



TECHNICAL DATA

Garage doors

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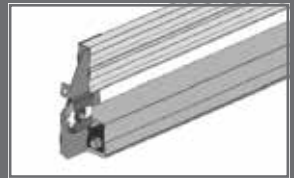
37 SIDE-HINGED DOORS

- 38.....SIDE DOOR (SH1)
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TRACKS

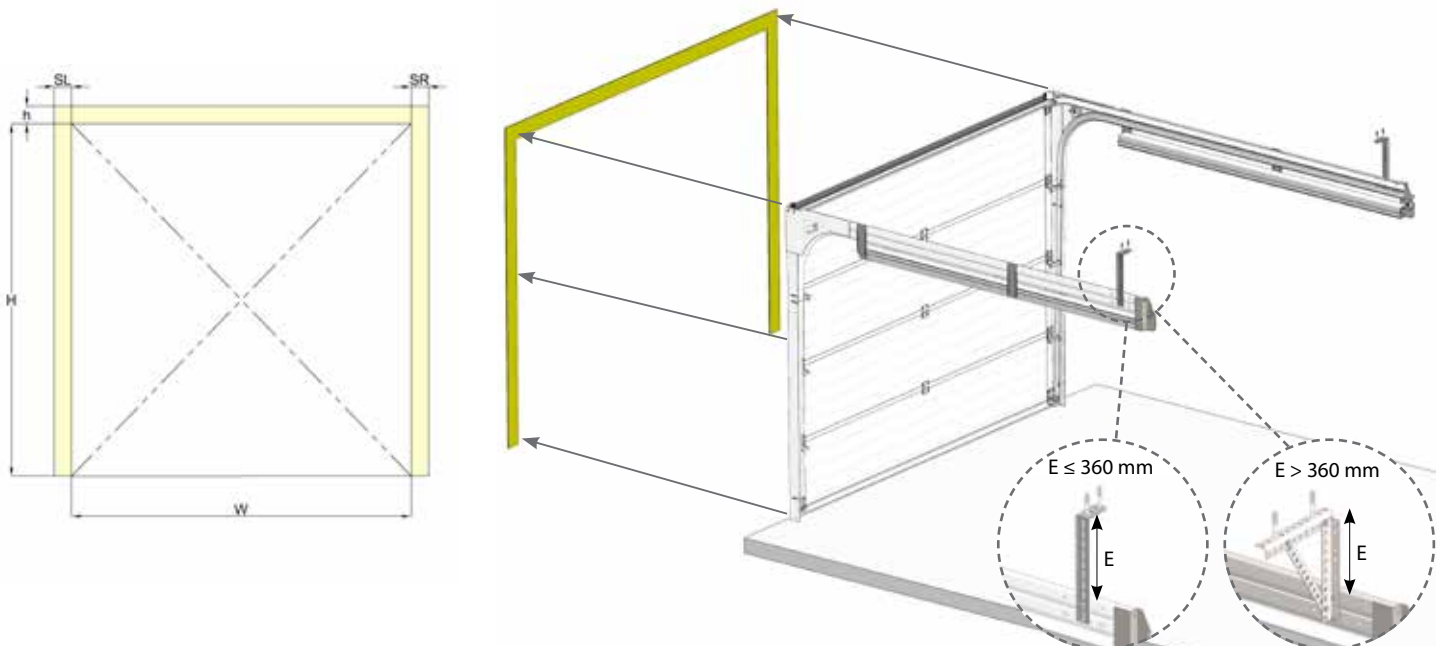
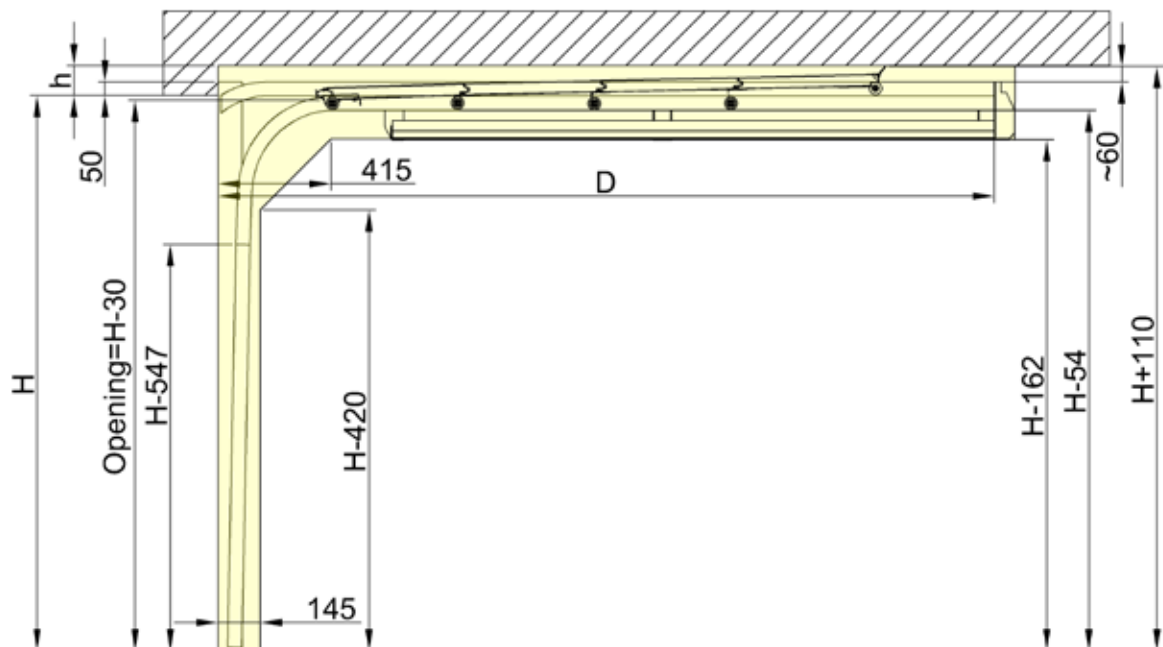
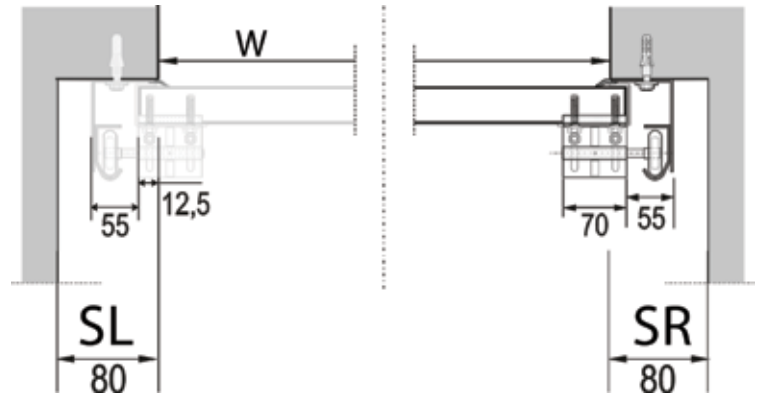


R30

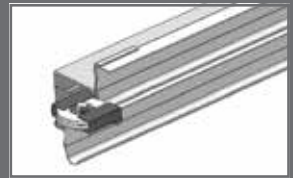


h (headroom)	110 mm (manual) 150 mm (with el. operator)
SL / SR (sideroom)	80 mm
Daylight opening	H - 30 mm

H	D
≤ 2070	2680
2071 - 2125	2880



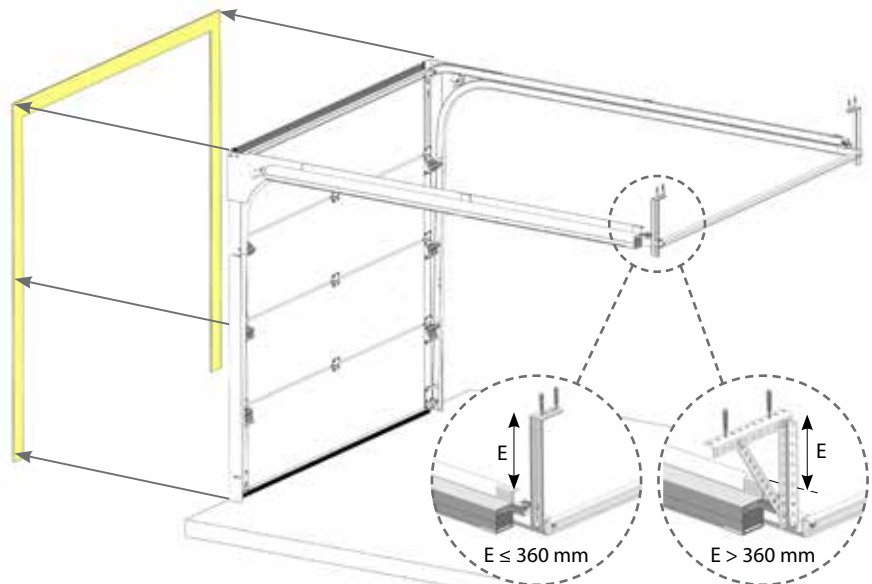
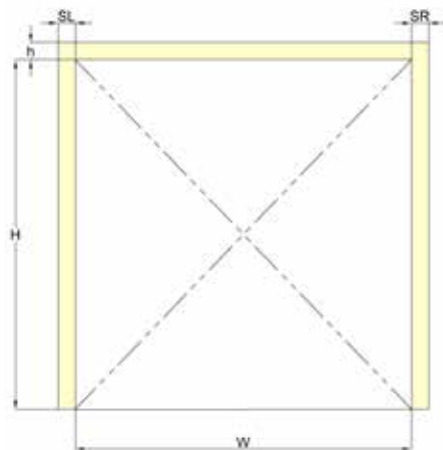
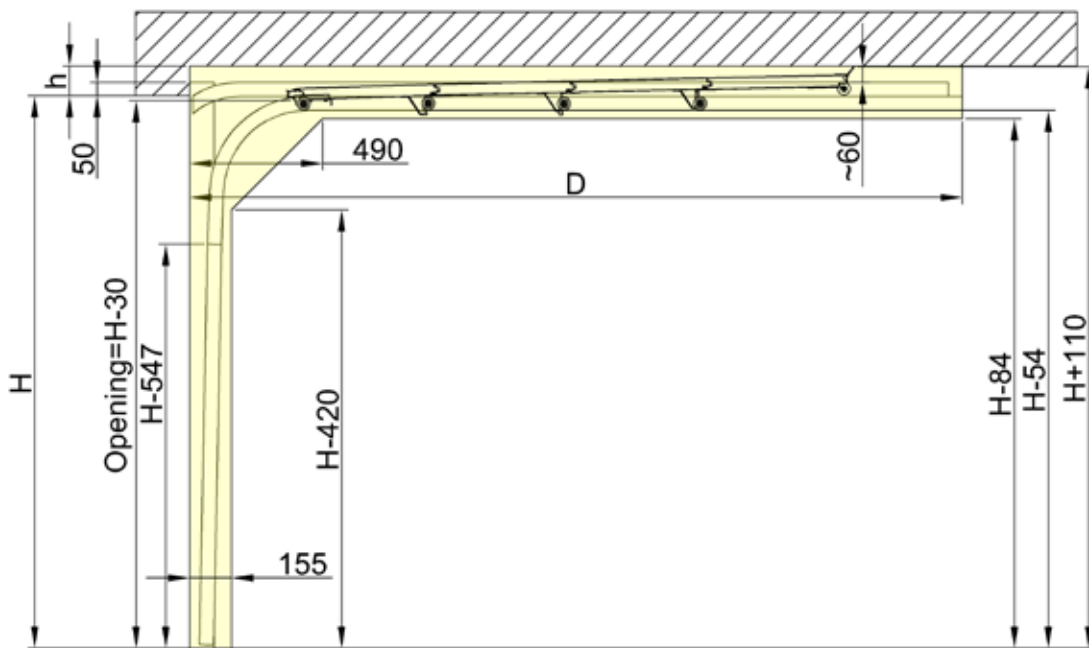
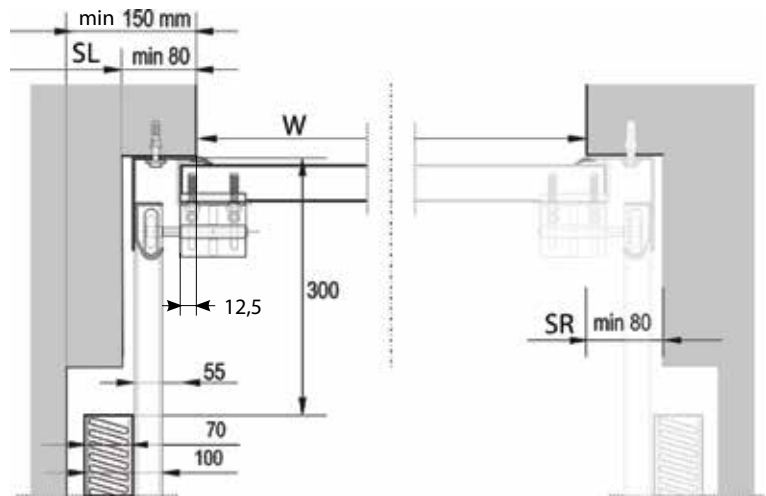
R40 - SM



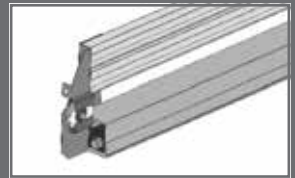
h (headroom)	110 mm (manual) 150 mm (with el. operator)
SL / SR (sideroom)	150 mm
Daylight opening	H - 30 mm

See page 12 for options to reduce required headroom and increase daylight opening.

H	D
≤ 2070	2720
2071 - 2270	2920
2271 - 2400	3047
2401 - 2500	3300



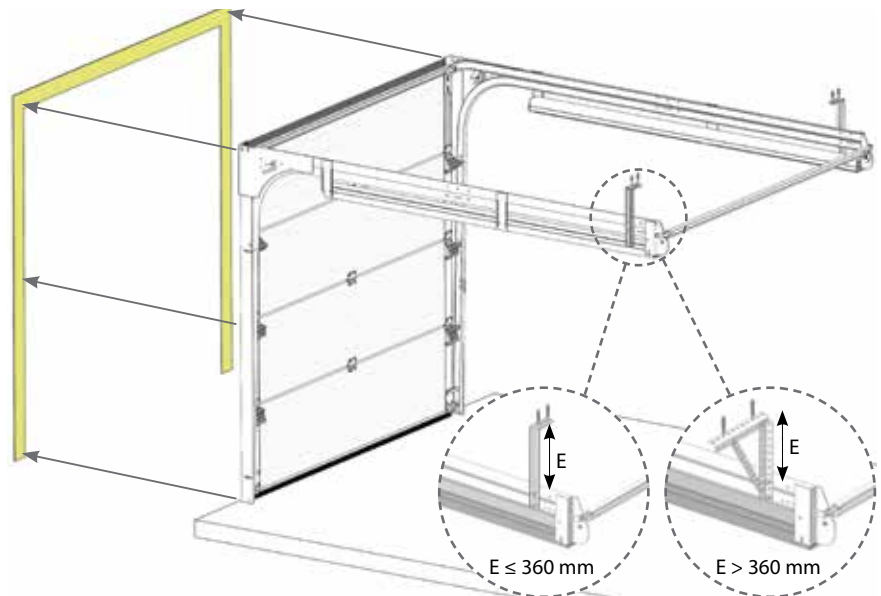
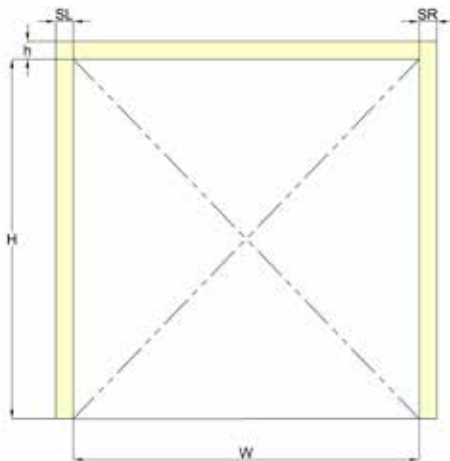
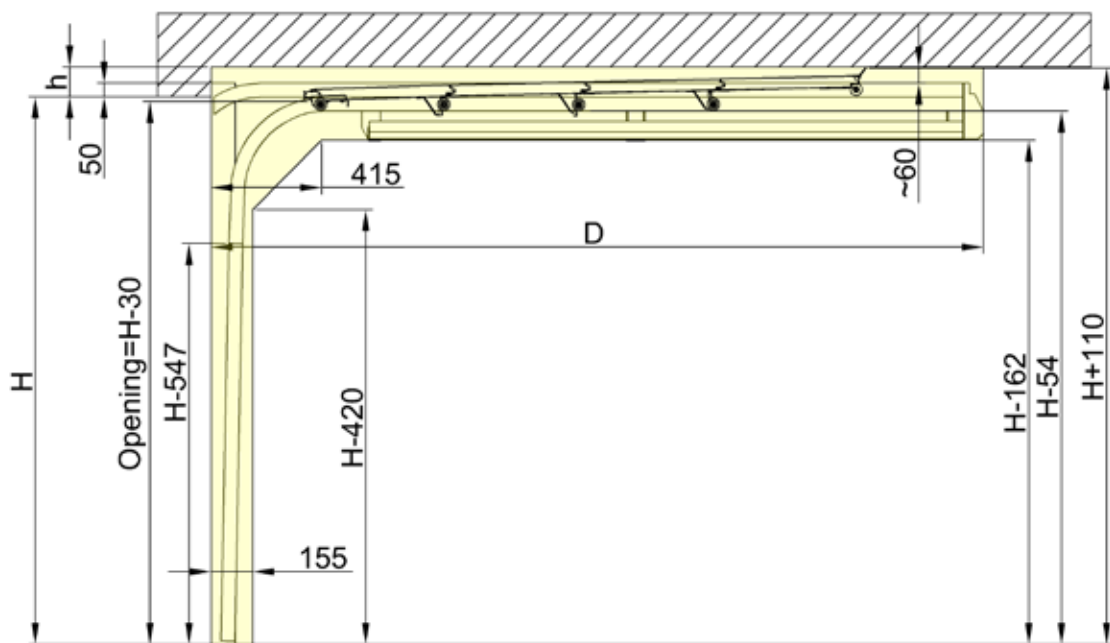
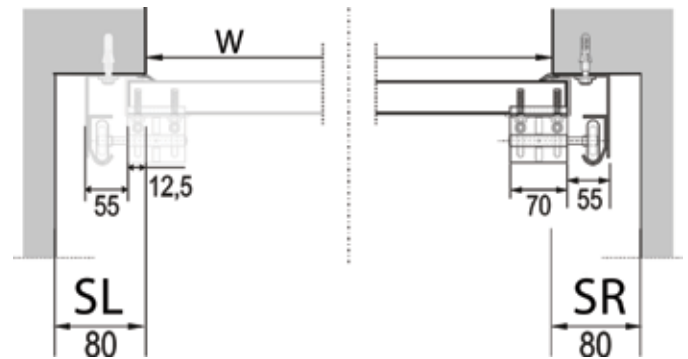
R40 - UM



h (headroom)	110 mm (manual) 150 mm (with el. operator)
SL / SR (sideroom)	80 mm
Daylight opening	H - 30 mm

See page 12 for options to reduce required headroom and increase daylight opening.

H	D
≤ 2070	2680
2071 - 2270	2880
2271 - 2400	3007
2401 - 2500	3260

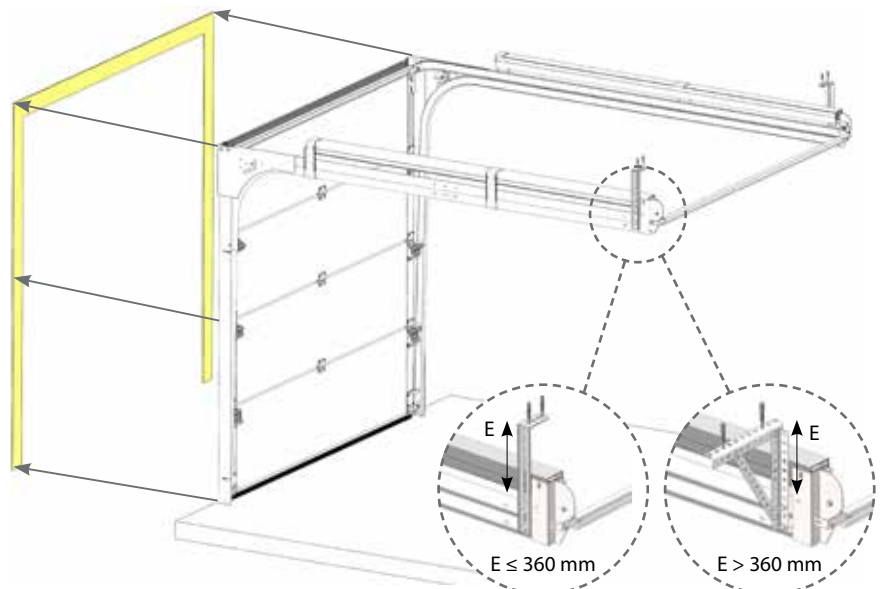
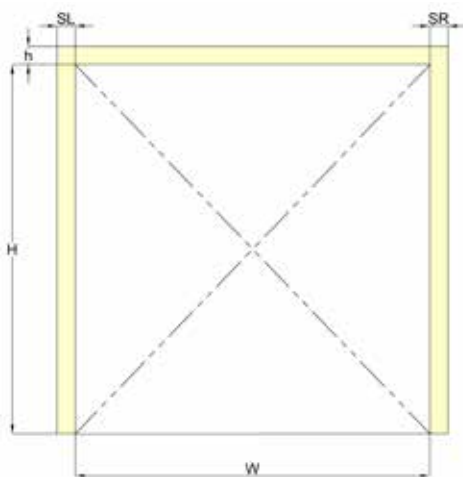
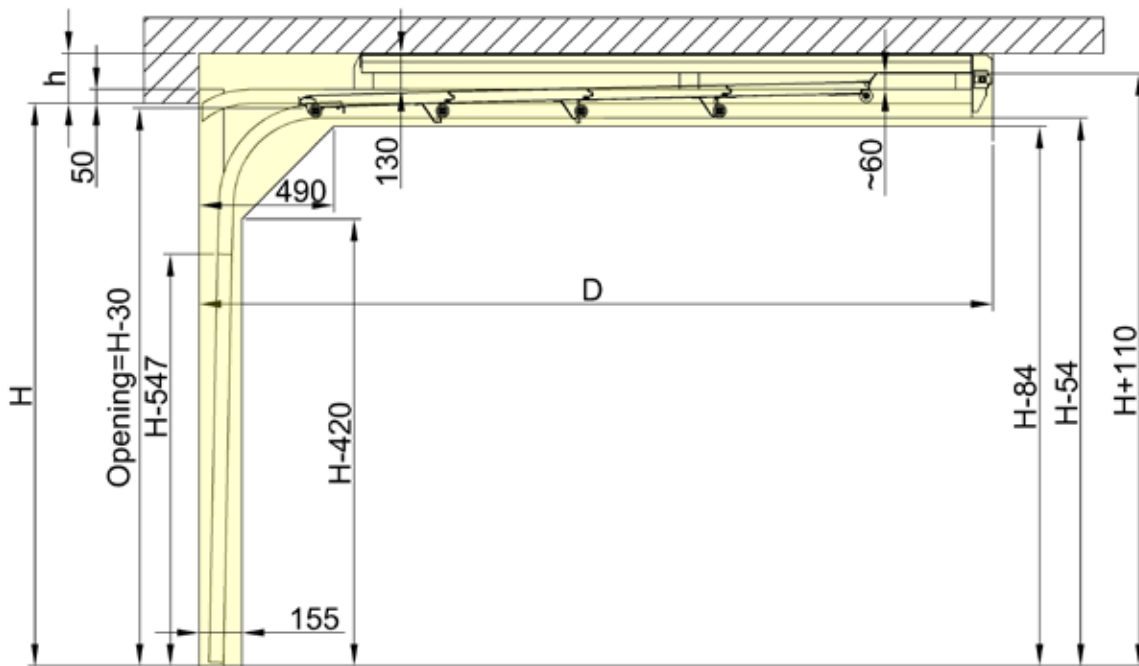
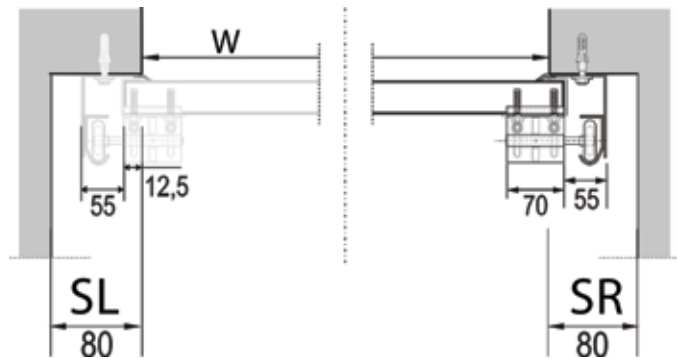


R40 - TM



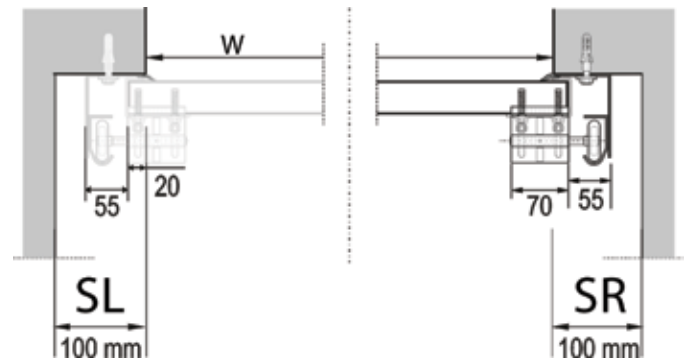
h (headroom)	180 mm (with el. operator or manual)
SL / SR (sideroom)	80 mm
Daylight opening	H - 30 mm

H	D
≤ 2125	2880
2126 - 2250	3007
2251 - 2500	3260

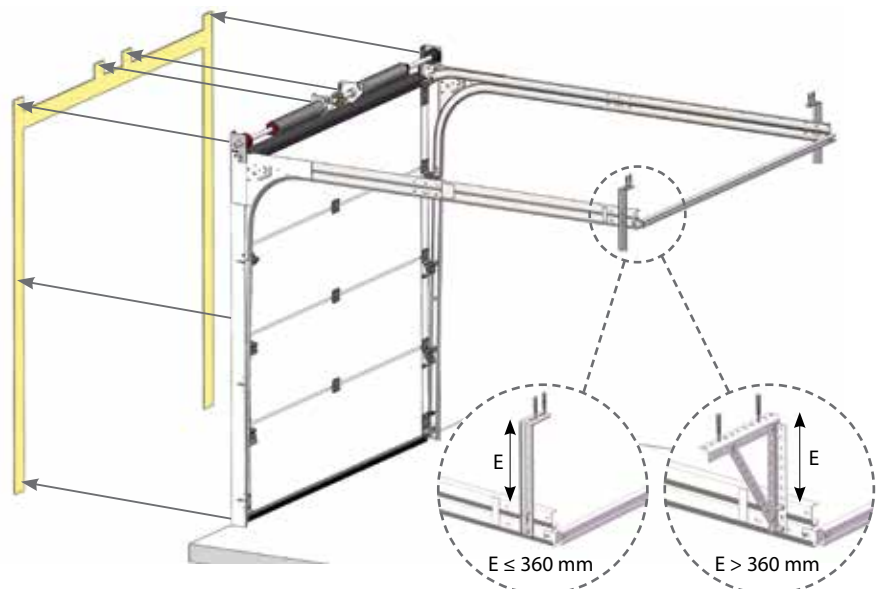
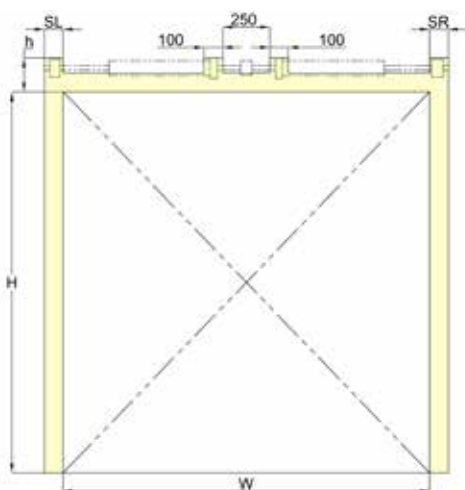
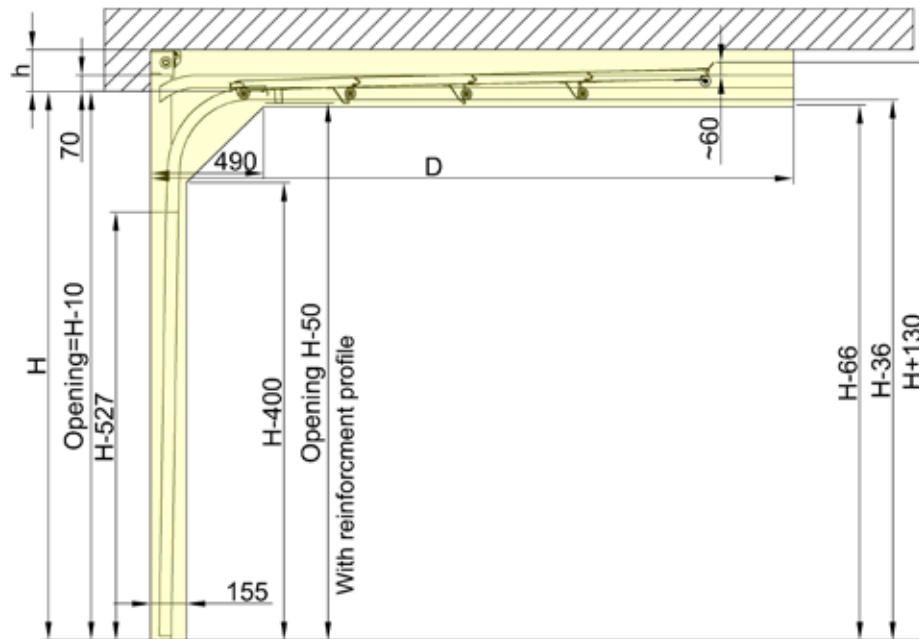


TL LHR - FM

h (headroom)	180 mm (with el. operator and manual)
SL / SR (sideroom)	100 mm
Daylight opening	H - 130 mm (manual) H - 10 mm (with el. operator) H - 50, W $\geq$ 4500 (with el. operator)
D (fitting depth)	H + 550 mm



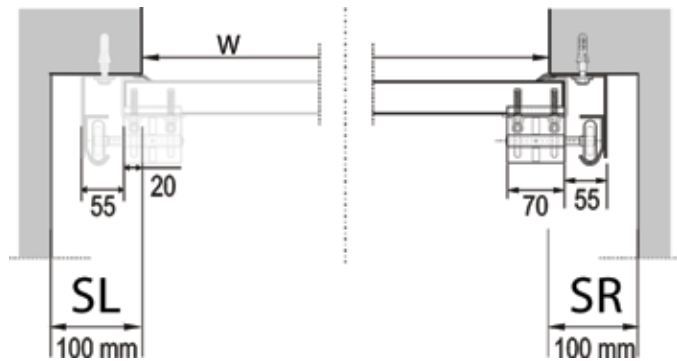
Number of required suspensions	
W $\leq$ 3000	1 suspension per side
W > 3000	2 suspensions per side



W > 5000 mm regarding the quantity of springs consult the manufacturer

TL LHR - RM

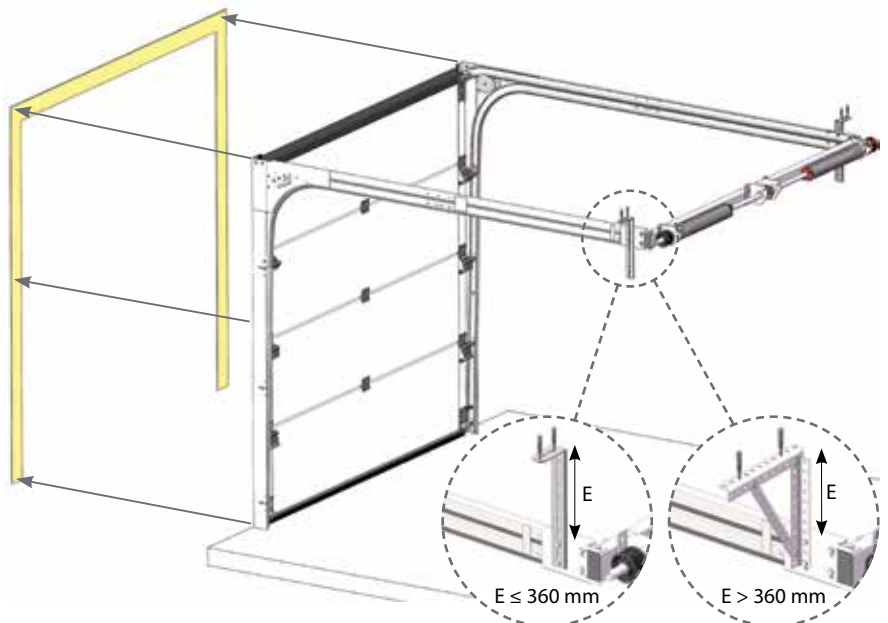
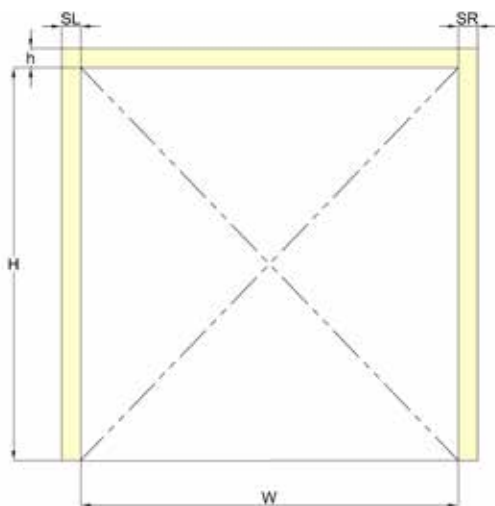
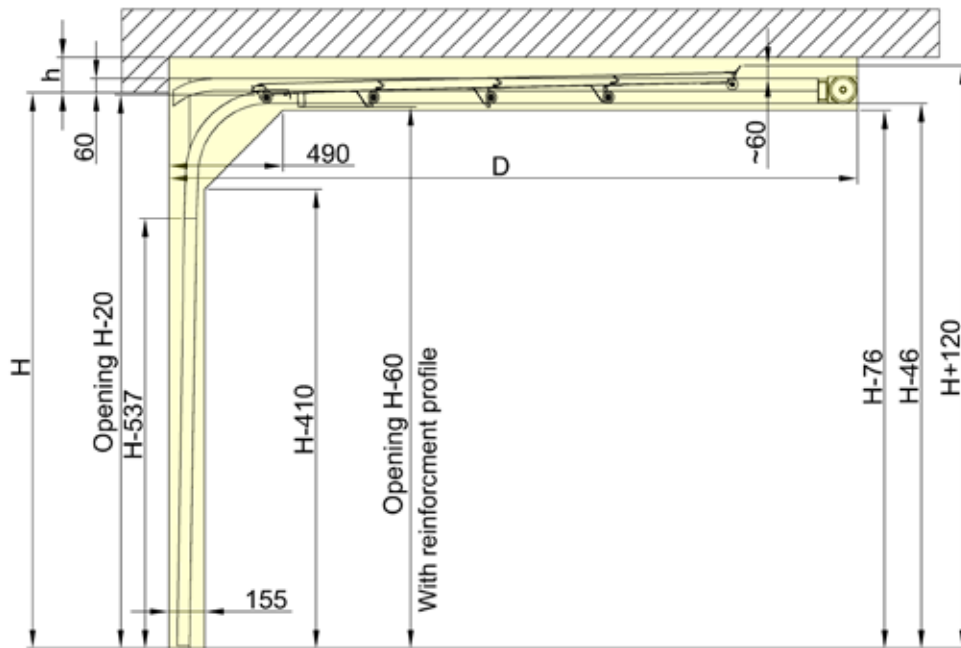
h (headroom)	120 mm (manual) 160 mm (with el. operator)
SL / SR (sideroom)	100 mm
Daylight opening	H - 160 mm (manual) H - 20 mm (with el. operator) H - 60, W $\geq$ 4500 (with el. operator)
D (fitting depth)	H + 700 mm H + 1100 mm with Sommer operator



Number of required suspensions

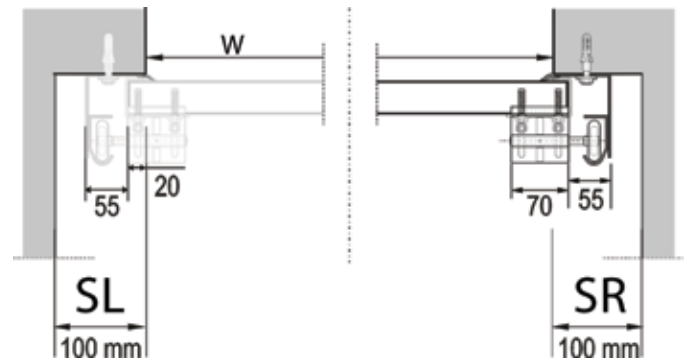
W $\leq$ 3000	1 suspension per side
W > 3000	2 suspensions per side

See page 12 for options to reduce required headroom and increase daylight opening.

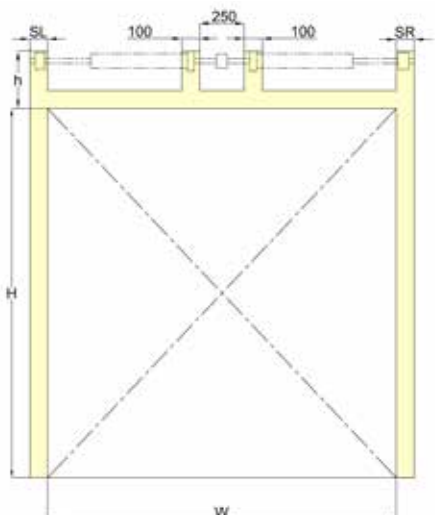
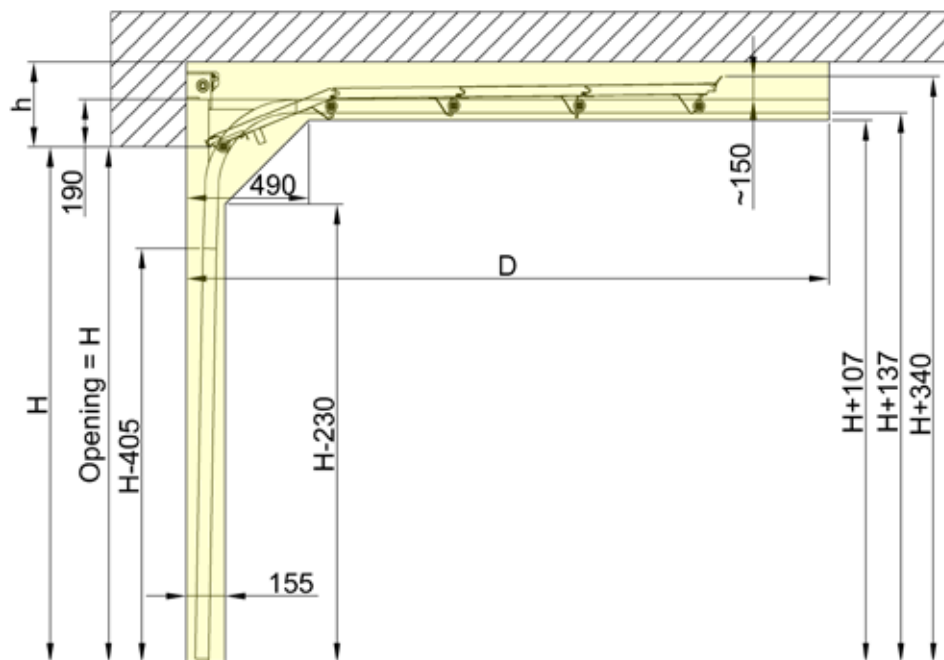


TL STD

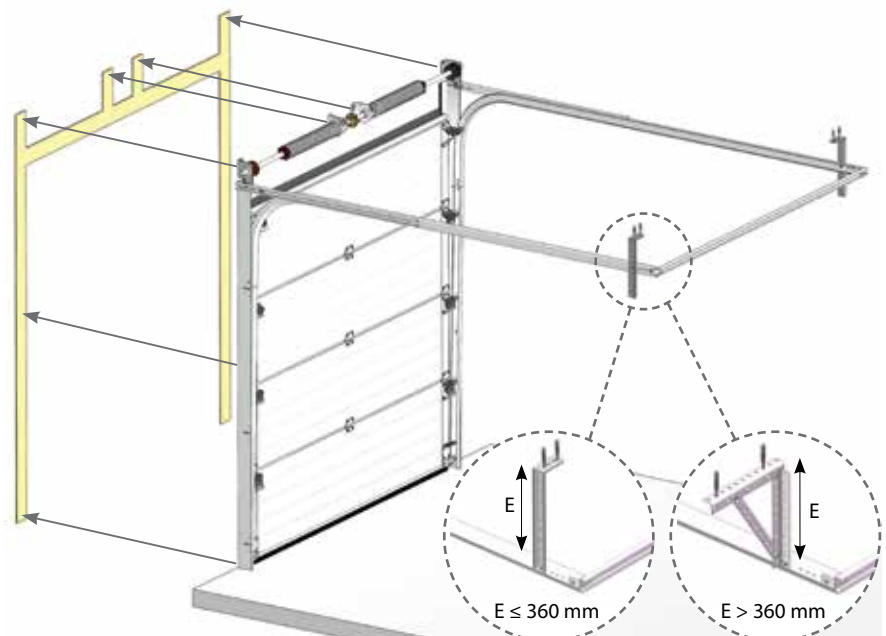
h (headroom)	340 mm (manual) 370 mm (with el. operator)
SL / SR (sideroom)	100 mm
Daylight opening	H
D (fitting depth)	H + 510 mm



Number of required suspensions	
$W \leq 3000$	1 suspension per side
$W > 3000$	2 suspensions per side



W > 5000 mm regarding the quantity of springs consult the manufacturer



Additional options to reduce required headroom and increase daylight opening

Min headroom (mm)								
Equipment	Model							
	R40 SM		R40 UM		R40 TM		LHR-RM	
	Manual	Operator	Manual	Operator	Manual	Operator	Manual	Operator
Standart top brackets and top weather seal on panel	110	150	110	150	180	180	120	160
Standart top brackets and top weather seal on lintel	90	130	90	130	180	180	90	130
Top weather seal on lintel + LHR top brackets (18023) + with side brackets (18010)	70	110	not available	not available	180	180	80	120
Universal lock 22008	95		95		180		105	
Knob lock 22009	100		100		180		110	
With pass door	not available		not available		not available		105	

Max daylight opening (mm)							
Model							
R40 SM		R40 UM		R40 TM		LHR-RM	
Manual	Operator	Manual	Operator	Manual	Operator	Manual	Operator
H-120	H-30	H-120	H-30	H-120	H-30	H-160	H-20 (W ≤ 4500) H-40 (W > 4500)

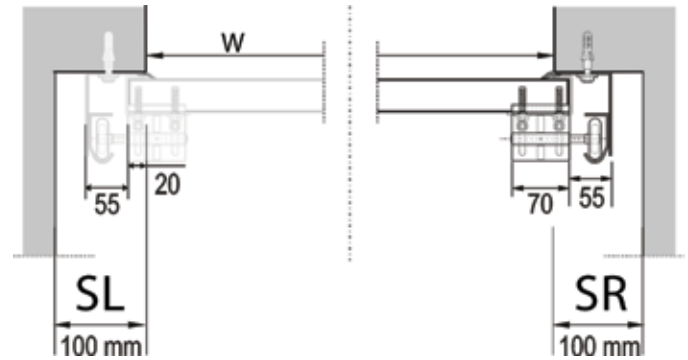
For full daylight opening use extended vertical tracks +30 mm (R40 UM/SM/TM), +20 mm LHR-RM (W≤4500)
You need more headroom (+30 mm or +20 mm) then required min headroom

Fitting depth (mm)				
Opening H, mm	Model			
	R40 SM	R40 UM	R40 TM	LHR-RM
≤ 2070	2720	2680	2680	H+700
2071-2450	2920	2880	2880	H+700
2451-2500	3047	3007	3007	H+700
2501-3000	not available	not available	not available	H+700

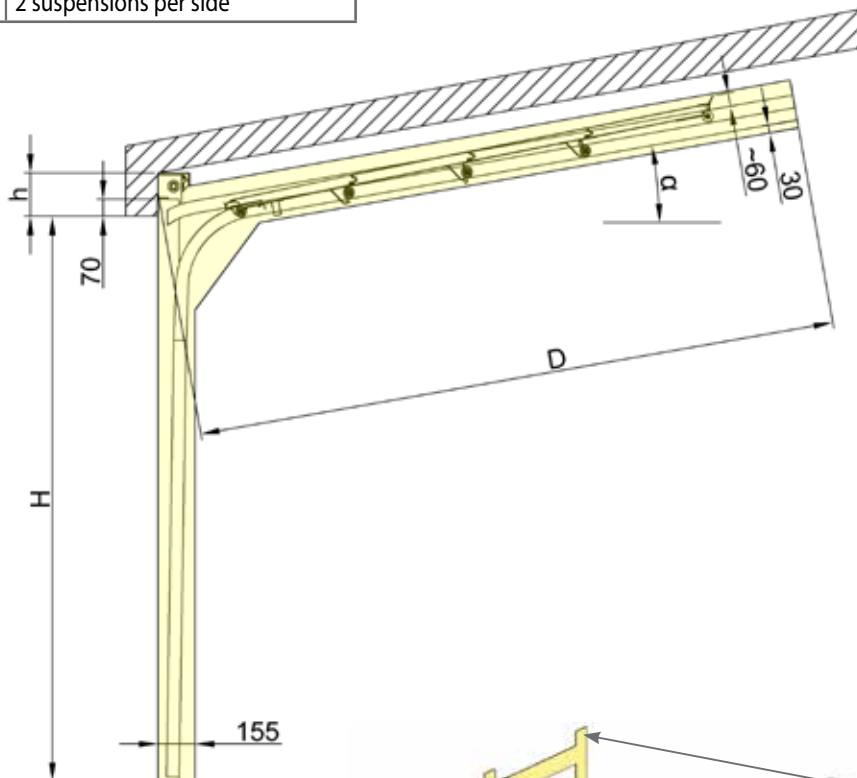
Min sideroom (mm)			
Model			
R40 SM	R40 UM	R40 TM	LHR-RM
150	80	80	100

TL LHR - FM PR

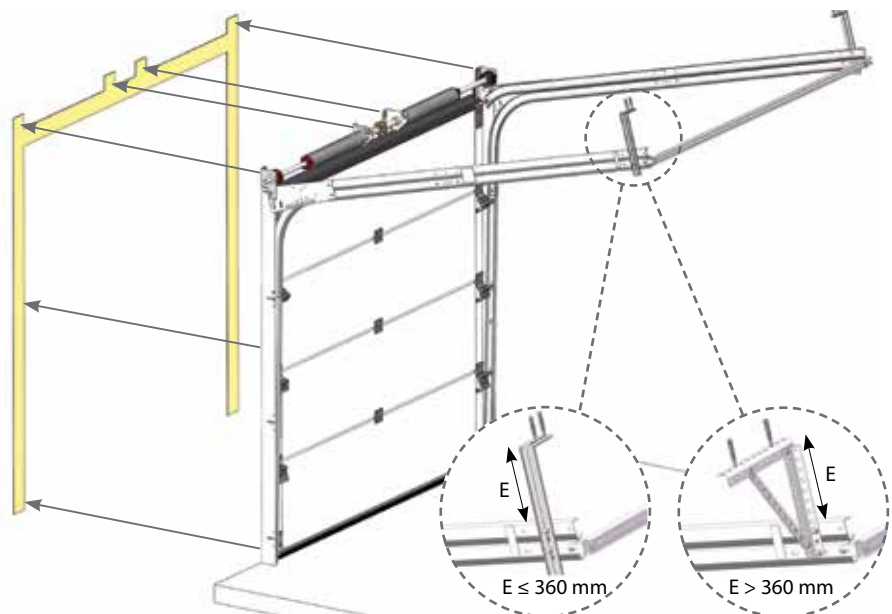
h (headroom)	Go to page 16
SL / SR (sideroom)	100 mm
Daylight opening	H - 130 mm (manual) H - 10 mm (with el. operator) H - 50, W $\geq$ 4500 (with el. operator)
D (fitting depth)	H + 550 mm



Number of required suspensions	
W $\leq$ 3000	1 suspension per side
W > 3000	2 suspensions per side

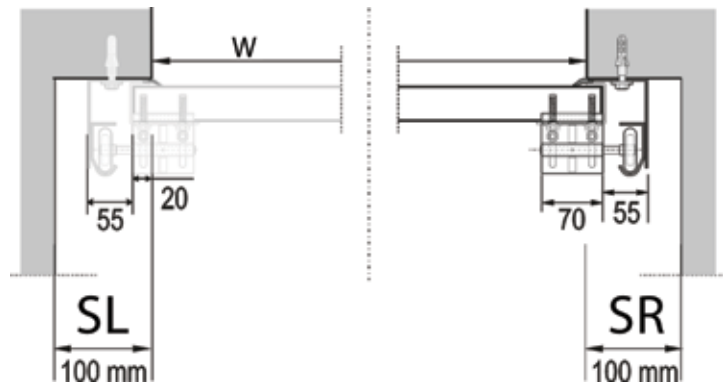


Regarding quantity of springs
consult manufacturer



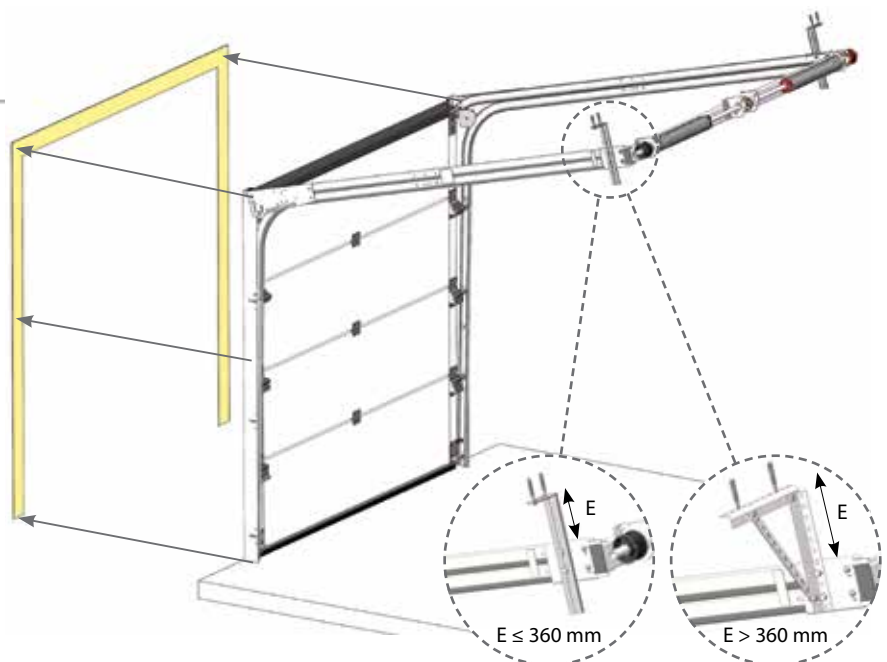
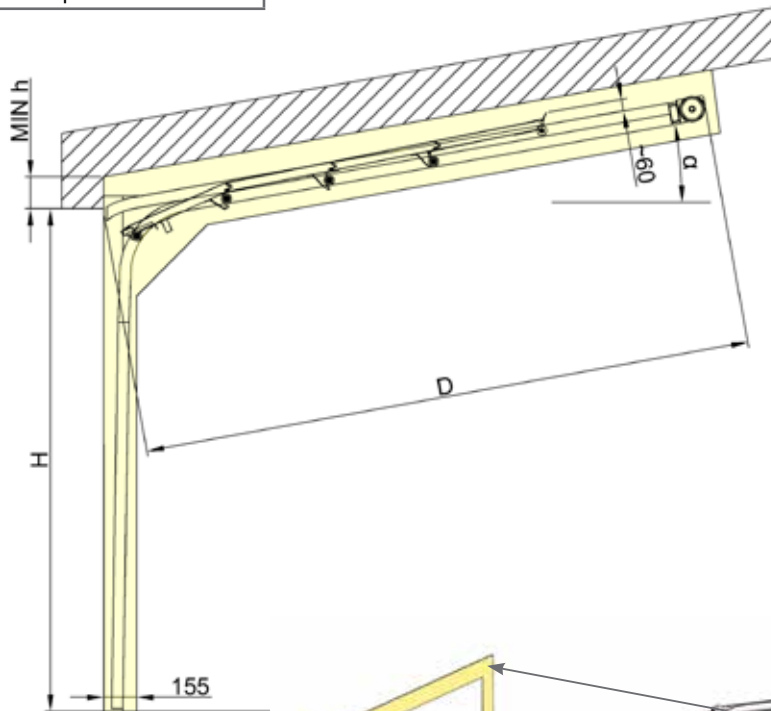
TL LHR - RM PR

h (headroom)	120 mm (manual) $\alpha \leq 15^\circ$ 160 mm (with el. operator) $\alpha \leq 15^\circ$ *for bigger angle consult manufacturer
SL / SR (sideroom)	100 mm
Daylight opening	H - 160 mm (manual) H - 20 mm (with el. operator) H - 60, W $\geq$ 4500 (with el. operator)
D (fitting depth)	H + 700 mm H + 1100 mm (with sommer operator)



Number of required suspensions

W $\leq$ 3000	1 suspension per side
W $>$ 3000	2 suspensions per side

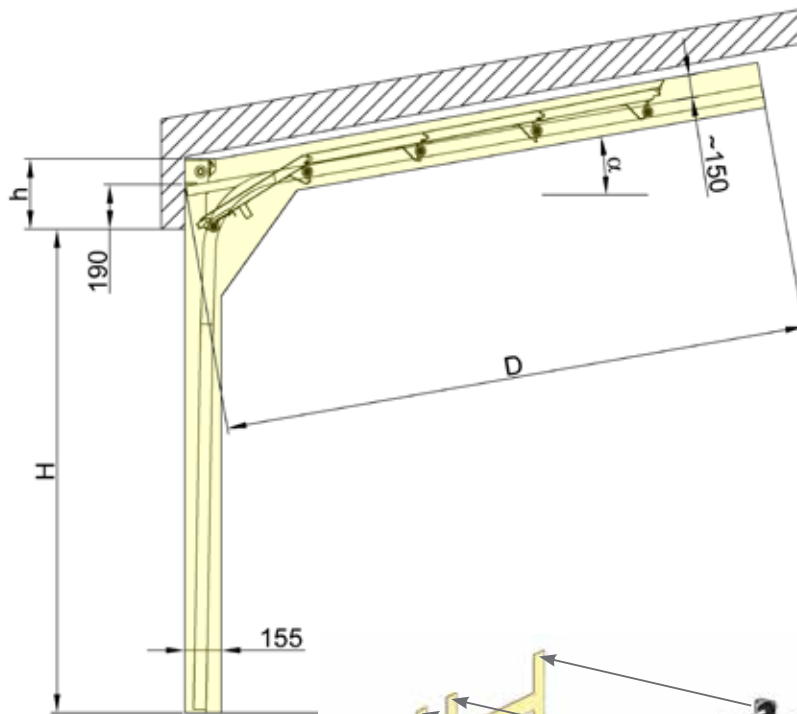
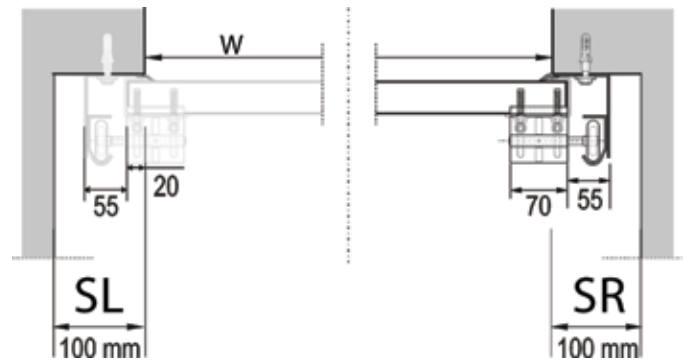


Regarding quantity of springs
consult manufacturer

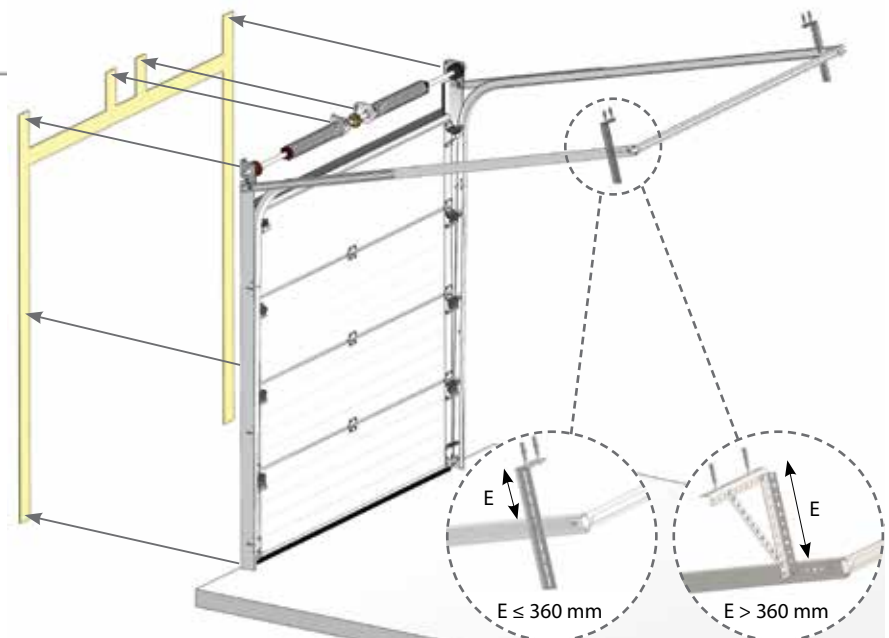
TL STD PR

h (headroom)	Go to page 16
SL / SR (sideroom)	100 mm
Daylight opening	H
D (fitting depth)	H + 510 mm

Number of required suspensions	
$W \leq 3000$	1 suspension per side
$W > 3000$	2 suspensions per side



Regarding quantity of springs
consult manufacturer



Door size, pitch angle and required headroom correlation



All sizes are for doors without operator

Required headroom for doors with woodgrain / stucco panels

	$\alpha \leq 10^\circ$		$10^\circ < \alpha \leq 15^\circ$		$15^\circ < \alpha \leq 20^\circ$		$20^\circ < \alpha \leq 25^\circ$		$25^\circ < \alpha \leq 30^\circ$	
	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM
$H \leq 2000$	340	180	340	180	340	180	340	180	370	270
$H \leq 2250$	340	180	340	180	340	180	370	270	370	270
$H \leq 2500$	340	180	340	180	370	270	370	270	370	270
$H \leq 2750$	340	180	370	270	370	270	370	270	370	270
$H \leq 3000$	370	270	370	270	370	270	370	270	430	310

Required headroom for doors with woodgrain / stucco panels and wicket door

	$\alpha \leq 10^\circ$		$10^\circ < \alpha \leq 15^\circ$		$15^\circ < \alpha \leq 20^\circ$		$20^\circ < \alpha \leq 25^\circ$		$25^\circ < \alpha \leq 30^\circ$	
	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM
$H \leq 2000$	340	180	340	180	340	180	370	270	370	270
$H \leq 2250$	340	180	340	180	340	180	370	270	370	270
$H \leq 2500$	340	180	340	180	370	270	370	270	370	270
$H \leq 2750$	340	180	370	270	370	270	370	270	370	270
$H \leq 3000$	370	270	370	270	370	270	370	270	430	310

Required headroom for doors with smooth (SLICK type) panels

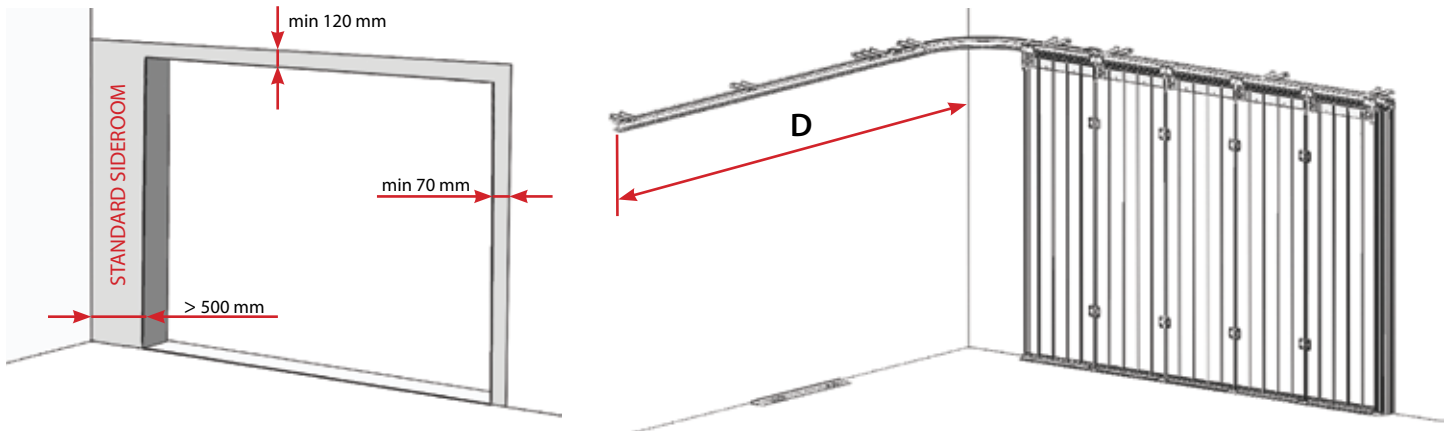
	$\alpha \leq 10^\circ$		$10^\circ < \alpha \leq 15^\circ$		$15^\circ < \alpha \leq 20^\circ$		$20^\circ < \alpha \leq 25^\circ$		$25^\circ < \alpha \leq 30^\circ$	
	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM
$H \leq 2000$	340	180	340	180	340	180	370	270	370	270
$H \leq 2250$	340	180	340	180	370	270	370	270	370	270
$H \leq 2500$	340	180	370	270	370	270	370	270	370	270
$H \leq 2750$	370	270	370	270	370	270	370	270	370	270
$H \leq 3000$	370	270	370	270	370	270	370	270	430	310

Required headroom for doors with smooth (SLICK type) panels and wicket door

	$\alpha \leq 10^\circ$		$10^\circ < \alpha \leq 15^\circ$		$15^\circ < \alpha \leq 20^\circ$		$20^\circ < \alpha \leq 25^\circ$		$25^\circ < \alpha \leq 30^\circ$	
	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM	STD	LHR-FM
$H \leq 2000$	340	180	340	180	340	180	370	270	370	270
$H \leq 2250$	340	180	340	180	370	270	370	270	370	270
$H \leq 2500$	340	180	370	270	370	270	370	270	370	270
$H \leq 2750$	370	270	370	270	370	270	370	270	370	270
$H \leq 3000$	370	270	370	270	370	270	435	310	430	310

SSD

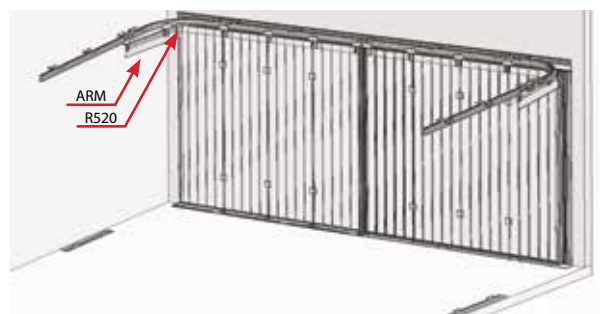
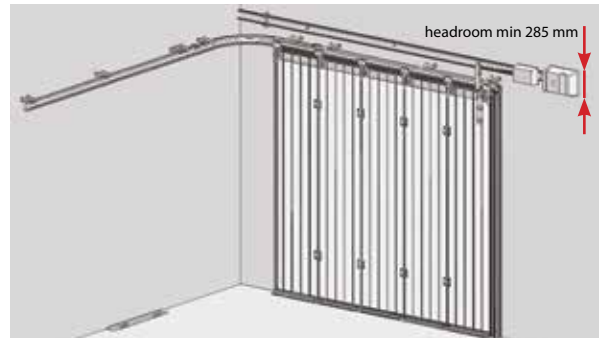
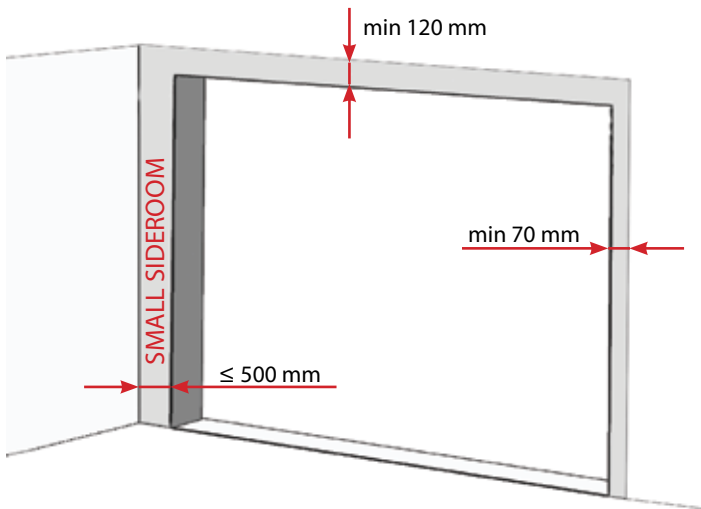
STANDARD SIDEROOM



SMALL SIDEROOM

SIDEROOM	RADIUS	ARM	D	Operator fitting place***
150 - 200	R520	R520 + ARM L = 1000	W + 1250	side wall only
201 - 300	R520	R520 + ARM L = 600	W + 800	side wall
301 - 500	R520	R520 + ARM L = 400	W + 600	side wall
> 500	R420	-	W + 100	lintel

*** Operator movement range must be longer than W, if standard rail is too short use additional rail extensions



SINGLE DOOR

H = max 3000 mm, W = max 6000 mm

ANGLE RANGES

$\alpha = \text{min } 85^\circ, \text{ max } 180^\circ$



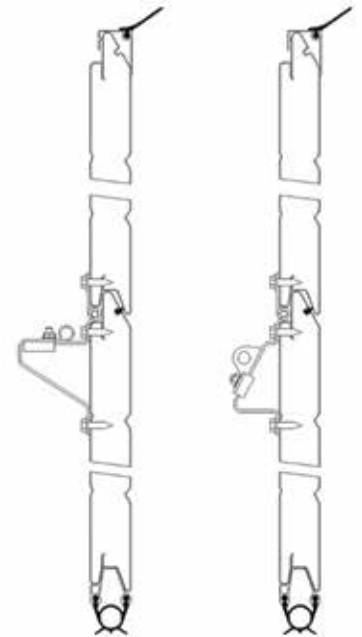
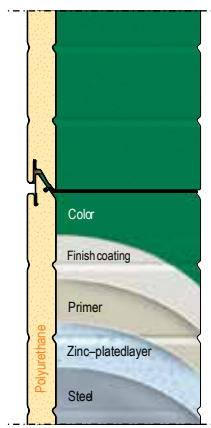
PANELS



PANEL TYPES

Panel type	S (mm)	K		Λ	Panel weight		Tolerances			U value
		Kcal m ² hK	Watt m ² K	Kcal mK	Kg/m	Kg/m ²	Thickness	Width	Length	W m ² K
R-500	40	0,43	0,50	0,017	5,6	11,2	+/- 2	+/- 1	+/- 5	0,52
R-610					6,8	11,2				

Section type	U value (W/ m ² K)	Wind class	Water penetration class	Air premability class
Sandwich	1 - 1,6	5	3	2

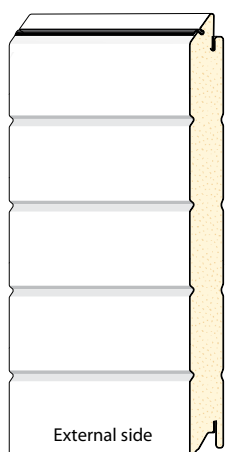


All panels Internal side - ribbed, stucco embossed RAL 9002

W ≤ 4500

W > 4500

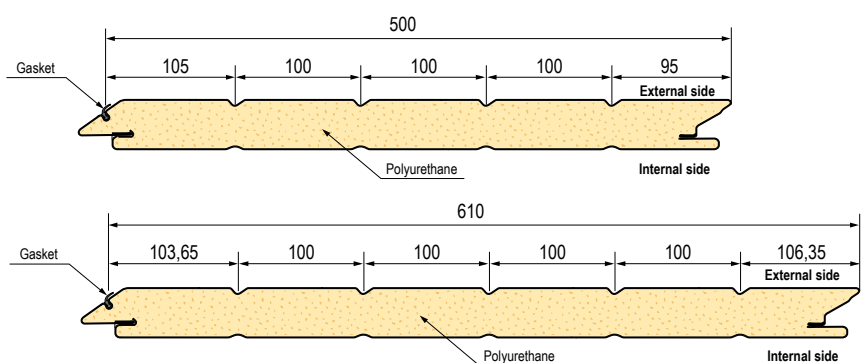
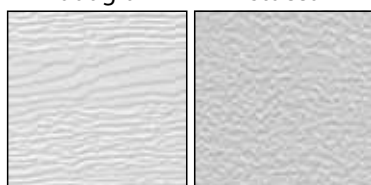
RIB



PANEL SURFACES

woodgrain

stucco



PANEL COLOURS

painting RAL

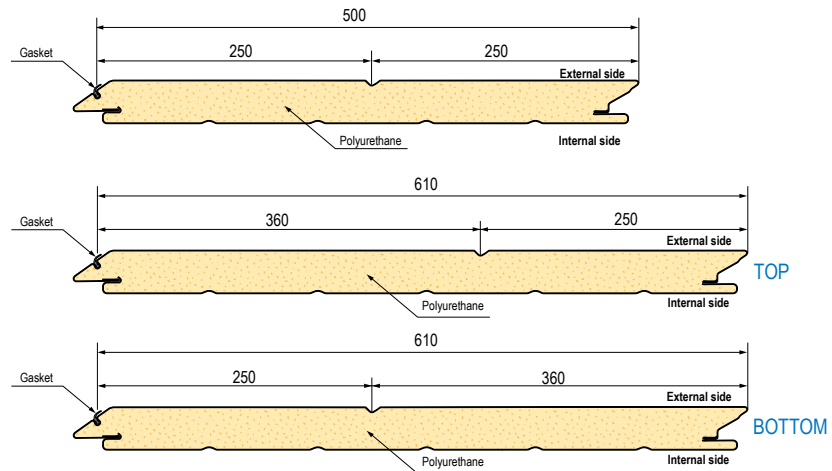
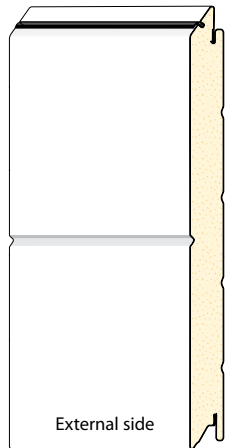


STANDARD COLOURS

RAL 9016, RAL 8017.

PANEL TYPES

MIDRIB

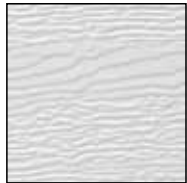


PANEL SURFACES

woodgrain

stucco

smooth



PANEL COLOURS

painting RAL

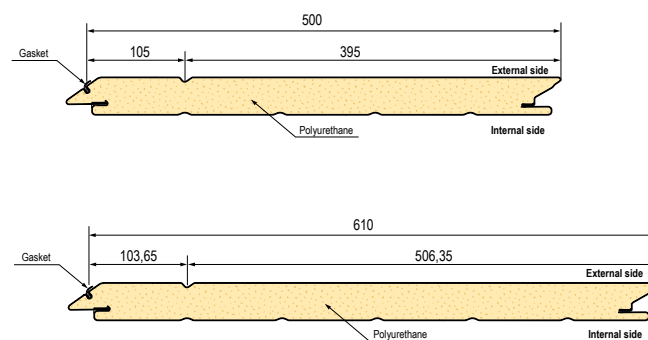
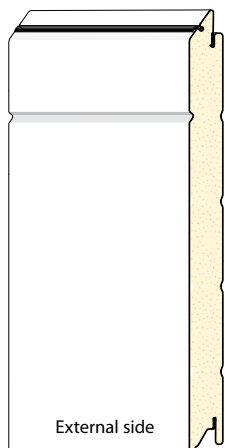
RAL PEARL
(only smooth surface)



STANDARD COLOURS

RAL 9016 (stucco, woodgrain),
RAL 8017 (woodgrain),
RAL 6009 (woodgrain),
RAL 7016 (woodgrain),
GOLDEN OAK (smooth),
OLD OAK (smooth),
LIGHT OAK (smooth),
MAHOGANY (smooth),
DARK OAK (smooth).

TOPRIB



PANEL SURFACES

smooth



PANEL COLOURS

painting RAL

RAL PEARL

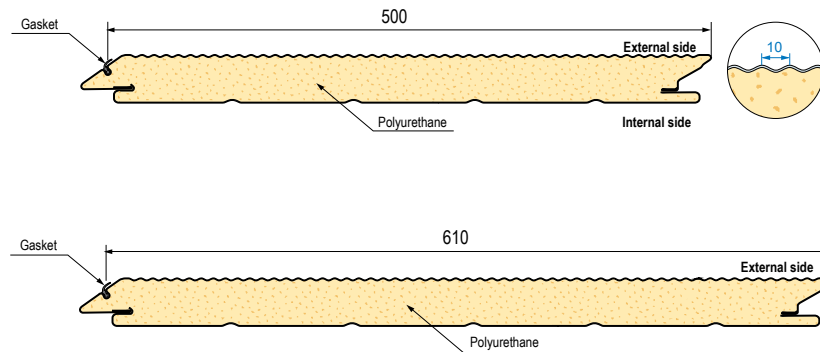
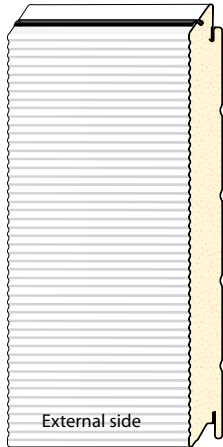


STANDARD COLOURS

RAL 9016,
RAL 7016.

PANEL TYPES

MICRORIB



PANEL SURFACES

smooth



PANEL COLOURS

painting RAL



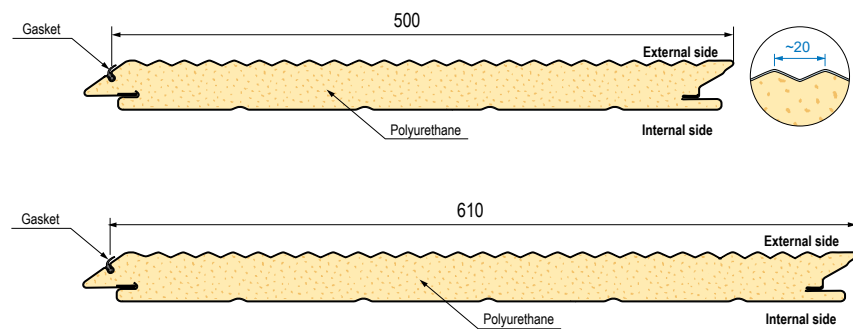
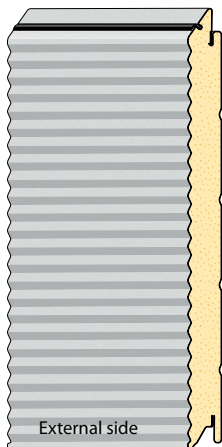
RAL PEARL
(single sided)



STANDARD COLOURS

RAL 9016

MACRORIB



PANEL SURFACES

stucco



Standard colour: RAL9007.

PANEL COLOURS

painting RAL

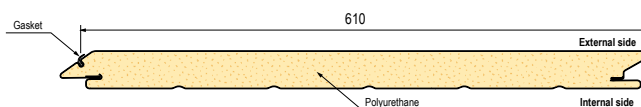
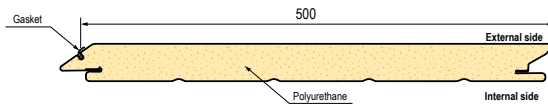
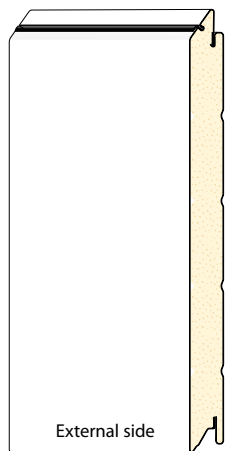


STANDARD COLOURS

RAL 9007,
RAL 9016,
RAL 7016.

PANEL TYPES

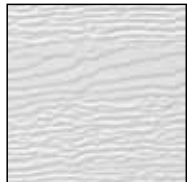
FLUSH



PANEL
SURFACES

woodgrain

stucco



PANEL
COLOURS

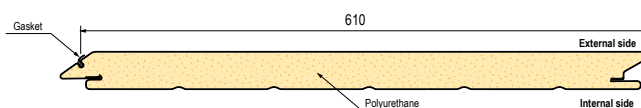
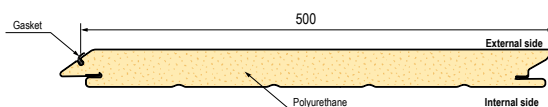
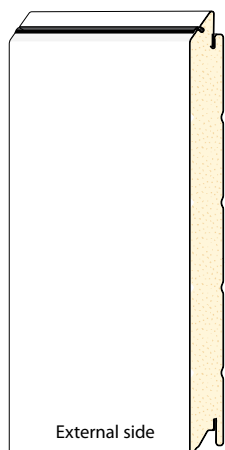
painting RAL



STANDARD
COLOURS

RAL 9016.

SLICK



PANEL
SURFACES

smooth



PANEL
COLOURS

painting RAL



RAL PEARL



STANDARD
COLOURS

RAL 9016,
RAL 9006,
RAL 7016,
RAL 9004.

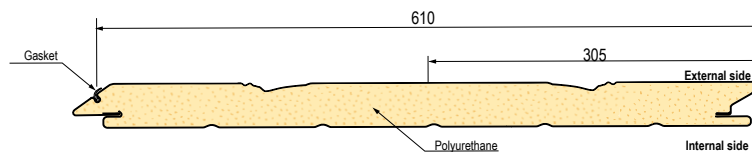
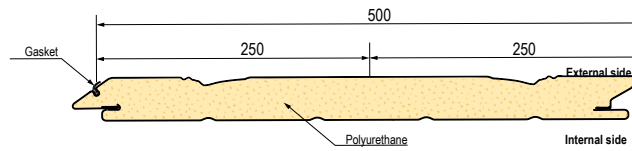
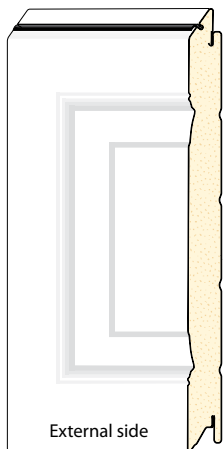
SLICK PLUS

STANDARD
COLOURS

Stainless Steel, Copper, Anthracite DB 703.

PANEL TYPES

CASSETTE



PANEL
SURFACES

PANEL
COLOURS

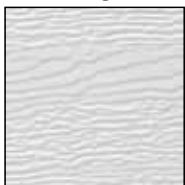
WOOD
IMAGES



Golden Oak

STANDARD
COLOURS

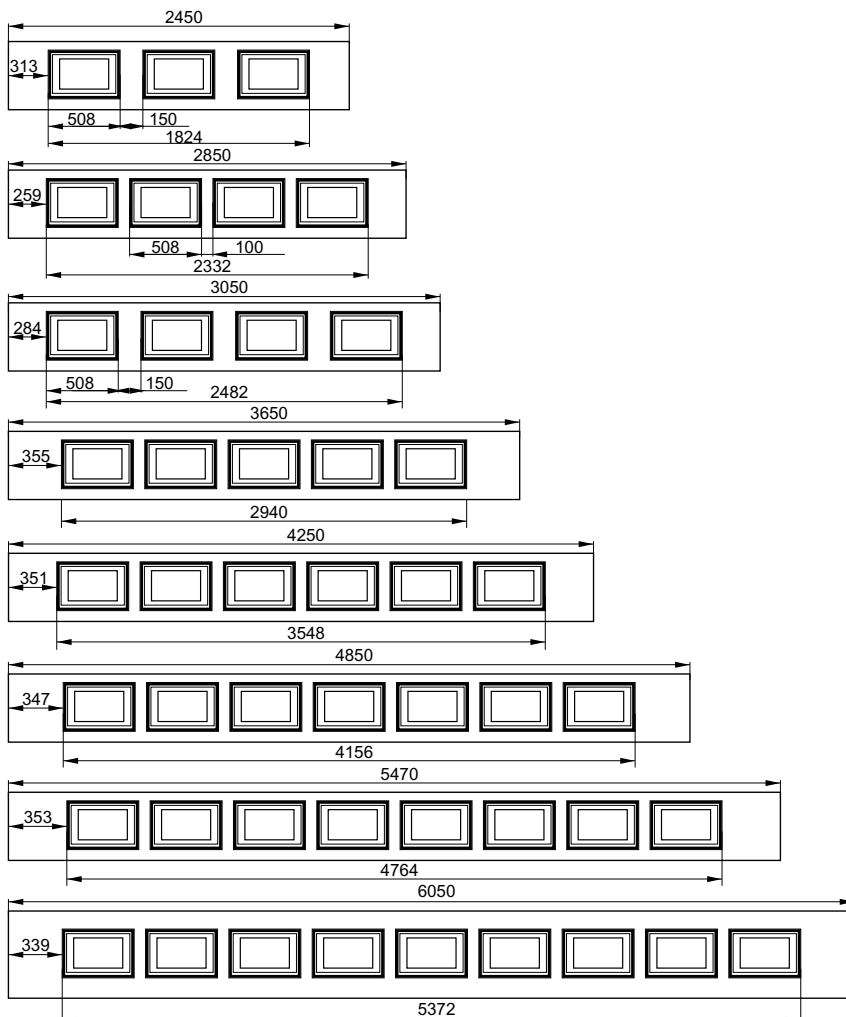
woodgrain



painting RAL

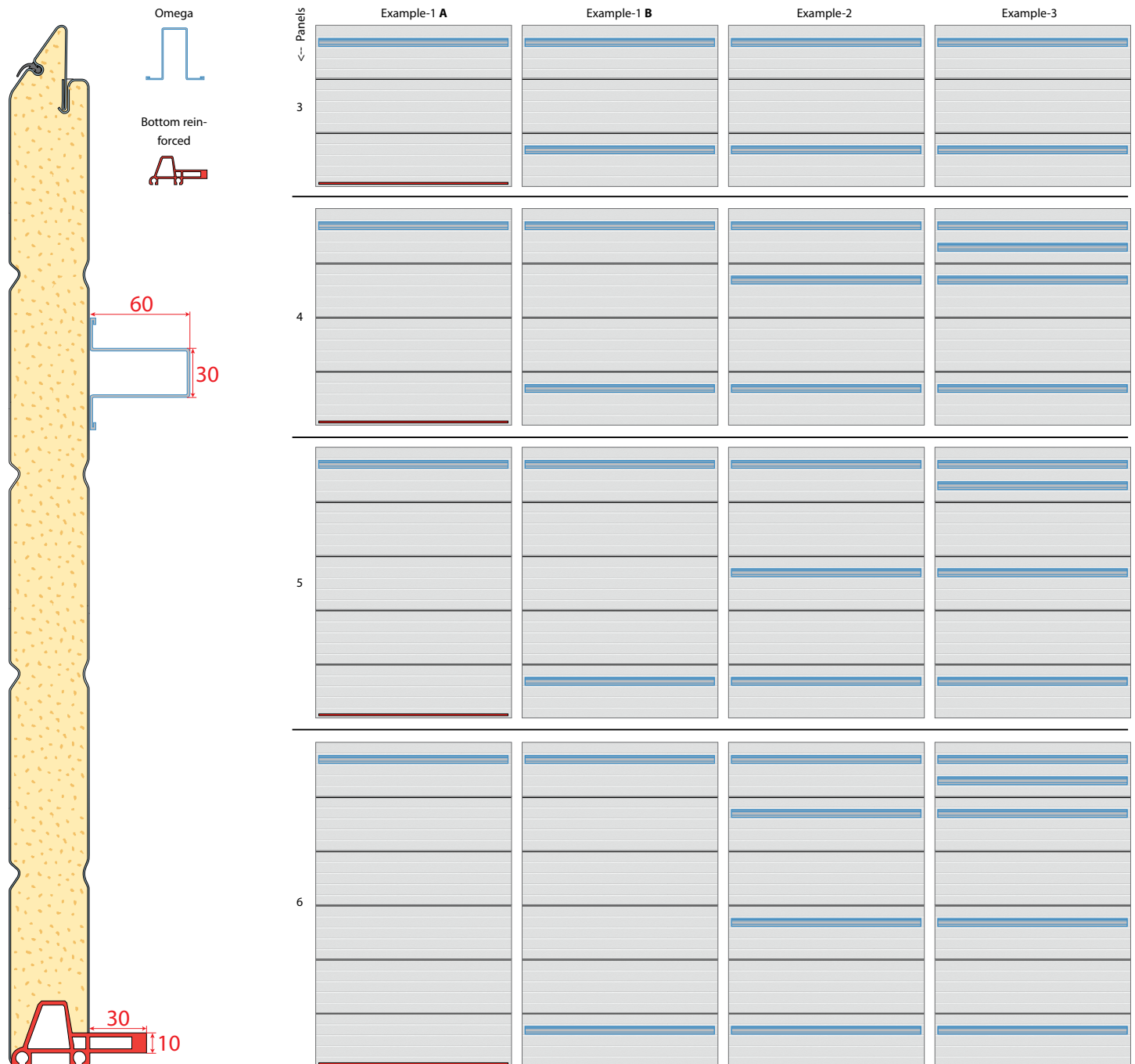


RAL 9016,
GOLDEN OAK (woodgrain).

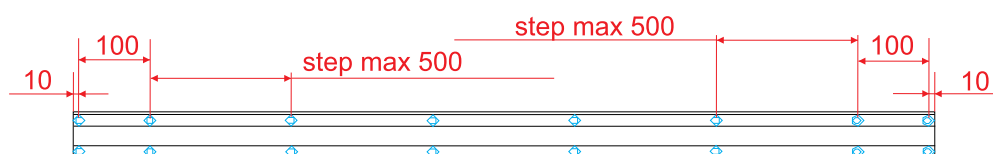


Reinforcement profiles on sandwich panels

Opening width, W	Profile type	Example No.		Main location on panel	Quantity of reinforcements
W≤4500	-	-		-	-
4500<W≤5000	Bottom reinforced + omega	1-A	"Example No. 1-A" is used by default. For cut bottom panel use "Example No. 1-B"	Top of panel (for omega)	1 + 1 = 2
	Omega	1-B		Top of panel	2
5000<W≤5500	Omega	2		Top partinion of panel	on every second doorpanel
5500<W≤6000	Omega	3		Top of panel	on every second doorpanel + 1 on top

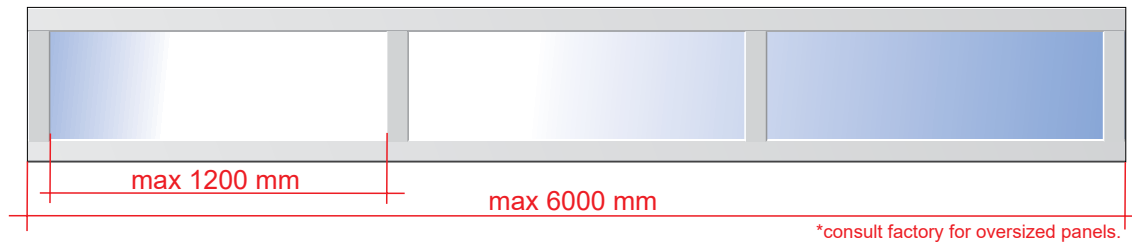


Profile fixing points

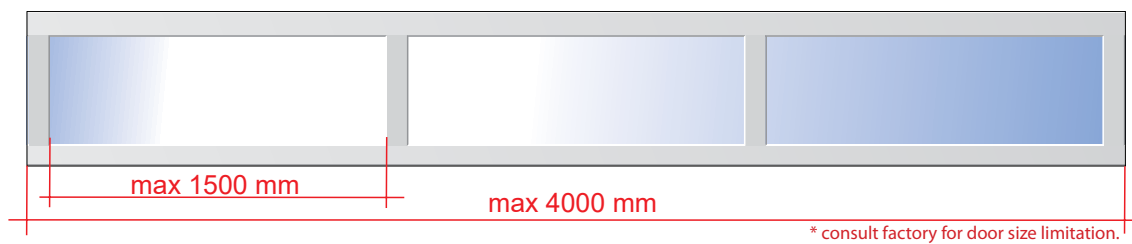


ALU-framed PANEL TYPES

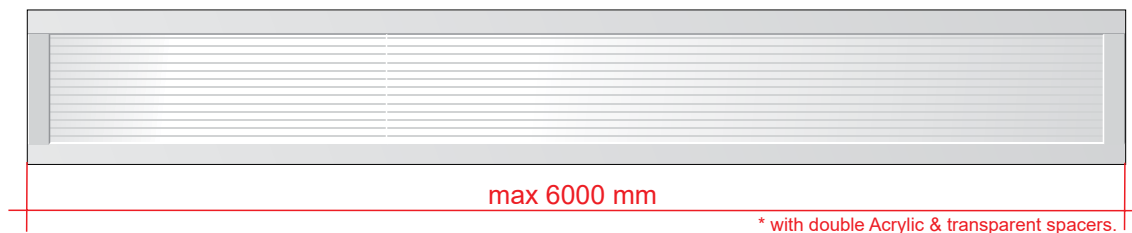
Double insulated Acrylic (Clear / Matt / "Frosted") glazing



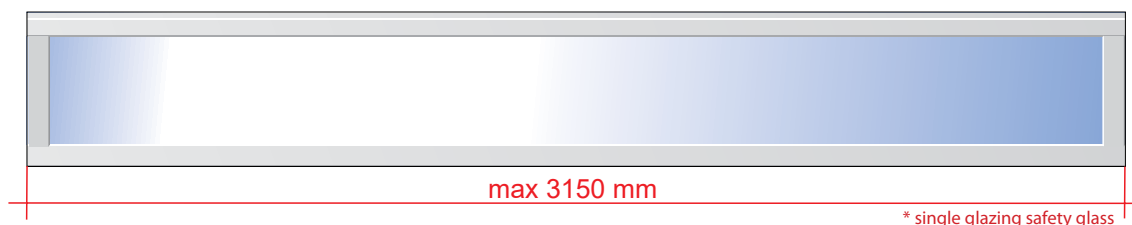
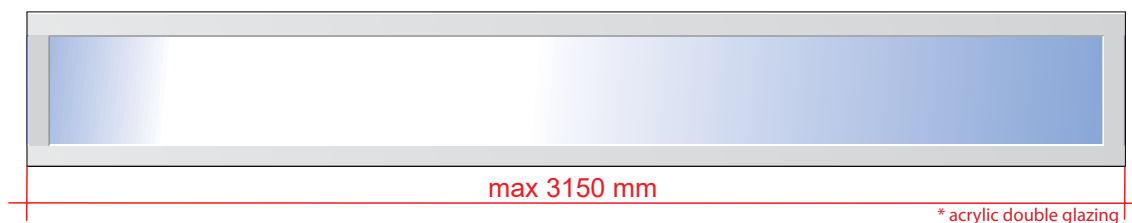
Single / Double glazing (safety glass)



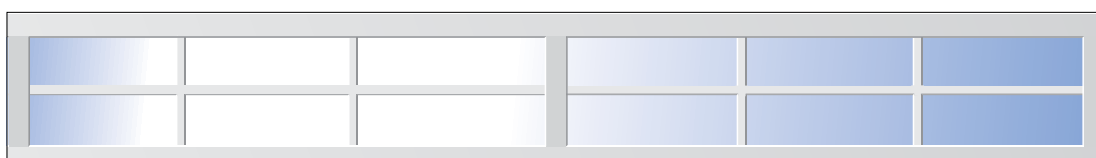
Polycarbonate glazing



Continuous glazing



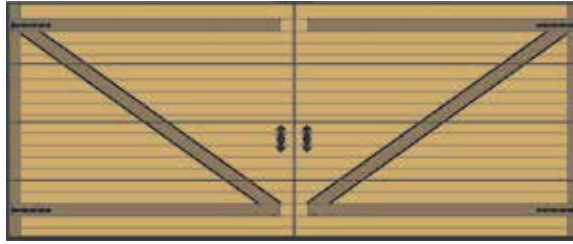
"Cross" decoration



RETRO

* custom Retro design upon request.

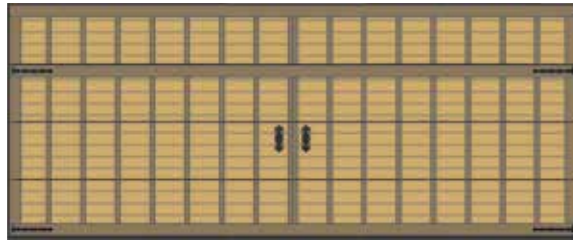
Retro Z



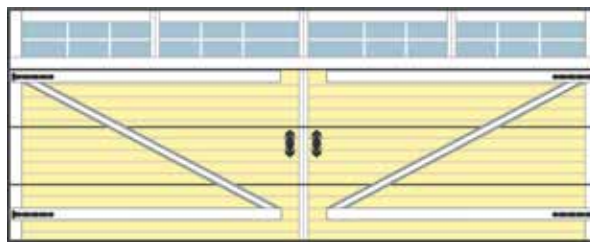
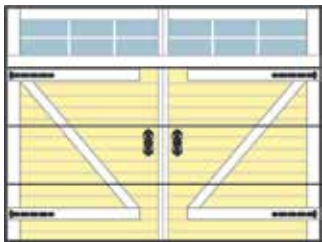
Retro X



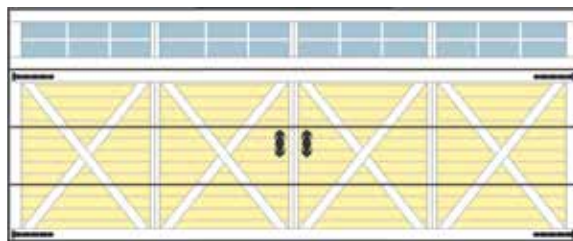
Retro H



Retro Z - FV



Retro X - FV



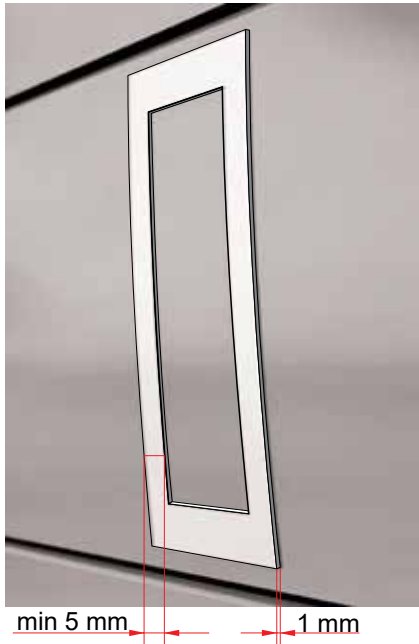
Retro H - FV



DECOR APPLIQUÉS



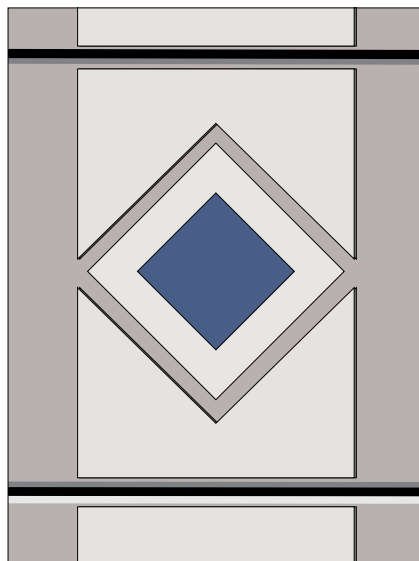
STAINLESS METAL APPLIQUÉS OPTIONS



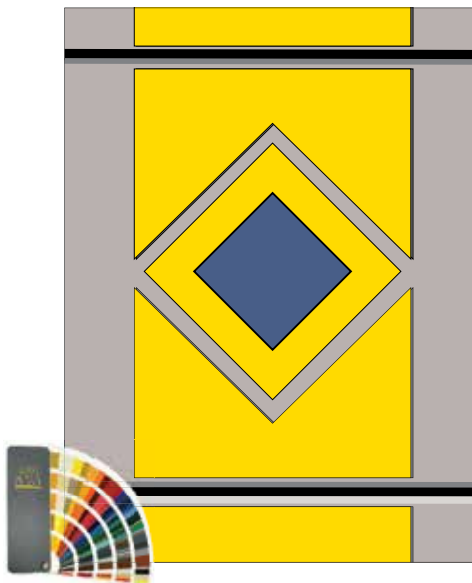
Brushed



RAL painted



Appliques combined with windows



RAL painted appliques & windows



Individual design decorations available on request



For more information refer to Ryterna DESIGN catalogue

PVC WINDOWS

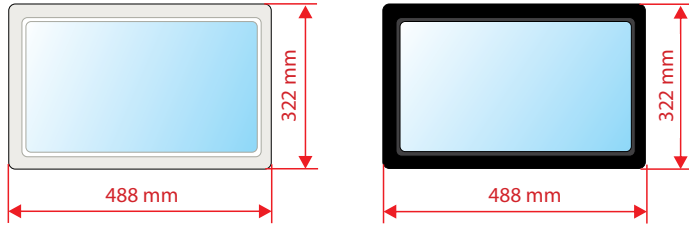


STAINLESS STEEL WINDOWS



PVC WINDOWS Scratch-proof double glazing

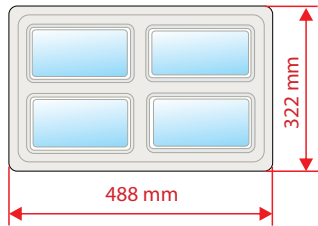
Standard acrylic double glazing windows (standard frame - white/black)



Painted RAL colours



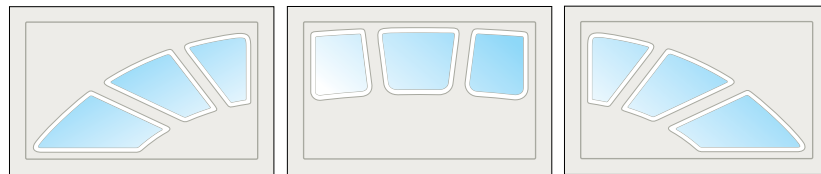
"Cross" acrylic double glazing windows (standard frame - white)



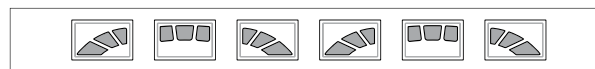
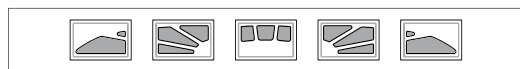
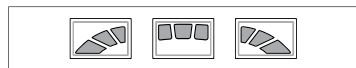
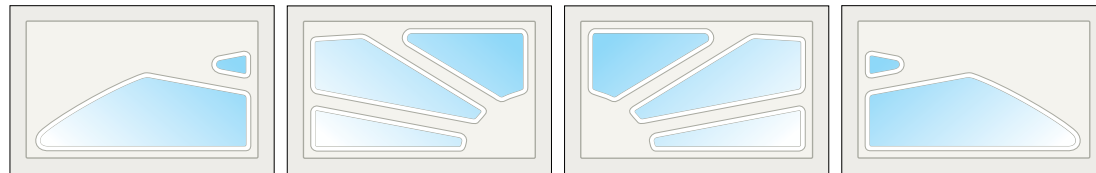
Painted RAL colours



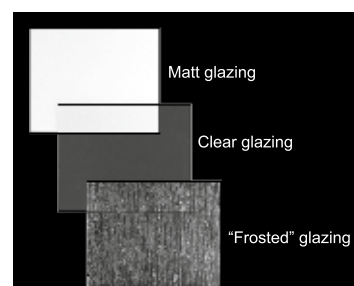
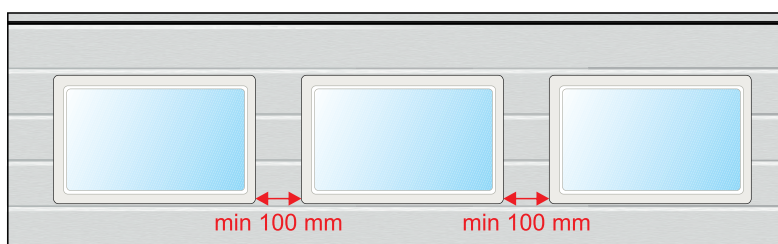
"Sunrise" acrylic double glazing windows (standard frame - white)



Painted RAL colours

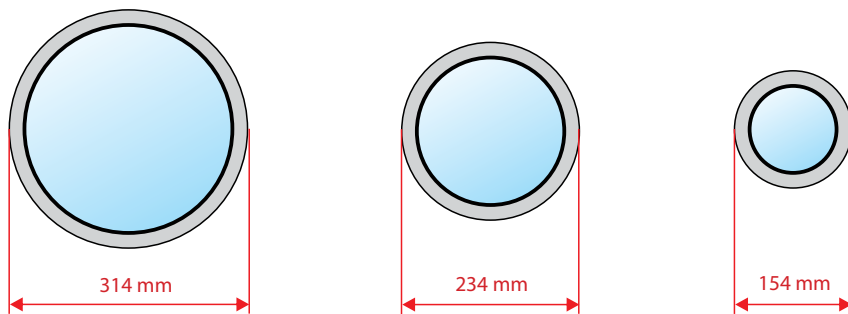


Acrylic double glazing windows location



Stainless steel windows

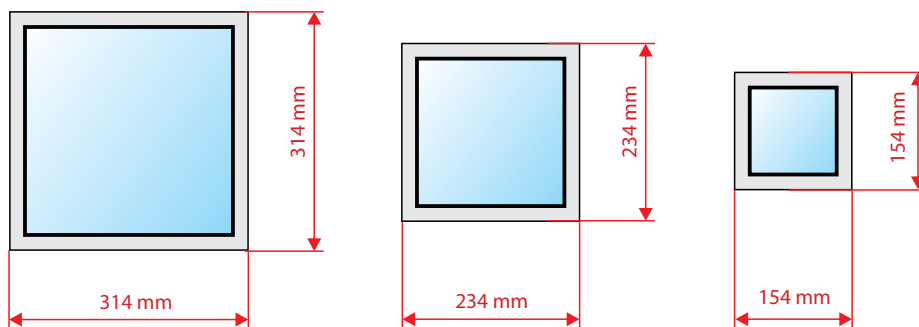
Round stainless steel windows (single glazing safety glass)



printed RAL colours



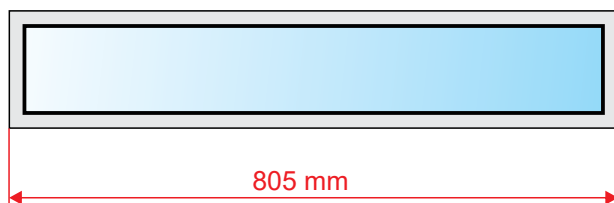
Square stainless steel windows (double glazing safety glass)



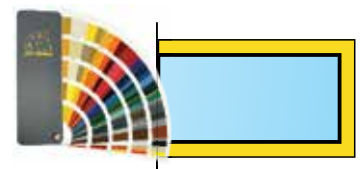
printed RAL colours



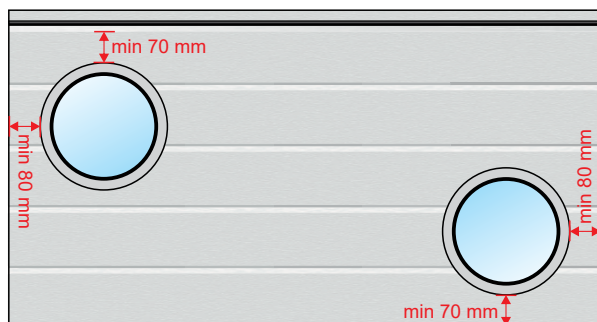
Rectangular stainless steel windows (double glazing safety glass)



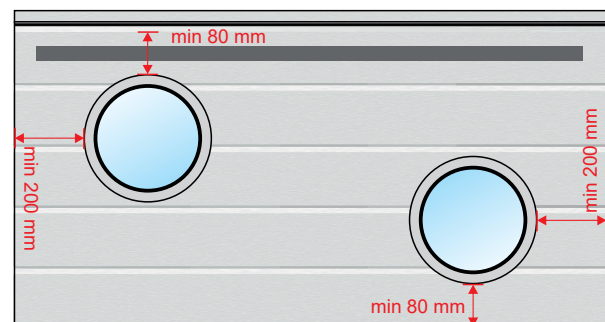
printed RAL colours



Stainless steel windows location



$W \leq 4500$



$4501 > W \geq 6000$

Type of glass



clear



matt

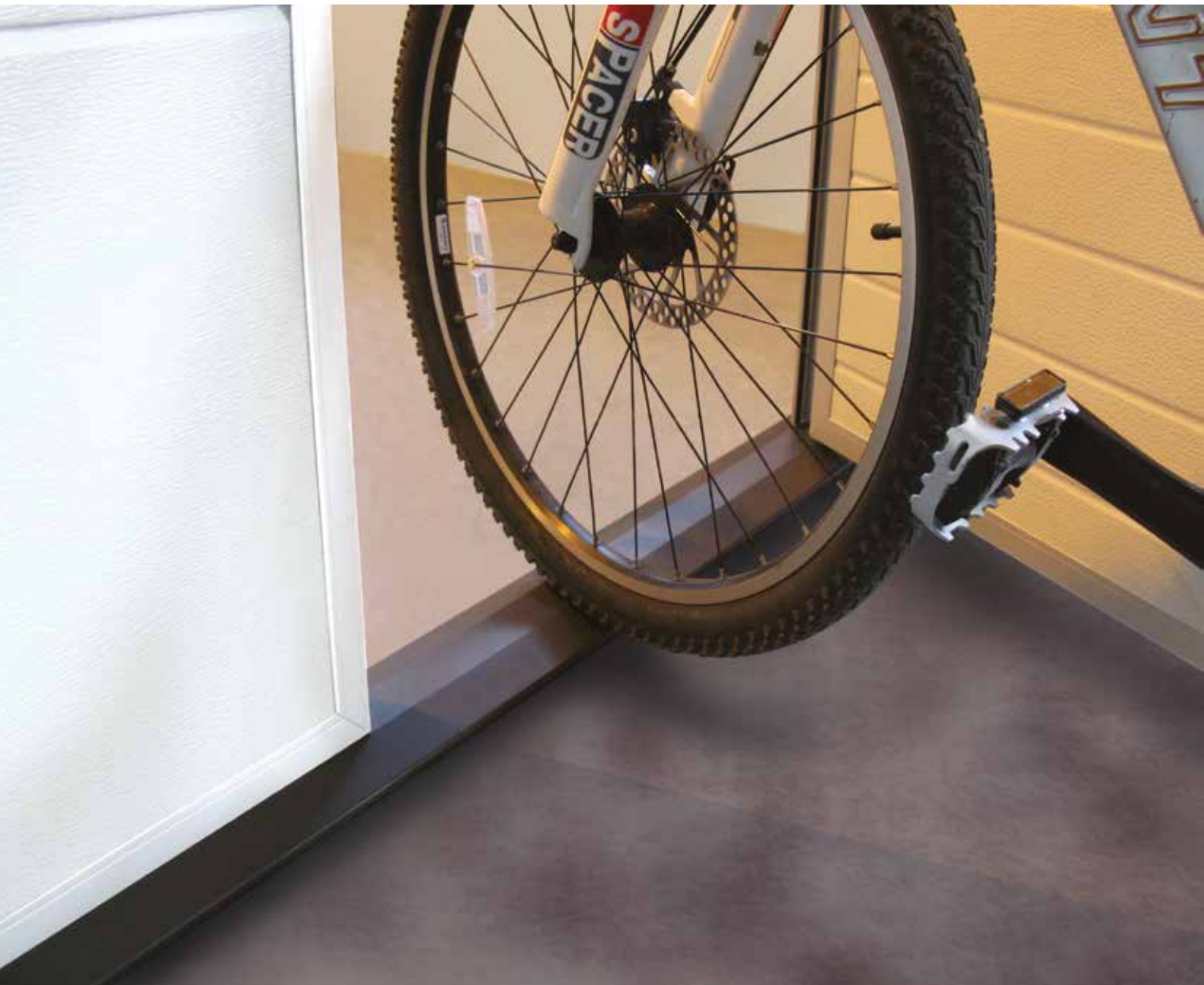


"frosted"



tinted

WICKET DOOR

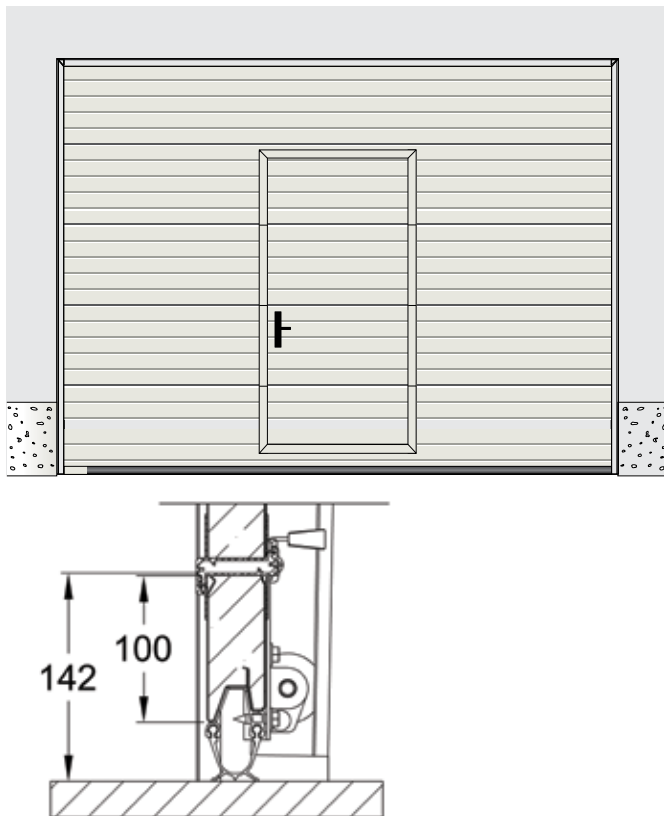


WICKET DOOR

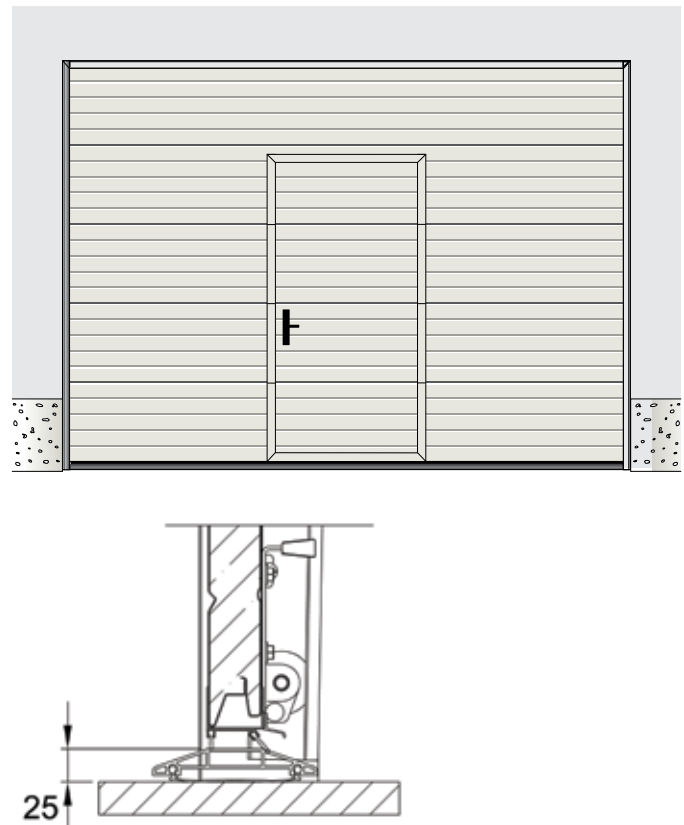
Wicket door critical dimensions



Wicket door with standard threshold



Wicket door with low threshold



Handle options



white handle



aluminium handle

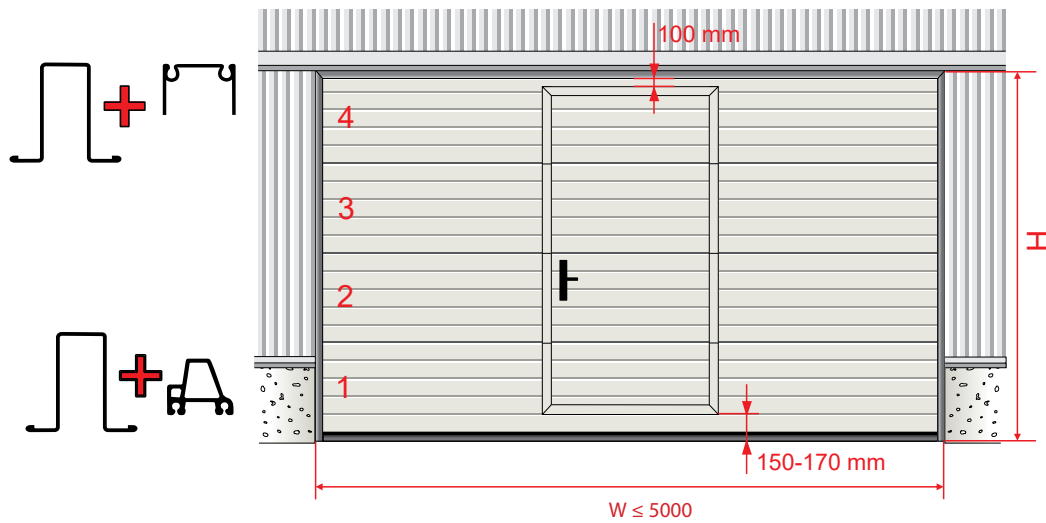


black handle

white handle - on white doors
aluminium handle - on silver doors and by request
black handle - on wood image and painted doors

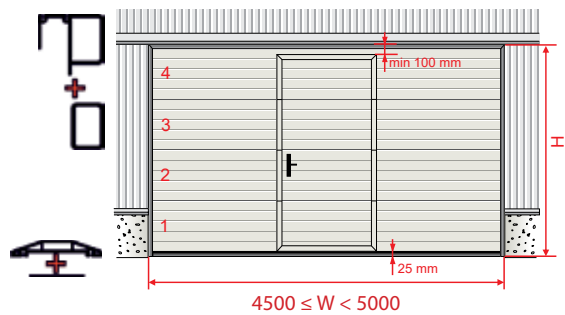
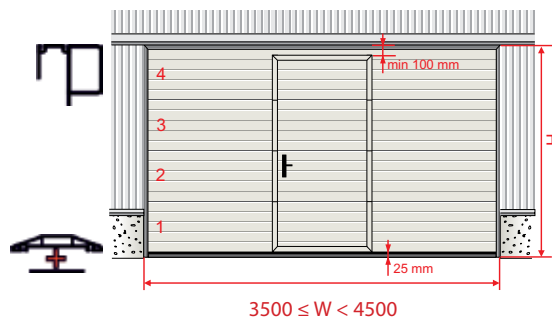
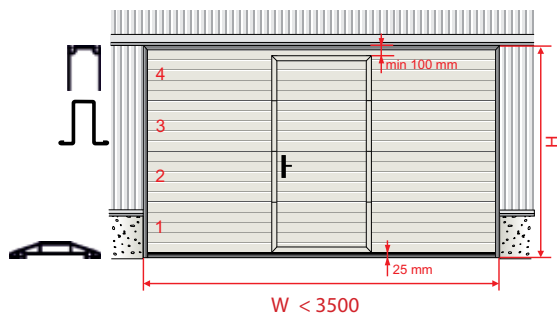
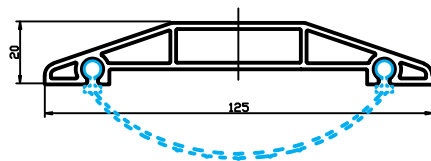
WICKET DOOR

Standard threshold

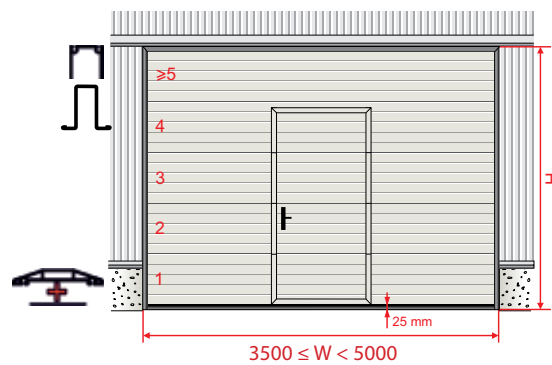
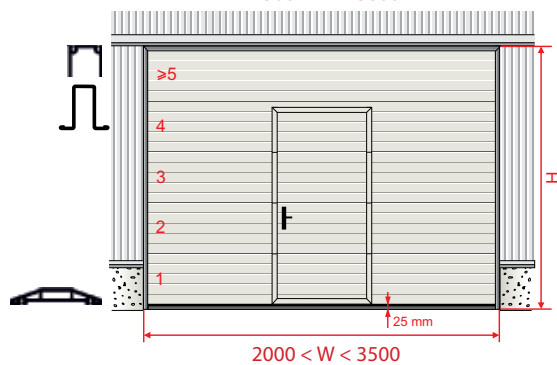


$W > 5000$ - on request

Low threshold

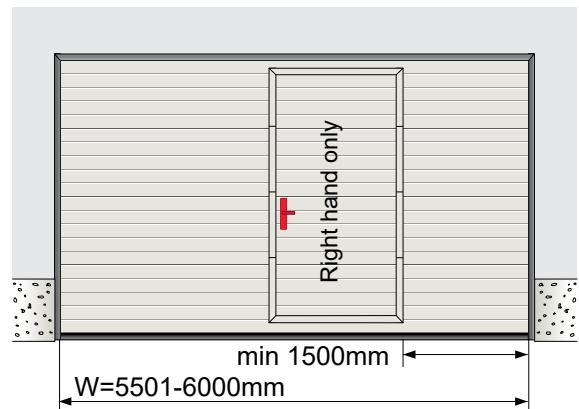
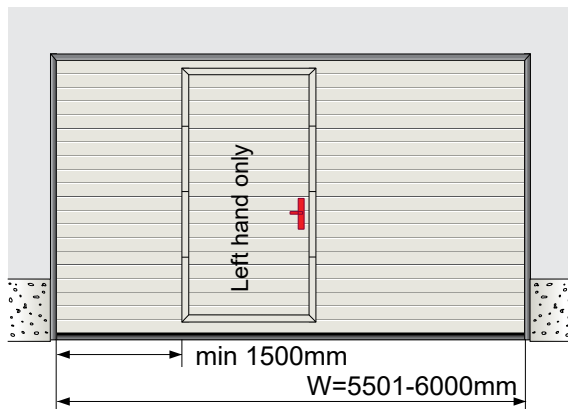
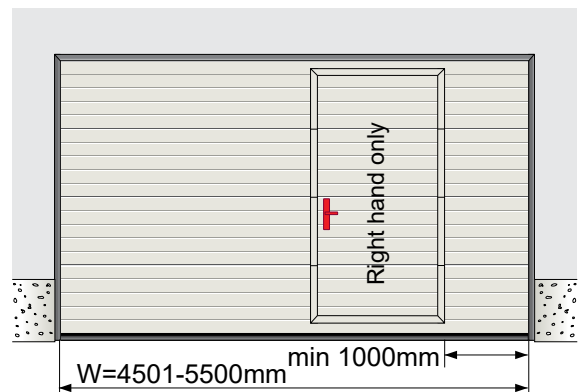
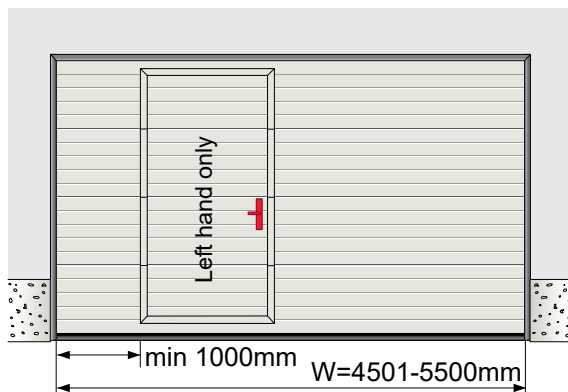
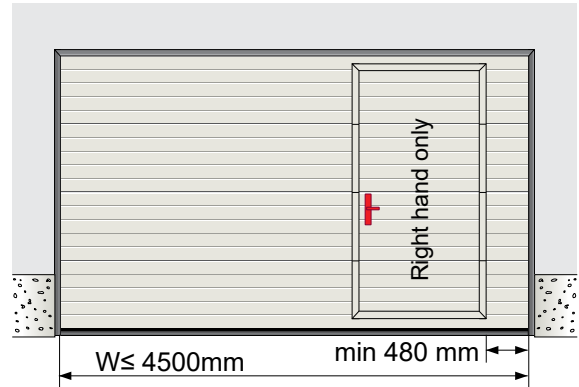


$W > 5001$ - on request.

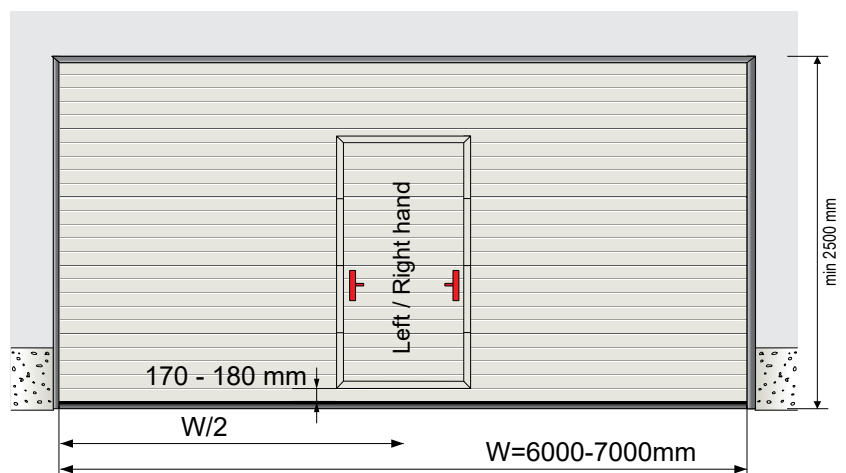


WICKET DOOR

External view

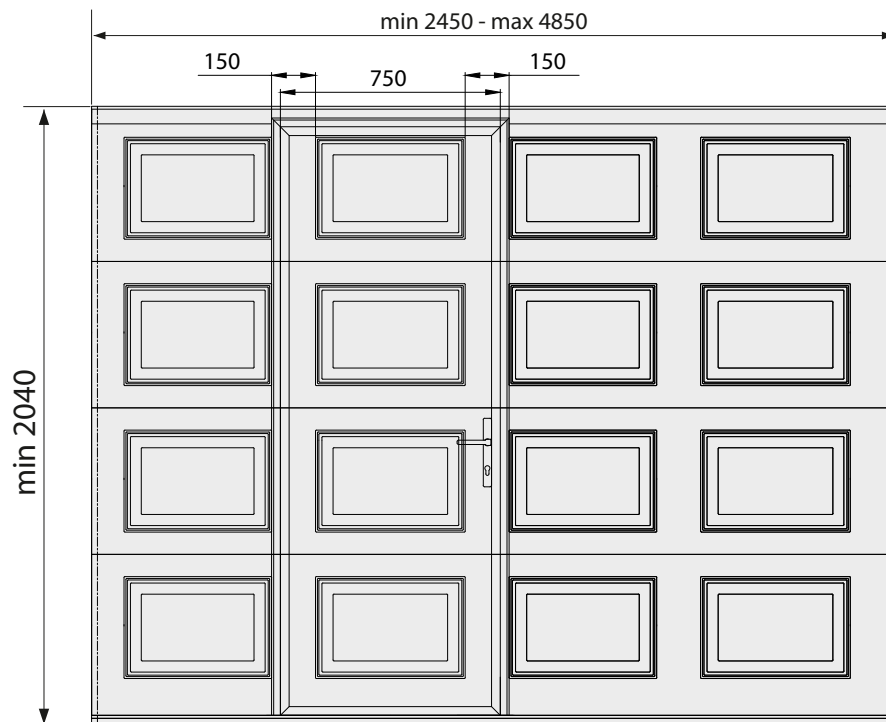


Handle side (L/R) maybe chosen when the wicket door is in the middle

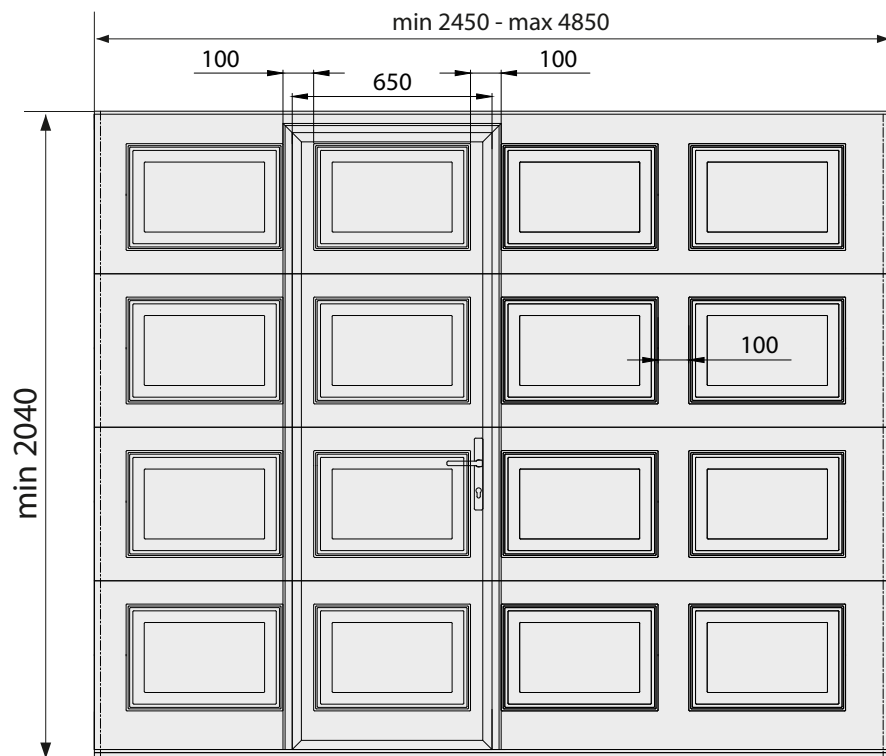


WICKET DOOR

CASSETTE panels



Opening height ≥ 2040 mm
(consult factory for window limitations)

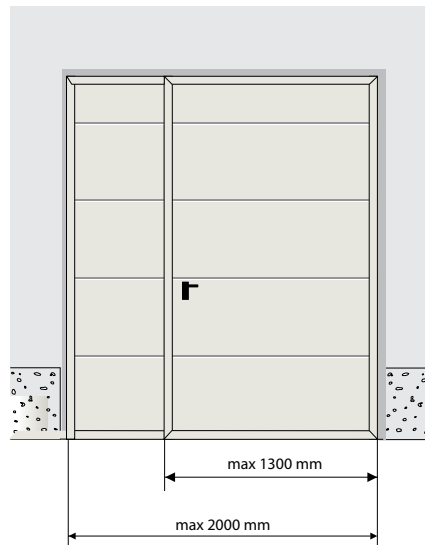
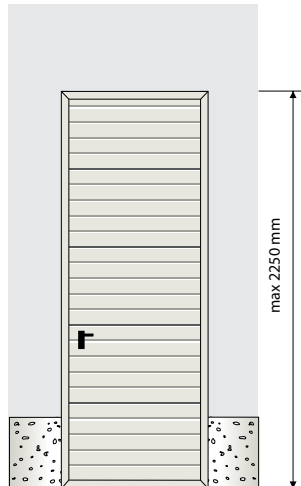
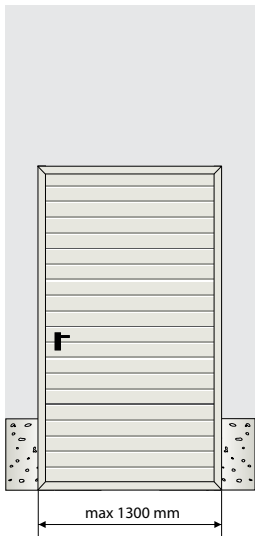
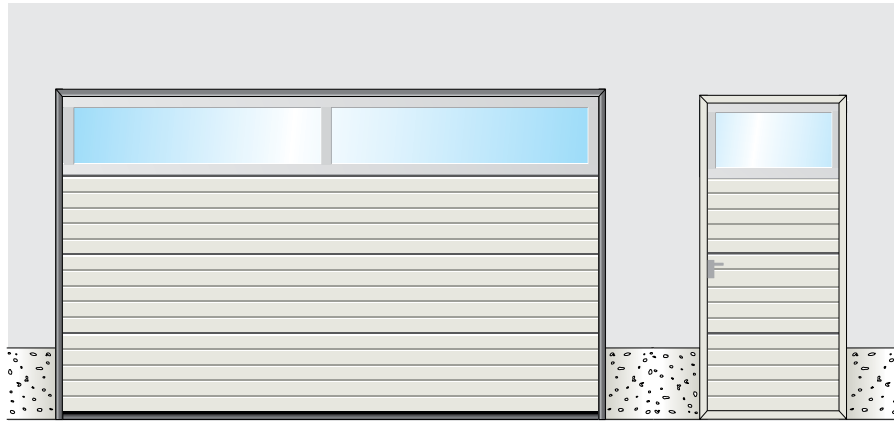
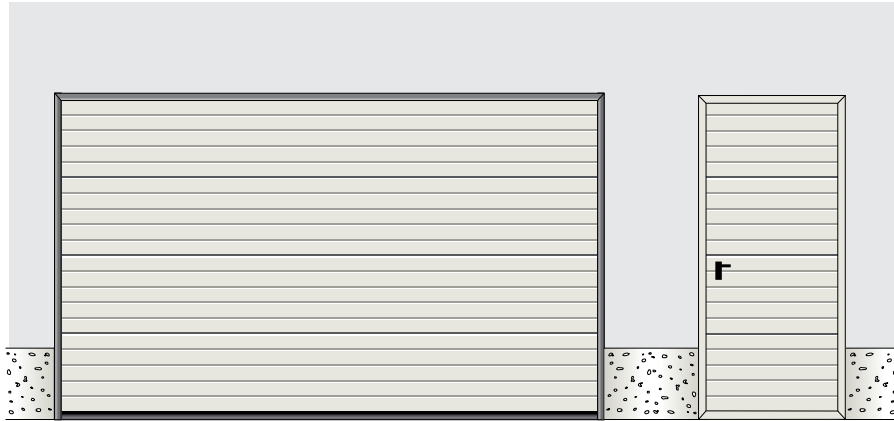


Consult manufacturer for threshold options

SIDE-HINGED DOORS

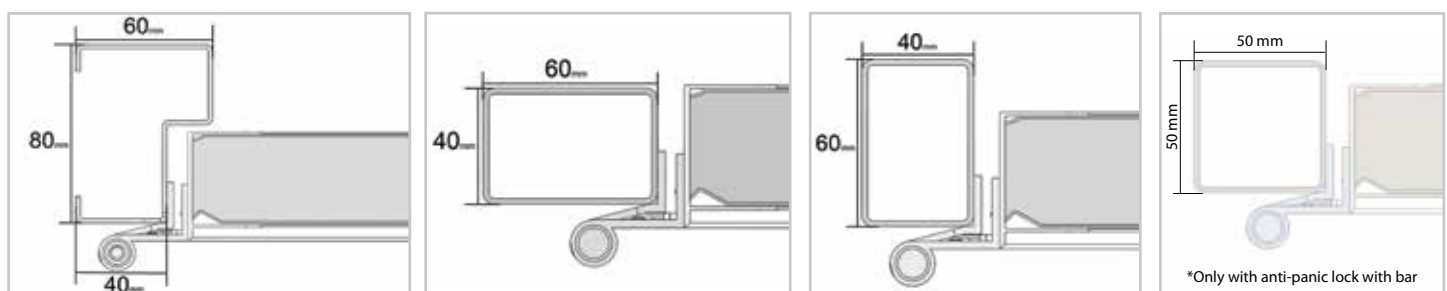
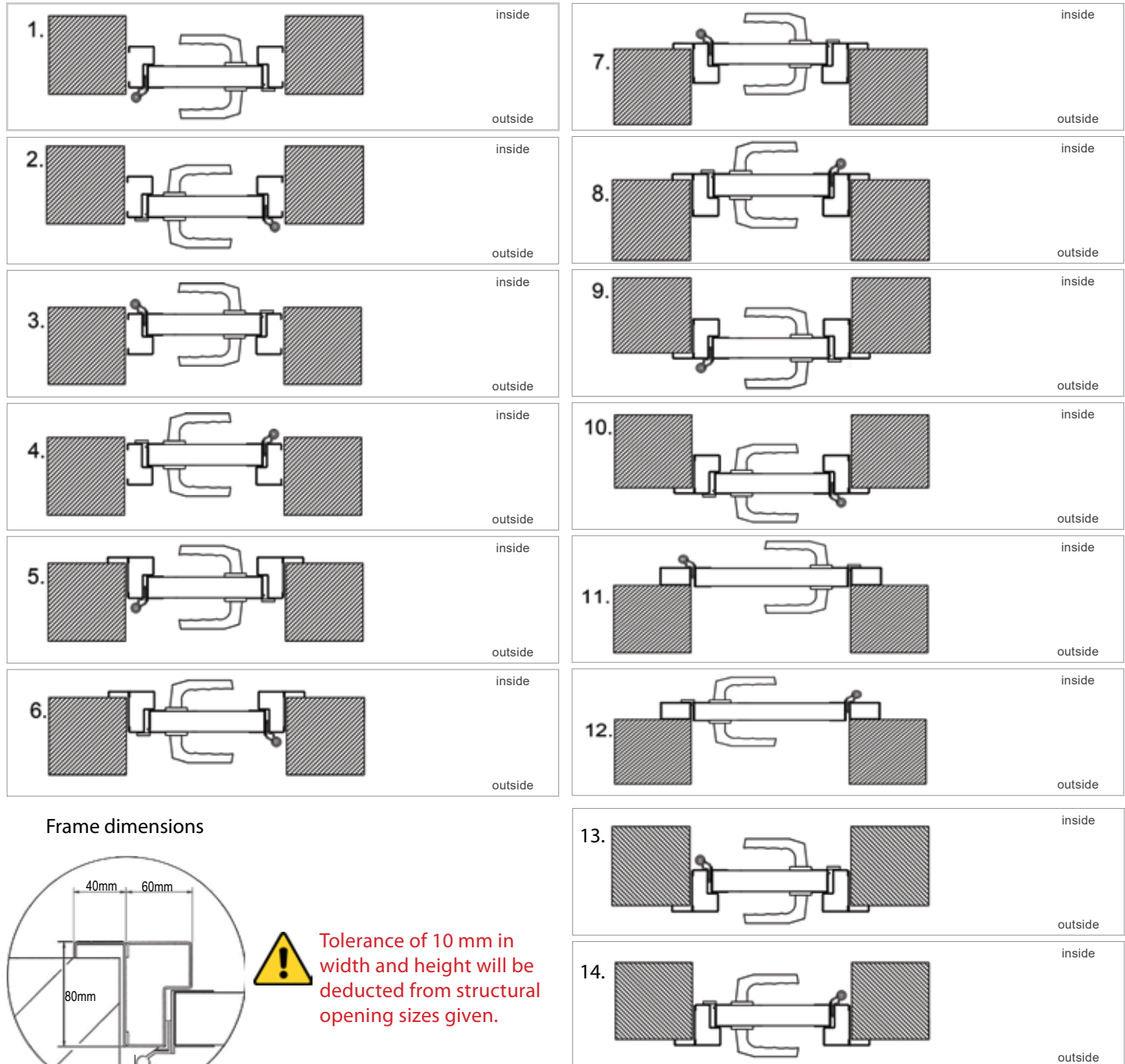


SIDE DOOR (SH1)



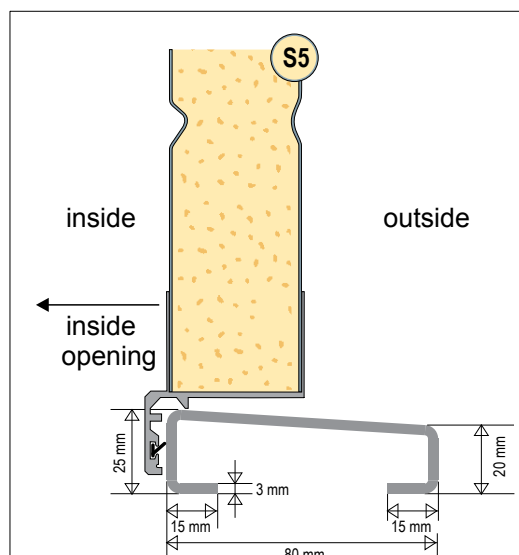
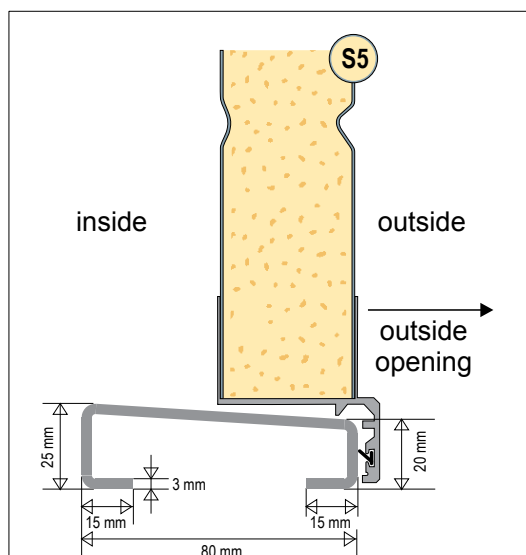
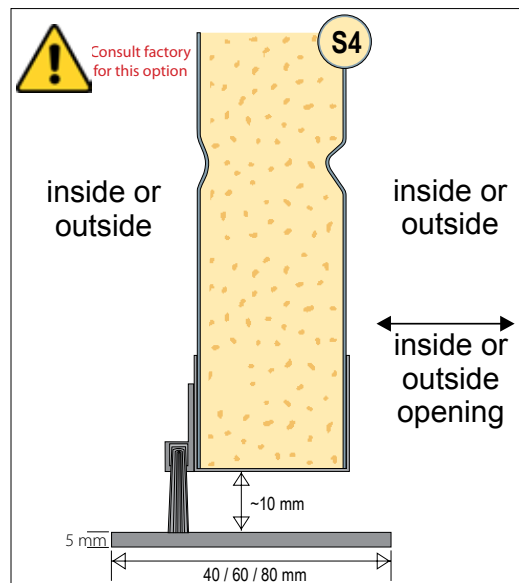
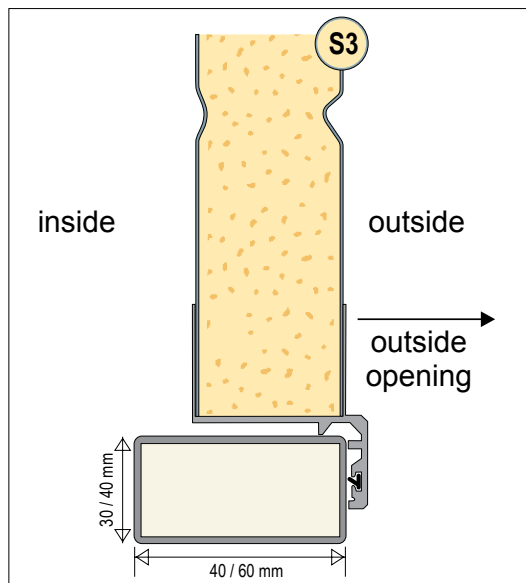
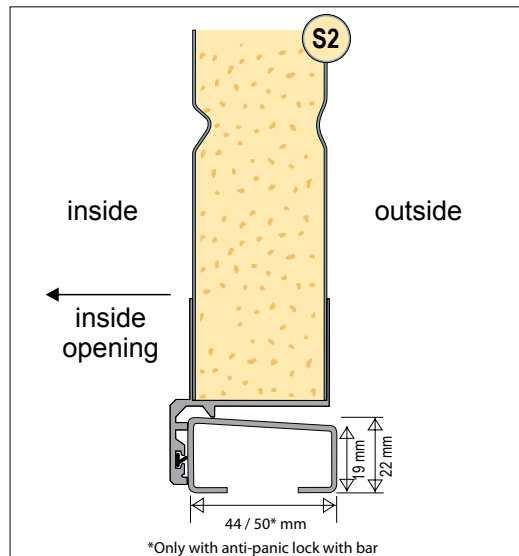
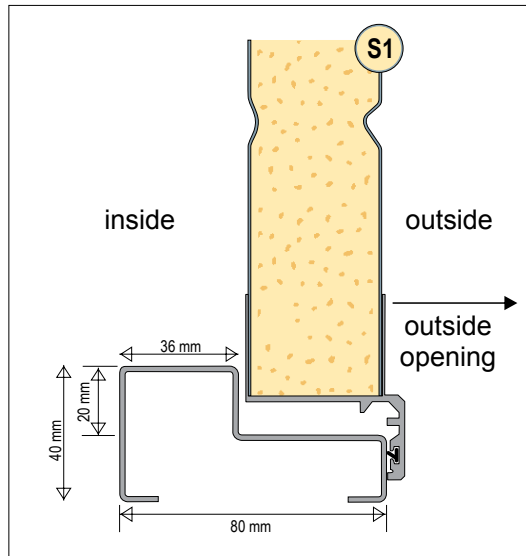
SIDE DOOR (SH1)

Side doors fitting and opening options

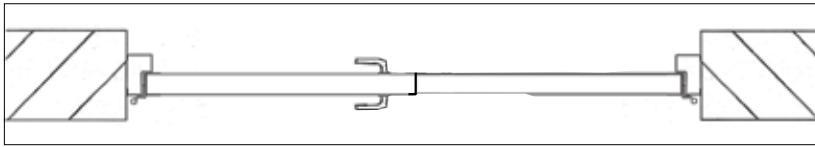
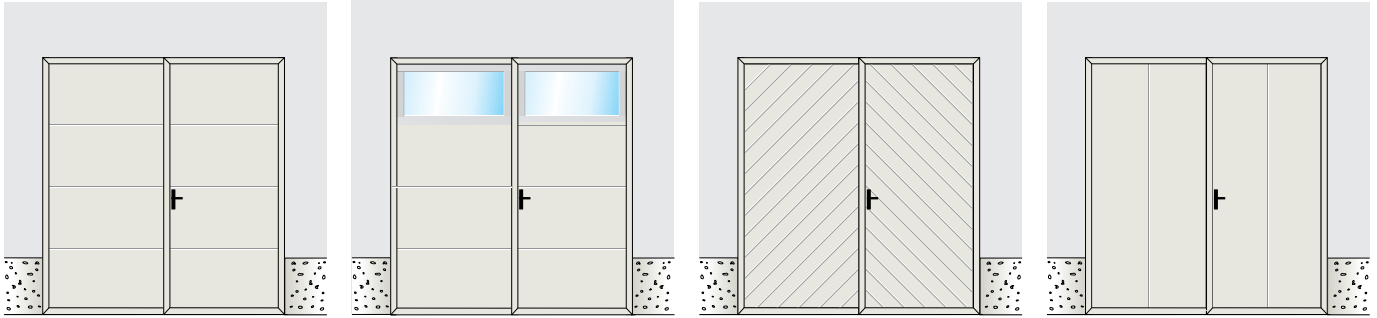


SIDE DOOR (SH1)

Side doors threshold types

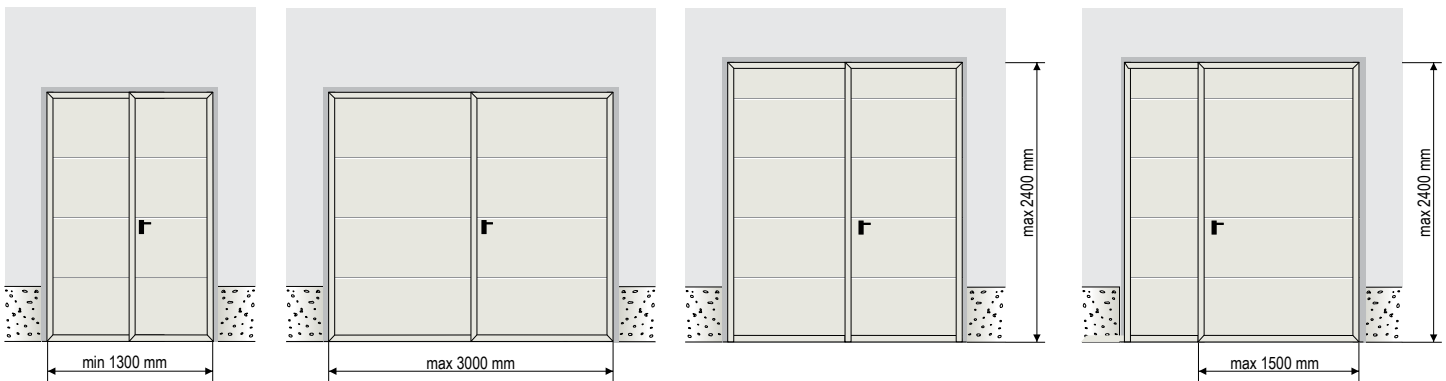


DOUBLE HINGED DOOR (SH2)

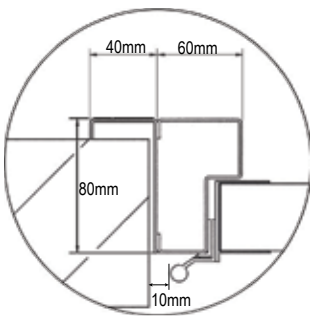


Two leaf doors are recommended when the opening is wider than 1300 mm.

Double side door critical dimensions



Frame dimensions



Tolerance of 10 mm in width and height will be deducted from structural opening sizes given.

Handle options



white handle



aluminium handle

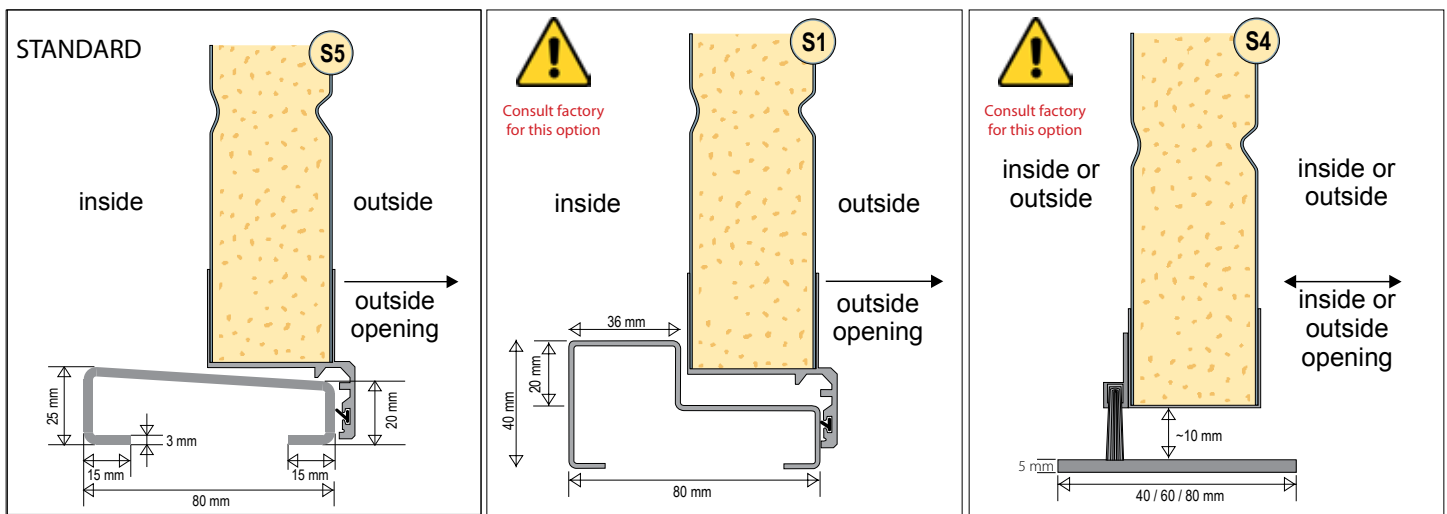
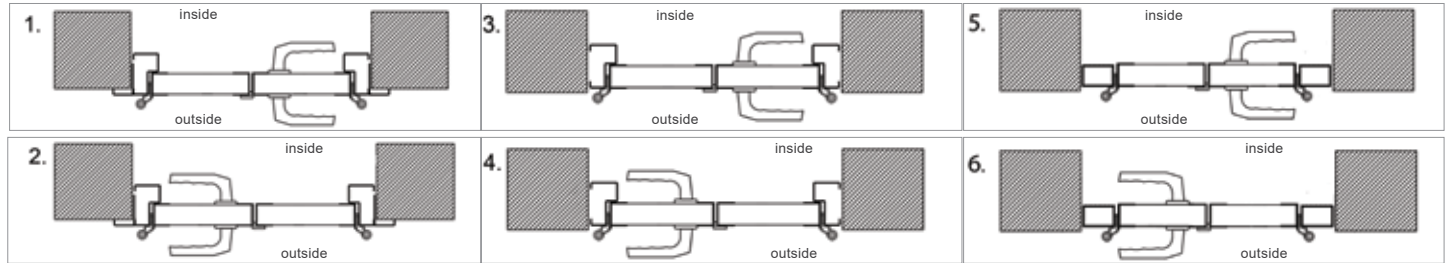


black handle

white handle - on white doors
aluminium handle - on silver doors and by request
black handle - on wood image and painted doors

DOUBLE HINGED DOOR (SH2)

SH2 opening and handling options



Locking options and door stays

