



Technical data

Roller shutter RP077

Index

1. Finished sizes	page 4
2. Assembly possibilities	page 4
3. Curtain	page 5
4. Technical data	page 5
5. Bottom lath	page 5
6. Intermediate lath	page 6
7. Operation	page 6
8. Consoles	page 7
9. Boxes	page 8
10. Guide rails	page 9
11. Supplements	page 11
12. General remarks	page 12
13. Wind resistance and operating classes in accordance with NBN EN 13659	page 14
14. Order form RP077	page 17

Harol reserves the right to make alterations of the product without prior notice.

1. Finished sizes

- Finished width B:
 - Including guide rails = measured from the back side of the guide rails
 - Without guide rails = curtain measure, including the clamps
- Finished height H:
 - With consoles = height including consoles
 - Without consoles = height of the opening + rolling up (see table 2)
 - Without operation = measure of shutter curtain including final slat
- Regarding to the wall in W and H, the play is deducted by the client
- For a construction without consoles and with operation, you should indicate the length of the axle

Attention: depending on the chosen operation, it is possible that the position of the console varies regarding to the guide rail. See table 11 and figure 9

2. Assembly possibilities

- Can be built-in or surface mounted
- Surface mounted, there are four possibilities: mounting type 1, 2, 5 en 7: see figure 3
- Built-in, there are two possibilities: right roller and left roller: see figure 4
- The minimum lateral cut-away for the operation (from the back of the guide rail): see table 11

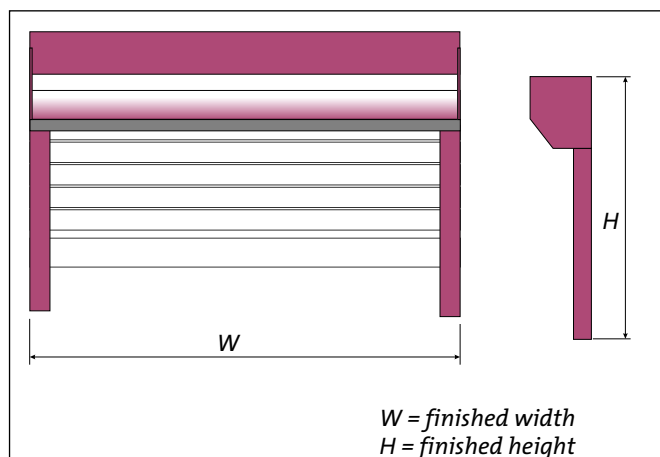


Fig. 1 : Finished sizes as surface mounted

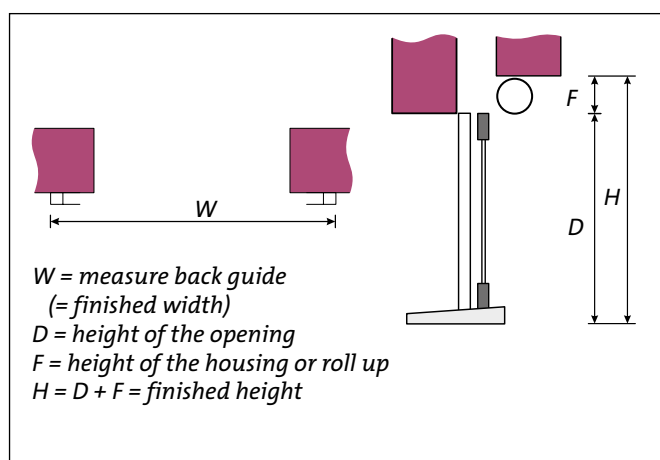


Fig. 2 : Finished sizes as built-in roller shutter

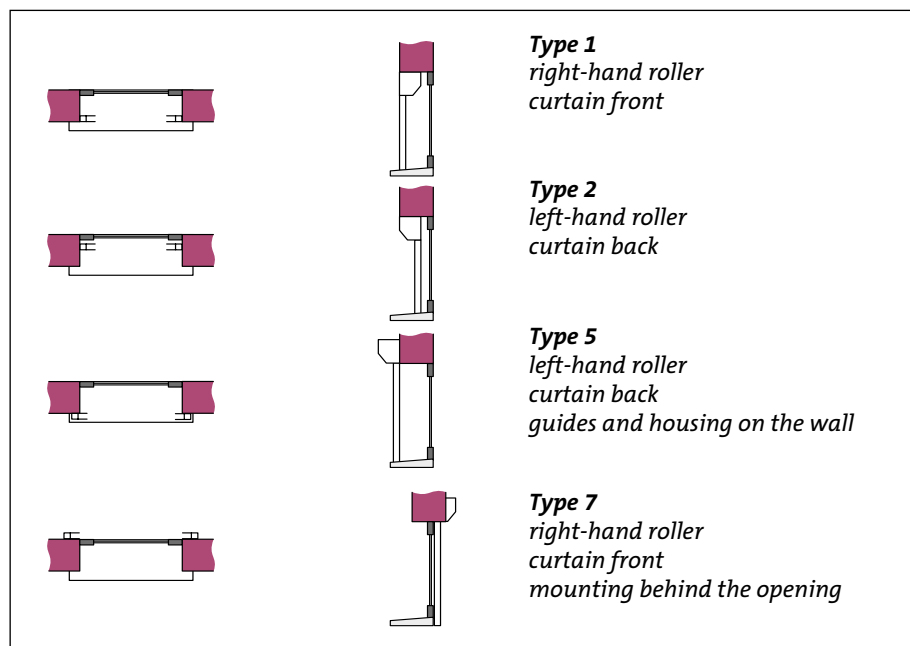


Fig. 3 : Assembly as surface mounted roller shutter

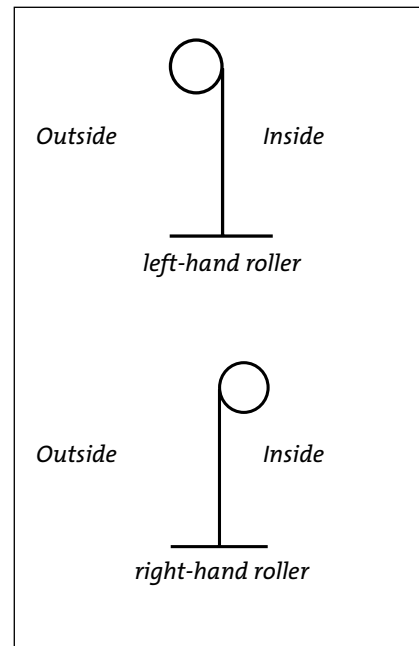


Fig. 4 : Assembly as built-in roller shutter

3. Curtain

- Standard:

- Slat: AD77
- Material: double-walled, foam-insulated slat
- Colours: see colour card in price list
- Side clamps: prevent the slats from sliding sideward
- Attachment to the axle:
 - Electric operation: attachment to the axle by means of spring suspension
 - Coiled spring operation: curtain is fixed directly to the axle

- Optional:

- Window
- Ventilation
- Lift security system (only possible with electric operation)
- Technical data slats: see table 1
- Curtain of more than 50 kg is delivered separately and they are rolled up reversibly (simplified assembly)
- Rolling up diameters:
 - See table 2
 - These are net rolling up diameters, please provide a minimum play of 20 mm

Alu lath	AD77
thickness lath (mm)	19
covering height (mm)	77
total height (mm)	87
number of profiles per m height (ex.)	13
net weight kg/m ²	5
gross weight kg/m ²	6,5
max. width (mm)	5500
max. height (mm)	5000
max. surface (m ²)	15



Table 1 : Technical data lath

Hoogte	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000
Diameter	182	204	208	234	234	236	260	264	264	268	294	294	298	298	328	328	332	332	342	360	360

Table 2 : Net roll-up diameters (in mm)

4. Technical data

- Maximum sizes:

- Electric:

- Width: 5500 mm
- Height: 5000 mm
- Surface: 15 m²

- Coiled spring:

- Width: 3500 mm
- Height: 3000 mm
- Surface: see table 6

5. Bottom lath

- Material: extruded aluminium
- Colours: see colour card in price list
- Provided with a rubber seal:
 - Sound-insulating by closing
 - Wind- and rain sealer
- Technical details: see table 3

Alu bottom lath	
thickness bottom lath (mm)	19
covering height (mm)	78
total height (mm)	85
net weight kg/m ²	1,223
max. width (mm)	5500



Table 3 : Technical data bottom lath

6. Intermediate lath

- Material: extruded aluminium
- Colours: see colour card in price list
- Use:
 - As roller shutter lath, provided with a cylinderlock and/or handgrips:
 - At handheight
 - Immediately above the bottom lath (and the eventually ventilating profile)
 - As roller shutter lath with letter box at handheight
- Technical data: see table 4

Alu intermediate lath	
thickness intermediate lath (mm)	16
covering height (mm)	78
total height (mm)	87
net weight (kg/m ²)	0,978
max. width (mm)	5500



Table 4 : Technical data intermediate lath

7. Operation

- **Electrical operation:**
 - Standard:
 - built-in, asynchronous Altus IOmotor (230V)
 - 5 m electric cable
 - Smoove transmitter
 - Technical qualities: consult table 5
 - Optional:
 - RTS or LT motors
 - electric cable 10m
 - without transmitter
 - for automation: please consult the Harol domotics catalogue
- **Electrical motor with emergency control:**
 - Standard:
 - built-in, asynchronous motor (230V) with control buttons and emergency control
 - 3m electric cable
 - single pole built-on switch and plug
 - with crank and cardan joint
 - technical qualities: consult table 5
 - Optional:
 - electric cable 5m or 10m
 - without switch and plug
 - removable crank
 - for automation: please consult the Harol domotics catalogue

	Torque (Nm)	Speed (rev/min)	Capacity (Watt)	Charge (Volt)	Standard cable length (m)
Jet	10	17	120	230	3
Atlas	15	17	140	230	3
Meteor	20	17	160	230	3
Gemini	25	17	170	230	3
Apollo	35	17	240	230	3
Mariner	40	17	270	230	3
Vectran	50	12	240	230	3
Vega	60	12	280	230	3
Sirius	80	12	320	230	3
Titan	100	12	410	230	3
Taurus	120	12	450	230	3
RDO 50 CSI	20	17	160	230	2,5
RDO 50 CSI	40	17	270	230	2,5
RDO 60 CSI	80	12	320	230	2,5
RDO 60 CSI	100	12	410	230	2,5
RDO 60 CSI	120	12	450	230	2,5
Altus 50 RTS 10/17	10	17	120	230	5
Altus 50 RTS 40/17	40	17	270	230	5
Altus 60 RTS 55/17	55	17	320	230	5
Altus 60 RTS 85/17	85	17	450	230	5
Altus 60 RTS 100/12	100	12	410	230	5
Altus 60 RTS 120/12	120	12	410	230	5
Altus 50 IO 6/12	6	12	90	230	5
Altus 50 IO 10/12	10	12	90	230	5
Altus 50 IO 20/12	20	12	140	230	5
Altus 50 IO 30/12	30	12	160	230	5
Altus 50 IO 40/12	40	12	240	230	5
Altus 50 IO 50/12	50	12	240	230	5
Altus 60 IO 55/17	55	17	290	230	5
Altus 60 IO 70/17	70	17	350	230	5
Altus 60 IO 85/17	85	17	400	230	5
Altus 60 IO 100/17	100	17	350	230	5
Altus 60 IO 120/17	120	17	400	230	5

Table 5 : Technical data motors

- Coiled spring operation:

- Operation by means of a built-in spring
- Always in combination with a cylinder lock
- Maximum sizes according to table 6

- Operating exit:

- Is always seen from the inside
- Possible operating exits: see figure 5 and table 7

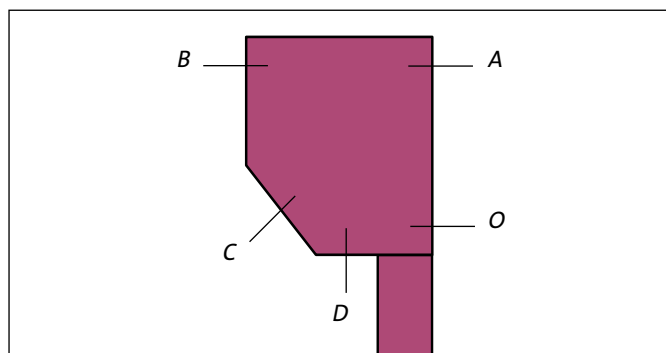


Fig. 5 : Choice operating exit tubular motor

	1,2	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	2,9	3	3,1	3,2	3,3	3,4
1															
1,2															
1,4															
1,6															
1,8															
2															
2,2															
2,4															
2,6															
2,8															
3															

Table 6 : Choice table coiled spring operation (in m)

Assembly type	1	2	5	7
Exit electrical cable	B C D	A O	A O	B C D
Exit crank NHB *	A B C D O	A B C D O	A B C D O	A B C D O

Table 7 : Choice exit tubular motor

*

8. Consoles

- Material: aluminium (up to max. 70 kg gross curtain weight) or steel
- Colours: see colour card in the price list
- Sizes: see table 9
- Minimum console sizes: see table 8
- Standard: provided with sliding bearings with consoles S350 and S400
 - The axle moves in function of the rolling up:
 - During the rolling up, the axle moves horizontally to the middle of the consoles
 - During the rolling up, the axle moves horizontally to the middle of the guide rails
 - Realises a smooth roll up and increases the life of the curtain and the guide rails
- Optional: sliding bearings also with smaller consoles
 - Attention: more cut-away is necessary

Remarks:

- K-consoles are only possible in combination with 026 guides

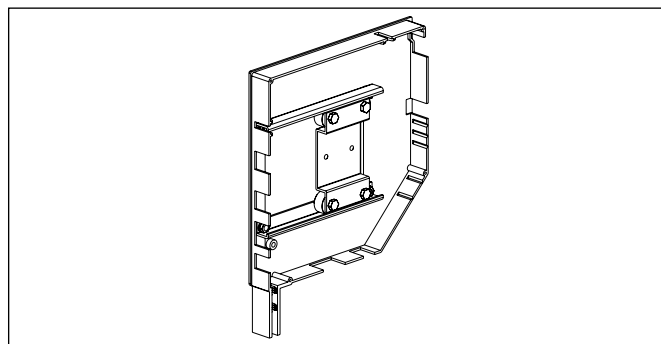


Fig. 6 : Sliding bearing

Box type	Standard	With interm. lath	With lift secur. system
255 *	1500	1400	1500
300	2800	2300	2600
350	4100	3600	4000
400	5000	5000	5000

With ALU K-consoles: gross curtain weight is limited up to 70 kg

Table 8 : Roll-up table

* Not possible when sidelong savings

9. Boxes

- Material:
 - Aluminium
 - Profiled and folded
- Colours: see colour card in price list
- Box types:
 - Choice between 5 different box types depending on the console type
 - Each box is composed of 2 or more parts
 - See figure 7
- Box dimensions: see table 9
- Box types 1 up to and including 4 with a width of over 3000 mm, the use of supporting brackets is being recommended (option)
- The box types 1 up to and including 4 are separately available

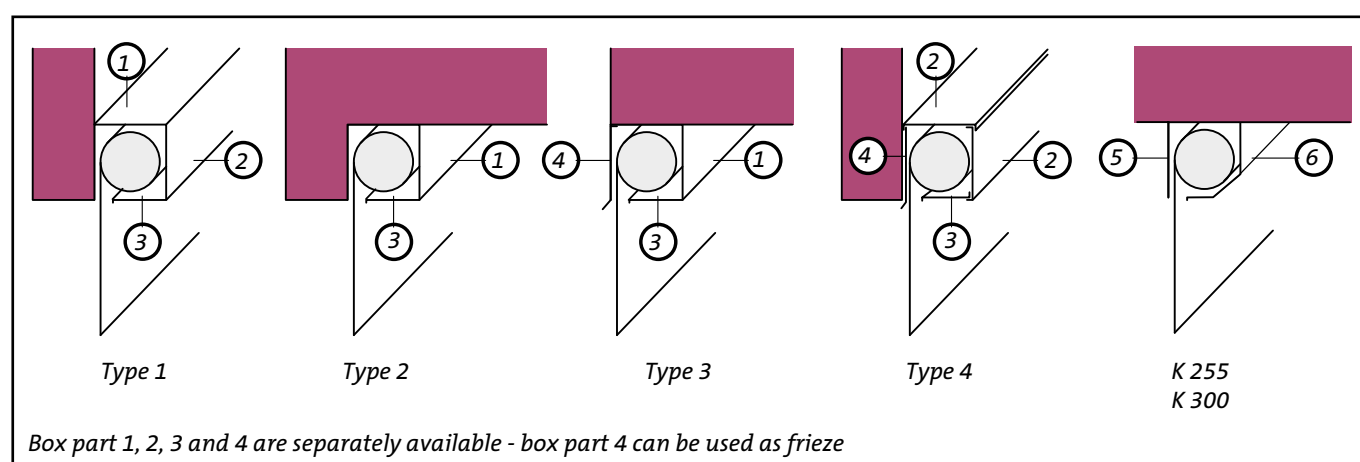


Fig. 7 : Boxes

		TYPE OF BOX					
		Type 1	Type 2	Type 3	Type 4	K 300	K 255
Box size	255 x 255	-	-	-	-	-	x
	300 x 300	x	x	x	x	x	-
	350 x 350	x	x	x	x	-	-
	400 x 400	x	x	x	x	-	-
Bracket type (from 3 m width)	300 x 300	B1	B2	B2 + B3	B1	-	-
	350 x 350	B1	B2	B2 + B3	B1	-	-
	400 x 400	B1	B2	B2 + B3	B1	-	-
Consoles	Alu	-	-	-	-	x *	x
	Steel	x	x	x	x	x	-

Table 9 : Boxes (* gross curtain weight max. 70 kg)

10. Guide rails

- Material: extruded aluminium
- Colours: see colour card
- Types: choice between 026 and 052
(the hollow guide 026 is not symmetric: pay attention with the assembly)
- Dimensions: see table 10
- As a standard provided with brushes:
 - Slight and low-noise track
 - Sound-insulating with wind
 - Long-life guaranteed
- Optional:
 - Fixation angles

Illustration	Reference	Application	Fixing possibilities		
			Type 1	Type 2	Type 3
	026	Surface mounted	x	x	-
	052	Built-in	x	x	x
	W01	Eventual attachment with connection 052	See also figure 9		

Table 10 : Guide rails

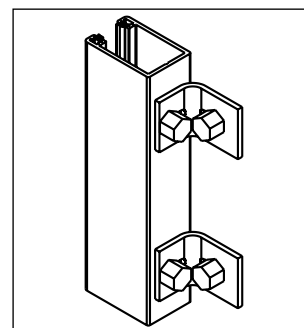


Fig. 8 : Mounting with angle bar W01

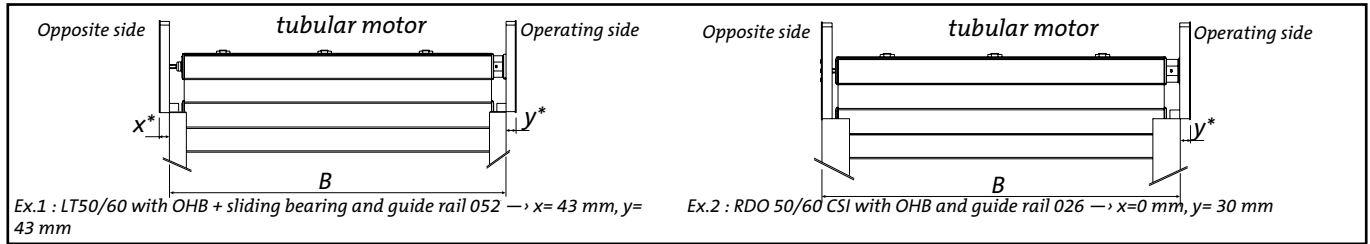


Fig. 9 : Examples sidelong savings (* see table 11)

		Operating side (y)		Opposite side standard (x)		Opposite side with fall protection (x)	
		026	052	026	052	026	052
LT 50/60 (also RTS & IO)	without sliding bearing	-	43	-	3	-	43
	with sliding bearing	-	43	-	43	X	X
RDO 50/60 CSI (NHB)	without sliding bearing	-	43	-	3	-	43
	with sliding bearing	30	83	-	43	X	X
Coiled spring system		-	3	-	3	niet mogelijk	
NHB = emergency control							
Attention							

Table 11 : Table for min. sidelong savings for motors (from backside guide rails)

Remark: no savings possible when using aluminium consoles.

11. Supplements

- **Lift security system through crank handle operation:**

- The DVA system is specially fashioned to fully block the shutter curtain
- Only possible with motor operation or crank handle operation

- **Security for final slat:**

- Obstacle detection while closing the roller gate
- Optical: function based on an infrared ray

- **Cylinder lock:**

- Mounted in an intermediate slat
- Only possible in combination with coiled spring operation
- The lock is operated from in- and outside

- **Letter box:**

- Mounted in an intermediate slat (eventually between the handgrips)
- Combined with cylinderlock only possible when the intermediate slat with cylinderlock is mounted directly above the bottom slat

- **Motor with built-in receiver (RTS) and wall transmitter:**

- Operation of the motor with remote control
- Motor should get supply only (230 V)
- Optional: without wall transmitter

- **Supporting brackets:** (with box type 1 up to and including 4)

- Recommended from 3000 mm width
- Extra fixation of the box in the middle
- Are not visible at the outside
- Prevent the box from sagging

- **Window glass:**

- Extruded slat (ASX77) with openings provided with windows in polycarbonate (2 mm thick)
- Maximum 3 slats with windows in one curtain
- These slats are always placed in group
- Please indicate number and height on the order form
- The indicated height is respected approximately, depending on the technical possibilities

- **Ventilation:**

- Extruded profile (VP79)
- Always mounted above the bottom lath

- **Fall protection:**

- Prevents the roller gate from falling down in case of a mechanical failure of the motor
 - Not possible with coiled spring operation
- Attention: more cut-away is necessary

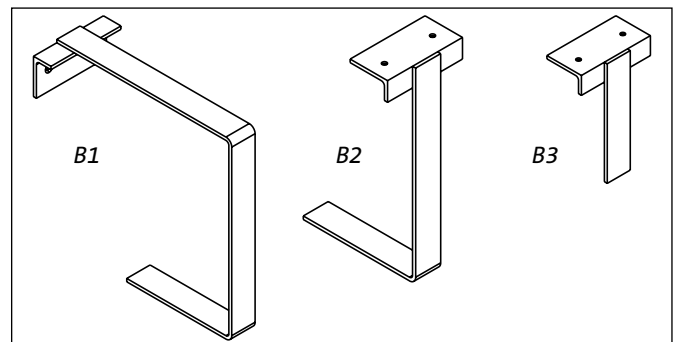


Fig. 10 : Supporting brackets

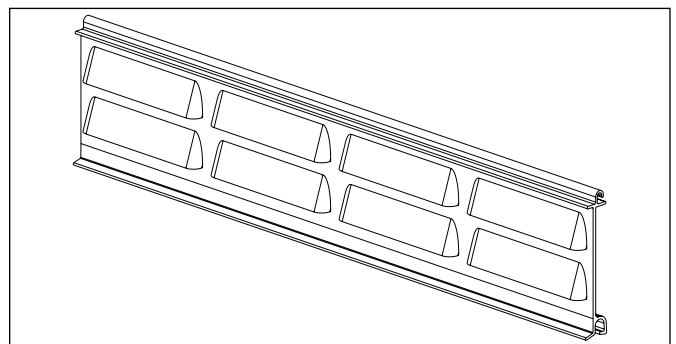


Fig. 11 : Ventilation

Optie: Options: RP077 as a roller gate

When do we refer to a door as opposed to a roller shutter (EN 13241-1)?

Manual or powered doors intended for installation in zones in the reach of persons, and of which providing safe access for goods and vehicles guided or driven by persons in industrial, commercial or residential spaces is the principal intended use.

Classification of the RP077

Watertightness: testing according to EN 12489:2000 and classification according to EN 12425:2000

Class2: 50Pa, waterspray for 20min

Resistance to wind loads: testing according to EN 12444:2000 and classification according to EN 12424:2000

Guide	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
026	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2
052	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2	2	2

Guide	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200
026	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
052	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Guide	5300	5400	5500
026	0	0	0
052	0	0	0

Class 0:NPD Class 2: 450Pa Class 4: 1000Pa
Class 1:300Pa Class 3: 700Pa

Air permeability: testing according to EN 12427:2000 and classification according to EN 12426:2000

Class 0:NPD (no performance determined)

thermal resistance: testing according to EN 12428:2000

The RP077 may not be used as a part of a partition construction that encloses the protected volume of home and office buildings and industrial spaces for which energy is consumed to maintain a specific internal temperature for people.

Which extensions of the basic RP077 are minimally required for the RP077 to be able to be used as a door?

We offer three possibilities depending on the situation:

Situation	characteristics	minimum compulsory extension
1	- trained users - not public - dead man's system desired	- dead man's BUTTON switch - fall protection
2	- trained users - public - dead man's system desired	- dead man's KEY switch - fall protection
3	- trained/not trained users - public or not public - pulse switch desired	- control (Rollixo) + safety edge - fall protection

Trained users:

users are considered trained if the employer, the supervisor of the space or the owner has given them approval to operate the door and has advised them with respect to use of the door.

compulsory extensions

<i>compulsory in situation</i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>fall protection</i>	<i>fall protection A1129</i>	<i>fall protection A1129</i>	<i>fall protection A1129</i>
<i>operation</i>	<i>surface-mounted pulse switch A54</i>	<i>surface-mounted pulse key switch, two turning directions A44</i>	<i>final slat protection with Rollixo incl. transmitter A61</i>

*other pulse button switches,
see domotics*

*other pulse key switches,
see domotics*

12. General remarks

- The surface of the slats can cause slight damage as a result of friction. This phenomenon is part and parcel of the product and is, as a consequence, not covered by the guarantee.
- All electrical connections are to be done according to the legal provisions of the country. The installer is responsible for the connection and the function of the product.
- Harol does not accept any responsibility for the curtain to be ripped off by wind or storm. The installer should consider all precautions in order to deliver a product that is adapted to the mounting situation.
- This information represents our current knowledge and cannot be used against us.
- Harol reserves the right to make alterations of the product without prior notice.

13. Wind resistance and operating classes in accordance with NBN EN 13659

13.1 Compulsory application since 1 April 2006

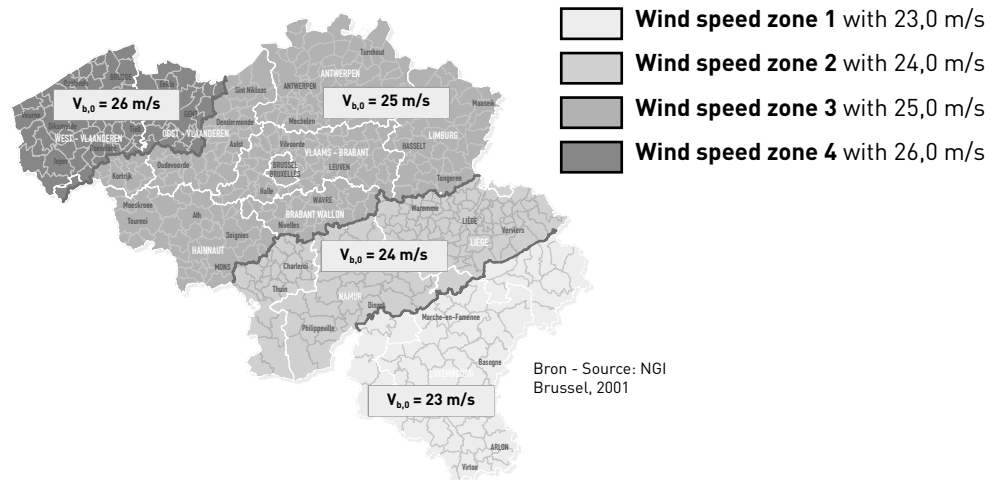
The new NBN EN 13659 standard has been in force since 1 April 2006. In accordance with this standard, from that date onwards roller shutters must carry a CE mark that also shows the wind resistance class. There are standards and guidelines for different countries in order to define which wind resistance class is necessary for which application. For Germany, the German "Bundesverband Rolladen und Sonnenschutz" commissioned the development of an IFT guideline entitled "Application advice for external closures". This guideline (DIN 1055-4:2005-3) divides the territory of

Germany into wind speed or wind load zones and terrain categories. In this way, the applicable wind speed zone and terrain category can be derived from the location of the building. The installation height of the closures indicates the third necessary reference measurement. For Belgium, everything is shown in standard NBN EN 1991-1-4 and the territory is divided into four wind speed zones. The Netherlands is divided into three wind speed zones in accordance with standard NEN-EN 1991-1-4: 2005/NB:2007 and France has four wind speed zones in accordance with standard DTU 34.2.

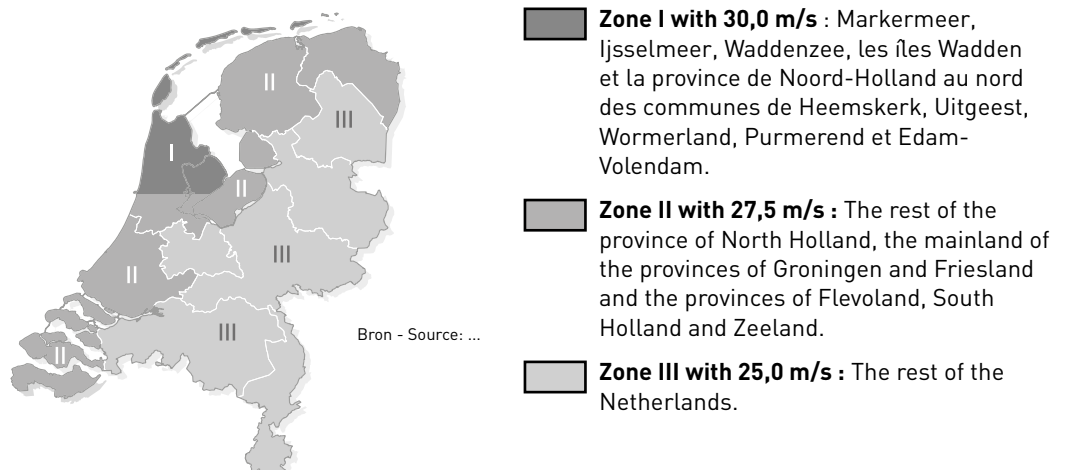
For other countries, ask the local meteorological services for the values!

13.2 Détermination des zones de vitesses de vent ou zones de charges de vent

Belgium



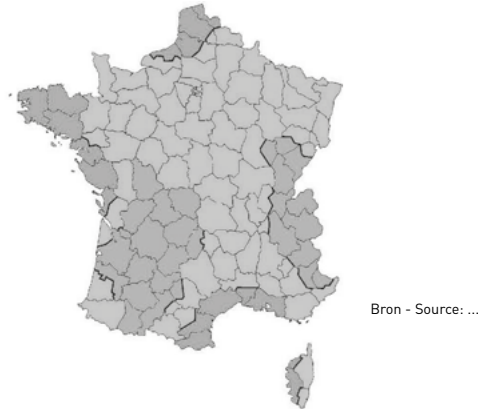
The Netherlands



Germany



France



	Wind load zone 1 with 22,5 m/s
	Wind load zone 2 with 25,0 m/s
	Wind load zone 3 with 27,5 m/s
	Wind load zone 4 with 30,0 m/s

	Wind load zone 1 with 22,0 m/s
	Wind load zone 2 with 24,0 m/s
	Wind load zone 3 with 26,0 m/s
	Wind load zone 4 with 28,0 m/s

13.3 Definition of the terrain or roughness category

	Terrain category 0 <i>(The most stringent)</i> Sea or coastal area with wind flowing over the open sea.
	Terrain category I Lakes or flat and horizontal area with negligible vegetation and no obstacles.
	Terrain category II Area with low vegetation such as grass, with or without a few free-standing obstacles (trees, buildings) with a distance between them of at least 20 times their height (= gap of at least 20 obstacle heights).
	Terrain category III Area with regular overgrowth or buildings or isolated obstacles with a gap of no more than 20 obstacle heights (e.g. villages, peri-urban areas, sustainable forests etc.)
	Terrain category IV <i>(The least stringent)</i> Urban areas where at least 15% of the surface area is covered with buildings with an average height of over 15 metres.

13.4 Installation height

In addition to the wind speed zone and the terrain category, the installation height also plays a role in defining the wind resistance classes. The table below shows the recommended wind resistance class depending on the installation height in accordance with the applicable standards in each country.

The minimum class in the application advice notes is wind resistance class 2. That does not mean that class 0 or class 1 products must not be used. However, a product with the relevant wind resistance class is recommended to define a particular quality level.

BELGIUM	Terrain category	Installation heights > 0 - 8 metres				Installation heights > 8 - 20 metres				Installation heights > 20 - 100 metres			
		Wind speed zone				Wind speed zone				Wind speed zone			
		1 23 m/s	2 24 m/s	3 25 m/s	4 26 m/s	1 23 m/s	2 24 m/s	3 25 m/s	4 26 m/s	1 23 m/s	2 24 m/s	3 25 m/s	4 26 m/s
	0	3	4	4	4	4	4	4	5	4	5	5	5
THE NETHERLANDS	I	3	4	4	4	4	4	4	5	4	5	5	5
	II	3	3	3	4	3	4	4	4	4	5	5	5
	III	2	3	3	3	3	3	3	4	4	5	5	5
	IV	2	3	3	3	3	3	3	3	4	4	4	4

THE NETHERLANDS	Terrain category	Installation heights > 0 - 8 metres			Installation heights > 8 - 20 metres			Installation heights > 20 - 100 metres		
		Wind speed zone			Wind speed zone			Wind speed zone		
		1 30 m/s	2 27,5 m/s	3 25 m/s	1 30 m/s	2 27,5 m/s	3 25 m/s	1 30 m/s	2 27,5 m/s	3 25 m/s
	0	4	4	4	5	5	4	6	5	5
FRANCE	I	4	4	4	5	5	4	6	5	5
	II	4	4	3	5	4	4	5	5	5
	III	4	3	3	4	4	3	5	5	5
	IV	3	3	3	4	3	3	5	4	4

FRANCE	Terrain category	Installation heights > 0 - 8 metres				Installation heights > 8 - 20 metres				Installation heights > 20 - 100 metres			
		Wind speed zone				Wind speed zone				Wind speed zone			
		1 22 m/s	2 24 m/s	3 26 m/s	4 28 m/s	1 22 m/s	2 24 m/s	3 26 m/s	4 28 m/s	1 22 m/s	2 24 m/s	3 26 m/s	4 28 m/s
	0	3	4	4	4	4	4	5	5	4	5	5	5
GERMANY	I	3	4	4	4	4	4	5	5	4	5	5	5
	II	3	3	4	4	3	4	4	4	4	5	5	5
	III	2	3	3	3	3	3	4	4	4	5	5	5
	IV	2	3	3	3	3	3	3	3	4	4	4	4

GERMANY	Terrain category	Installation heights > 0 - 8 metres				Installation heights > 8 - 20 metres				Installation heights > 20 - 100 metres			
		Wind speed zone				Wind speed zone				Wind speed zone			
		1 22,5 m/s	2 25,0 m/s	3 27,5 m/s	4 30,0 m/s	1 22,5 m/s	2 25,0 m/s	3 27,5 m/s	4 30,0 m/s	1 22,5 m/s	2 25,0 m/s	3 27,5 m/s	4 30,0 m/s
	0	3	4	4	4	4	4	5	5	4	5	5	6
GERMANY	I	3	4	4	4	4	4	5	5	4	5	5	6
	II	3	3	4	4	3	4	4	5	4	5	5	5
	III	2	3	3	4	3	3	4	4	4	5	5	5
	IV	2	3	3	3	3	3	3	4	4	4	4	5

15.5 Wind resistance depending on slat and guide

AD77

guide	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200
026	6																						
052	6																					5	

guide	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500
026	5		4				3						2				1						
052	5	4				3						2				1							

14. Order form RP077

Click on the link below:

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