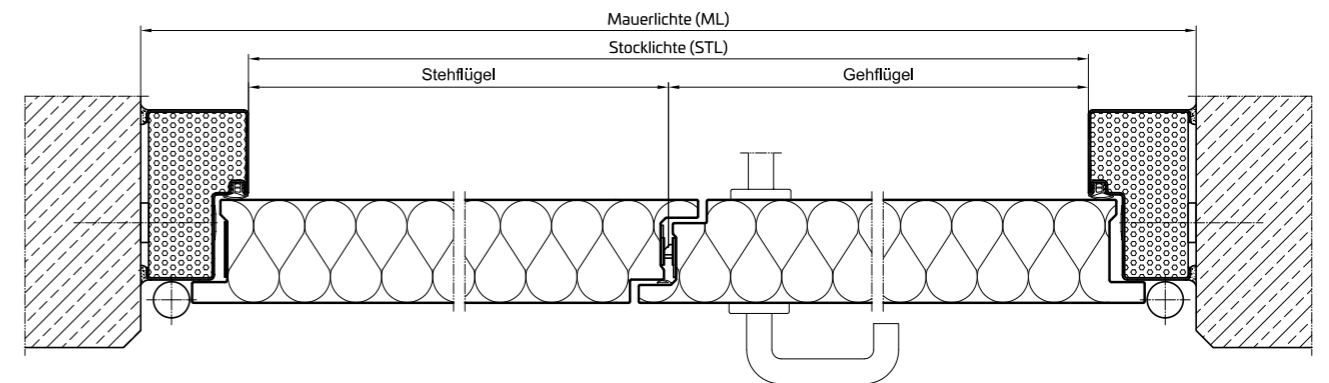
Block frame



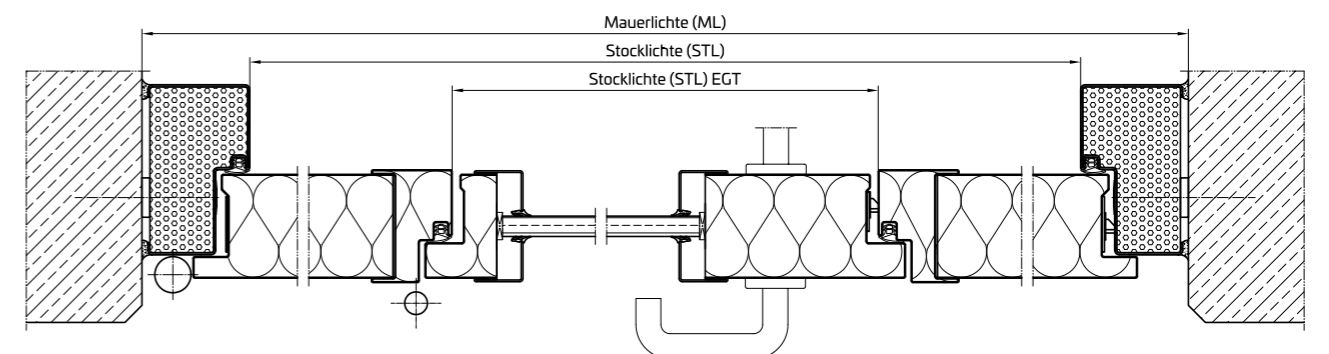
Example: Concrete wall



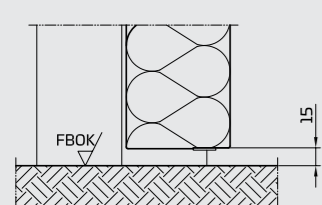
Double-leaf swing door with block frame



Single-leaf swing door with built-in pedestrian door and glass cut-out

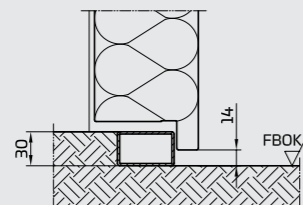


Without sill construction



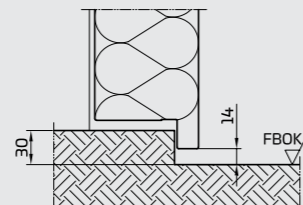
Sill construction

FR 50 x 30 +
Four-sided door leaf



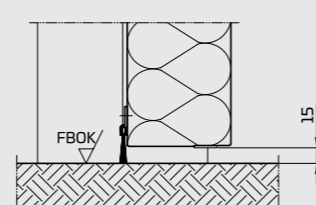
Stop on building side

Four-sided door leaf



Brush sealing

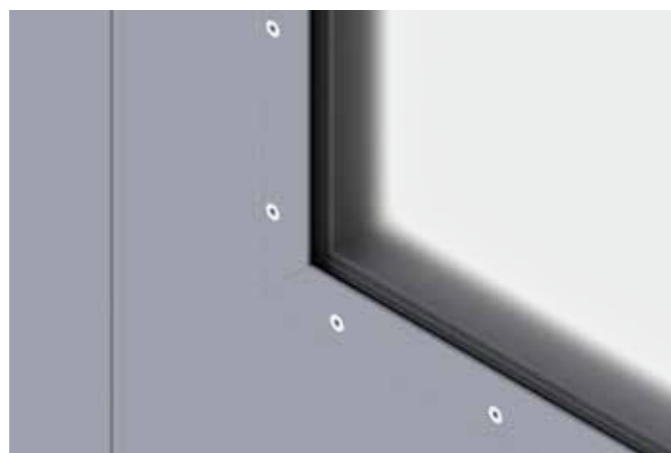
as special design only



Frame filling according to requirements

Glazing

Our range includes all shapes of glazing, which are always tailored to the individual requirements of our customers. Regardless of whether PENEDER glass cutouts in the element or the built-in pedestrian door are rectangular, circular or of special shapes, there are virtually no limits to their possible designs.



Screw-on glazing
bar in stainless steel
or powder-coated,
choice of RAL colours



Screw-on glazing
bar in stainless steel
or powder-coated,
choice of RAL colours

Hinges

Our stainless steel hinges that were developed in-house are solid and robust but can still be adjusted on a three-dimensional basis. This makes opening as easy as pie even with the maximum gate size.



Hinges made of
stainless steel

Locking systems

Our door closers are absolutely reliable and quiet. From our wide range of technical and visual products you can choose the ones that are tailor-made for your requirements.



Rack and pinion closer with link arm



Tandem rack and pinion closer with link arm



Slide rail door closer with built-in pedestrian door

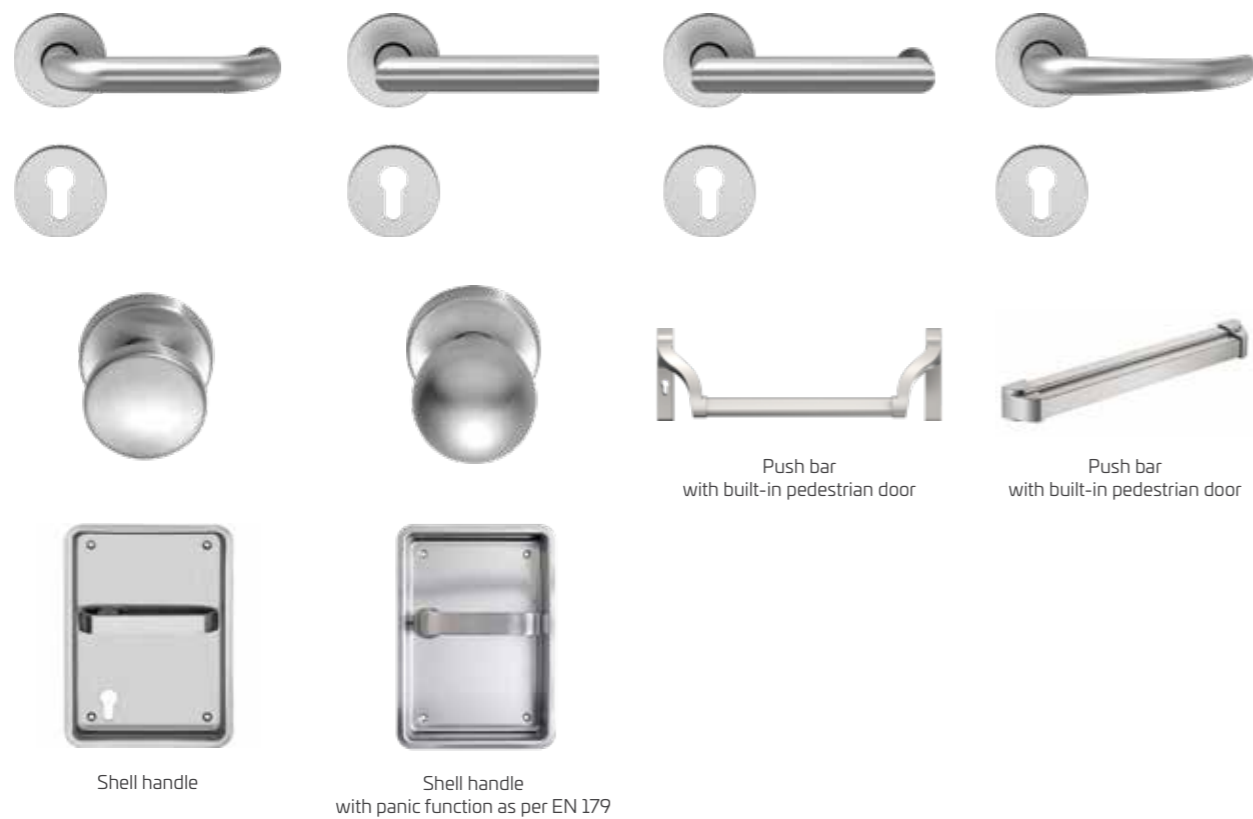


Door coordinator



Fitting technology

Make your own mind up about our wide selection of different fittings that are available in stainless steel, aluminium or plastic.



Frame installation
in record time

Our depth-adjustable assembly bushes make possible rapid and uncomplicated fixing of frames on concrete and planked steel structures.

Representation of frame installation



PENEDERrail

The big attractive one

PENEDERrail is a particularly imposing sliding gate that will impress you with its large dimensions and wide range of technical features, as well as its short delivery times. The attractive design with a sliding rail, inlet and labyrinth profiles as well as a niche flap in all the RAL colours is what sets PENEDERrail apart. Features specific to the version, including, for example, an automatic drive or a pedestrian door with no threshold with an EN 179-compliant shell handle, are what make this sliding gate unique. In addition to this, PENEDERrail is available as a telescopic version as PENEDERrail extended as well as without an inlet.

Sizes (clear wall height)

Width* up to 16,000 mm
 Height* up to 5,500 mm
 Gate surface* up to 50 m²



With the European CE mark according to EN 16034 and/or EN 13241

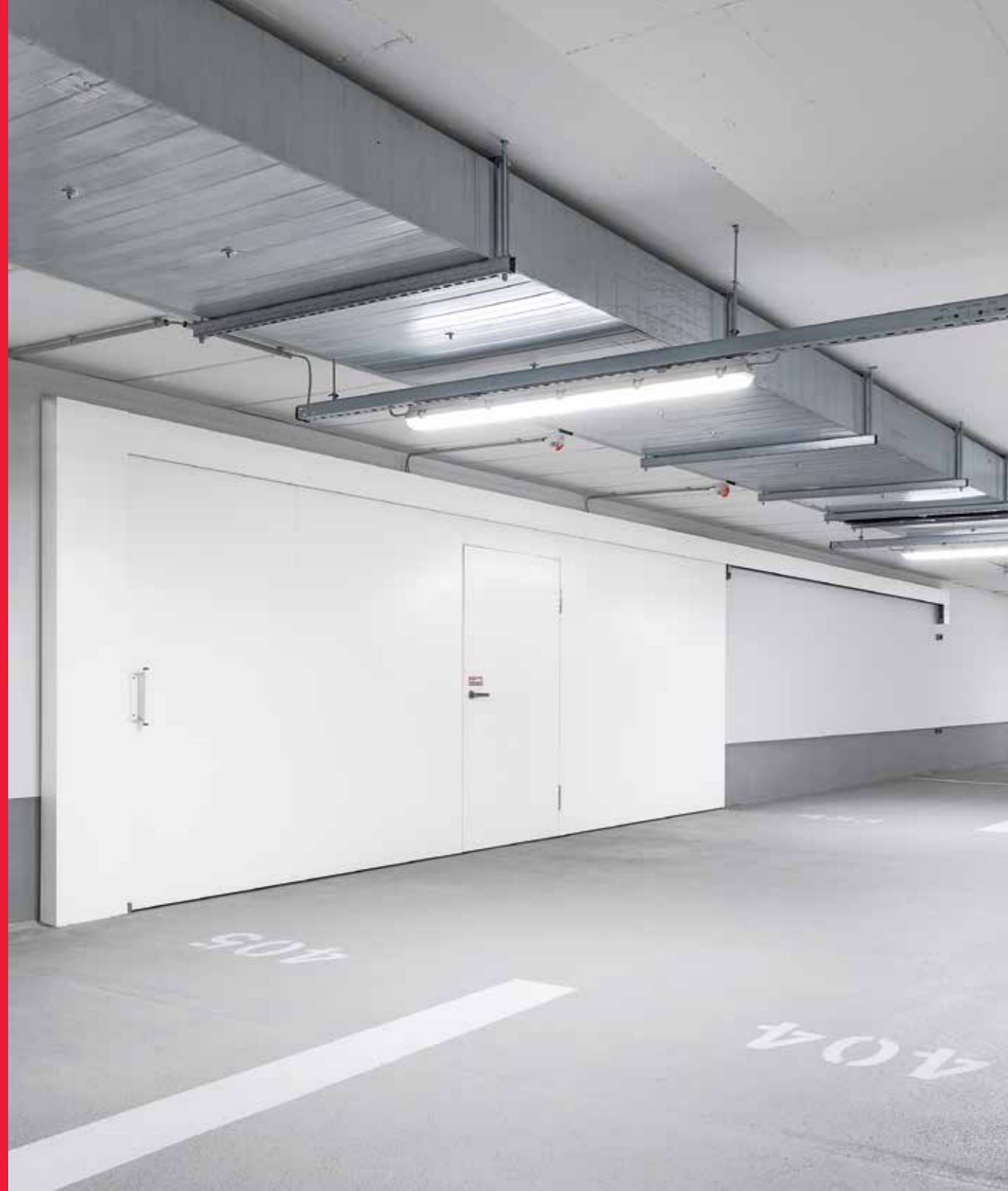
Facts

* The actual sizes depend on the class and version

PENEDERrail	rail-00 single/double-leaf	rail-30 single/double-leaf	rail-90 single/double-leaf
E1,30 fire-retardant		✓	
E1,90 fire-resistant			✓
S ₂₀₀ smoke-shielding	✓	✓	✓
Escape and emergency routes in built-in pedestrian door	✓	✓	✓
Surface made of stainless steel	✓	✓	✓
Glass cut-outs and built-in pedestrian door	✓	✓	✓

PENEDERrail extended Telescopic version	rail ext-00 single-leaf	rail ext-30 single-leaf	rail ext-90 single-leaf	rail ext-00 double-leaf	rail ext-30 double-leaf	rail ext-90 double-leaf
E1,30 fire-retardant		✓			✓	
E1,90 fire-resistant			✓			✓
Escape and emergency routes in built-in pedestrian door	✓	✓	✓	✓	✓	✓
Surface made of stainless steel	✓	✓	✓	✓	✓	✓
Glass cut-outs and built-in pedestrian door	✓	✓	✓	✓	✓	✓
Two-piece telescopic version	✓	✓	✓	✓	✓	✓
Telescopic version 3- or 4-piece	✓	✓				

Combination options depending on the size, class and version



Special features:

- Possible without inlet profile (without smoke protection)
- Without threshold over the entire opening area
- Headroom of only 100 mm with emergency exit door (with a frame clearance of 2,100 mm a 2,000 mm emergency exit door is possible)
- C2 self-closing

ideal for spacious openings

Attractive and large



- 1 Single-leaf, galvanised
- 2 Double-leaf with emergency exit function
- 3 Without inlet profile

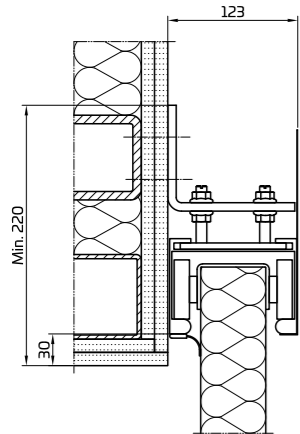
PENEDERrail

Sectional drawings (selection)

Installation variants of sliding rail EI30

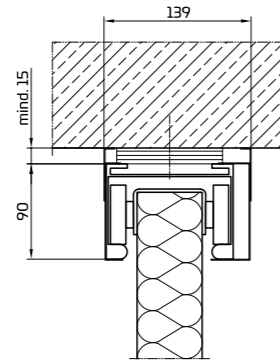
Wall-mounted variant

Dry wall construction with smoke protection



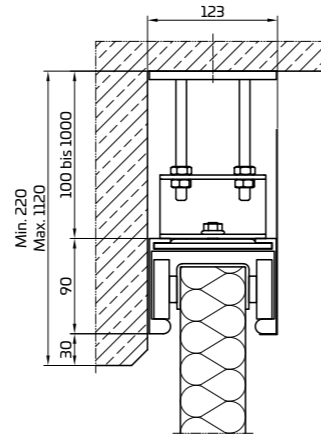
Ceiling-mounted direct variant

Concrete wall



Suspended ceiling-mounted variant

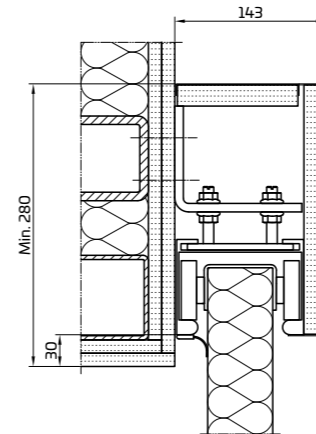
Concrete wall



Installation variants of sliding rail EI90

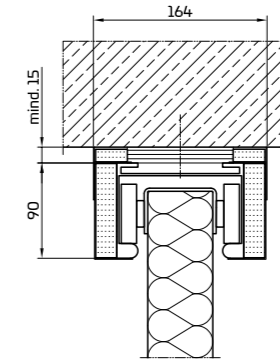
Wall-mounted variant

Dry wall construction with smoke protection



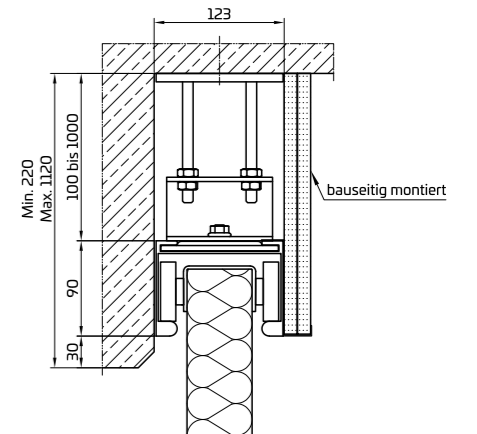
Ceiling-mounted direct variant

Concrete wall



Suspended ceiling-mounted variant

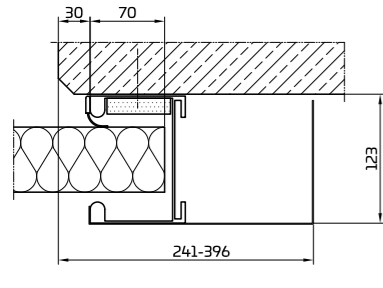
Concrete wall



Installation variants of inlet profile EI30

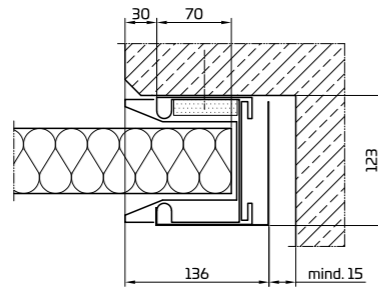
Normal inlet

Concrete wall with smoke protection



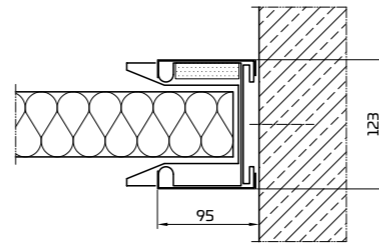
Weight deflected

Concrete wall



Flush inlet

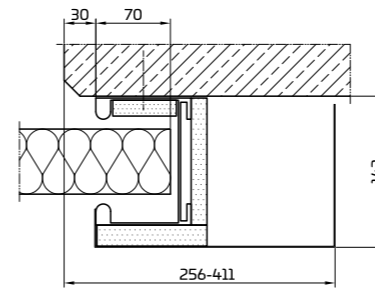
Concrete wall



Installation variants of inlet profile EI90

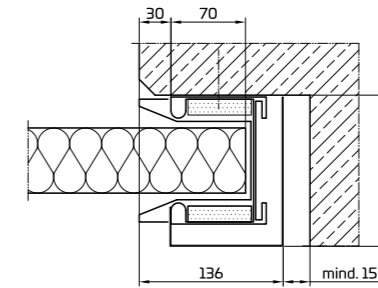
Normal inlet

Concrete wall



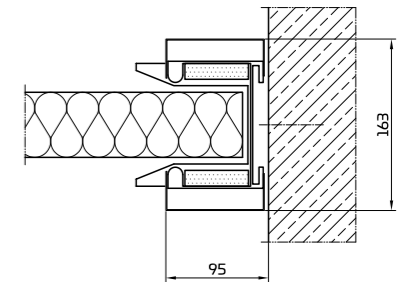
Weight deflected

Concrete wall

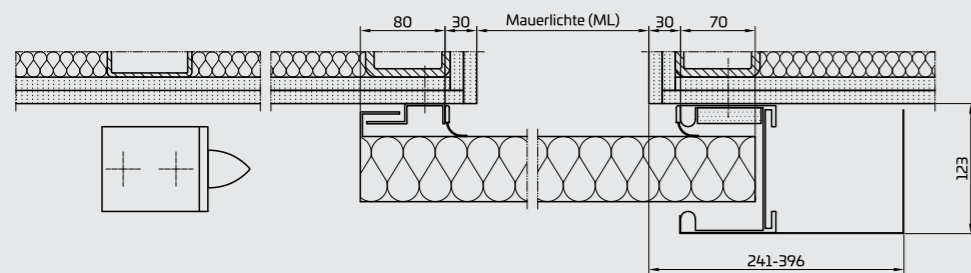


Flush inlet

Concrete wall

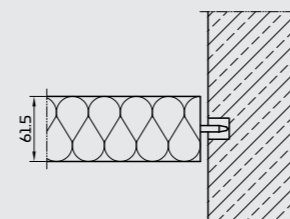


Sliding gate single-leaf normal inlet EI30 with smoke protection, dry wall construction

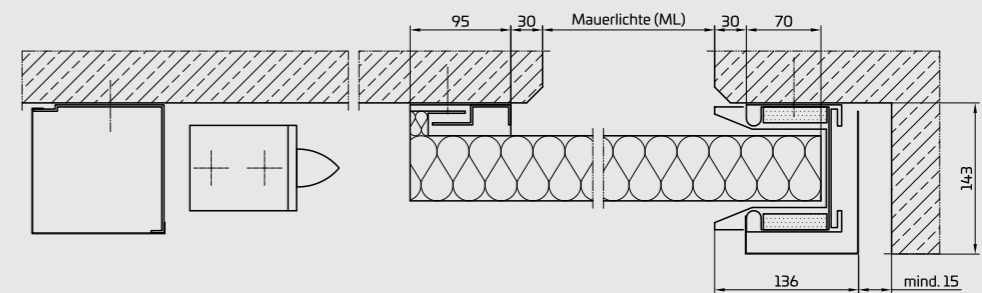


Installation without inlet profile

Concrete wall



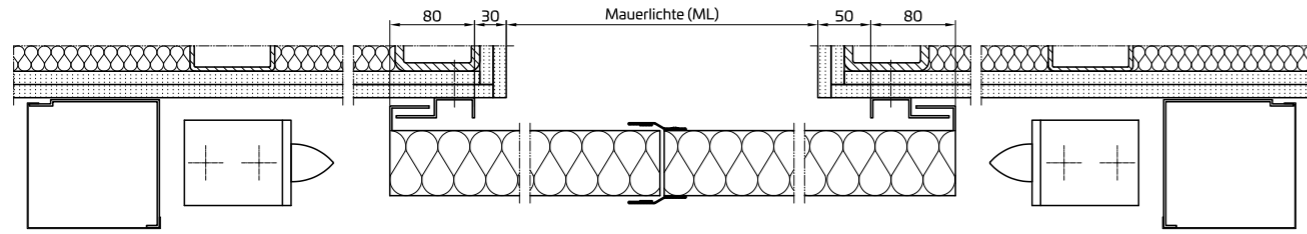
Sliding gate, single-leaf Weight deflected EI90, concrete wall



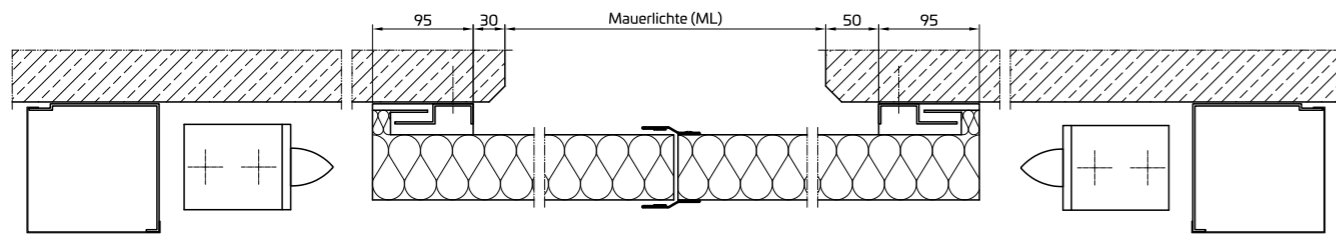
PENEDERrail

Sectional drawings (selection)

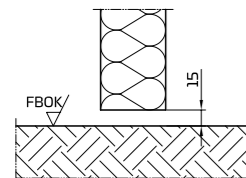
Sliding gate double-leaf with weight box EI30, dry wall construction



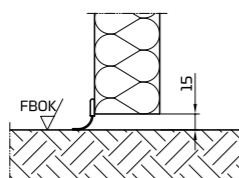
Sliding gate double-leaf with weight box EI90, concrete wall



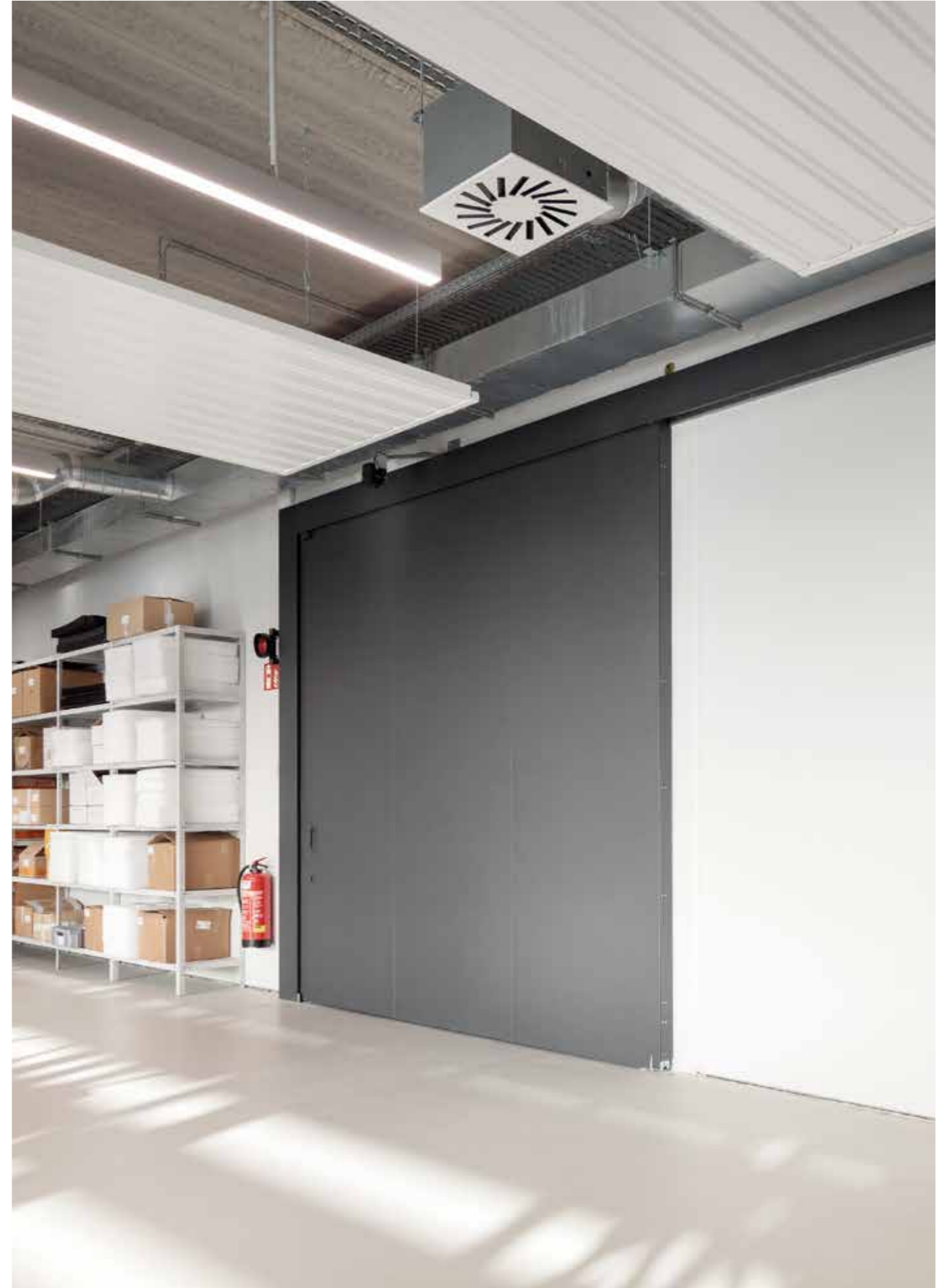
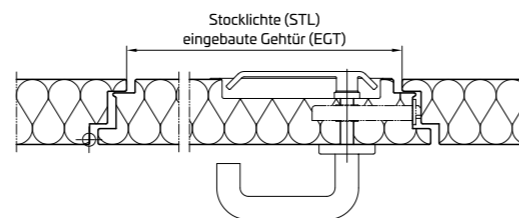
Baseboard
Floor clearance 15 mm



Baseboard with smoke protection



Built-in pedestrian door

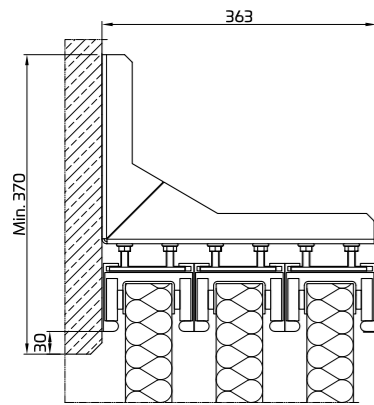


PENEDERrail extended

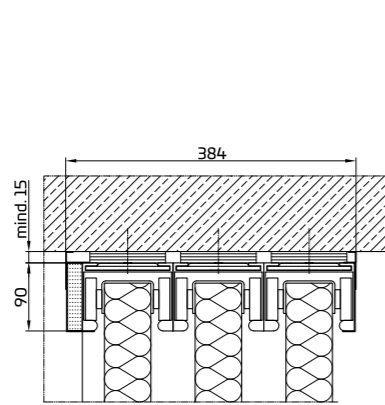
Sectional drawings (selection)

Installation variants of three-piece sliding rail EI30 concrete wall (up to four pieces are possible)

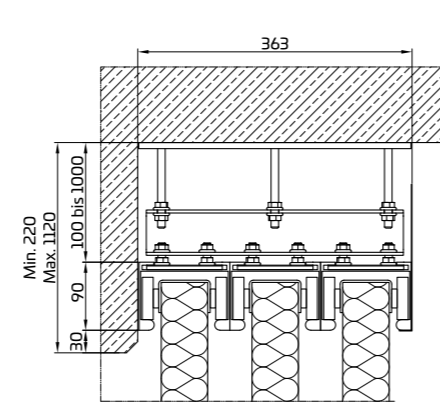
Wall-mounted variant



Ceiling-mounted direct variant

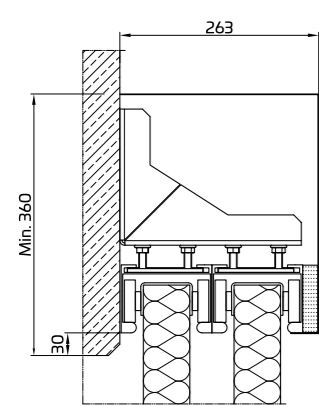


Suspended ceiling-mounted variant

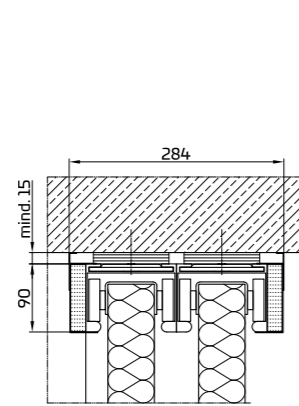


Installation variants of two-piece sliding rail EI90 concrete wall

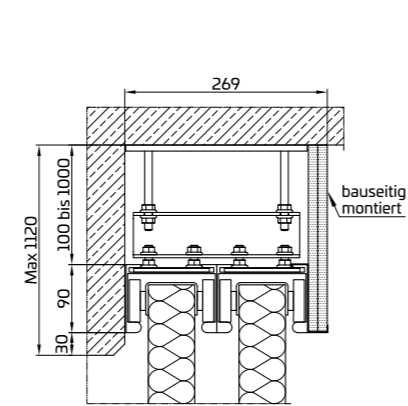
Wall-mounted variant



Ceiling-mounted direct variant



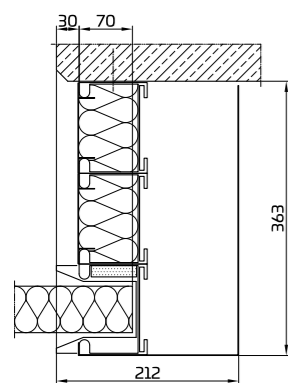
Suspended ceiling-mounted variant



Installation variants of inlet profile EI30-EI90

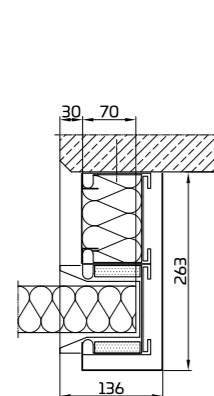
Normal inlet

Three-piece concrete wall EI30



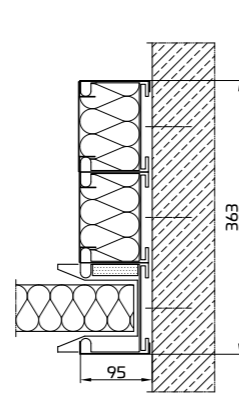
Weight deflected

Two-piece concrete wall EI90



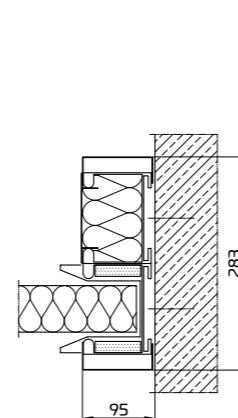
Flush inlet

Three-piece concrete wall EI30



Flush inlet

Two-piece concrete wall EI90



Glazing and building hinges

Our range includes all shapes of glazing, which are always tailored to the individual requirements of our customers. Regardless of whether PENEDER glass cutouts in the element or the built-in pedestrian door are rectangular, circular or of special shapes, there are virtually no limits to their possible designs.



Screw-on glazing bar in stainless steel or powder-coated, choice of RAL colours



Screw-on glazing bar in stainless steel or powder-coated, choice of RAL colours



3D adjustable building hinges made from stainless steel

Door closer with built-in pedestrian door and controls of sliding gate



Integrated door closer



Shell handle, powder-coated

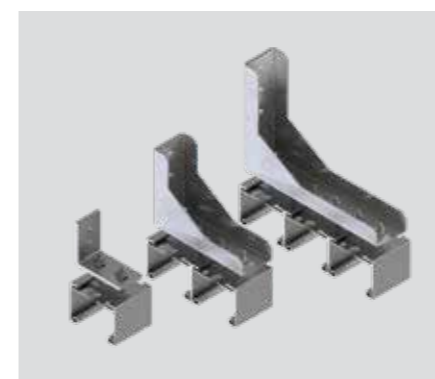


Stainless steel shell handle

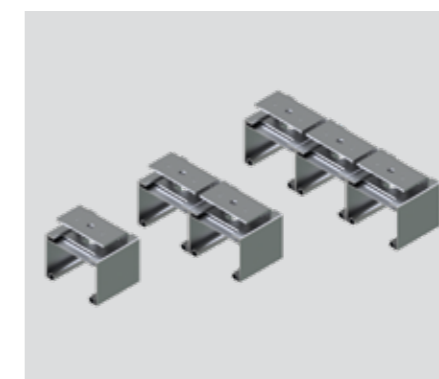


Push/pull door handle, powder-coated with circle deadlock

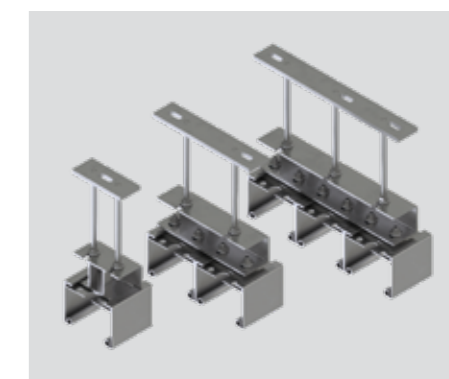
Installation variants of 1-, 2- and 3-piece sliding rail



Wall-mounted variant



Direct ceiling mounting



Suspended ceiling-mounted

Fittings with built-in pedestrian door

Make your own mind up about our wide selection of different fittings that are available in stainless steel, aluminium or plastic.

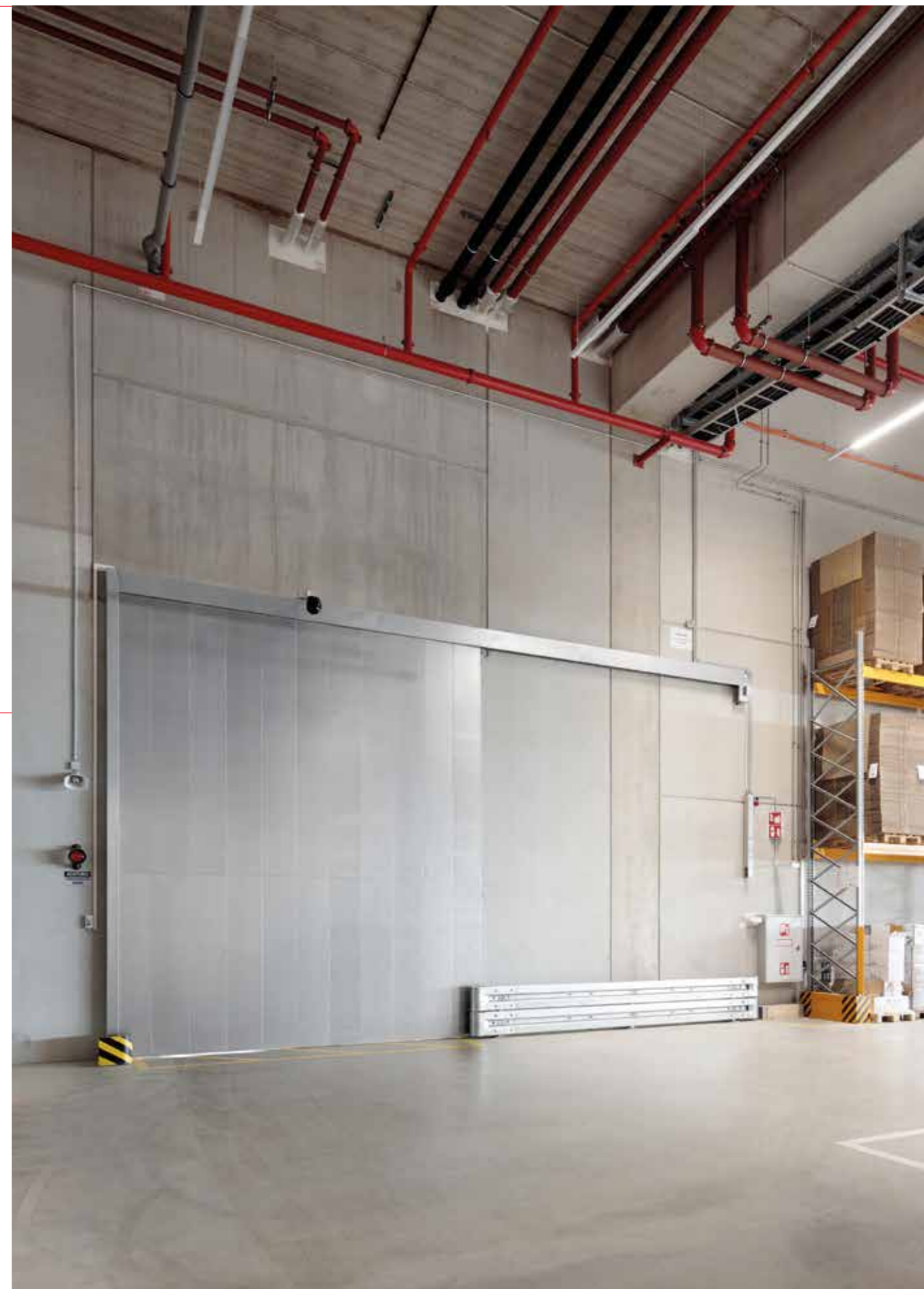


Shell handle with built-in pedestrian door

Shell handle with panic function as per EN 179 with built-in pedestrian door

Push bar with built-in pedestrian door

Push bar with built-in pedestrian door



PENEDERrun

Behind the scenes

We recommend using PENEDERrun anywhere where fast opening is important. The elegant automatic gate stands out due to its impressive size and high-quality features including, for example, stainless steel surfaces with glass cut-outs or a built-in threshold-free pedestrian door including a panic handle.

PENEDERrun is approved for use with drives produced by many manufacturers and is suitable for people as well as goods and vehicle traffic. This means that the visually attractive automatic gate is mainly used in hospitals, supermarkets and restaurants.

Sizes (clearance)

EI₂30-C* up to 5,800 x 4,200 mm (max. 16.27 m²)

* C0 to C5 self-locking, depending on the version
(Size, weight, etc.); actual sizes depend on the class, design and drive



With the European CE mark according to EN 16034 and/or EN 13241




Facts



Special features:

- Can be implemented in unrivalled sizes
- Fast opening speed
- C- to C5 self-closing
- Approved drives made by the following manufacturers:
Assa Abloy, Ditec Entrematic, Dormakaba, Geze, Gilgen, GU BKS, Record, Reisinger and Tormax

optimised for the **restaurant trade**

	run-00 single/double-leaf	run-30 single/double-leaf
 EI ₂ 30 fire-retardant		✓
 Escape and emergency routes in built-in pedestrian door	✓	✓
 Surface made of stainless steel	✓	✓
Built-in pedestrian door	✓	✓
Glass cutout	✓	✓

Combination options depending on the size, class and version

Behind the scenes

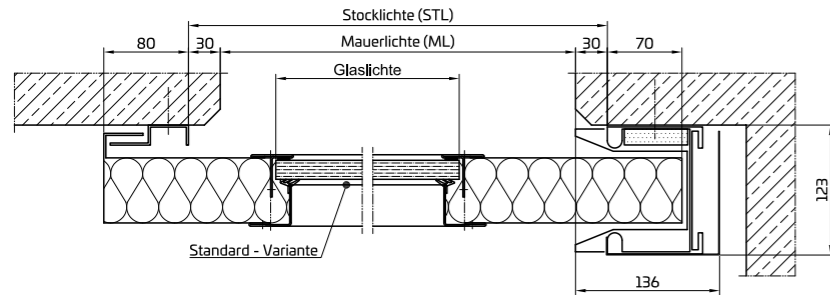


- 1 Single-leaf with porthole
- 2 Double-leaf

PENEDERrun

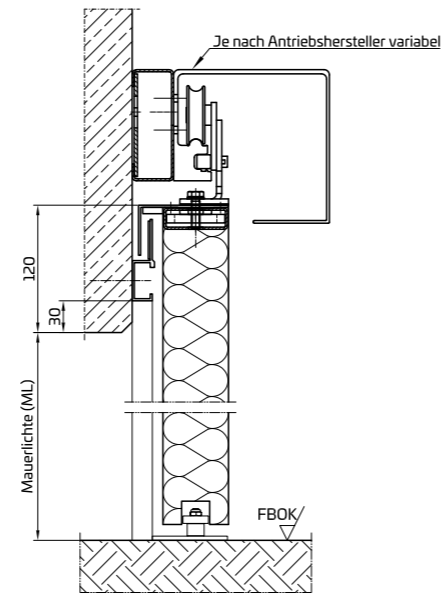
Sectional drawings (selection)

High-speed gate, single-leaf
with glazing, concrete wall

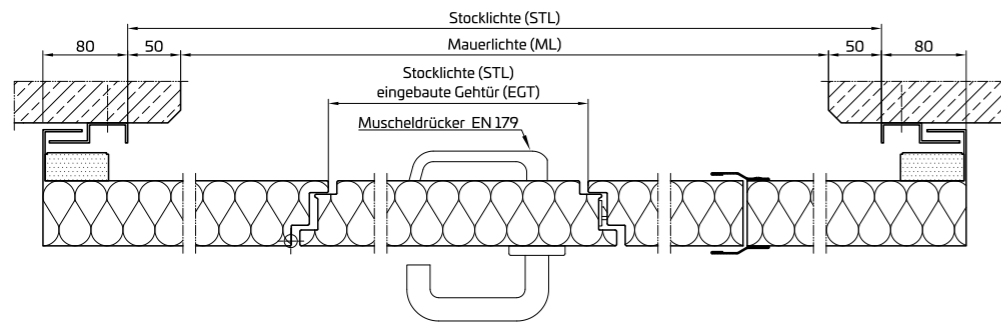


Installing drive supports

Dimensions vary depending on the drive manufacturer

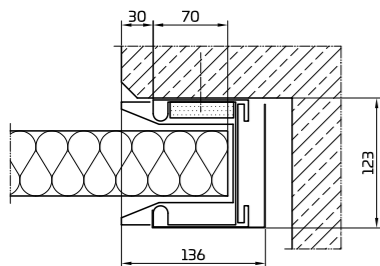


High-speed gate, double-leaf
with built-in pedestrian door, concrete wall

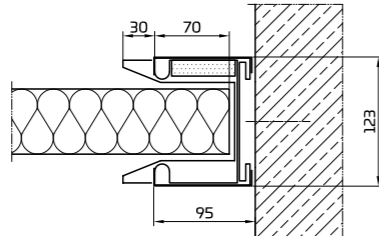


Installation variants of inlet profile

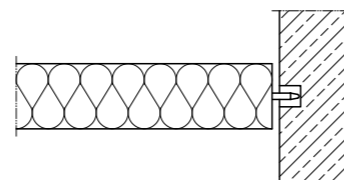
Normal inlet
Concrete wall



Flush inlet
Concrete wall



Without inlet profile
Concrete wall



Glazing

Our range includes all shapes of glazing, which are always tailored to the individual requirements of our customers. Regardless of whether PENEDER glass cutouts in the element or the built-in pedestrian door are rectangular, circular or of special shapes, there are virtually no limits to their possible designs.



Glazing bar screwed flat on one side or both sides in stainless steel or powder-coated, choice of RAL colours

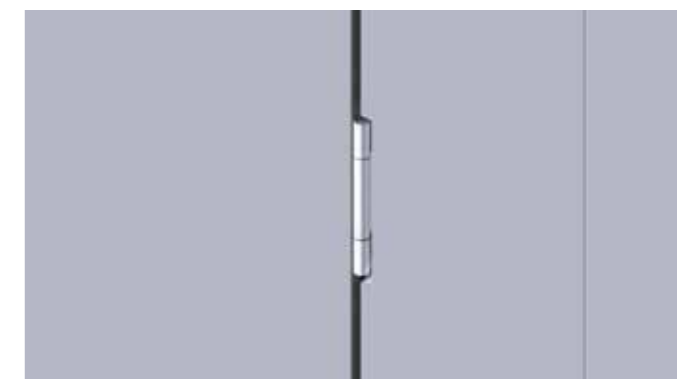


Glazing bar screwed flat on one side in stainless steel or powder-coated, choice of RAL colours

Door closers and hinges with built-in pedestrian door



Integrated door closer



Building hinges made from stainless steel

Fittings with built-in pedestrian door

Make your own mind up about our wide selection of different fittings that are available in stainless steel, aluminium or plastic.



Shell handle with built-in pedestrian door

Shell handle with panic function as per EN 179 with built-in pedestrian door

Push bar with built-in pedestrian door

Push bar with built-in pedestrian door

PENERlift

With limited amounts of space

If there is not a lot of space at the sides, PENERlift is the perfect solution on industrial premises or in central storage facilities, for example. The high-quality lift gate is used with openings of 500 mm x 600 mm and above and is fitted with a suspension chain which we developed in-house which means that it closes precisely and without jerking. Closing is carried out either manually or automatically and is extremely quiet.

PENERlift is available as a fire- and/or smoke-protection gate. The lift gate is also available as the PENERlift extended telescopic version with a built-in threshold-free pedestrian door.

Sizes (clearance)

Width* up to 16,000 mm
 Height* up to 5,500 mm
 Gate surface* up to 50 m²

* The actual sizes depend on the class and version



With the European CE mark according to EN 16034 and/or EN 13241

Facts



Special features:

- Solid opening and closing
- Built-in pedestrian door possible
- Suspension chain developed in-house
- C2 self-closing

The perfect solution for **high-bay warehouses**

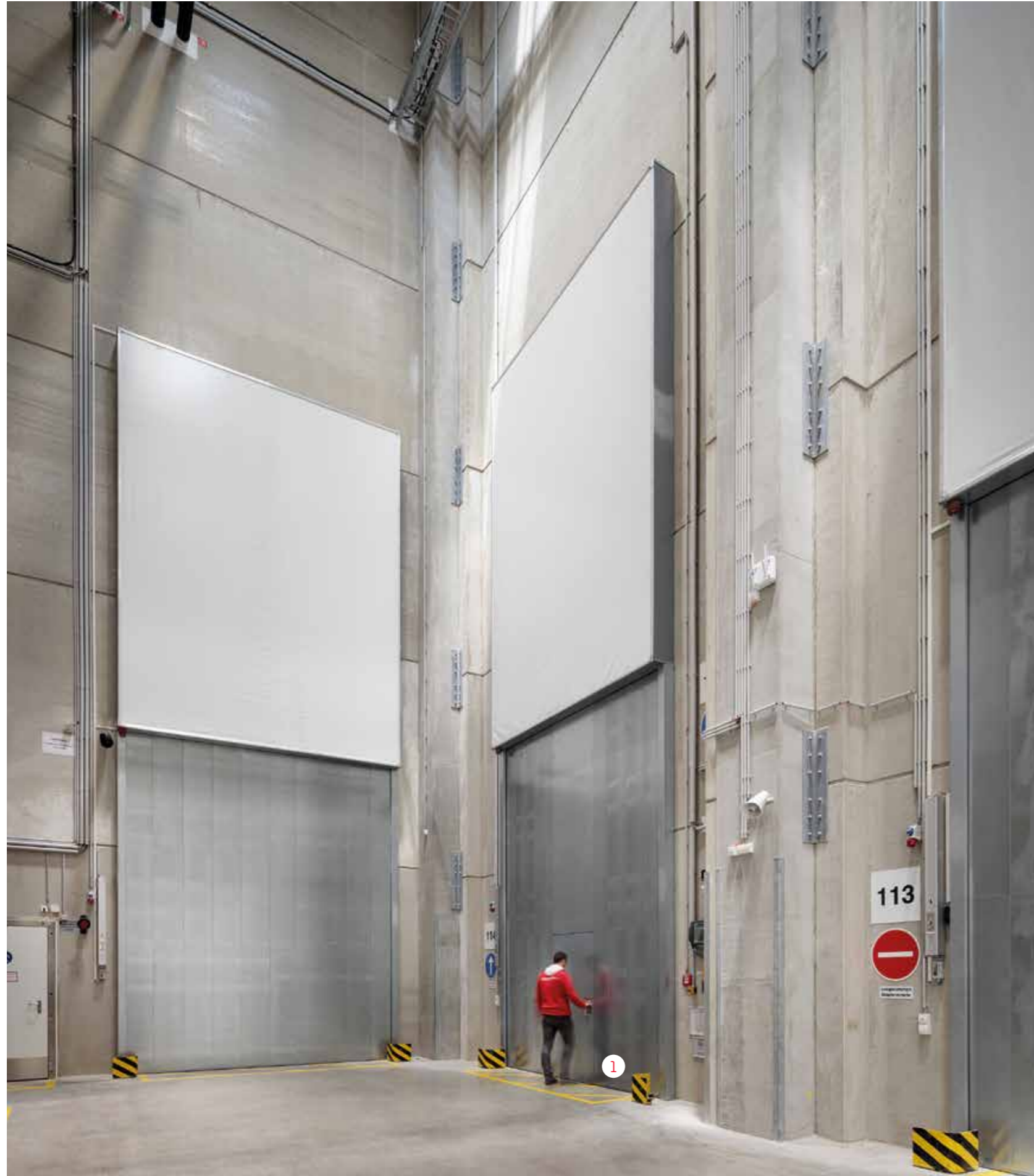
PENERlift	lift-00 single-leaf	lift-30 single-leaf	lift-90 single-leaf
E1,30 fire-retardant		✓	
E1,90 fire-resistant			✓
S ₂₀₀ smoke-shielding	✓	✓	✓
Surface made of stainless steel	✓	✓	✓
Glass cut-outs and built-in pedestrian door	✓	✓	✓

Combination options depending on the size, class and version

PENERlift extended Telescopic version	lift ext-00 two-piece	lift ext-30 two-piece	lift ext-90 two-piece
E1,30 fire-retardant		✓	
E1,90 fire-resistant			✓
Surface made of stainless steel	✓	✓	✓
Glass cut-outs and built-in pedestrian door	✓	✓	✓

Combination options depending on the size, class and version

Limited amounts of space



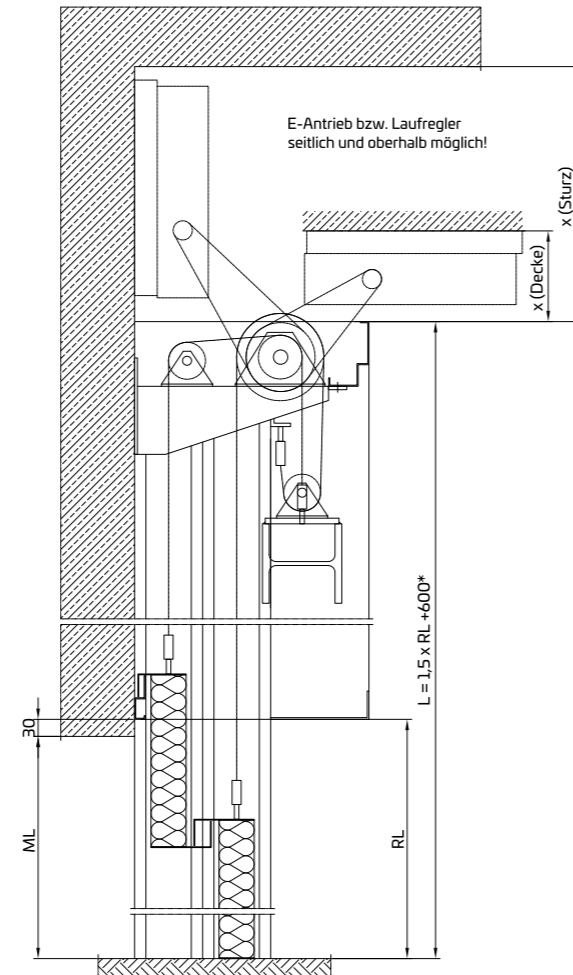
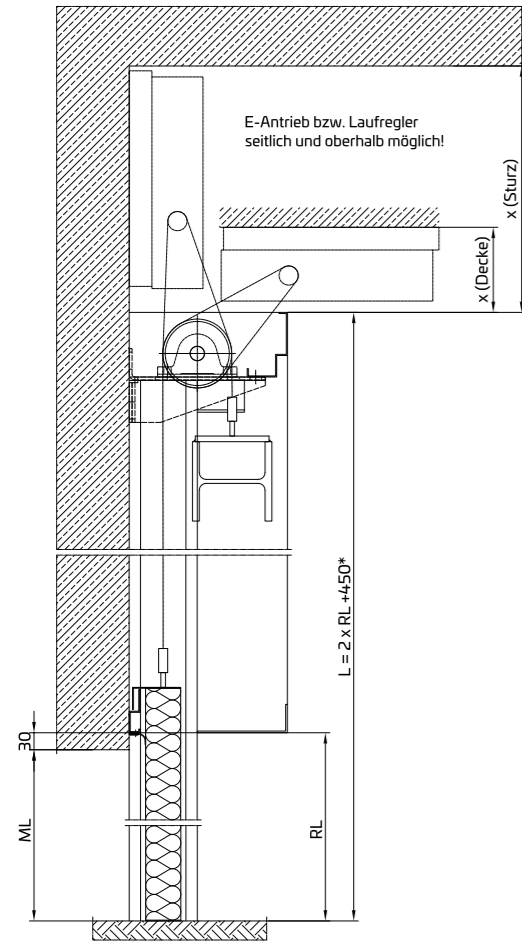
- 1 1-piece with pedestrian door
- 2 2-piece with telescopic function

PENERlift

Sectional drawings (selection)

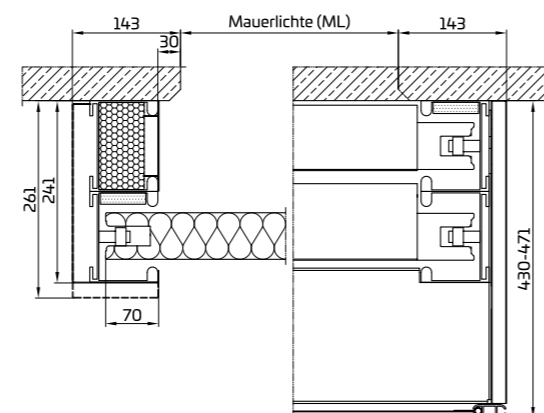
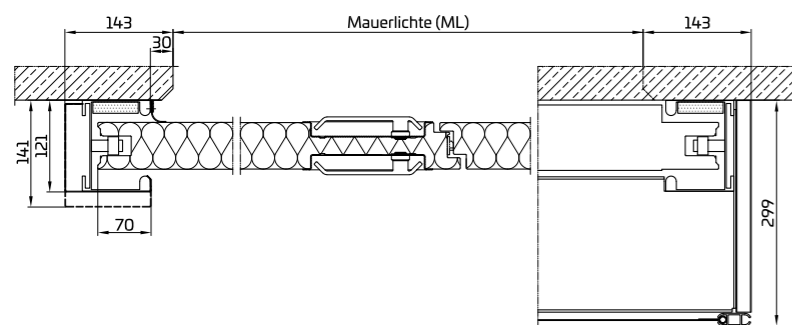
Lift gate with smoke protection

Telescopic lift gate



Lateral guide of lift gate with smoke protection and built-in pedestrian door

Lateral guide of telescopic lift gate



Door hinge, closer and shell handle with built-in pedestrian door



3D-adjustable hinges made from stainless steel



Integrated door closer



Shell handle

Controls of gate leaf



Shell handle, powder-coated



Stainless steel shell handle

Safety made from **aluminium glass**

Our elegant solutions made from aluminium and glass demonstrate how it is possible to interpret safety in an elegant architectural way.

Doors integrate visually into any spaces, which means that they melt seamlessly into an attractive whole. This is safety at its most beautiful.



Manufacturing shop at the **Atzbach** site



PENEDERtherm

Visual appeal meets functionality

PENEDERtherm is a thermally separated fire protection door for indoor and outdoor areas. This graceful all-purpose swing door is available with fire protection, smoke protection or anti-burglary protection. We also have available a wide range of additional designs like side panels and/or skylights as well as diagonal shapes, segment arches and special shapes, for example. PENEDERtherm can be used both as fixed glazing with an unlimited field width and as a mounted, cross-storey window façade, for example.

Internal doors (effective clear opening)

Single-leaf* up to 1,458 mm x 3,000 mm
 Double-leaf* up to 2,858 mm x 3,000 mm
 Leaf weight of EI₂30-C5 up to 250 kg possible
 Leaf weight of EI₂60-C5/EI₂90-C5 up to 300 kg possible

External doors (effective clear opening)

Single-leaf* up to 1,450 x 2,600 mm
 Double-leaf* up to 2,851 x 2,600 mm
 Leaf weight of EI₂30-C5 up to 250 kg possible

Side panel/skylight

Glass width* up to 1,586 mm
 Structure height* up to 4,120 mm



EXTERNAL DOORS: With the European CE mark according to 14351-1 and/or EN 16034



INTERNAL DOORS: With Austrian certificate of registration according to ÖNORM B 3850/51

Fixed glazing

Infinite width* possible
 Glass width* up to 1,586 mm
 Structure height* up to 5,000 mm

* The actual sizes depend on the class and version

	therm-00 single/ double-leaf	therm-S single/ double-leaf	therm-30 single/ double-leaf	therm-60 single/ double-leaf	therm-90 single/ double-leaf	therm-fix fixed element
Without fire protection	✓					✓
EI ₂ 30 fire-retardant			✓			✓
EI ₂ 60 highly fire-retardant				✓		✓
EI ₂ 90 fire-resistant					✓	✓
S ₂₀₀ smoke-shielding		✓	✓	✓	✓	
Sound-insulating up to 42 dB	✓	✓	✓	✓	✓	
RC2 anti-burglary protection		✓	✓			
External door (CE)		✓	✓			
Escape and emergency routes	✓	✓	✓	✓	✓	
Skylight/side panel	✓	✓	✓	✓		

Combination options depending on the size, class and version

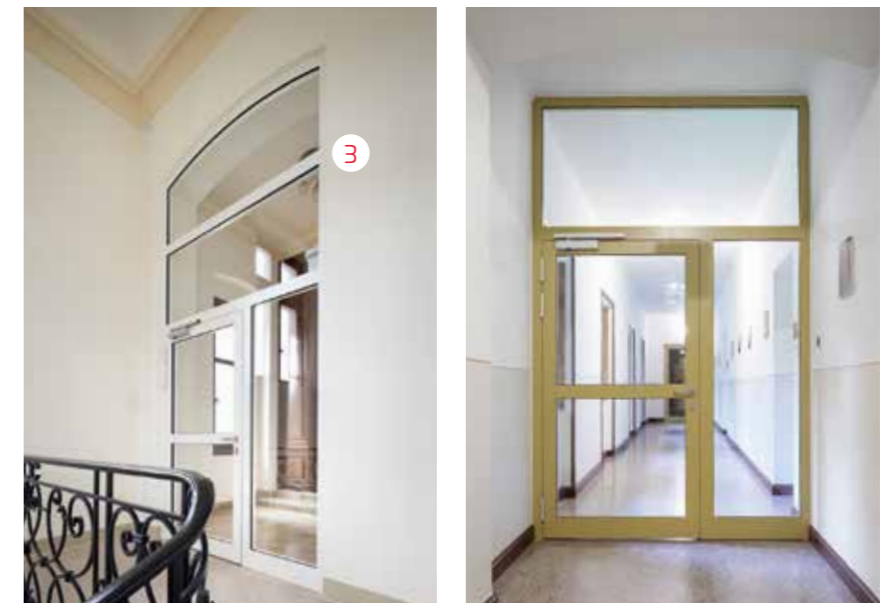
Special features:

- Insulating glass outdoors (3-layer fire-resistant glass up to U 0.5 W/m²K)
- Integrated or surface-mounted door check, automatic swing door drive possible
- Integrated carry bar, can be used on a wide range of locks
- Surfaces anodised, RAL, NCS, effect coating
- With panic exit device tested as per EN 1125 and EN 179
- C5 self-closing

Fire compartment portal with panic bar

Facts

Visually appealing and functional

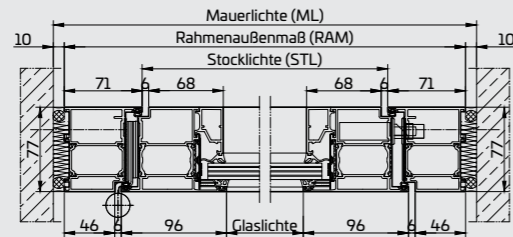


- 1 EI,30 fixed element with Nurglas joint
- 2 Double-leaf lock door with panic bar
- 3 Divided skylight with segment arch

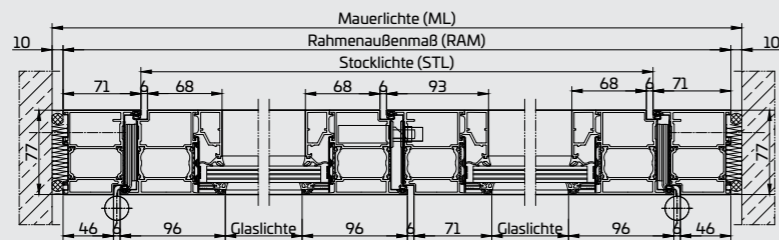
PENEDERtherm

Horizontal sections (selection)

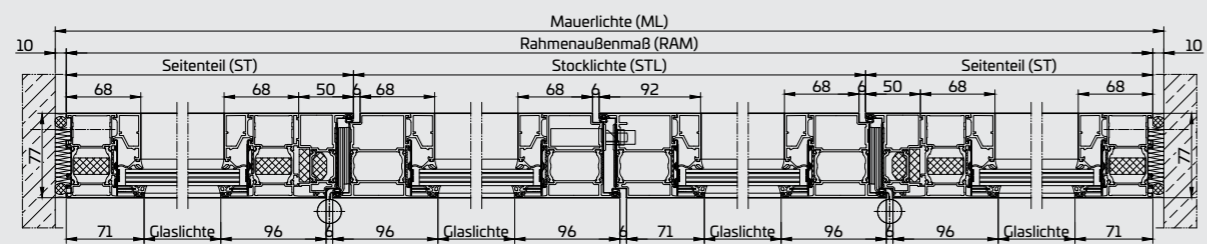
Single-leaf



Double-leaf

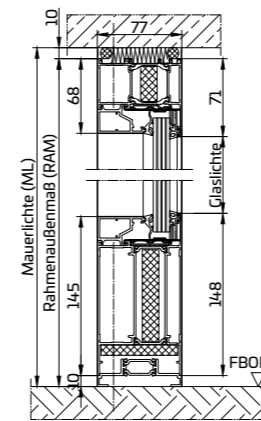


Double-leaf including side panels

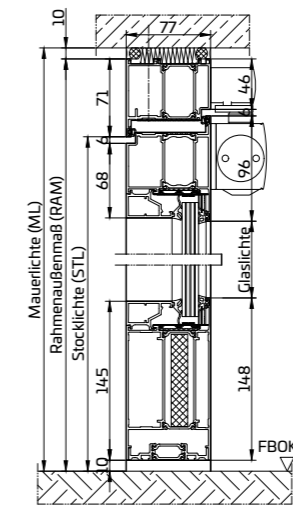


Vertical sections (selection)

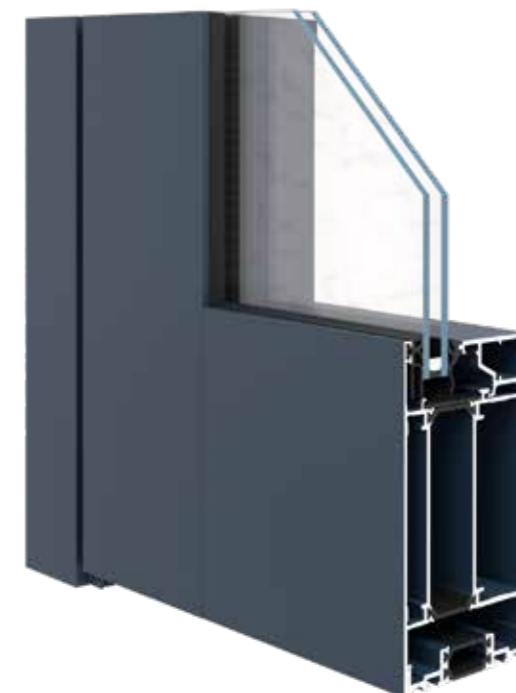
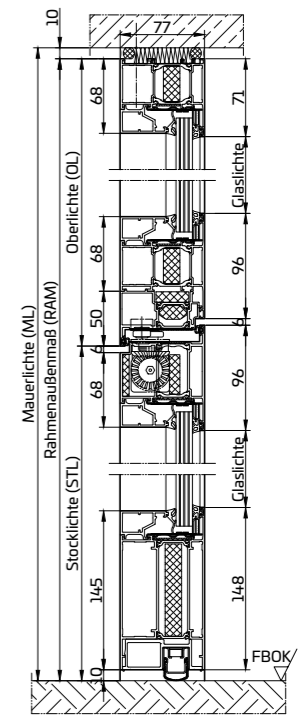
Fixed glazing



With surface-mounted door check and floor clearance



With the skylight, integrated door closer and lowerable floor seal



3D profile section
PENEDERtherm

PENERlight

Transparent beauty for indoors

PENERlight is an elegant fire protection door for indoor areas. This high-quality swing door is available with side panels and/or skylights as well as diagonal shapes, segment arches and special shapes. Apart from this, it is available as a smoke protection version, which you can use with fixed glazing with an unlimited field width.

Sizes (effective clear opening)

Width* single-leaf up to 1,350 mm
 Width* double-leaf up to 2,500 mm
 Height* up to 2,500 mm

Weight of leaf

Up to 190 kg possible

Side panel/skylight

Glass width of single- and double-leaf up to 1,284 mm
 Structure height up to 3,200 mm

Fixed glazing

Infinite width possible
 Glass width up to 1,284 mm
 Structure height up to 3,200 mm



INTERNAL DOORS: With Austrian certificate of registration according to ÖNORM B 3850/51



FIXED GLAZING: With Austrian certificate of registration according to the basic usage guideline of the Austrian Institute of Construction Engineering (OIB) Fire-resistant glazing

Facts

Special features:

- Surface-mounted door check, automatic swing door drive possible
- Integrated carry bar, can be used on a wide range of locks
- Surfaces anodised, RAL, NCS or effect coating
- S₂₀₀ with property-related assessment only
- With panic exit device tested as per ÖNORM EN 1125 and ÖNORM EN 179

Double-leaf Fixed leaf can be opened by 180° with external retaining magnets

	light-30 single/double-leaf	light-fix fixed element
E30 fire-retardant	✓	✓
EW30 fire-retardant	✓	✓
S ₂₀₀ smoke-shielding	✓*	
Escape and emergency routes	✓	
Skylight/side panel	✓	

Combination options depending on the size, class and version

* With property-related assessment only

Beauty for indoors

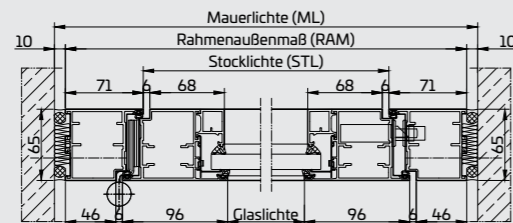


- 1 Double-leaf with barrel hinge
- 2 Glass divided horizontally
- 3 Side panel and skylight

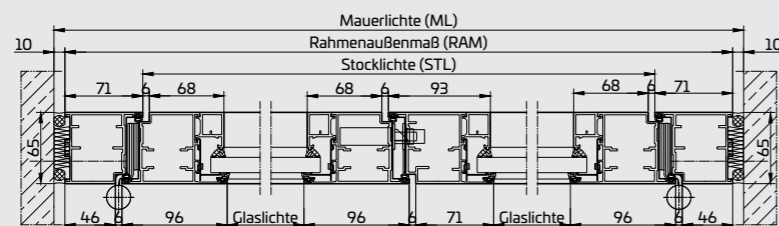
PENERlight

Horizontal sections (selection)

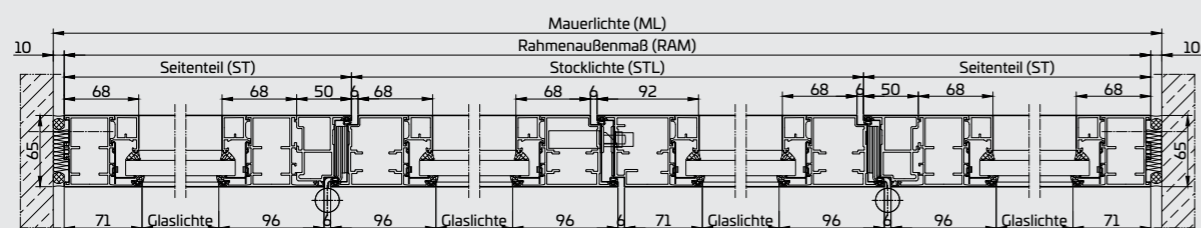
Single-leaf



Double-leaf

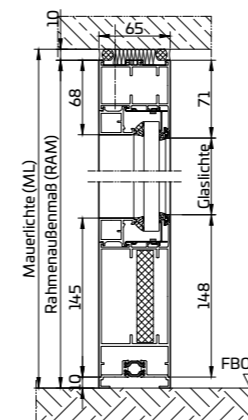


Double-leaf including side panels

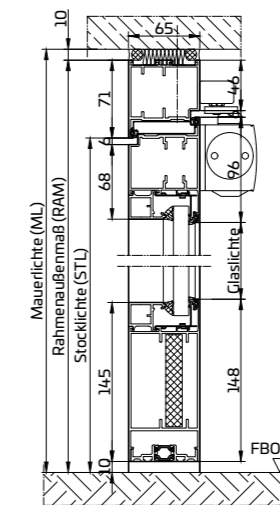


Vertical sections (selection)

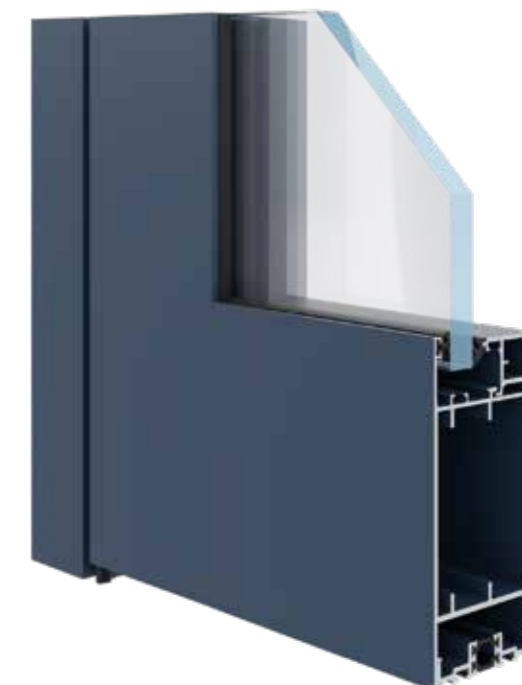
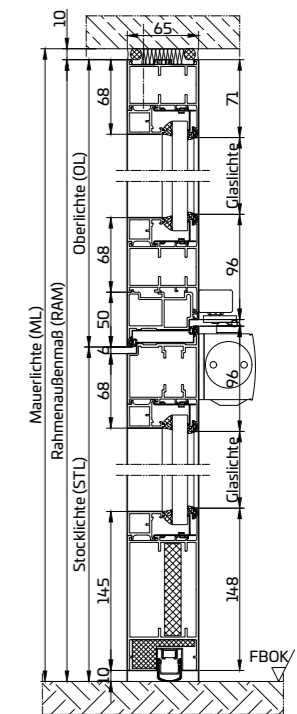
Fixed glazing



With surface-mounted door check and floor clearance



With skylight, surface-mounted door check and lowerable floor seal



3D profile section
PENERlight

PENEDERpro

Insulates and protects

PENEDERpro is a high-quality frame door made from aluminium for use in outside areas. It has a high level of thermal insulation and an excellent U-value. The PENEDERpro is available in a wide range of designs, including hidden door hinges, for example. Side panels and skylights as well as many other design elements are possible like round arches, decorative mullions or chamfering. In addition to this, you can use PENEDERpro as fixed glazing.

Sizes

The possible sizes are determined by the structural design, necessary wind, air and water values or the glass size.



With the European CE mark according to EN 14351-1

Facts

Weight of leaf

Up to 250 kg possible

U-values

Door up to 1.3 W/m²K

Window up to 0.86 W/m²K

Fixed element up to 0.6 W/m²K



Special features:

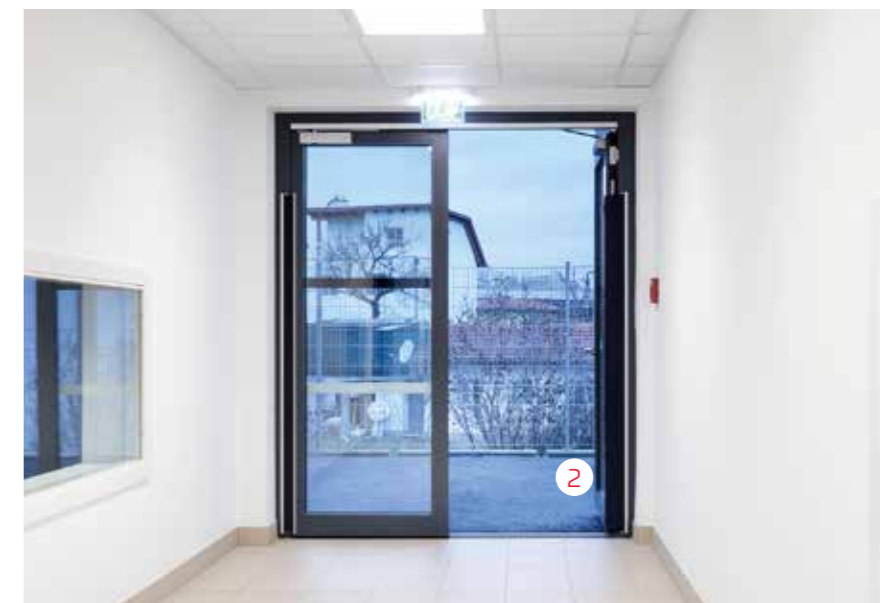
- High level of thermal insulation for outdoor areas
- With anti-burglary protection as per EN 1627
- Surfaces anodised, RAL, NCS and effect coating
- Also possible as a tilt and turn window
- Disabled-accessible threshold

	pro-00 single/double-leaf	pro-00 tilt and turn window	pro-00 fixed element
00 Without fire protection	✓	✓	✓
<42 Sound-insulating up to 42 dB	✓		
RC2 anti-burglary protection	✓	✓	
RC3 anti-burglary protection	✓	✓	
CE external application	✓	✓	
Escape and emergency routes	✓		
Skylight/side panel	✓	✓	

Combination options depending on the size, class and version

Double-leaf with RC3 anti-burglary protection

Insulates and protects

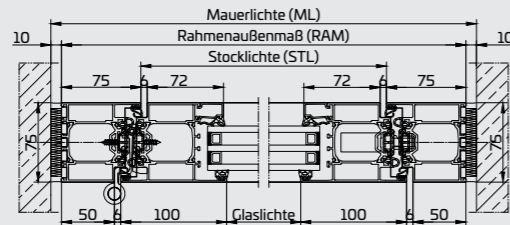


- 1 Aluminium portal with tilt and turn window
- 2 Double-leaf emergency exit function on the active door leaf

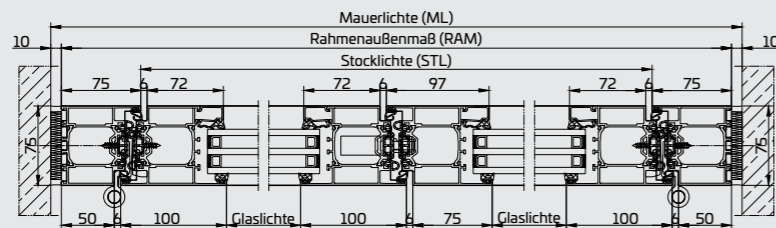
PENEDERpro

Horizontal sections (selection)

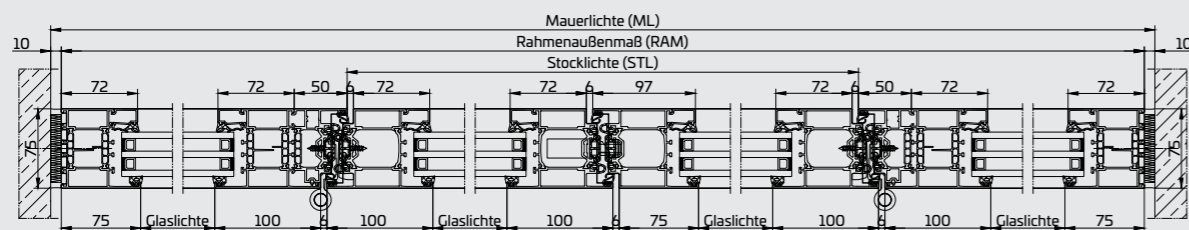
Single-leaf



Double-leaf

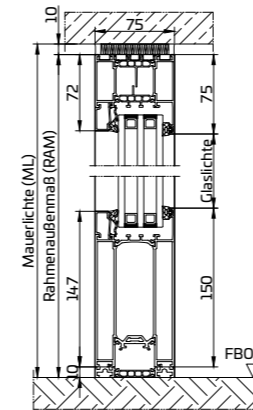


Double-leaf including side panels

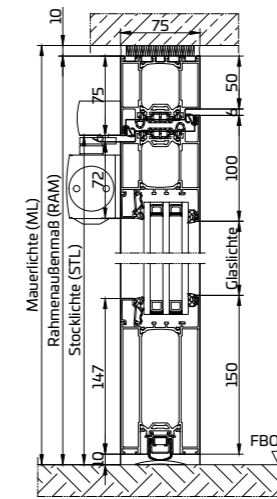


Vertical sections (selection)

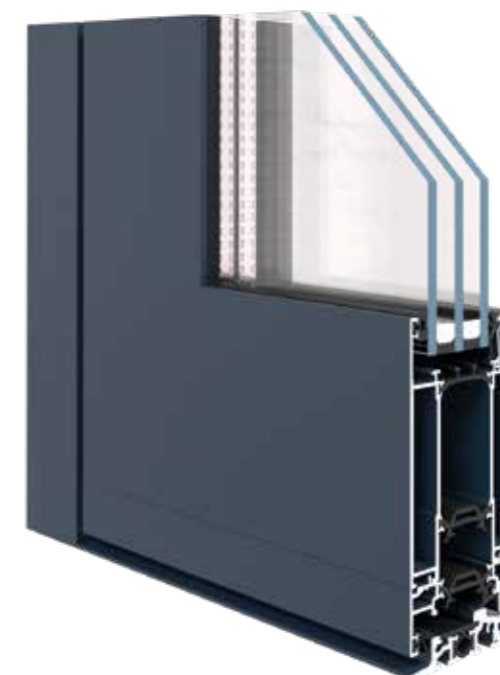
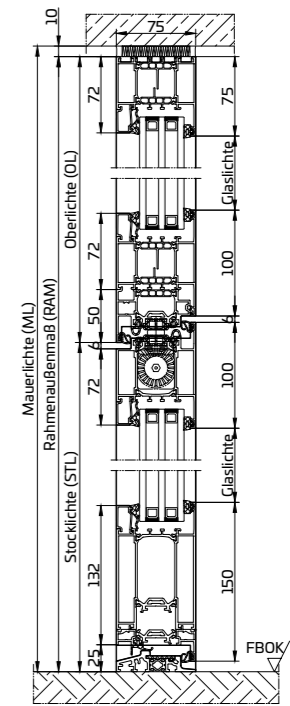
Fixed glazing



With surface-mounted door check and floor seal



With skylight, integrated door closer and thermally separated ground sill



3D profile section
PENEDERpro

PENERbasic

The classical room closure

PENERbasic is a simple frame door for special applications or indoor ones, like porches or winter gardens, for example. It is possible to combine the relatively light frame door with side panels and a skylight as well as to use it as fixed glazing.

Sizes (effective clear opening)

Up to 1,300 mm width and 2,200 mm height or
1,100 mm width and 2,300 mm height

Weight of leaf

Up to 170 kg possible

	basic-00 Single/double-leaf	basic-00 Fixed element
 Without fire protection	✓	✓
 Escape and emergency routes	✓	
Skylight/side panel	✓	

Special features:

- Non-insulated aluminium door or fixed glazing
- Surfaces anodised, RAL, NCS or effect coating
- Emergency exit door systems as per EN 1125 and EN 179

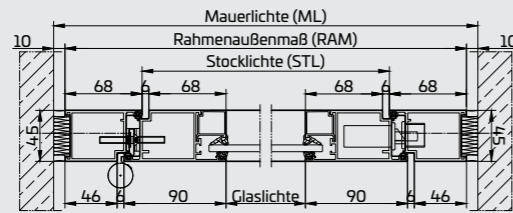
Plain office entrance door with entry control



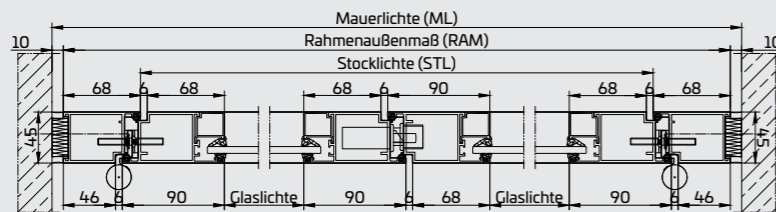
PENERbasic

Horizontal sections (selection)

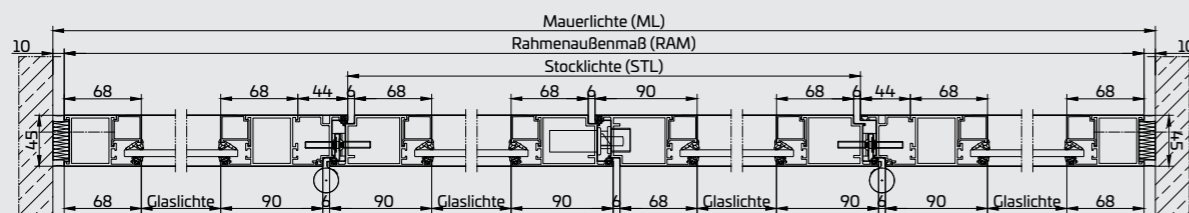
Single-leaf



Double-leaf

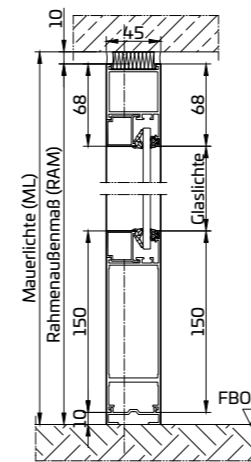


Double-leaf including side panels

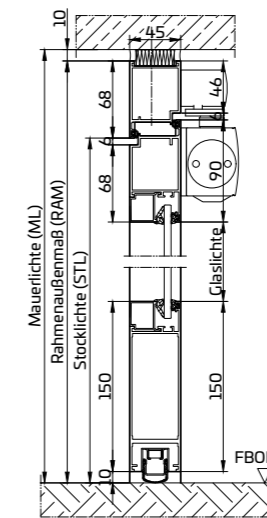


Vertical sections (selection)

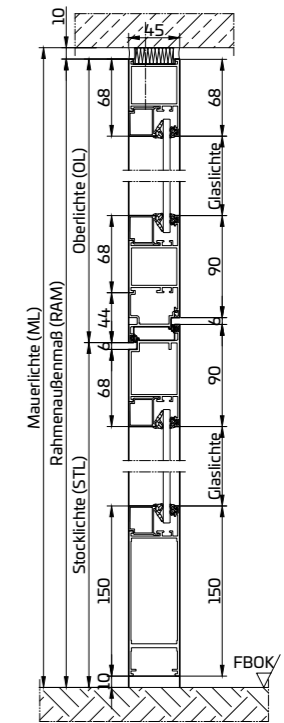
Fixed glazing



With surface-mounted door check and lowerable floor seal



With skylight



3D profile section
PENERbasic

PENEDERstrong

Extravagant protection

PENEDERstrong is a high-quality swing door with fire protection for use in indoor areas. It is used wherever people need to pass through quickly, like in hotel lobbies or museums, for example. Profile frames are available in a wide variety of different colours or in stainless steel, the glazing bars are not visible. It is possible to open PENEDERstrong in both directions without an end stop and you can combine it with PENEDERNurglas side panels and skylights as well as using it as fixed glazing with fire protection in indoor areas.

Sizes (effective clear opening)

Width double-leaf up to 2,200 mm¹⁾/2,530 mm²⁾
 Height up to 2,700 mm¹⁾/2,645 mm²⁾

¹⁾ EI₂30-C5

²⁾ EI₂60-C5



With Austrian certificate of registration according to ÖNORM B 3850

Facts

Side panel/skylight

Version with PENEDERNurglas or frame structure possible on request

	strong-00 Single/double-leaf	strong-30 Double-leaf	strong-60 Double-leaf
00 Without fire protection	✓		
30 EI ₂ 30 fire-retardant		✓	
60 EI ₂ 60 highly fire-retardant			✓
Escape and emergency routes	✓	✓	✓
Skylight/side panel PENEDERNurglas	✓		✓

Combination options depending on the size, class and version

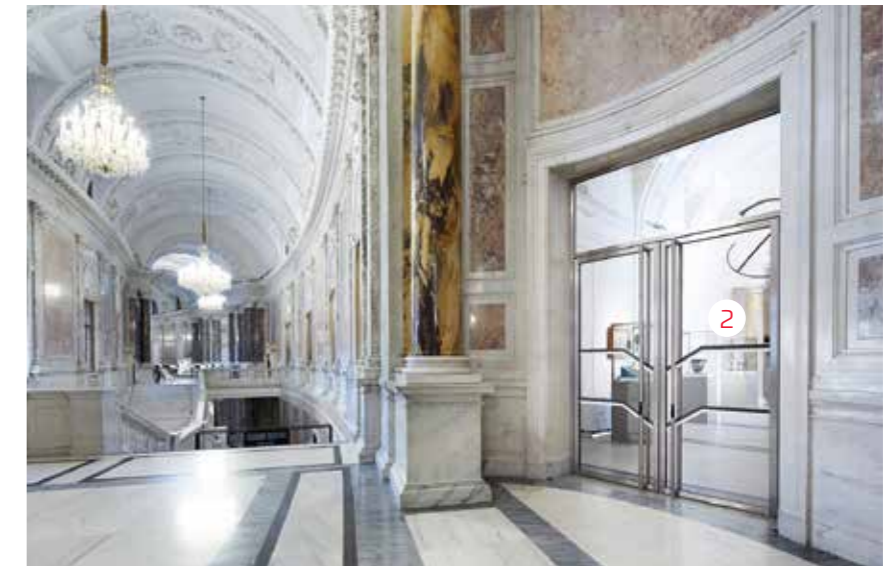
Special features:

- No visible glazing bars, glass is in the middle in the rebate
- Can be combined with PENEDERNurglas side panels and skylight (EI₂60)
- Surfaces anodised, RAL, NCS, effect coating or stainless steel
- Tested as per ÖNORM EN 1634-1, approved as per ÖNORM B 3850
- Alignment possible in both directions of opening

Double-leaf **Stainless steel version**



Extravagant protection

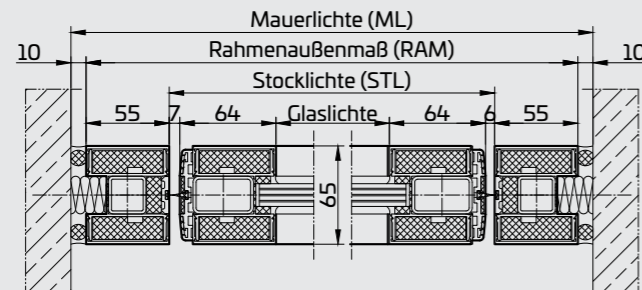


- 1 PENERnurglas skylight
- 2 Glass foilation B1600

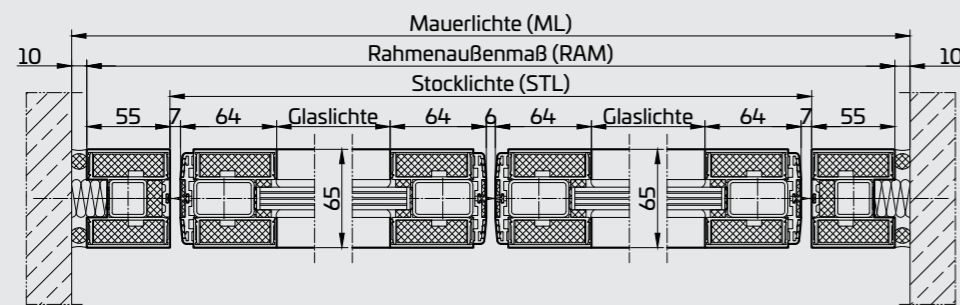
PENEDERstrong

Horizontal sections (selection)

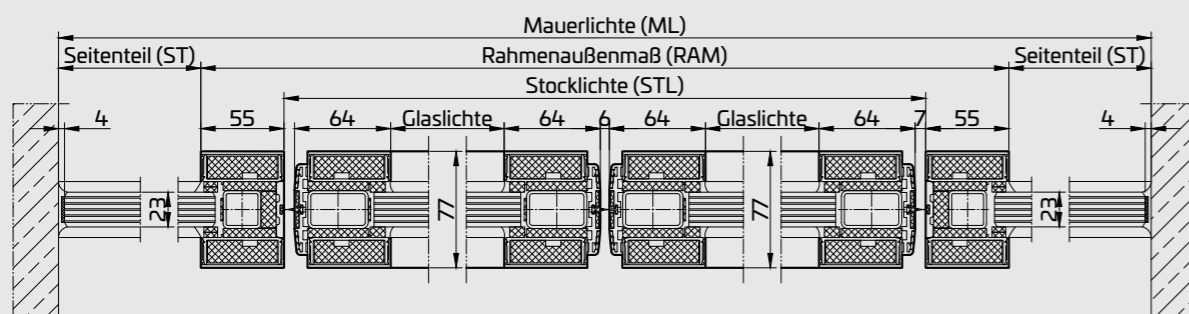
Single-leaf



Double-leaf

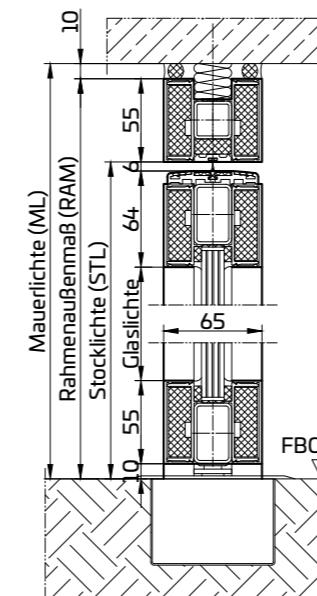


Double-leaf including side panels

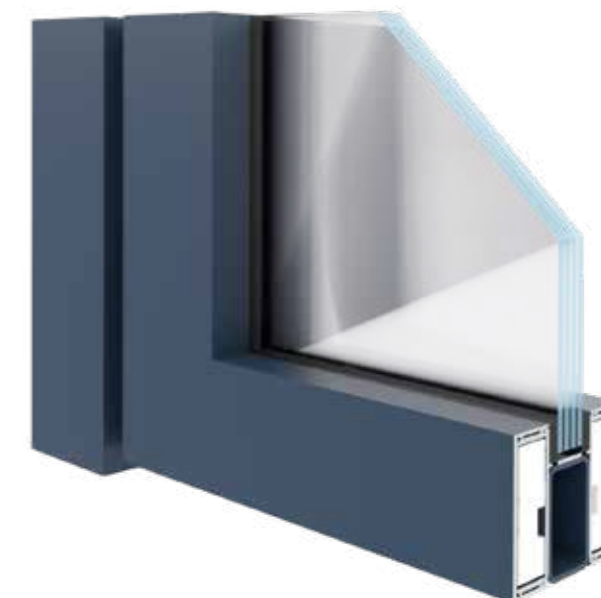
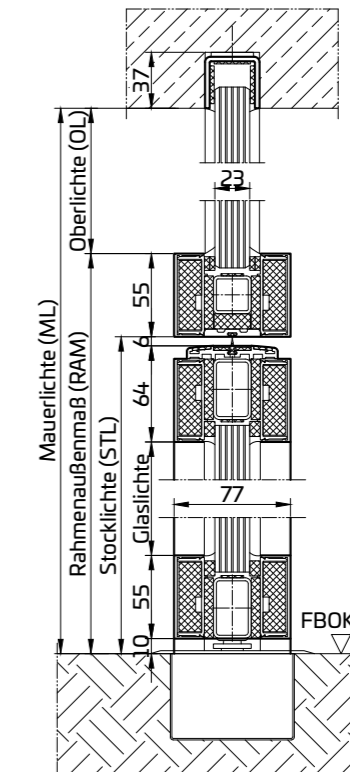


Vertical sections (selection)

With floor spring



With PENEDERNurglas skylight



3D profile section
PENEDERstrong

Swing door

Versions

Leaf fillings



Glass filling



Glass filling with
foliation
by image: B1600



Panel filling

Building hinges



Barrel hinge



Screw-fastened door hinge

Door locking systems



Slide rail door closer



Integrated door closer



Anti-panic keep



Rebate bolt lock

Swing door

Versions



Glass filling



Glass filling with foliage
By image: B1600



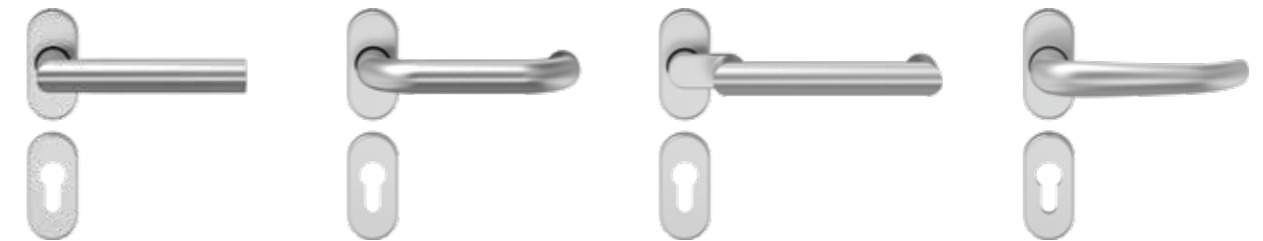
Pivot door hinge covered in the door rebate

Fittings

Rotating wing and swing door selection

Fittings for swing doors

Make your own mind up about our wide selection of different fittings that are available in stainless steel, aluminium or plastic.



Long backplate security fitting plate for RC doors

Push bar



Push bar

Push bar

Fittings for swing doors – available in stainless steel



PENER push bar across the entire leaf height



Door handle with chamfered supports

PENEDERnurglas

Pure elegance

PENEDERnurglas is frameless fixed glazing whose visual appeal and function perfectly complement PENEDER swing doors. The unique fixed glazing with its unlimited field width provide a particularly elegant and attractive effect. This is fire protection at its most elegant.

Sizes (external frame dimensions)

Unlimited field width
Field height max. 2,800 mm

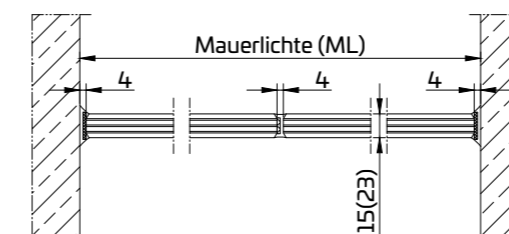


With Austrian certificate of registration according to the basic usage guideline of the Austrian Institute of Construction Engineering (OIB) Fire-resistant glazing

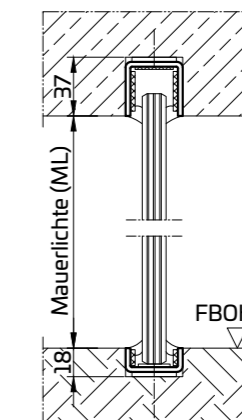
Facts

	nurglas-30	nurglas-60
E130 fire-retardant	✓	
E160 highly fire-retardant		✓

Horizontal section



Vertical section



3D section
PENEDERnurglas

Special features:

- Width can be expanded as far as you like
- Wall ending with butt joint or profile
- No visible fixing profiles (installed flush or embedded in the plaster)
- Can be combined with PENEDERstrong swing door and PENEDERwood
- Tested as per ÖNORM EN 1364-1 and approved with ÜA mark
- fire protection classes E30 and E60 on request

Frameless fire protection



PENEDERhorizontal

For natural room illumination

PENEDERhorizontal is installed in the ceiling under light domes and light runs to reach the specified fire-resistance class with horizontal fire compartments and to make possible natural lighting in the room. PENEDERhorizontal is particularly suitable for large glass surfaces and for retrofitting with refurbishing projects.

Sizes

Max. post spacing 1,000 mm (infinitely buildable)
Max. elongation value 2,700 mm

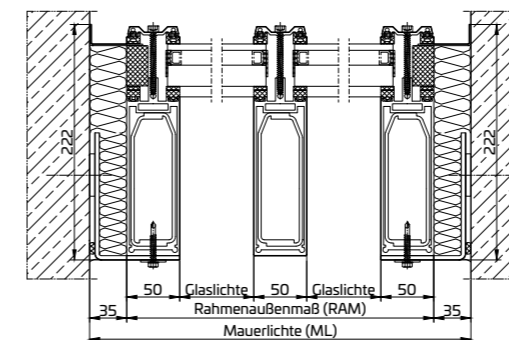
Fire-resistance class REI30



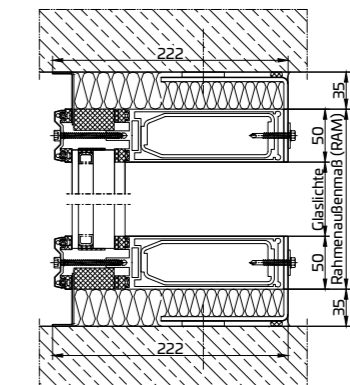
With Austrian certificate of registration according to the basic usage guideline of the Austrian Institute of Construction Engineering (OIB) Fire-resistant glazing

Facts

Horizontal section



Vertical section



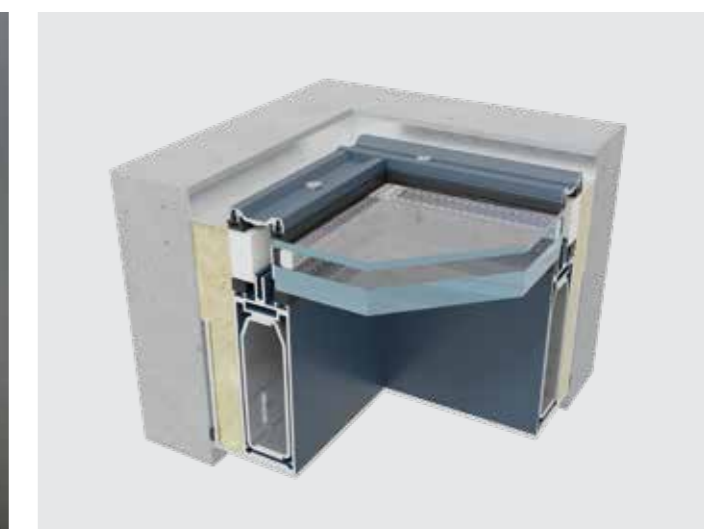
Special features:

- Installation angle of 0° to 15°
- Aluminium profile with steel core
- Surfaces anodised, RAL, NCS and effect coatings
- Wall ending on structural steel, concrete, and timber structures possible at no extra cost
- Must not be exposed to weathering, installation under protective elements or in an interior space

Horizontal fire-resistant glazing



Weather protection due to light dome



3D profile section

Fire protection made of wood

Our wooden fire protection doors are presented with natural safety of artisan quality. The surfaces are as multifaceted as the material itself. There are no limits to the design options.



PENEDERwood

Safety and design made from wood

Every wooden fire protection door is a unique item of artisan quality. The surfaces are multifaceted; however, PENEDER's tried and tested quality is always inside. Various types of frames, numerous surface variants, glazing, combinations of side panels and top sections in addition to flexibility in the external geometry make possible virtually any design.

Door leaf

- 50 mm and 66 mm wooden door leaf with stable solid wood edging and fire protection filling
- Surfaces veneered, painted, foliated or with laminate coating
- Upholstery and artistic decoration of all types, like milling, decorative strips, carvings, cassettes, infill finishes, for example and much much more.
- Glass cut-outs in any possible shapes

Steel frame

Block frame, corner frame, closed frame or refurbishment frame

Sizes:

Width single-leaf up to 1,250 mm
 Width double-leaf up to 2,350 mm
 Height: up to 2,350 mm
 Surface: Single-leaf up to 2.93 m²; double-leaf up to 5.52 m²
 Glazing: up to 1.87 m² per leaf
 (Minimum frieze width: 150 mm)



With Austrian certificate of registration according to ÖNORM B 3850/51

Facts

Wooden frame

- Casing frame, closed frame or corner frame
- Wide range of solid or glazed side panels or top sections possible
- Curved elements possible
- Can be installed in endless PENEDERnurglas wall, PENEDERnurglas connection with skylight too
- Covered hinges and closers

Sizes:

Width single-leaf up to 1,320 mm
 (with side light/side panel up to 4,500 mm)
 Width double-leaf: up to 2,645 mm
 (with side light or side panel up to 5,700 mm)
 Height: up to 2,700 mm
 (with side light/side panel up to 3,130 mm)
 Surface: Single-leaf up to 3.31 m²; double-leaf up to 6.62 m²
 Glazing: up to 1.87 m² per leaf
 (Minimum frieze width: 150 mm)



Special features:

- Wooden and steel frames
- Frames for flush-mounted or rebated door leaves
- Door leaves and frames from a single source
- High-quality building hinges and fittings
- Any commercially available closers and fittings that have been tested for fire resistance
- Fire resistance-tested electronic access and entry control systems, like fingerprint door openers, for example

Wooden door leaf with steel frame

	wood-00 Wooden frame single/double-leaf	wood-30 Wooden frame single/double-leaf	wood-00 Steel frame single/double-leaf	wood-30 Steel frame single/double-leaf
EI ₂ 30 fire-retardant		✓		✓
Escape and emergency routes	✓	✓	✓	✓
Stainless steel frame plate			✓	✓
Top section/skylight	✓	✓		
Side panel/side light	✓	✓		
Glass cutout	✓	✓	✓	✓

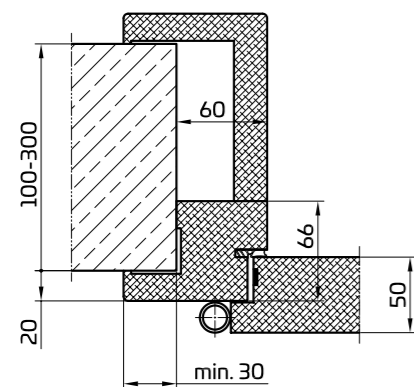
Combination options depending on the size, class and version

PENEDERwood

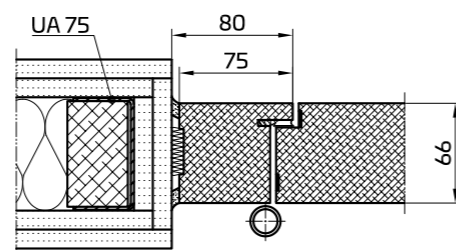
Sectional drawings (selection)

Wooden frame

Corner frame/closed frame
rebated

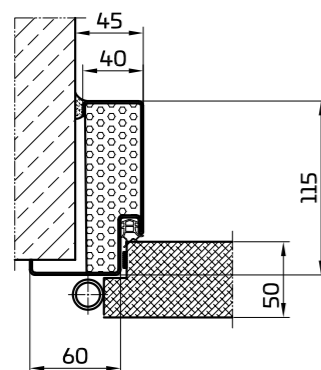


Block frame
flush-mounting on both sides

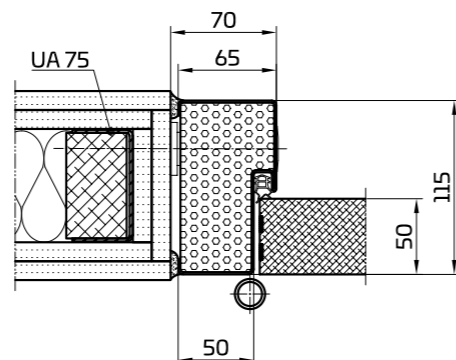


Steel frame

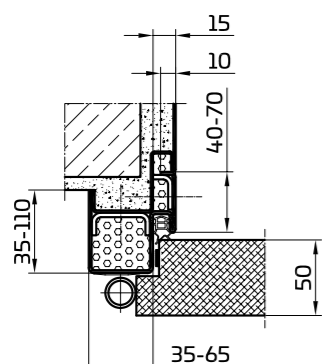
Corner frame
rebated



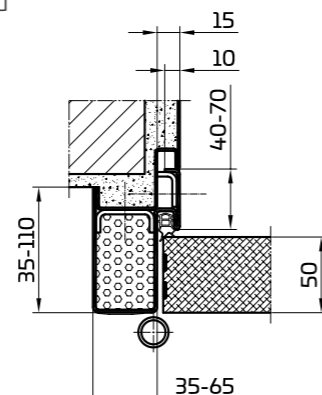
Block frame
flush-mounted



Refurbishment frame
rebated

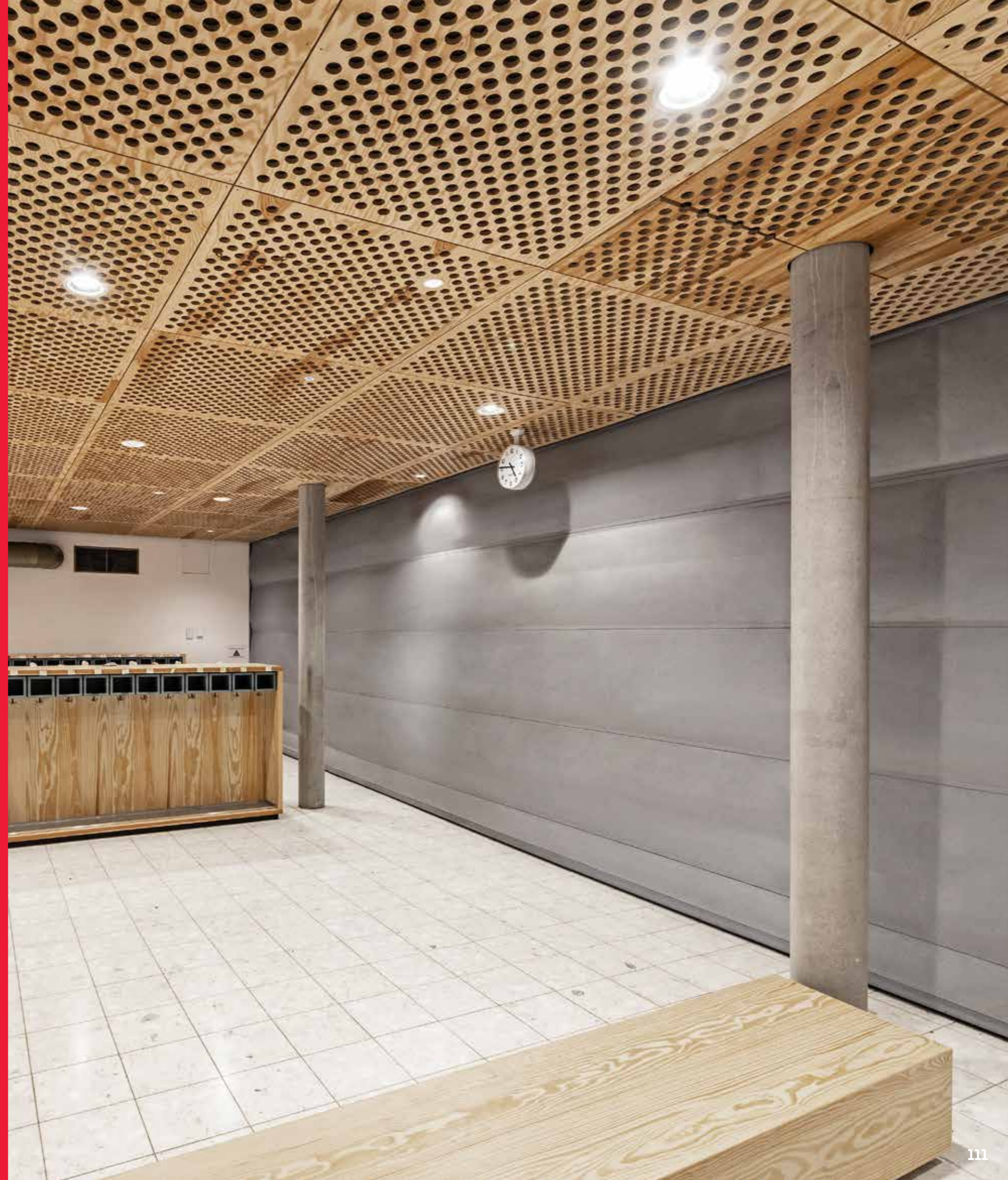


Refurbishment frame
flush-mounted



Textile protection

Fire prevention curtains and smoke aprons are predestined for use as safe closures for large openings. This invisible protection has the most flexible function due to its low weight and wide range of application options.



PENEDERtextil

Textile fire and smoke protection

TFF (Textile Flexible Fire Protection Curtain): This innovative fire prevention curtain made for wire-reinforced glass filament fabric ensures fire-resistant sealing over a wide area. The TFF is used to seal off openings in walls. It is also suitable for use as sectional protection with machines or in warehouse areas, for example.

TFR (Textile Flexible Smoke Apron): Smoke aprons are used primarily in limiting smoke development in defined areas. In case of fire, the spread of smoke is limited, the smoke that has developed is directed to extractors. Depending on the application, you can implement rigid, flexible or space-enclosing versions of the smoke apron with lateral guide rails.

TFF-E/-EW

E30-C2 to E120-C2, with optional smoke protection S_{200}
 EW30-C2 to EW90-C2, with optional smoke protection S_{200}
 System width: 900 mm to 12,000 mm
 Run length: 300 mm to 7,000 mm
 Surface: max. 60 m²
 Max. size with smoke protection S_{200} : 2,800 mm x 3,000 mm

TFF-EI

EI₂30-C to EI₂60-C

TFF-EI₂30 (max. effective clear opening)

Height: 4,810 mm
 Width: 6,565 mm
 Surface: 31.5 m²

TFF-EI₂60 (max. effective clear opening)

Height: 3,060 mm
 Width: 4,010 mm
 Surface: 12.27 m²

Version details

- Extensive sealing off, suitable for wall openings and façades
- Vertical closure
- Low weight per running metre of opening width
- Low space requirement ideal for retrofitting e.g. with protection of historic buildings and monuments



TFF-E/-EW & -EI: With the European CE mark according to EN 16034 and/or EN 1324-1



TFR: With the European CE mark according to EN 12101-1

Facts

TFR

Classification for smoke aprons (applies to loading of 30 to 120 minutes):
 DA (tested up to 600°)
 DHA (tested up to 1100°, deployment for more demanding requirements)

Sizes

Width: max. up to 50 m
 Height: max. up to 14 m

Version details

- Large system widths
- Design freedom: good integration in architectural specifications, open room design
- Low weight: only 25 kg per running metre of opening width
- Low space requirement
- Ideal for retrofitting with protection of historic buildings and monuments
- Optimisation of the HSVS

Special features:

- Safe closure for large openings
- Flexible installation options
- Excellent thermal radiation limitation in TFF-EW classes (only 1.43 kW/m² after 90 minutes of the permitted 15 kW/m²)
- Adaptable housing surface:
 Visible parts available in all colours similar to RAL or stainless steel

Integrated guide rail and housing

Hidden safety

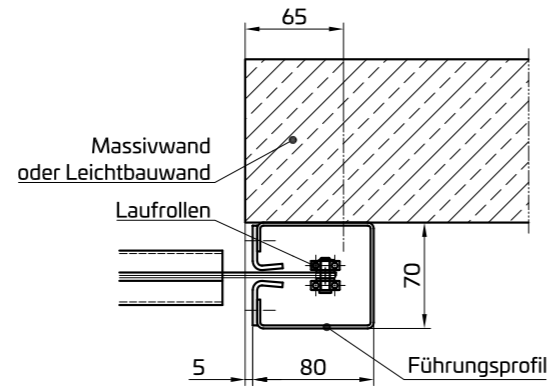
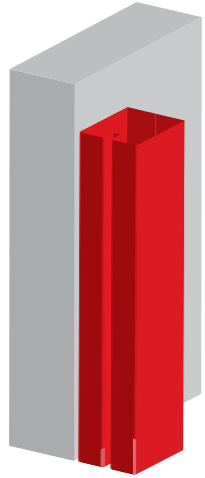


- 1 Textile smoke apron
- 2 Pushbutton
- 3 Wall mounting of housing and guide rail

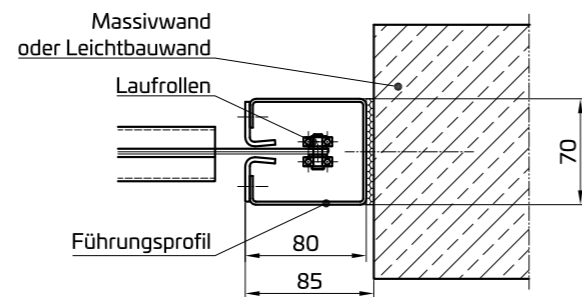
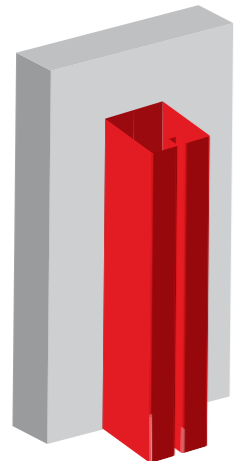
TFF-E/-EW and TFR

Installation variants of guide rail

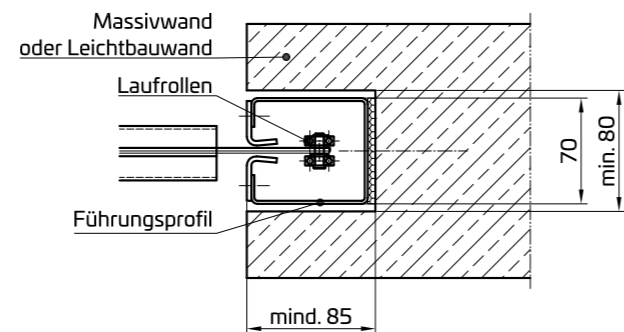
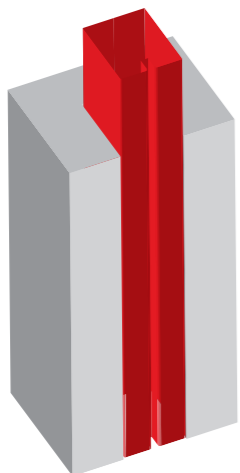
Wall-mounted lateral guide



Reveal-mounted lateral guide



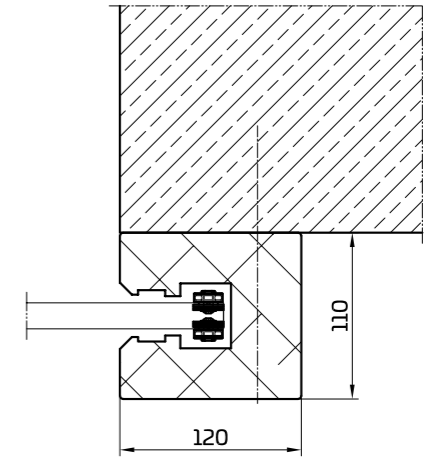
Niche-mounted lateral guide



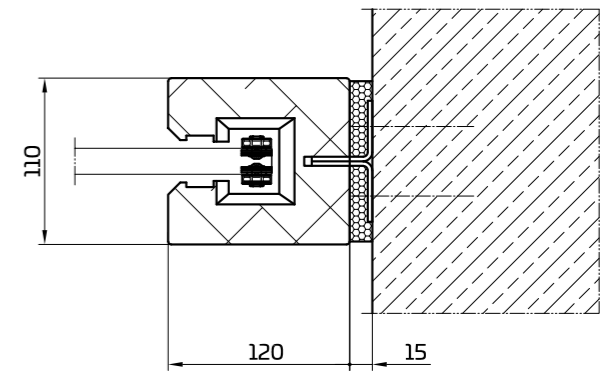
TFF-EI

Installation variants of guide rail

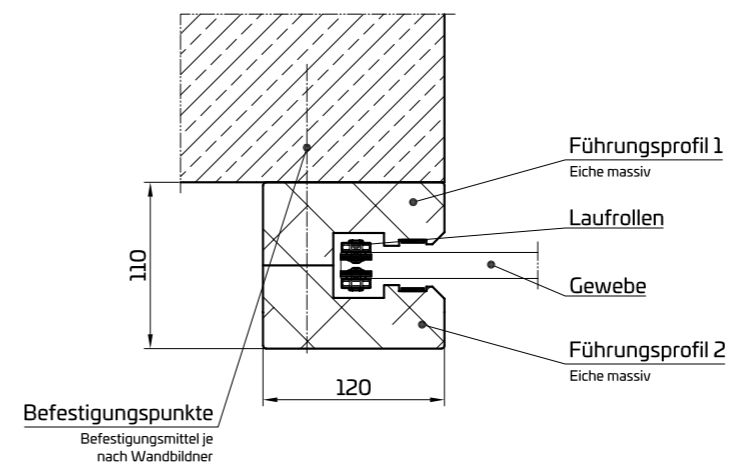
Wall-mounted lateral guide



Reveal-mounted lateral guide



Detail version of guide rail

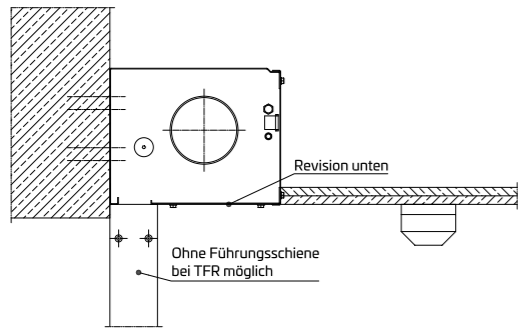


TFF-E/-EW and TFR

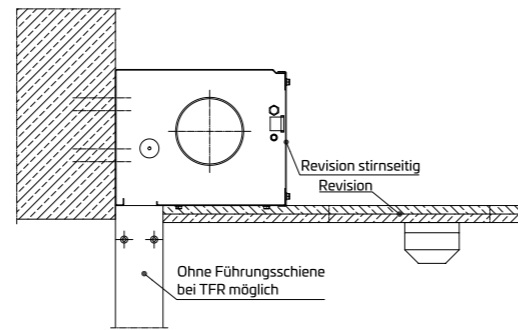
Installation variants of housing

Wall-mounted variant

Housing visible from below

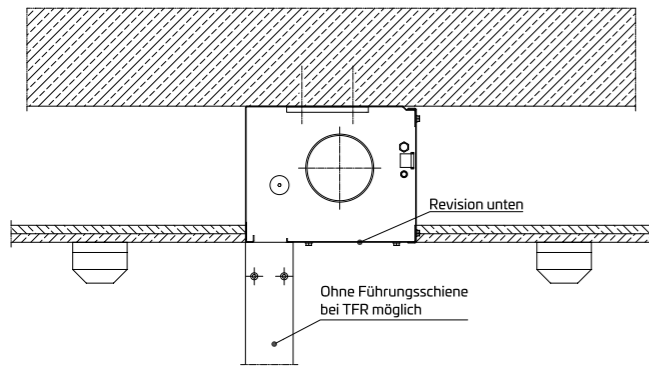


Housing not visible in suspended ceiling

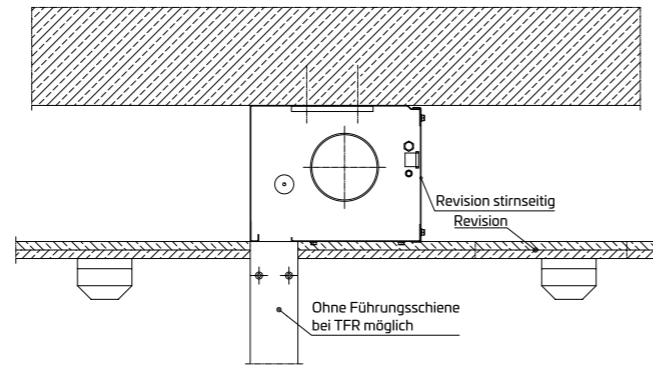


Direct ceiling mounting

Housing visible from below

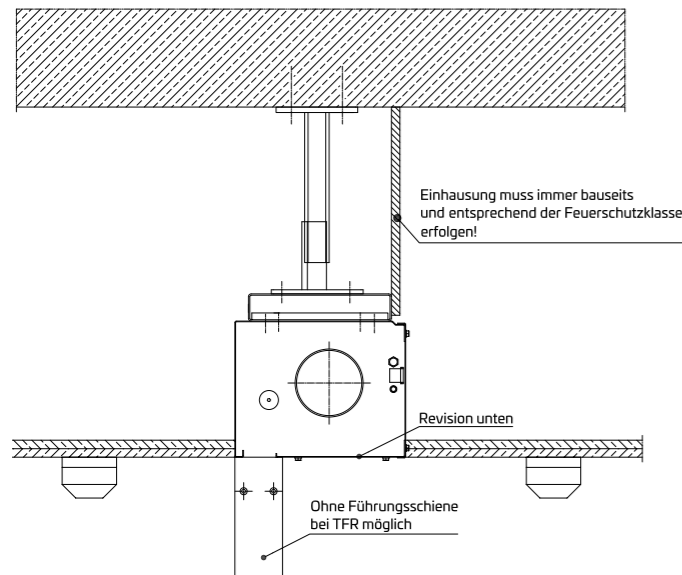


Housing not visible in suspended ceiling

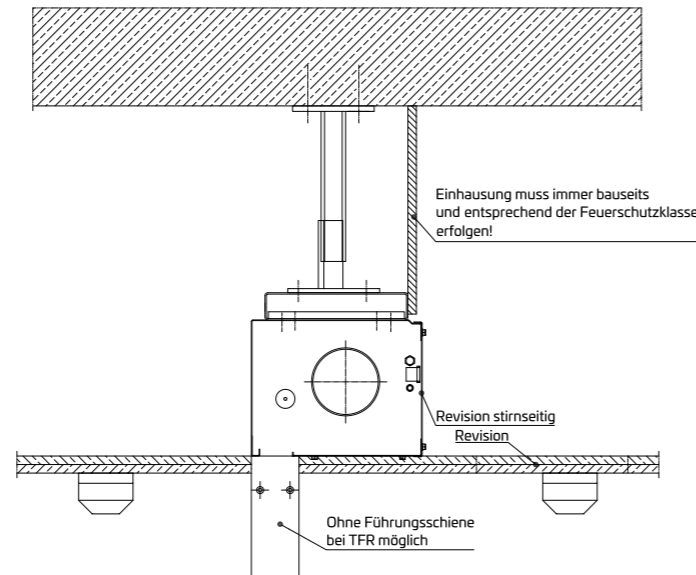


Suspended ceiling-mounted

Housing visible from below

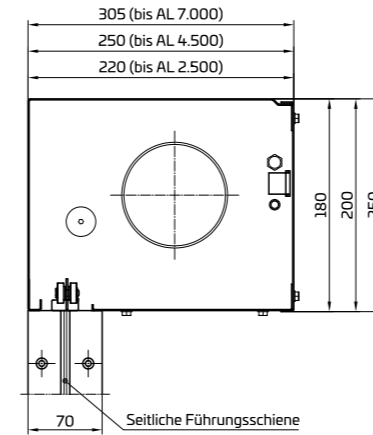


Housing not visible in suspended ceiling

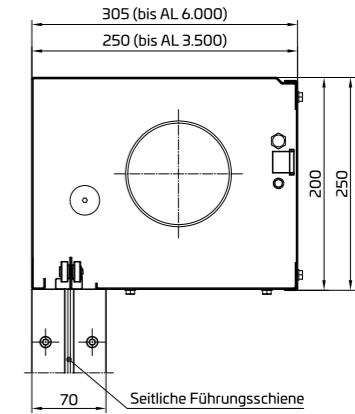


Housing dimensions

Dimensions of TFF-E/TFR

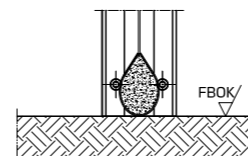


Dimensions of TFF-EW/TFR

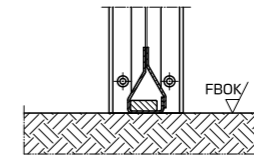


Baseboards

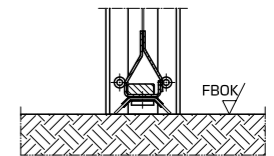
Granulate bag



End trim



End trim with smoke protection S₂₀₀

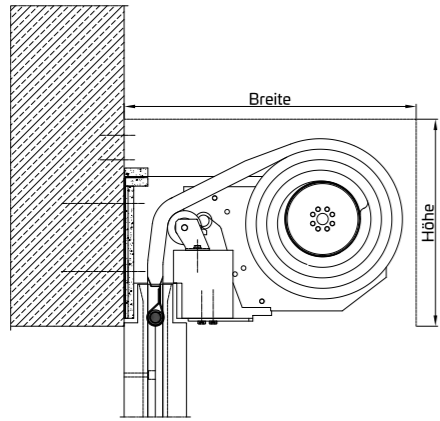


TFF-EI

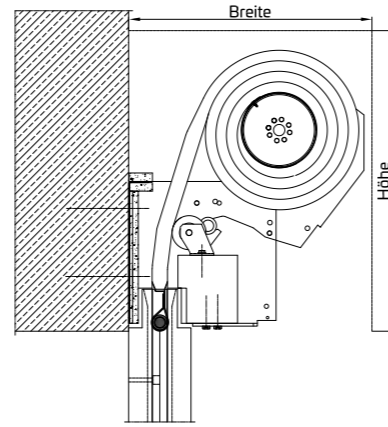
Installation variants of housing

With no housing

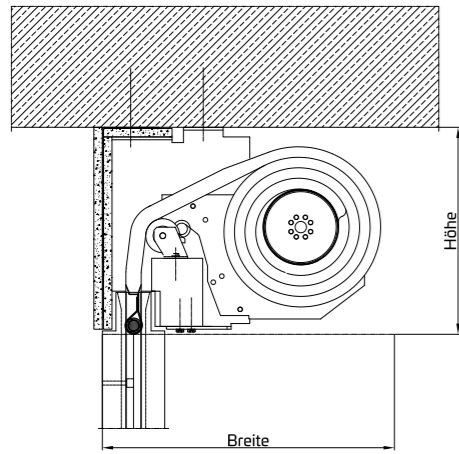
Wall-mounting V1



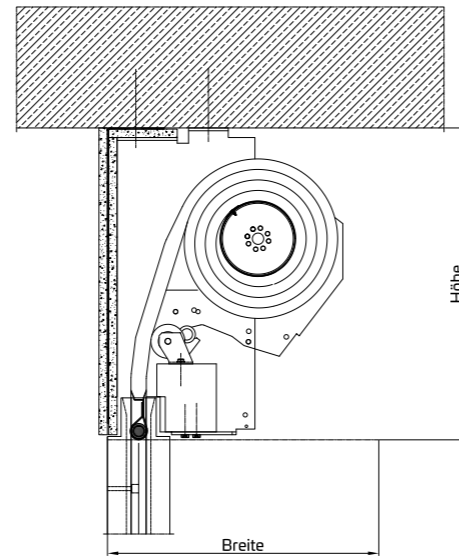
Wall-mounting V2



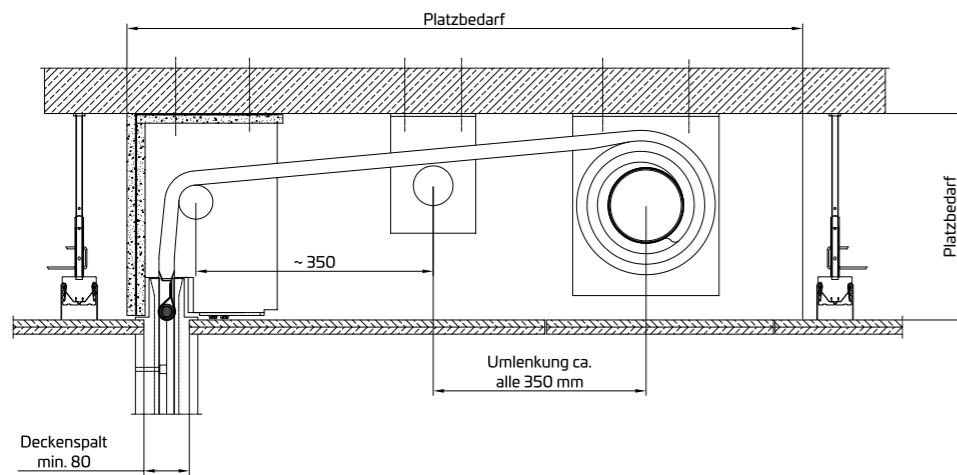
Ceiling mounting V1



Ceiling mounting V2



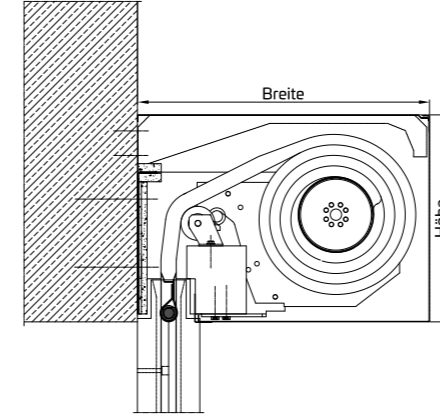
Special solution for installation in suspended ceilings



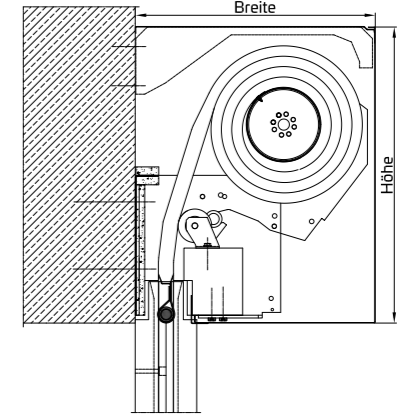
Platzbedarf abhängig von Ablauflänge und zur Verfügung stehender Einbauhöhe (je geringer die Einbauhöhe, desto breiter ist der erforderliche Platzbedarf).

With housing

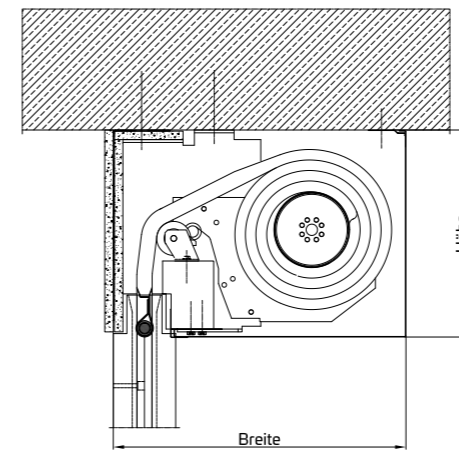
Wall-mounting V1



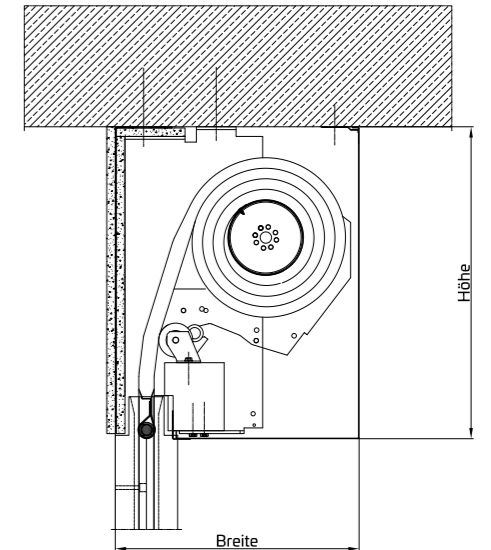
Wall-mounting V2



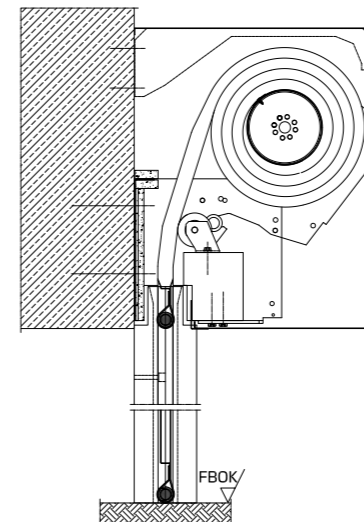
Ceiling mounting V1



Ceiling mounting V2



Baseboard



TFF-E/-EW and -EI

3D model wall mounting

TFF-E/-EW



TFF-EI

