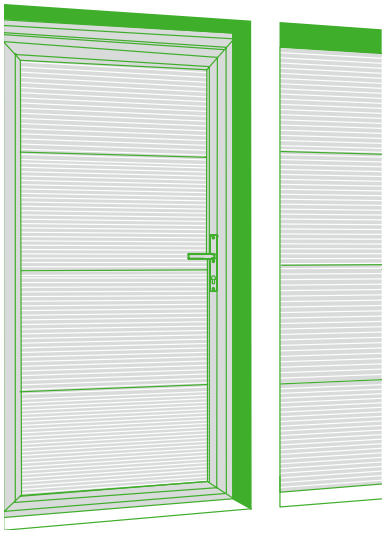
ALUTECH
DOOR SYSTEMS



English

DESIGN DESCRIPTION AND TECHNICAL GUIDE FOR SIDE DOOR INSTALLATION

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Due to the constant improvement of the design of the doors 'Alutech Door Systems' [the Company] reserves the right to make changes and additions to this document. The contents of this document cannot be used as the basis for legal claims.

1. SCOPE AND CONDITIONS OF SIDE DOOR USE

This 'Description of constructions and specifications for the installation' is applicable to side doors intended to fill openings in the exterior and interior walls, dividers of unheated industrial, public and administrative buildings. Side doors cannot be used for openings of hazardous zones of buildings as well as for boundary fire barriers.

The side doors climatic category is U1 according to GOST 15150. For this climatic category the following values of the outdoor air temperature during operation are set:

- upper operating is +40 °C;
- lower operating is –45 °C;
- upper operating limit is +45 °C;
- lower operating limit is –50 °C.

Notes.

1. Operating value of air temperature are values within which the maintenance of the required nominal values and cost-effective service life of products are ensured.
2. Limit working value of air temperature are values within which items can (extremely rare and no more than within 6 hours, and for lower temperature value—12 hours) be in operation and at the same time:
   - continue to operate, but may not maintain the required nominal values;
   - restore the nominal values after the termination of these limit operating values.

Side doors delivery to places located in microclimatic areas with cold climates is allowed if the average temperature of the absolute annual minimum temperature is not lower than –45 °C.

2. SIDE DOOR COMPLIANCE WITH NORMATIVE AND TECHNICAL DOCUMENTS

Side doors meet the requirements of:

- EU Regulation № 305/2011 of the European Parliament and the Council of the European Union on the establishment of harmonised conditions for the spread on the market of construction products;
- Technical Regulations of the Republic of Belarus TR 2009/013/BY 'Buildings and structures, construction materials and products. Safety';
- STB 1138 'Doors and gates for buildings and structures. General specifications';
- GOST 23747 'Doors made of aluminium alloys. General specifications';
- Standard EN 14351-1 'Windows and doors. Standard for products. Part 1: Windows and exterior doors without characteristics of fire resistance and smoke penetration'.

2.1. SIDE DOOR TECHNICAL FEATURES

Characteristics	Side door	
	from sandwich-panels (45 mm)	from panoramic sections AluPro (45 mm)
Thermal transmittance	2,5 W/(m^{2}K)	4,3 W/(m^{2}K)
Resistance to wind load	Class C2	Class C1
Acoustic performance	20 dB	23 dB
Air permeability	Class 2	Class 1
Watertightness	Class 1A	—

Tests are carried out at Technical and Test institute for Construction Prague (Czech Republic).

3. DESCRIPTION OF THE SIDE DOOR STRUCTURE

3.1. STRUCTURE OF THE STANDARD SIDE DOOR SET

The standard set of side doors includes the following elements:

- a frame with a threshold. A threshold setting method allows replacement during operation without disassembly of the side door frame. The frame, door and the threshold are made of extruded aluminium alloy profiles;
- a side door leaf. A leaf frame is made of extruded aluminium alloy profiles. Double-walled steel panels with polyurethane foam filler (sandwich panels) and/or panoramic sections are used as filling for the leaf frame;
- two adjustable hinge straps attached to special profile seals for framing and the side door frame profile;
- a set comprising of a mortice lock with a latch, a cylinder mechanism and keys;
- a set comprising of lever handles with escutcheons and fitting.

Rubber strips based on EPDM are used to seal the rebate ledge between the leaf and the frame. The seal on the top and side faces of the leaf is bilateral, on the threshold is one-sided. Sealing brush is used as additional threshold sealing.

4. TYPES OF INFILL FOR THE SIDE DOOR LEAF

4.1. FILLING WITH SANDWICH PANELS

Sandwich panels used for the manufacture of sections of the side door leaf are made of galvanised sheet steel with a subsequent application of protective and decorative coatings. The panel is filled with environmentally friendly polyurethane foam (Freon-free). The panel thickness is 45 mm with a specially formed head providing high rigidity of the leaf. The panels have a special EPDM seal providing reliable leaf airtightness.

4.1.1. THE COLOUR RANGE OF THE SANDWICH PANELS

Basic colours:

Pattern of outer surface of the panel	Base colour of the outer surface of the panel *		Woodgrain colour of the outer surface of the panel	
	Woodgrain	Smooth	Woodgrain	Smooth
Microwave	RAL 1015 – light ivory* RAL 3004 – purple red* RAL 5010 – gentian blue* RAL 6005 – moss green* RAL 7016 – anthracite grey* RAL 8014 – sepia brown* RAL 8017 – chocolate brown* RAL 9006 – white aluminium* RAL 9016 – white* ADS 703 – anthracite	—	—	—
S-ribbed	RAL 1015 – light ivory* RAL 3004 – purple red* RAL 5010 – gentian blue* RAL 6005 – moss green* RAL 7016 – anthracite grey* RAL 8014 – sepia brown* RAL 8017 – chocolate brown* RAL 9006 – white aluminium* RAL 9016 – white* ADS 703 – anthracite	—	—	Golden Oak Dark Oak Cherry
M-ribbed	RAL 8014 – sepia brown* RAL 9016 – white*	RAL 7016 – anthracite grey* RAL 9016 – white*	—	Golden Oak Dark Oak Cherry
L-ribbed	RAL 8014 – sepia brown* RAL 9016 – white*	RAL 7016 – anthracite grey* RAL 9016 – white* ADS703 – anthracite	—	Golden Oak Dark Oak Cherry
Cassette	RAL 8014 – sepia brown* RAL 9016 – white*	—	Golden Oak Dark Oak	—

* Colours closely correspond to RAL scale.

The outer side of the panel can (if required) be painted in other colours having a close match to the RAL range. The possibility of painting in dark colours, in such colours as metallic, pearl and reflective colours will be considered upon request.

The colour of the inner surface of the panels is white-grey, close to RAL 9002 (due to design features an outer metal sheet of the panel is visible at the junction of two sandwich panels). If required, the inner side of panels can be painted in other colours having a close match to the RAL range. The possibility of painting in dark colours, in such colours as metallic, pearl and reflective colours will be considered on an order by order basis.

When ordering several elements of side doors in one colour (eg, framing, sandwich panels outside/inside, window frames) slight variations in colours are possible. It is connected with the difference of the properties of materials used (steel, aluminium, plastic) and usage of different painting technology. Slight colour differences of the elements are also possible when ordering repair work of the previously mounted side doors.

4.1.2. THE COLOUR RANGE OF THE SIDE DOOR ELEMENTS WHEN INFILLING WITH SANDWICH PANELS

Basic colours of elements:

Name of the element	Colour *
Top and side profiles of the side door frame, top and side profiles of the side door leaf frame	RAL 8019 (grey brown) RAL 9006 (white aluminium) RAL 9016 (white)
Threshold profile, lower profile of the side door leaf frame, profile of the lower rebate ledge	RAL 9005 (black)
Hinge straps	RAL 8019 (grey brown) RAL 9006 (white aluminium) RAL 9010 (pure white)
Handles	RAL 8019 (grey brown) RAL 9005 (black) RAL 9006 (white aluminium) RAL 9016 (white)

* Colours closely correspond to RAL scale.

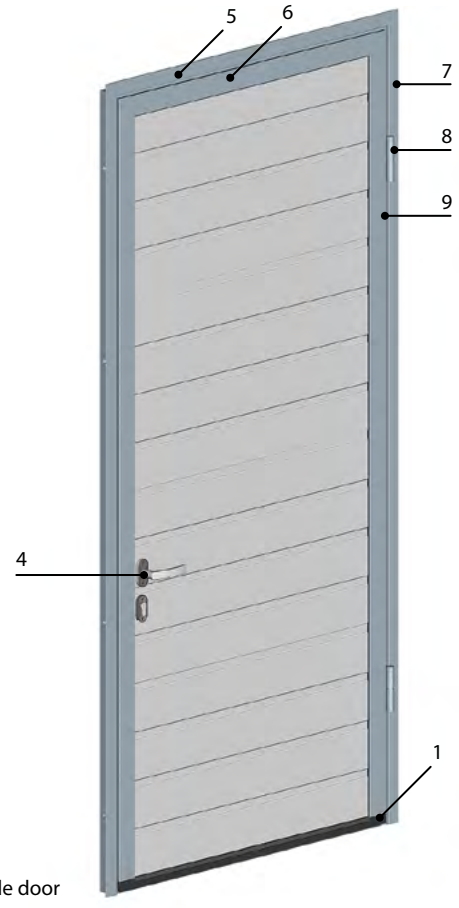


Fig. 1. Side door

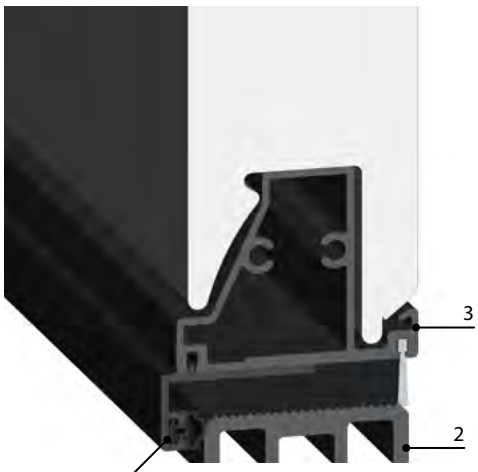


Fig. 2. Side door bottom section

1 — profile of the lower rebate ledge;
2 — threshold profile;
3 — lower profile of the side door leaf frame;
4 — handle;
5 — top profile of the side door frame;
6 — top profile of the side door leaf frame;
7 — side profile of the side door frame;
8 — hinge straps;
9 — side profile of the side door leaf frame.

Upon request the top and side leaf frame profiles can be painted in different colours, with a close match to the RAL range. The threshold profile, the lower door leaf profile and the profile of the lower rebate ledge are painted only in RAL 9005 (black).

Colour matching of sandwich panels and side door elements:

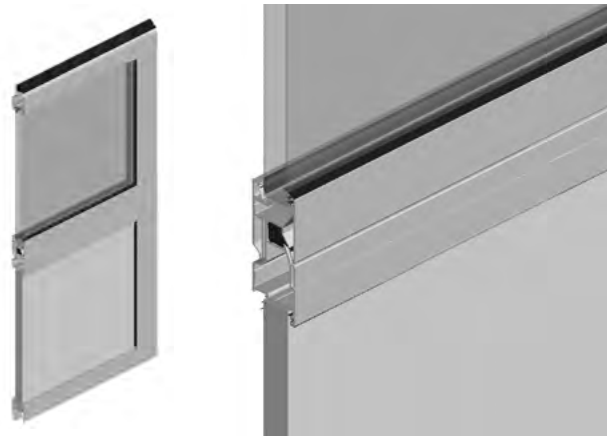
Colour of sandwich panels *	Colour of side door elements by default *		
	Colour of side door framing profiles and the leaf frame	Colour of hinge straps	Colour of handles
RAL 8014 (sepia brown) RAL 8016 (red brown) RAL 8017 (chocolate brown) RAL 8019 (grey brown) Golden Oak, Dark Oak, Cherry	RAL 8019 (grey brown)		
RAL 9016 (white)	RAL 9016 (white)	RAL 9010 (pure white)	RAL 9016 (white)
All other colours	RAL 9006 (white aluminium)		
	Other colours in the RAL catalogue		RAL 9005 (black)

* Colours closely correspond to RAL scale.

4.2. INFILLING WITH PANORAMIC SECTIONS

The panoramic section represents a frame structure assembled with extruded aluminium profiles. Sections can have an infill made both with translucent elements, and composite panels (alternative infill).

Panoramic sections are available in AluPro series.



AluPro is a profile system without thermal break.

4.2.1. TYPES OF INFILL FOR PANORAMIC SECTIONS

Infill for sections in AluPro series:

- a single insert made of mix of sterol and acrylonitrile (SAN-plastic), 3 mm thickness;
- double insert, 26 mm thickness, made of mix of sterol and acrylonitrile (SAN-plastic), 2 mm thickness (single-chamber unit 2-22-2). It is used on inserts till 0,5 m^2;
- double insert, 26 mm thickness, made of mix of sterol and acrylonitrile (SAN-plastic), 3 mm thickness (single-chamber unit 3-20-3). It is used on inserts over 0,5 m^2;
- a composite panel, 3 mm thickness, consisting of two aluminium sheets with high-pressure polyethylene space filling in-between. The outer and inner panel aluminium sheets are smooth;
- a composite panel, 26 mm thickness, consisting of two aluminium sheets with polyurethane foam space filling. The outer and inner panel aluminium sheets have stucco embossment.

Spacer elements are not used between sheets of acrylic in panoramic sections of AluPro series with double glazing. Protection against contact of acrylic sheets is provided due to the significant distance between them (20-22 mm). Double translucent inserts are available with one or two sealing gaskets.

Double seal gasket is recommended if the parameters of indoor climate can lead to the appearance of condensation in translucent inserts. Additional filling of the spacer frame with molecular sieve (water absorber) and the application a sealant to the second gasket are provided in a translucent insert with two sealing gaskets.

4.2.2. COLOUR RANGE OF PANORAMIC SECTIONS

Base colour of panoramic section profiles *	Colour of composite panels of alternative filling *
Sections of AluPro series	
RAL 1015 – light ivory* RAL 3004 – purple red* RAL 5010 – gentian blue* RAL 6005 – moss green* RAL 7016 – anthracite grey* RAL 8014 – sepia brown* RAL 8017 – chocolate brown* RAL 9006 – white aluminium* RAL 9016 – white* A00-D6 – silver	RAL 1015 – light ivory* RAL 3004 – purple red* RAL 5010 – gentian blue* RAL 6005 – moss green* RAL 7016 – anthracite grey* RAL 8014 – sepia brown* RAL 8017 – chocolate brown* RAL 9006 – white aluminium* RAL 9016 – white* RAL 9006 – white aluminium*

* Colours closely correspond to RAL scale.

4.2.3. COLOUR RANGE OF THE SIDE DOOR ELEMENTS WHEN INFILLING WITH PANORAMIC SECTIONS

Colour matching of panoramic sections and the side door elements:

<table>
<tr><th rowspan="2">Colour of sandwich panels*</th><th colspan="3">Colour of side door elements by default*</th></tr>
<tr><th>Colour of side door framing profiles and the leaf frame</th><th>Colour of hinge straps</th><th>Colour of handles</th></tr>
<tr><td>RAL 8014 (sepia brown)
RAL 8016 (red brown)
RAL 8017 (chocolate brown)
RAL 8019 (grey brown)</td><td colspan="3">RAL 8019 (grey brown)</td></tr>
<tr><td>RAL 9016 (white)</td><td>RAL 9016 (white)</td><td>RAL 9010 (pure white)</td><td>RAL 9016 (white)</td></tr>
<tr><td rowspan="2">All other colours</td><td colspan="3">RAL 9006 (white aluminium)</td></tr>
<tr><td colspan="2">Other colours in the RAL catalogue</td><td>RAL 9005 (black)</td></tr>
</table>

* Colours closely correspond to RAL scale.

5. OPTIONS

5.1. PANORAMIC GLAZING

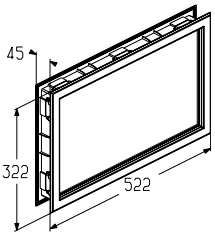
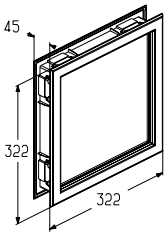
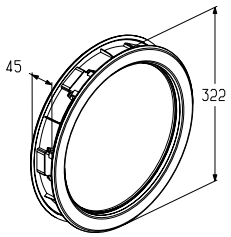
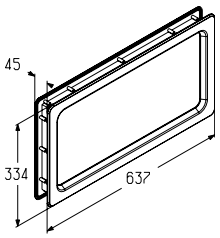
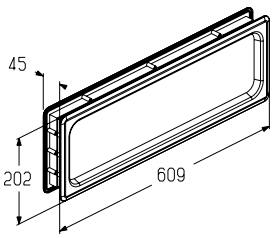
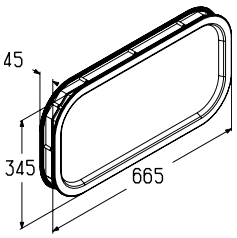
In gates with a leaf made of sandwich panels with Microwave, S-, M- and L-ribbed patterns one or more sections (except for the upper and lower) can be replaced by a section with panoramic glazing (panoramic sections). Side door can be produced from panoramic sections only. Panoramic sections from the AluPro series with translucent elements are used for glazing side doors. Colour range and infill options for panoramic sections are given in sec. 4.2.

5.2. CLOSER

The side door can be equipped with an additional lever-type side door closer.

5.3. WINDOWS

5.3.1. GEOMETRICAL DIMENSIONS OF THE WINDOWS

Window article	Image and dimensions	Colour of binding frame	Glass type
W043WH-TG		white	Transparent acrylic
W043WH-CG			Crystal acrylic
W043BR-TG		brown	Transparent acrylic
W043BR-CG			Crystal acrylic
W050WH		white	Transparent acrylic
W050BR		brown	
W060WH		white	Transparent acrylic
W060BR		brown	
W046		black	Transparent acrylic
W085		black	Transparent acrylic
W095		black	Transparent acrylic

As an additional option, the window's outside binding frame can be painted in colours from the RAL catalogue, while the colour of the window frame from the inside remains the same—white-grey. The option is available for the following types of windows: W043WH-TG, W043WH-CG, W043BR-TG, W043BR-CG W050WH, W050BR, W060WH and W060BR. The possibility of painting in colours, such as metallic, pearl and reflective colours will be considered upon request. Windows art. W043WH-TG, W043WH-CG, W043BR-TG, W043BR-CG can be complected additionally with Cross decorative inserts.

5.3.2. RESTRICTIONS ON THE INSTALLATION OF WINDOWS

Windows with article numbers listed in sec. 5.3.1 are installed in panels with Microwave and S-ribbed patterns of outer surface, height of 500 and 625 mm, M, and L-ribbed patterns, height of 500 mm.

Windows of art. W043WH-TG, W043WH-CG, W043BR-TG, W043BR-CG, W050WH, W050BR, W060WH, W060BR are installed in panels with M- and L-ribbed patterns of outer surface, height of 450 mm.

Windows of art. W043WH-TG, W043WH-CG, W043BR-TG, W043BR-CG are installed in panels with the cassette pattern of outer surface.

The minimum width of the side door leaf, in which installation of windows is possible:

Article number of window	Minimum width of the side door leaf, mm
W043WH-TG, W043WH-CG, W043BR-TG, W043BR-CG	855
W050WH, W050BR	655
W060WH, W060BR	655
W046	970
W085	950
W095	1000

5.4. AIR GRIDS

Type of air grid	Art.	Colour from outside	Colour from inside	Outside size, mm (W×H)	Square area of the opening, cm^2
Non-adjustable air grid (white)	VG-368WH	white	white	368×130	143
Non-adjustable air grid (black)	VG-368BK	black	white	368×130	143
Adjustable air grid (white)	VG-368RWH	white	white	368×130	65
Adjustable air grid (black)	VG-368RBK	black	white	368×130	65

Air grids are installed on the centre line of the panel (in the middle of the panels' height). Non-standard air grid positioning should be agreed with the customer individually (ideally in writing).

6. INFORMATIVE TECHNICAL DOCUMENTS

The side door supplied complete with product label, data sheet and installation manual.

7. SIDE DOOR PACKING

Standard side door package includes:

- side door unit consisting of a frame and a leaf hung on hinge straps, packed in a plastic bubble wrap;
- handles, side door closers, as well as the keys to the lock not installed on the side door, and the product passport is packed in a separate cardboard box. The box is inserted in the side door package.

8. SIDE DOOR PARAMETERS AND DIMENSIONS

8.1. FACADE SYSTEMS

A facade system is a single style solution for the side door and gates installed in the same facade of a building. It is provided subject to the following conditions being met:

- a set of infill sections for the side door leaf and the gate leaf should be the same (the location of the joints between the sections should be at the same level);
- the pattern of the front surface and the colour of the infill sections of the side door leaf and the gate leaf should be the same.

8.2. DIMENSIONS OF THE SIDE DOOR

ATTENTION! The ordered dimensions are width × height of the opening (LW×LH).

8.2.1. DIMENSIONAL PATTERN OF SIDE DOORS WITH A SANDWICH PANEL INFILL USING A SIDE DOOR CASSETTE PANEL PATTERN. SET INSTALLATION TYPES 1, 2, 3, 4, 5, 6; INSTALLATION BEHIND THE OPENING TYPES 1, 2; COMBINED INSTALLATION TYPES 1, 3

Side door opening height, mm	Side door opening width, mm						Height of the panels in the side doors and gates, mm	Number of panels in the side door or gates
	875	900	1000	1125	1250	over 1250		
1795							425, 425, 425, 425	4
1820							450, 425, 425, 425	4
1845							450, 450, 425, 425	4
1870							450, 450, 450, 425	4
1895							450, 450, 450, 450	4
1920							475, 450, 450, 450	4
1945							475, 475, 450, 450	4
1970							475, 475, 475, 450	4
1995							475, 475, 475, 475	4
2020							500, 475, 475, 475	4
2045							500, 500, 475, 475	4
2070							500, 500, 500, 475	4
2095							500, 500, 500, 500	4
2120							525, 500, 500, 500	4
2145							525, 525, 500, 500	4
2170							525, 525, 525, 500	4
2195							525, 525, 525, 525	4
2220							425, 425, 425, 425, 425	5
2245							450, 425, 425, 425, 425	5

The possibility of manufacturing will be considered on request.

ATTENTION! Minimal opening height of side door for installation behind the opening type 2 and for combined installation types 1, 3 is 1845 mm.

Side doors with a sandwich panel infill using a door panel pattern are manufactured of fixed sizes in height in accordance with the above table. Intermediate values of width and height of the door in 5 mm increments may be selected within the framework of this dimensional pattern.

8.2.2. DIMENSIONAL PATTERN OF SIDE DOORS WITH A SANDWICH PANEL INFILL USING A SIDE DOOR CASSETTE PANEL PATTERN. COMBINED INSTALLATION TYPE 2

Side door opening height, mm	Side door opening width, mm						Height of the panels in the side doors and gates, mm	Number of panels in the side door or gates
	875	900	1000	1125	1250	over 1250		
1810							425, 425, 425, 425	4
1835							450, 425, 425, 425	4
1860							450, 450, 425, 425	4
1885							450, 450, 450, 425	4
1910							450, 450, 450, 450	4
1935							475, 450, 450, 450	4
1960							475, 475, 450, 450	4
1985							475, 475, 475, 450	4
2010							475, 475, 475, 475	4
2035							500, 475, 475, 475	4
2060							500, 500, 475, 475	4
2085							500, 500, 500, 475	4
2110							500, 500, 500, 500	4
2135							525, 500, 500, 500	4
2160							525, 525, 500, 500	4
2185							525, 525, 525, 500	4
2210							525, 525, 525, 525	4
2235							425, 425, 425, 425, 425	5

The possibility of manufacturing will be considered on request.

Side doors with a sandwich panel infill using a door panel pattern are manufactured of fixed sizes in height in accordance with the above table. Intermediate values of width and height of the door in 5 mm increments may be selected within the framework of this dimensional pattern.

8.2.3. DIMENSIONAL PATTERN OF SIDE DOORS WITH A SANDWICH PANEL INFILL USING MICROWAVE, S-RIBBED, M-RIBBED, L-RIBBED PATTERNS, AS WELL AS WITH PANORAMIC SECTIONS

Side door opening height, mm	Side door opening width, mm					
	875	900	1000	1125	1250	over 1250
1895						
2000						
2125						
2250						
over 2250						

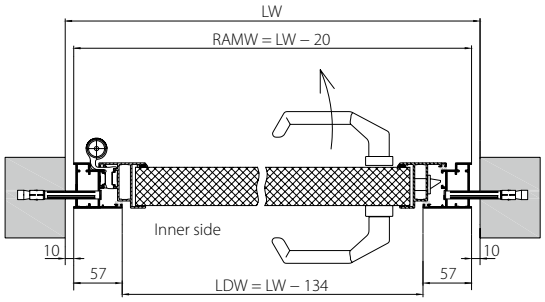
The possibility of manufacturing will be considered on request.

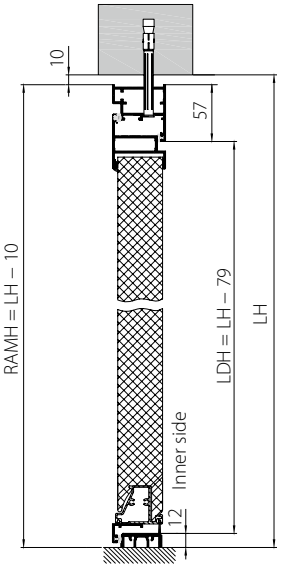
Intermediate values of width and height of the side door in 5 mm increments may be selected within the framework of this dimensional pattern.

9. SIDE DOOR INSTALLATION DIAGRAMS

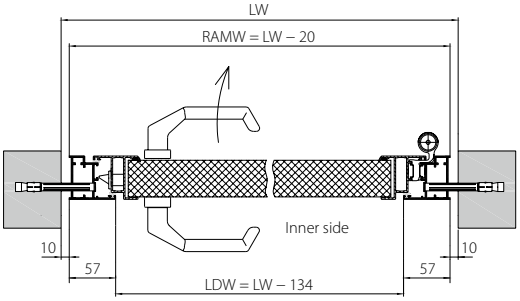
9.1. SET INSTALLATION. TYPE 1

Set installation
Opening outward
Opening direction—right



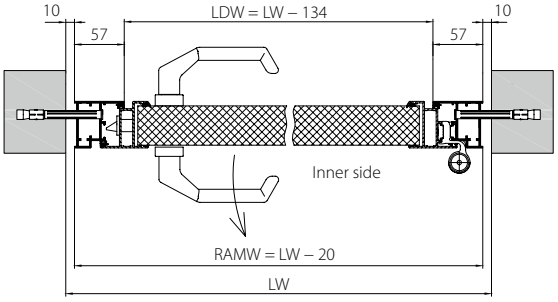


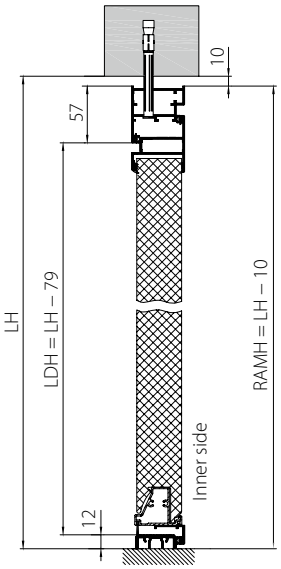
Set installation
Opening outward
Opening direction—left



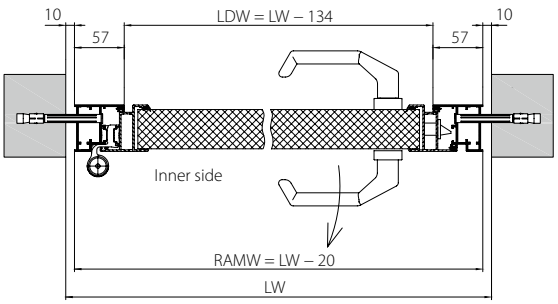
9.2. SET INSTALLATION. TYPE 2

Set installation
Opening inward
Opening direction—right



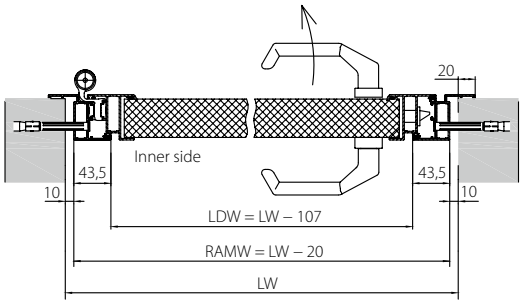


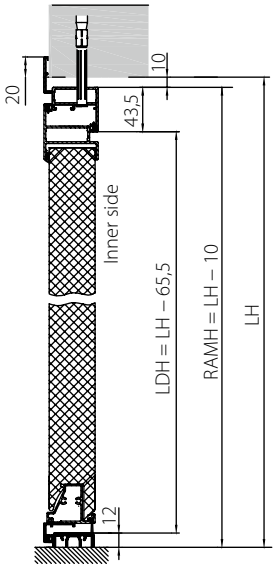
Set installation
Opening inward
Opening direction—left



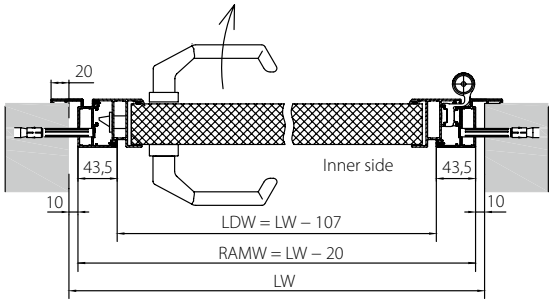
9.3. SET INSTALLATION. TYPE 3

Set installation with external stop
Opening outward
Opening direction—right



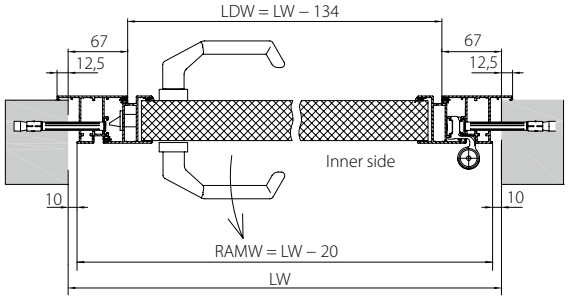


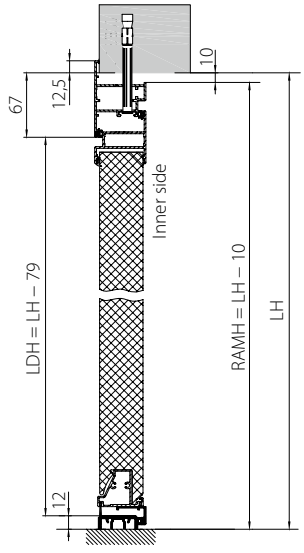
Set installation with external stop
Opening outward
Opening direction—left



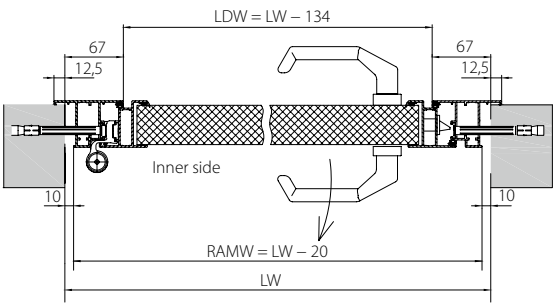
9.4. SET INSTALLATION. TYPE 4

Set installation with external stop
Opening inward
Opening direction—right



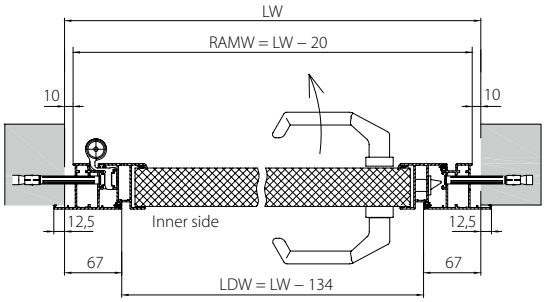


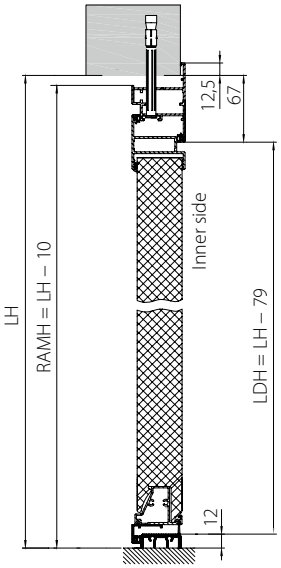
Set installation with external stop
Opening inward
Opening direction—left



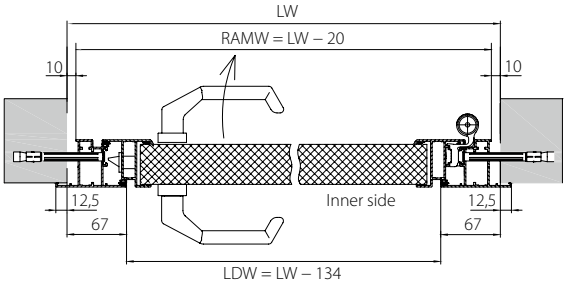
9.5. SET INSTALLATION. TYPE 5

Set installation with internal stop
Opening outward
Opening direction—right



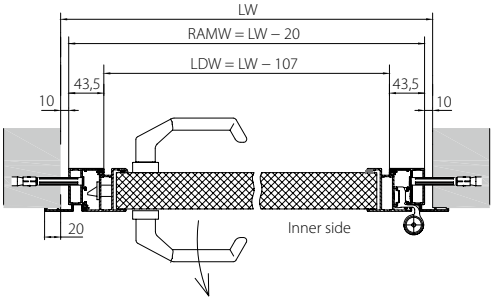


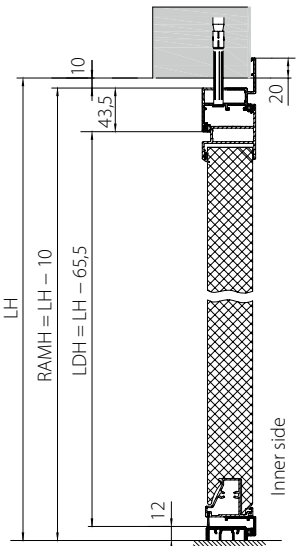
Set installation with internal stop
Opening outward
Opening direction—left



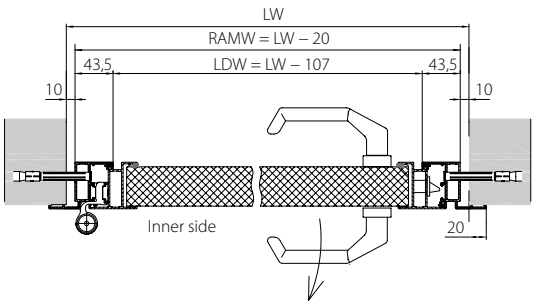
9.6. SET INSTALLATION. TYPE 6

Set installation with internal stop
Opening inward
Opening direction—right



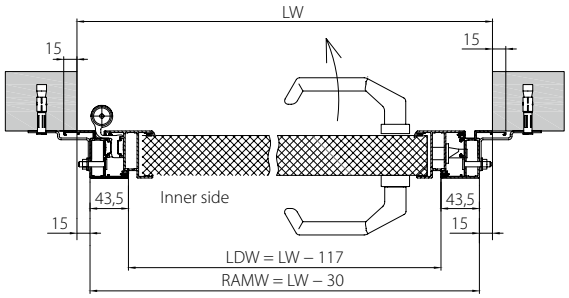


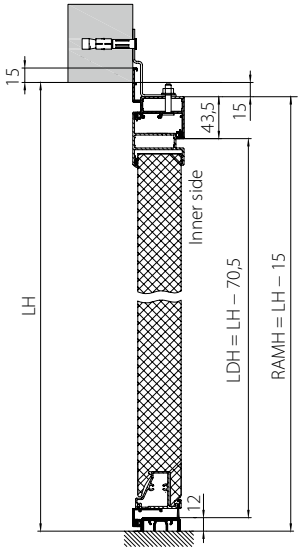
Set installation with internal stop
Opening inward
Opening direction—left



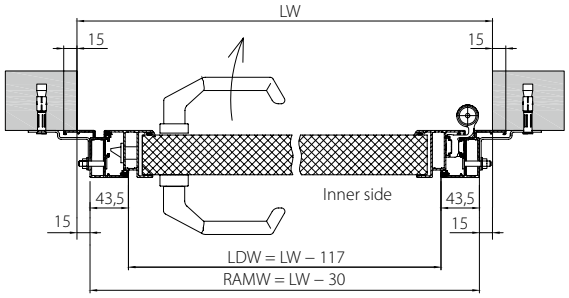
9.7. INSTALLATION BEHIND THE OPENING. TYPE 1

Installation behind the opening
Opening outward
Opening direction—right



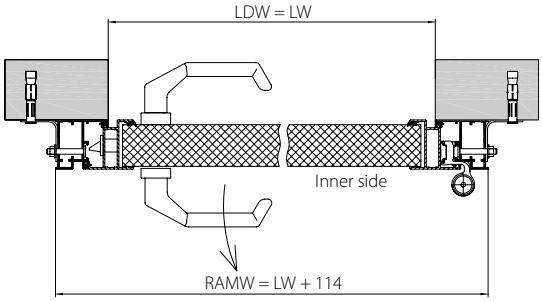


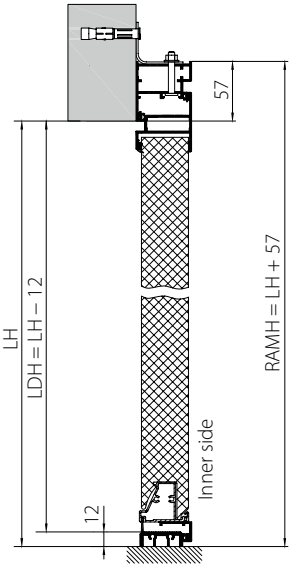
Installation behind the opening
Opening outward
Opening direction—left



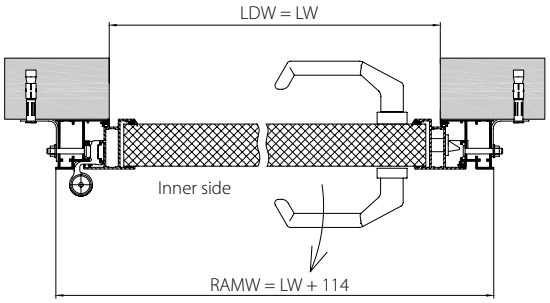
9.8. INSTALLATION BEHIND THE OPENING. TYPE 2

Installation behind the opening
Opening inward
Opening direction—right



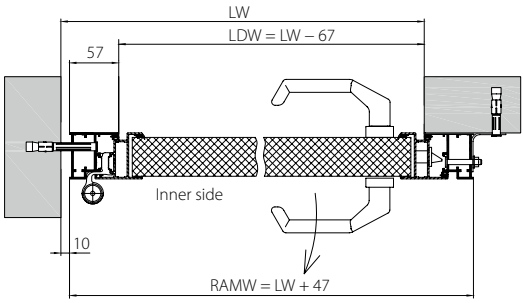


Installation behind the opening
Opening inward
Opening direction—left

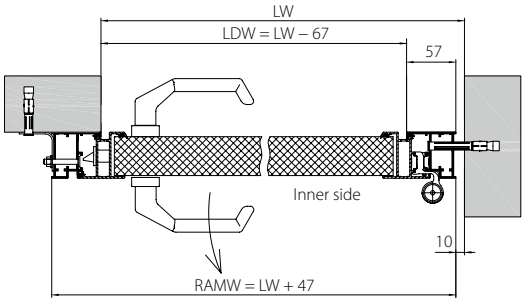


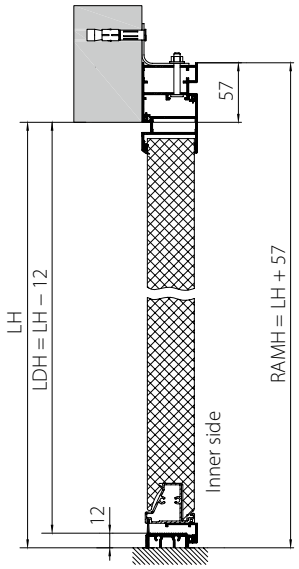
9.9. COMBINED INSTALLATION. TYPE 1

Combined installation. Rebate ledge attached
Opening inward
Opening direction—left



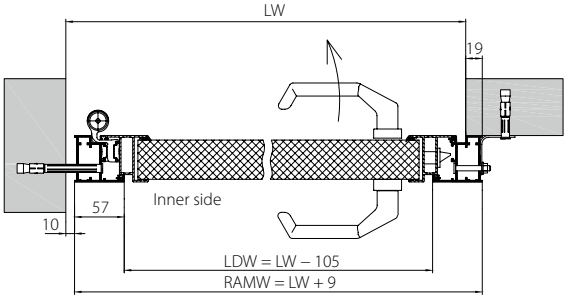
Combined installation. Rebate ledge attached
Opening inward
Opening direction—right



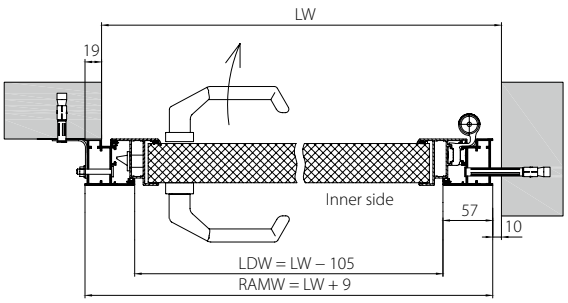


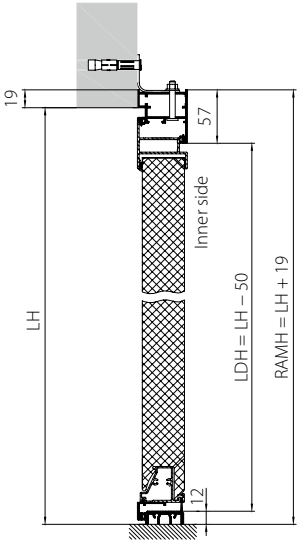
9.10. COMBINED INSTALLATION. TYPE 2

Combined installation. Rebate ledge attached
Opening outward
Opening direction—right



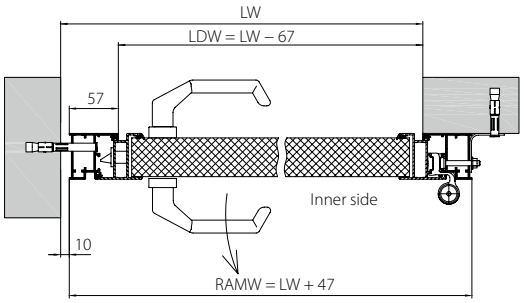
Combined installation. Rebate ledge attached
Opening outward
Opening direction—left



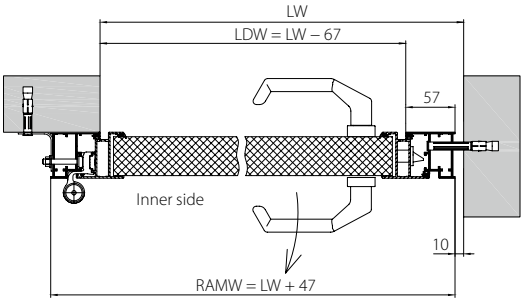


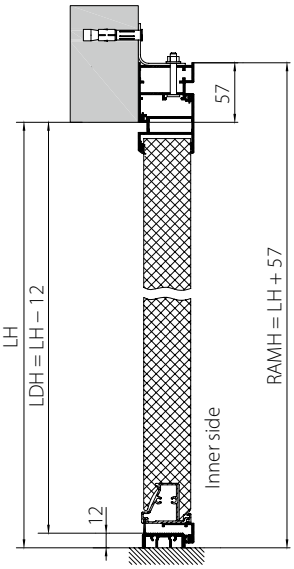
9.11. COMBINED INSTALLATION. TYPE 3

Combined installation. Rebate ledge inserted
Opening inward
Opening direction—right



Combined installation. Rebate ledge inserted
Opening inward
Opening direction—left





10. REQUIREMENTS FOR THE SIDE DOOR OPENING

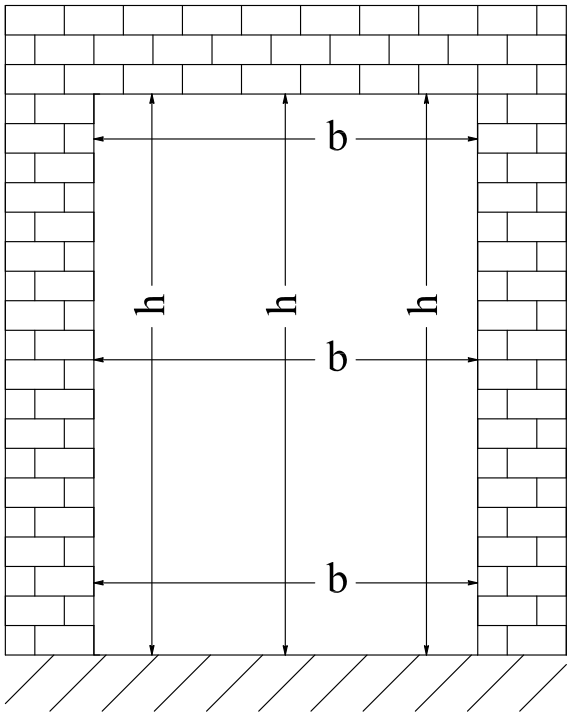
10.1. GENERAL PROVISIONS

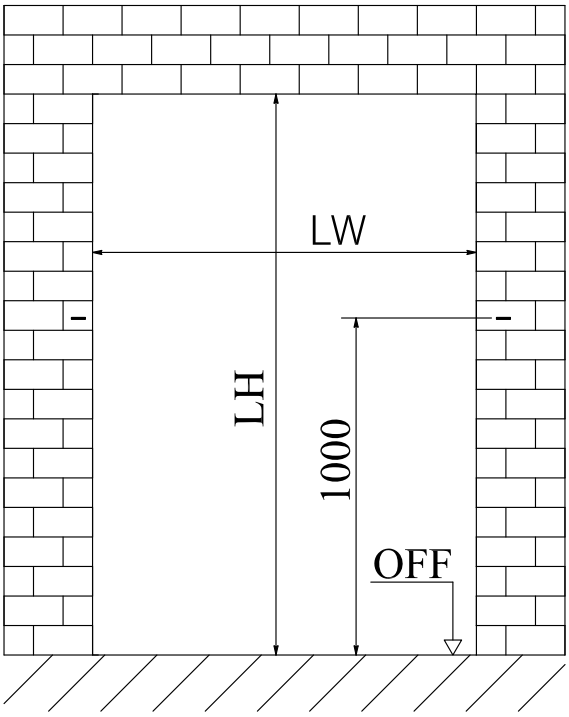
Prepared openings should meet the following requirements:

- openings should have a rectangular form;
- edges and surfaces of the outer and inner slopes should not have chips, stones, plaster laps, cracks and other damages in height (depth) of more than 5 mm, defective places should be filled with water resistant compositions;
- surfaces having oil contamination should be degreased;
- loose, crumbling parts should be strengthened (repaired with a binder composition);
- working surfaces deviations from the vertical and horizontal must not exceed 1.5 mm/m, but not more than 5 mm over the entire width or height of the opening;
- marks indicating zero level should be placed on the sides of the opening (the level of the finished floor). All dimensions for the height are determined from the zero marks.

10.2. DETERMINING THE SIZE OF THE OPENING

Measurements for the height of the opening h are made on the right, left and in the middle of the opening, width **b**—on the top, bottom and in the middle. The largest of the dimensions of height (**LH**) and width (**LW**) of the opening are crucial in side door ordering for the installation behind the opening. The smallest of the dimensions of height (**LH**) and width (**LW**) of the opening are crucial in side door ordering for set installation.





LW — opening width in the light;
LH — height from the finished floor to the lower edge of the opening header;
OFF — surface of the finished floor.

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