AVANTAGE

Smoke control shutter

CE 1812

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V13-EN-L 06/2021

Table of content

Table of content

Explanation of the abbreviations and pictograms

Wn = nominal width
Hn = nominal height
Sn = free air passage
Sl = free surface
E = integrity
I = thermal insulation
S = smoke leakage
60/120 = fire resistance time
Pa = pascal
o -> i = meets the criteria from the outside (o) to the inside (i)
i <-> o = fire side not important
AA = automatic activation
MA = manual activition
multi = multi compartment
ved = vertical duct
hod = horizontal duct
vew = vertical wall penetration
V = volt
W = watt
V AC = Volt alternating current
V DC = Volt direct current
E.TELE = power supply magnet
E.ALIM = power supply motor
Auto = automatic
Tele = remote controlled
Pnom = nominal capacity
Pmax = maximum capacity
DAS MOD = modular product
OP = option (delivered with the product)
KIT = kit (delivered separately for repair or upgrade)
PG = connection flange to the duct
GKB (type A) / GKF (type F): “GKB” stands for standard plasterboards (type A according to EN 520) while “GKF” plasterboards offer a higher fire resistance for a similar plate thickness (type F according to EN 520)
Cal-Sil = calcium silicate
ζ [-] = pressure loss coefficient
Q = airflow
ΔP = static pressure drop
v = air speed in the duct
Lwa = A-weighted sound power level
ME = motorised
H = habitat

	optimal free air passage and minimal pressure loss		superior air tightness (tested at 1500 Pa)
	intermediate dimensions on request		

DECLARATION OF PERFORMANCE

CE_DoP_Rf-t_V13_EN I-11/2019

1. Unique identification code of the product-type:	**AVANTAGE**
2. Intended use/es:	Smoke evacuation shutter to be used in smoke control systems, in multi-compartment applications at fire temperatures, or in single-compartment applications.
3. Manufacturer:	Rf-Technologies NV, Lange Ambachtstraat 40, B-9860 Oosterzele
4. System/s of AVCP:	System 1
5. Harmonised standard / European Assessment Document; notified body / European Technical Assessment, Technical Assessment Body, notified body; certificate of constancy of performance:	EN 12101-8:2011, Efectis with identification number 1812; Efectis_1812_CPR_1042
6. Declared performance according to EN 12101-8:2011	(fire resistance according to EN 1366-10, classification according to EN 13501-4)

Essential characteristics					Performance
Range	**Product**	**Shaft type**	**Shaft**	**Installation**	**Classification**
300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Avantage 60	Shaft	Promatect L500 ≥ 30 mm	1	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
			Geoflam ≥ 30 mm		
			Geotec ≥ 30 mm		
			Tecniver ≥ 35 mm		
			Glasroc F V500 ≥ 35 mm		
			Exthamat ≥ 25 mm		
			Desenfire HD ≥ 25 mm HD		
			Concrete ≥ 70 mm		
			Masonry, concrete blocks, concrete ≥ 100 mm		
	Avantage 120	Shaft	Promatect L500 ≥ 40 mm	1	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Geoflam ≥ 35 mm		
			Tecniver ≥ 45 mm		
			Exthamat ≥ 30 mm		
			Desenfire ≥ 25 mm THD		
			Concrete ≥ 70 mm		
			Masonry, concrete blocks, concrete ≥ 100 mm		
	Avantage 120	Shaft	Promatect L500 ≥ 50 mm	1	EI 120 (v_{ed} i ↔ o) S 1500 AA multi
			Geoflam ≥ 45 mm		
			Geoflam Light ≥ 35 mm		
			Geotec ≥ 45 mm		
			Tecniver ≥ 50 mm		
			Glasroc F V500 ≥ 50 mm		
			Exthamat ≥ 35 mm		
			Desenfire HD ≥ 35 mm		
			Desenfire ≥ 45 mm		
			Desenfire STR ≥ 25 mm		
			Masonry, concrete blocks, concrete ≥ 100 mm		

1 Type of installation: shaft-mounted 0/180°. Minimal in-between distances authorised.

Harmonised standard EN 12101-8:2011

Nominal activation conditions/sensitivity:	Pass - automatic activation
Response delay (response time): closure time	Pass - automatic activation
Operational reliability: cycling	300 cycles (no load)
Durability of response delay:	Pass
Durability of operational reliability:	Pass
Approved accessories	EASY-KAP mounting frame; Resetting by motor VAME (Range 350 x 385 mm ≤ Avantage ME 1V ≤ 700 x 1075mm); with grill
High operational temperature (HOT 400/30):	NPD (no performance determined)

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:
Mathieu Steenland, Technical Manager

Oosterzele, 11/2019

Product presentation AVANTAGE

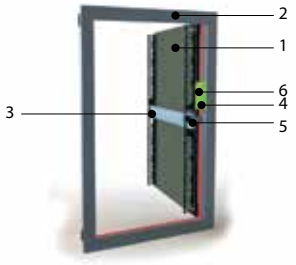
The smoke control shutter Avantage is noted for its superior airtight properties. The shutter is available as single (1V) and double (2V) shutter units; it is also available in a motorised version (Avantage ME) that allows the remote resetting of the blade. Developed in accordance with the European product standard EN 12101-8 and tested with front grill according to the EN 1366-10 standard, Avantage offers a fire-resistance of 60 or 120 minutes (see the classification overview), and ensures minimum pressure loss.

Smoke control shutters and dampers are suitable for use in ventilating protected lobbies, venting to shafts either naturally or mechanically. They open to evacuate smoke in emergency situations whilst maintaining fire resistant integrity in standby position.

- ☑ superior air tightness (tested at 1500 Pa)
- ☑ optimal free air passage and minimal pressure loss
- ☑ easy to test through remote resetting (ME variant, 1V)
- ☑ 2V model with simplified manual reset (closing)
- ☑ integrated blocking mechanism
- ☑ large dimensions

- ■ tested according to EN 1366-10
- ■ compliant with EN 12101-8
- ■ approved for installation in calcium-silicate, 'Staff', Tecniver, Glasroc, Extha and concrete shafts.
- ■ maintenance-free
- ■ for indoor use
- ■ intermediate dimensions on request
- ■ reversible (hinges left or right)

1. 1 shutter (1V) / 2 shutters (2V)
2. aluminium frame
3. lock + key
4. connection compartment
5. blocking mechanism + automatic locking at 90°
6. product identification



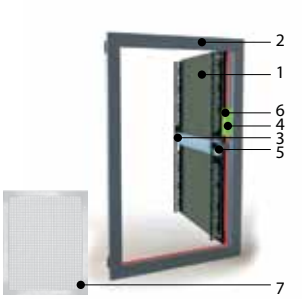
Variant AVANTAGE 1V

Variant AVANTAGE 1V

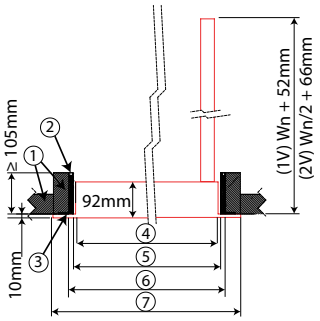
Avantage smoke control shutter, single (1V) shutter unit.

- 1 shutter
- fire resistance till 60 minutes

1. 1 shutter (1V)
2. aluminium frame
3. lock + key
4. connection compartment
5. blocking mechanism + automatic locking at 90°
6. product identification
7. front protection grill (compulsory)



Range and dimensions AVANTAGE 1V60



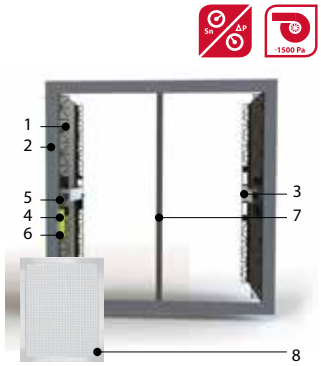
1. Refractory material
2. Sealing if mounting frame
3. Mounting frame (optional)
4. Nominal dimensions shutter Wn x Hn
5. Built-in dimensions without mounting frame (Wn+10) x (Hn+10)mm
6. Built-in dimensions with mounting frame (Wn+20) x (Hn+20)mm
7. Overall (outside) dimensions of the shutter (Wn+54) x (Hn+54)mm

	≥	≤
(W x H) mm	300x385	700x1075

Variant AVANTAGE 2V

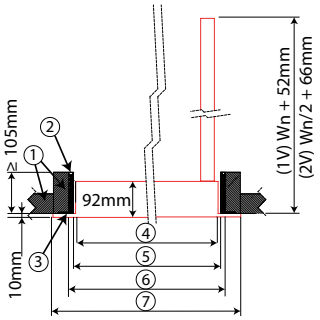
Avantage smoke control shutter, double (2V) shutter unit.

- 2 shutters
- fire resistance till 60 minutes



1. 2 shutters (2V)
2. aluminium frame
3. lock + key
4. connection compartment
5. blocking mechanism + automatic locking at 90°
6. product identification
7. central support (2V)
8. front protection grill (compulsory)

Range and dimensions AVANTAGE 2V60



1. Refractory material
2. Sealing if mounting frame
3. Mounting frame (optional)
4. Nominal dimensions shutter Wn x Hn
5. Built-in dimensions without mounting frame (Wn+10) x (Hn+10)mm
6. Built-in dimensions with mounting frame (Wn+20) x (Hn+20)mm
7. Overall (outside) dimensions of the shutter (Wn+54) x (Hn+54)mm

	≥	≤
(W x H) mm	350x385	1100x1105

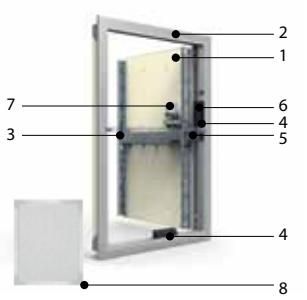
Variant AVANTAGE 1V ME

Variant AVANTAGE 1V ME

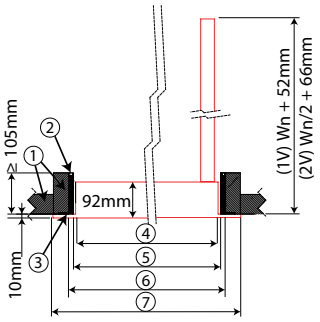
Motorised (ME) Avantage 1V smoke control shutter that allows the remote resetting of the blade.

- with resetting motor
- 1 shutter
- fire resistance till 60 minutes

1. 1 shutter (1V)
2. aluminium frame
3. lock + key
4. connection compartment
5. blocking mechanism + automatic locking at 90°
6. product identification
7. resetting motor (ME)
8. front protection grill (compulsory)



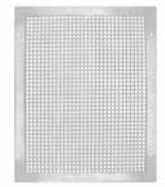
Range and dimensions AVANTAGE 1V60 ME



1. Refractory material
2. Sealing if mounting frame
3. Mounting frame (optional)
4. Nominal dimensions shutter Wn x Hn
5. Built-in dimensions without mounting frame (Wn+10) x (Hn+10)mm
6. Built-in dimensions with mounting frame (Wn+20) x (Hn+20)mm
7. Overall (outside) dimensions of the shutter (Wn+54) x (Hn+54)mm

	≥	≤
(W x H) mm	350x385	700x1075

Evolution - kits

	KITS VD24-VA	Natural magnet 24 V DC
	KITS VD48-VA	Natural magnet 48 V DC
	KITS VM24-VA	Electromagnet 24 V DC (not applicable for ME model)
	KITS VM48-VA	Electromagnet 48 V DC (not applicable for ME model)
	KITS FDC-VA	Limit switches 'open/closed'
	KITS ME-AVANM	Resetting motor ME 24V/48V
	EASY-KAP	Mounting frame (delivered separately)
	GFV-PB	Technical front protection grill (aluminium frame and perforated plate, fastened with screws 4.8x19mm), free air passage of 77,8%

Options - at the time of order

	GFV-PB	Technical front protection grill (aluminium frame and perforated plate, fastened with screws 4.8x19mm), free air passage of 77,8%

Storage and handling

Storage and handling

As this product is a safety element, it should be stored and handled with care.

Avoid:

- any kind of impact or damage
- contact with water
- deformation of the casing

It is recommended:

- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

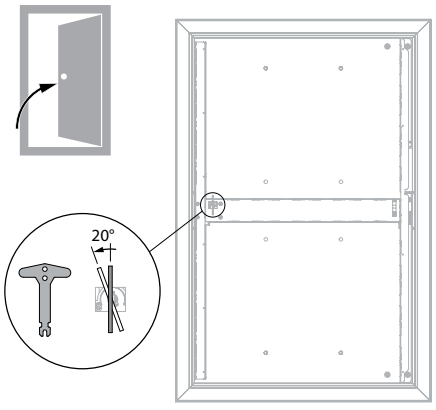
Installation

General points

- The installation must comply with the installation manual and the classification report.
- The installation of the smoke control duct must comply with the classification report delivered by the manufacturer.
- Axis orientation: see the declaration of performance.
- Avoid the obstruction of adjoining smoke control ducts.
- Verify if the blade can move freely.
- Rf-t smoke dampers may be applied to smoke control ducts that have been tested according to EN 1366-8 and EN 1366-9 as appropriate, constructed from similar materials with a fire resistance, thickness and density equal or superior to these of the tested materials.
  - ⚠ Caution: when fitting, the product should be handled with care and remain protected from any sealing products.
  - ⚠ Caution: before putting the installation into operation, clean off all the dust and dirt.
  - ⚠ Caution: bear in mind the blade's clearance inside the smoke control duct.

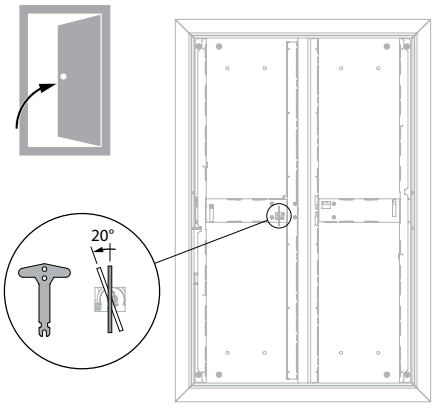
Operation: opening

1



1. Unlocking 1V
Manual:
Insert the key in the lock. Turn the key 20° anti-clockwise: the shutter opens. Remove the key from the lock.
Remote:
Remote controlled by an electrical impulse or by interrupting the magnet's power supply (option VD/VM).

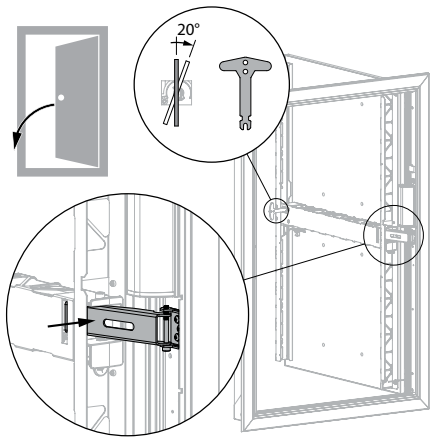
2



2. Unlocking 2V
Manual:
Insert the key in the lock. Turn the key 20° anti-clockwise: the shutter opens. Remove the key from the lock.
Remote:
Remote controlled by an electrical impulse or by interrupting the magnet's power supply (option VD/VM).

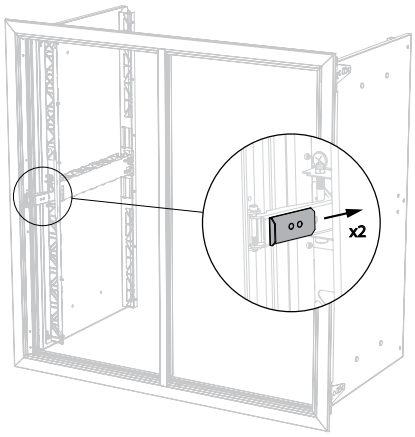
Operation: closing

1



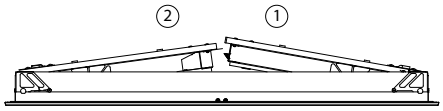
1. Resetting 1V
Manual:
Turn the key 20° clock wise and withdraw it. Push the blocking mechanism. Close the shutter by pulling the metal profile.

2



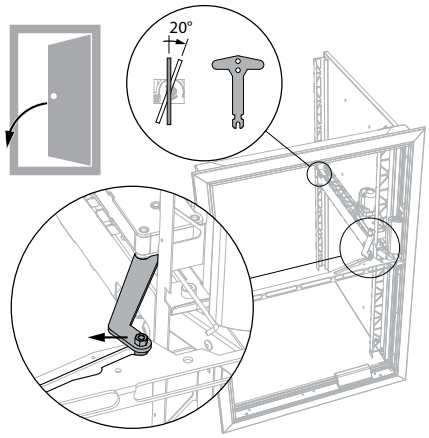
2. Resetting 2V
Manual:
Press on both blocking devices to deactivate them.

3



3. Turn the key 20° clock wise and withdraw it. Close both shutters together by pulling on the metal profiles. Make sure that the shutters hook in each other as illustrated.

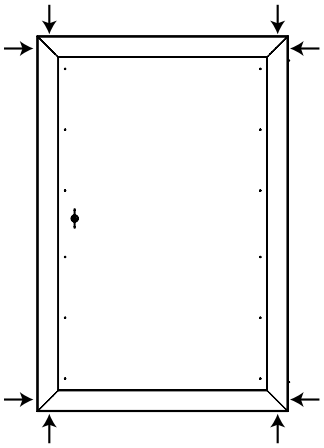
4



4. Resetting ME
Manual:
Turn the key 20° clock wise and withdraw it. Push the blocking mechanism. Close the shutter by pulling the metal profile.
Remote:
Power the actuator for at least 90 sec. (respect the prescribed voltage 24 or 48 Vdc).
The resetting stops automatically when the shutter is closed.
Switch off the power supply for at least 90 sec. in between each resetting cycle.

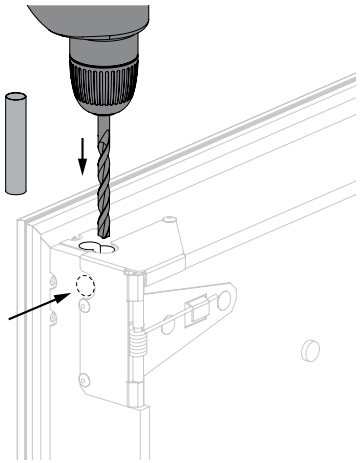
Electrical connection

1



1. The electrical supply can be done at the 4 corners of the shutter.

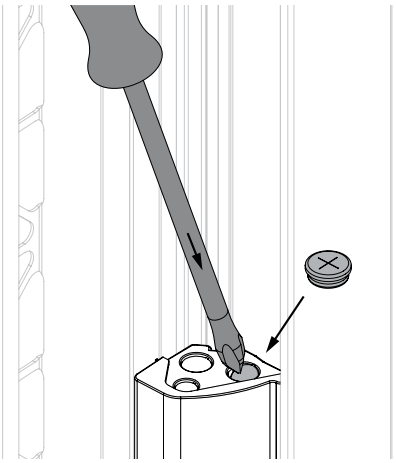
2



2. Drill a hole in the refractory material at the chosen corner(s). The galvanised part at the inside of the shutter is already indented.

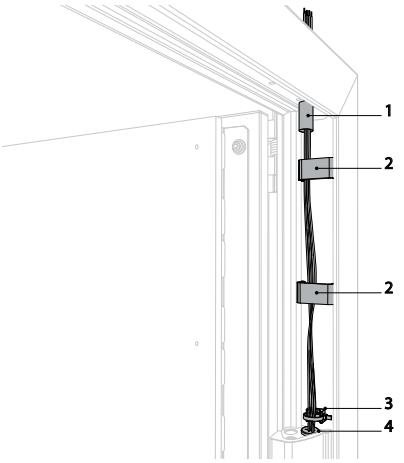
⚠ Caution: after passing and fixing the cables, you need to seal the drilled hole in the refractory plates around the electrical cables with fire resistant adhesive sealant (BCM f.e.).

3



3. Pierce an opening in the connection box. Affix the grommet delivered with the product.

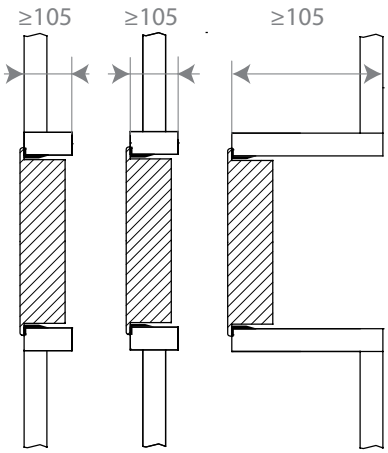
4



4. Lead the cables through the opening. Use the protective sleeve (1), the fixation clips (2) and the plastic cable clamp (3) to attach the cables to the frame. Lead the cables to the connection box through the grommet (4) and connect according to the electrical connection diagram.
Comply with the installation rules according to article 6.1 of NF S 61-932.

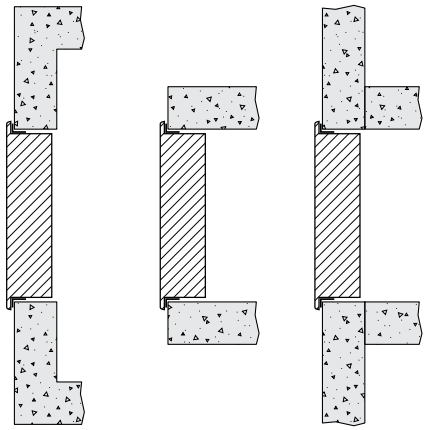
Position in the shaft

1

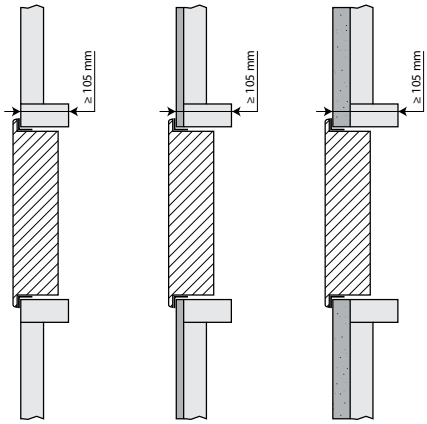


1. The shutter is affixed to the smoke control shaft through a sleeve. That sleeve can be installed either in the shaft, in the axis of the shaft or outside the shaft (or shaft extension).

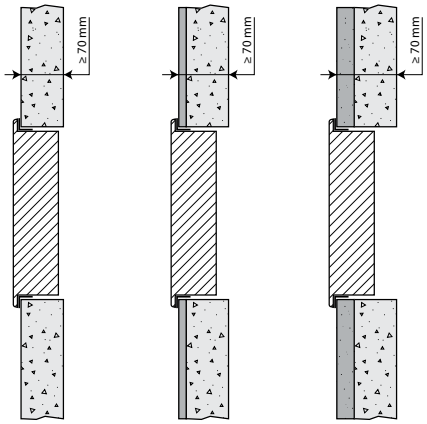
2



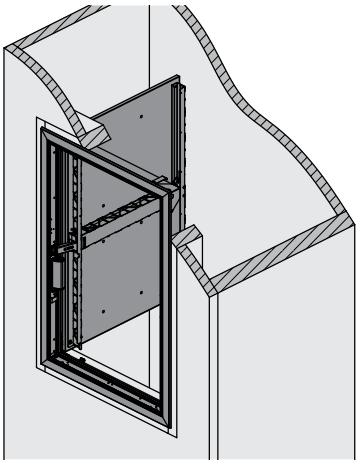
3



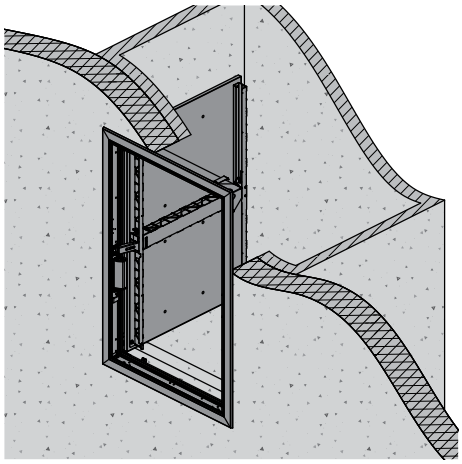
4



5

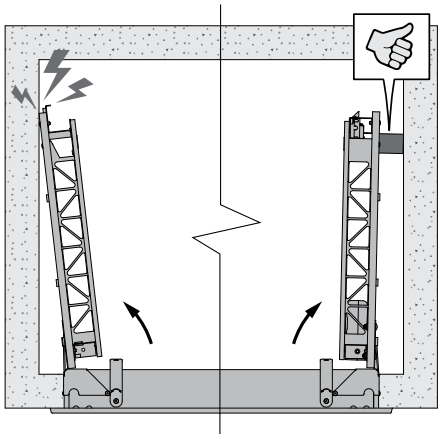


6



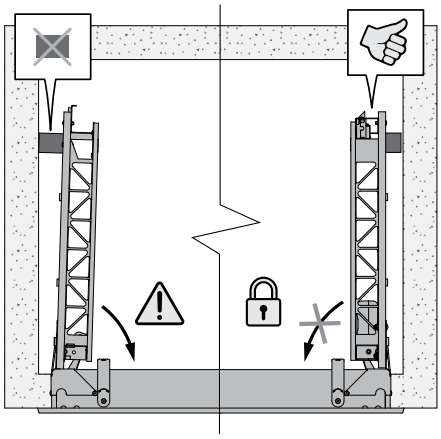
Shock absorbers for the doors

1



1. Shock absorbers (foam) come standard with the shutter. They can be affixed to the inner face of the door to prevent it from hitting the shaft wall when opening.

2



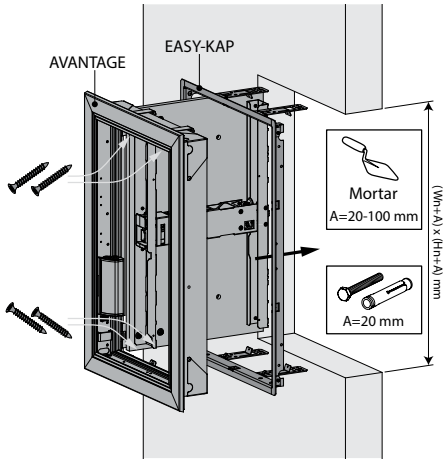
2. Be sure to cut these blocks to the correct dimensions so that the blocking mechanism can engage when the door opens.

Installation into vertical concrete shaft with mounting frame

The product was tested and approved in:

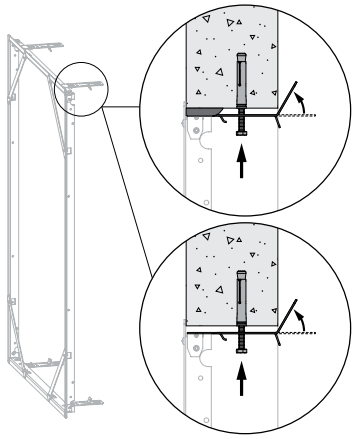
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Concrete ≥ 70 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
			Masonry, concrete blocks, concrete ≥ 100 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Concrete ≥ 70 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Masonry, concrete blocks, concrete ≥ 100 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Masonry, concrete blocks, concrete ≥ 100 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



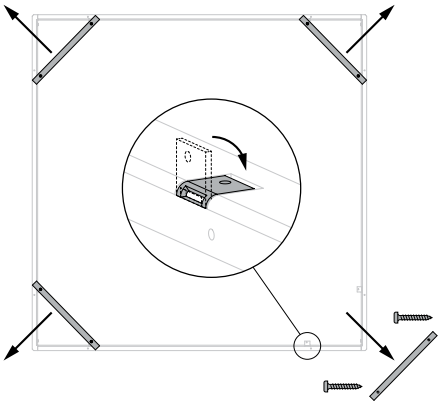
1. In case the mounting frame is screwed:
Make an opening with dimensions (W+20) x (H+20) mm.
In case the mounting frame is fixed with mortar:
Make an opening with dimensions (W+20) x (H+20) mm till (W+100) x (H+100) mm.

2



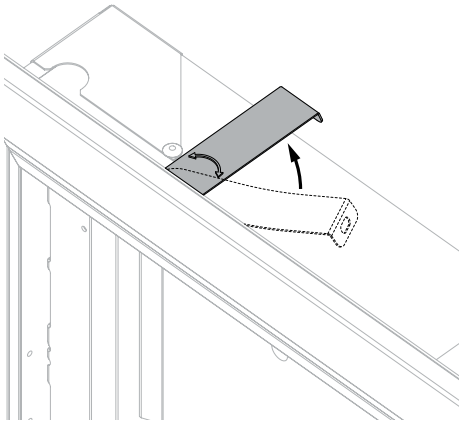
2. The mounting frame should always be fastened to the concrete shaft with screws and dowels (Ø 6 x minimum 60 mm, steel or stainless steel).
For an opening with dimensions up to (W+20) x (H+20) mm:
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the shaft and fasten the mounting frame with 4 screws Ø 6 x 60 mm, taking care not to misshape it. These screws can be inserted through any of the punched holes in the lugs, depending on the thickness of the shaft wall.
The finished opening must have the same size as the mounting frame (W+10) x (H+10) mm.
For an opening with dimensions up to (W+100) x (H+100) mm:
Apply mortar around the opening to reduce the opening to the outer dimensions of the frame, then proceed as mentioned above to fasten the frame into the opening. Make sure that the gap between the frame and the opening is sealed completely with mortar.
The mortar must harden completely before the damper is fastened to the mounting frame.

3



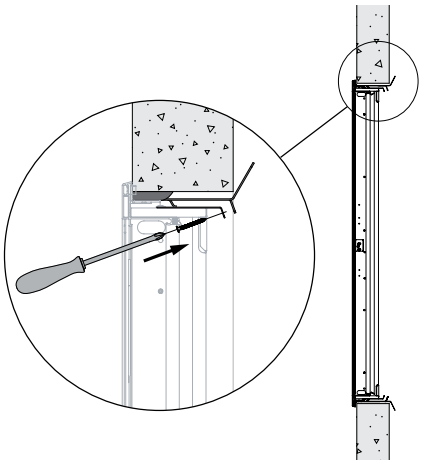
3. Put aside the screws that are affixed to one of the cross slats, then unscrew the 4 cross slats of the mounting frame and fold the 8 fastening plates in the frame.

4



4. Rotate the four fastening plates on the damper 90° (to the upright position).

5



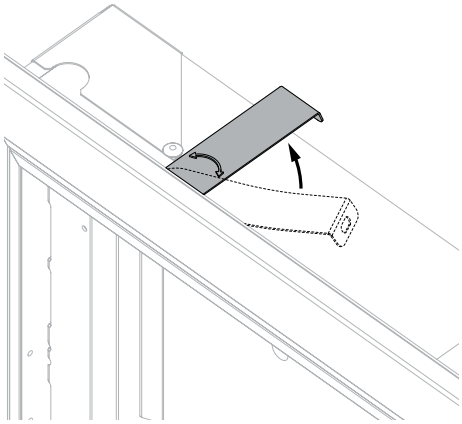
5. Open and position the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter.
Fasten the shutter onto the mounting frame with the 4 screws supplied, as shown in the drawing. Tightening the screws pulls the shutter towards the wall until its final position.
You can also slightly correct the angle of the shutter with respect to the mounting frame.
Connect the mechanism according to the wiring diagram.
Check the mobility of the shutter.

Installation into vertical concrete shaft without mounting frame

The product was tested and approved in:

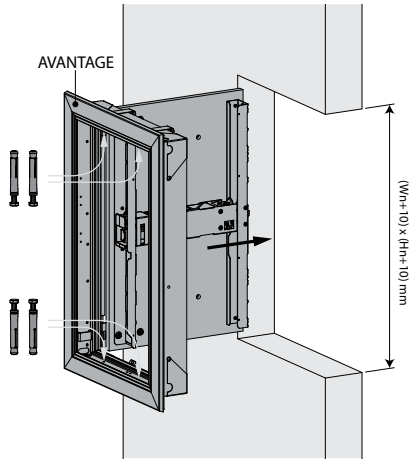
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Concrete ≥ 70 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
			Masonry, concrete blocks, concrete ≥ 100 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Concrete ≥ 70 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Masonry, concrete blocks, concrete ≥ 100 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Masonry, concrete blocks, concrete ≥ 100 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Rotate the four fastening plates on the damper 90° (to the upright position).
The fastening plates are not used for an installation without a mounting frame.

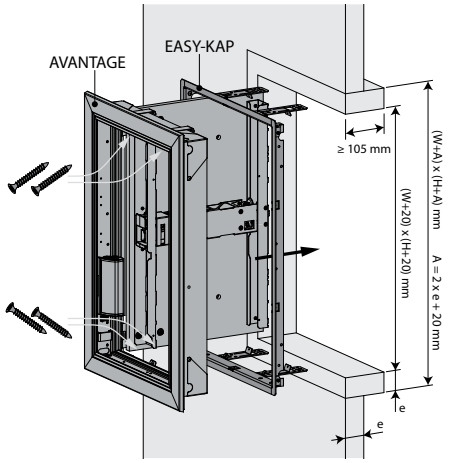
2



2. Make an opening with dimensions (W+10) x (H+10) mm.
Open and position the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.
Fix the shutter in the opening using 4 screws and dowels Ø6 x 40 mm.
Connect the mechanism according to the wiring diagram.
Check the mobility of the shutter.

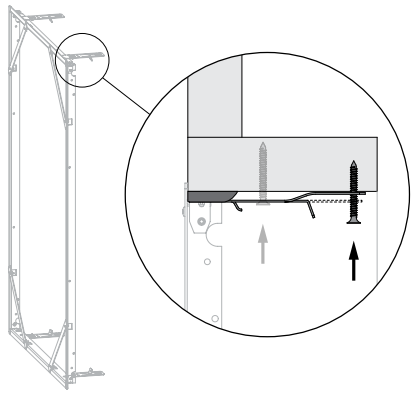
Installation into vertical shaft with built-in mounting frame: general instructions for all types of shafts (other than concrete)

1



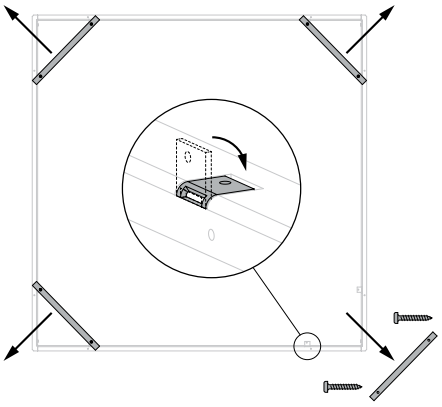
1. Make an opening with dimensions (W+A) x (H+A) mm.
A = 2 x thickness sleeve (e) + 20 mm .
Fit a sleeve of the same type and thickness of the duct (thickness e) of minimum 105 mm deep in the opening.
See details per type of shaft hereafter.

2



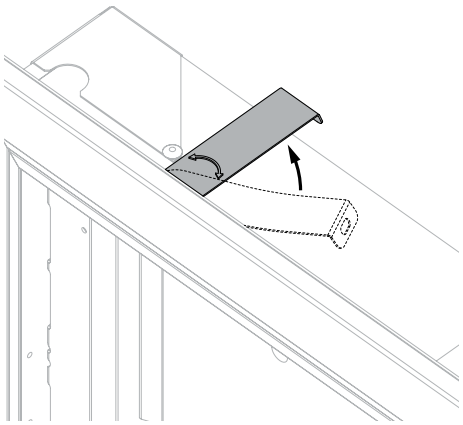
2. Fasten and seal the mounting frame. See details per type of shaft hereafter.
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve.
When fixed with screws, fasten the mounting frame to the sleeve with chipboard screws (Ø 6 x e) mm. These screws can be fixed in one of the openings provided for this purpose, depending on the depth of the sleeve.
Take care not to misshape the frame during its installation. The finished opening must have the same size as the mounting frame (W+10) x (H+10) mm.

3



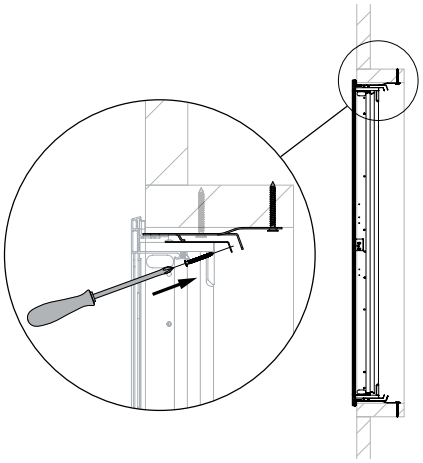
3. Put aside the screws that are affixed to one of the cross slats, then unscrew the 4 cross slats of the mounting frame and fold the 8 fastening plates in the frame.

4



4. Rotate the four fastening plates on the damper 90° (to the upright position).

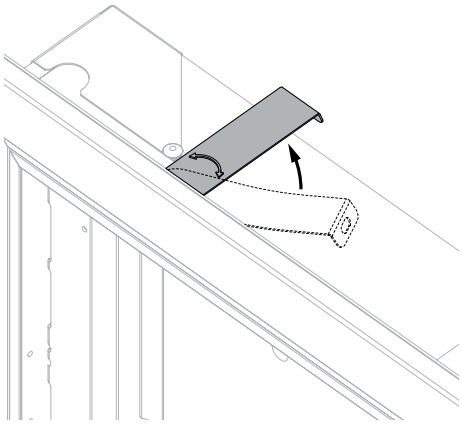
5



5. Open and position the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter.
Fasten the shutter onto the mounting frame with the 4 screws supplied, as shown in the drawing. Tightening the screws pulls the shutter towards the wall until its final position.
You can also slightly correct the angle of the shutter with respect to the mounting frame.
Connect the mechanism according to the wiring diagram.
Check the mobility of the shutter.

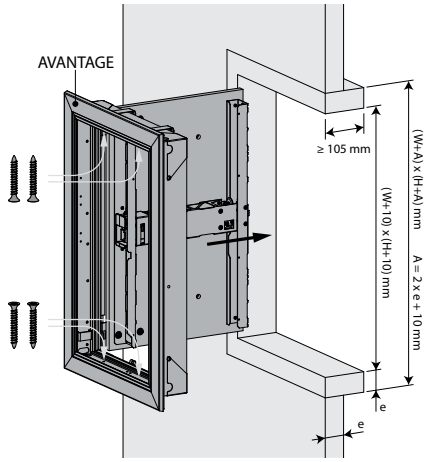
Installation into vertical shaft (without a mounting frame): general instructions for all types of shafts (other than concrete)

1



1. Rotate the four fastening plates on the damper 90° (to the upright position).
The fastening plates are not used for an installation without a mounting frame.

2



2. Make an opening with dimensions (W+A) x (H+A) mm.
A = 2 x thickness sleeve (e) + 10 mm.
Fit a sleeve of the same type and thickness of the duct (thickness e) of minimum 105 mm deep in the opening.
Open and position the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.
Fix the shutter in the opening using 4 screws Ø6 x 40 mm.

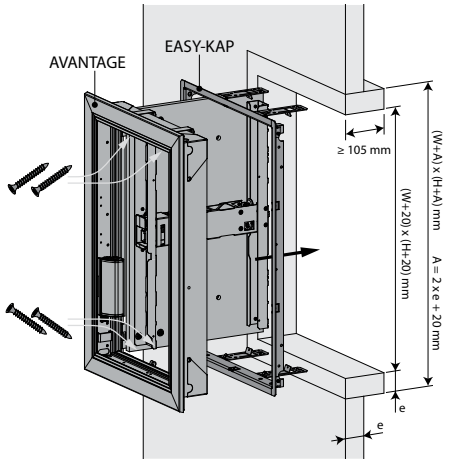
⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!
Connect the mechanism according to the wiring diagram.
Check the mobility of the shutter.

Installation into vertical shaft PROMATECT L500

The product was tested and approved in:

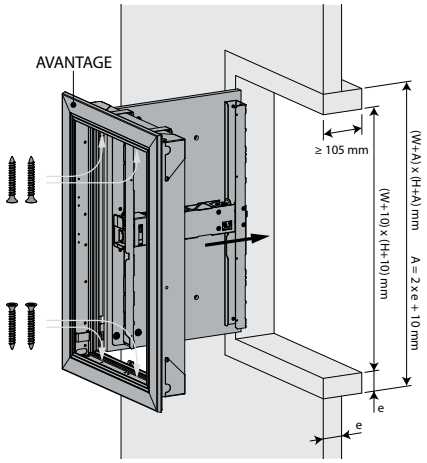
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 30 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 40 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Promatect L500 ≥ 50 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Installation with mounting frame:
Assemble the sleeve with staples and affix the assembled sleeve to the shaft wall with staples.
Coat the edges of the opening with adhesive plaster type Promacol S.
Seal the mounting frame with Promacol S taking care not to misshape it.

2



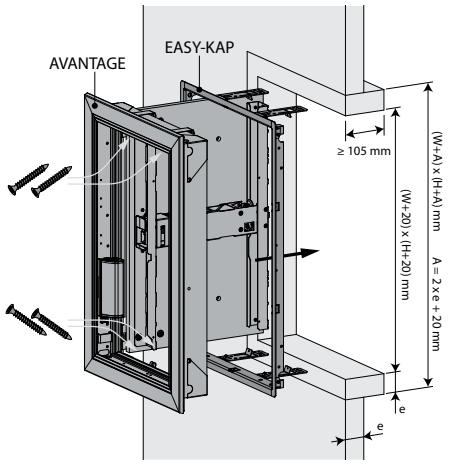
2. Installation without mounting frame:
Assemble the sleeve with staples and affix the assembled sleeve to the shaft wall with staples.

Installation into vertical shaft GEOFLAM (LIGHT) / GEOTEC

The product was tested and approved in:

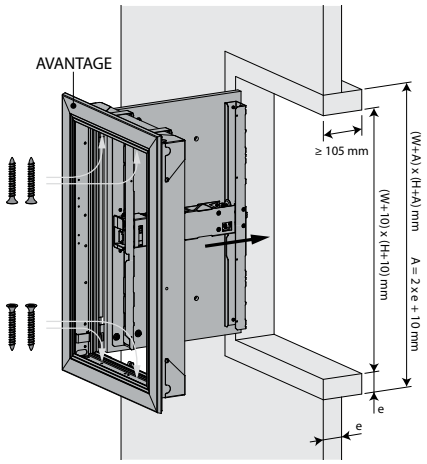
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam ≥ 30 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
			Geotec ≥ 30 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam ≥ 35 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Geoflam ≥ 45 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi
			Geoflam Light ≥ 35 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi
			Geotec ≥ 45 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Installation with mounting frame:
Coat the edges of the opening with adhesive plaster type PLACOL (in case of Geoflam) or GEOCOL (S) (in case of Geotec). In case of Geotec you can also assemble the sleeve with glue and screws Ø 5 x (2 x e) mm and affix the assembled sleeve to the shaft wall with glue and screws Ø 5 x (2 x e) mm every 100 mm.
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster or with GEOCOL (S) (in case of Geotec).
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. Caulk the mounting frame to the duct with vegetable fibre or (in case of Geotec) you can also coat the opening with Geocol (S) and fasten the mounting frame with screws of Ø 5 x e mm. Take care not to misshape the frame. The finished opening must have the same size as the mounting frame (W+10) x (H+10) mm.

2



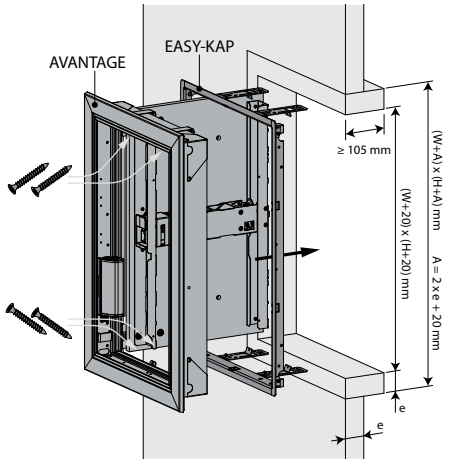
2. Installation without mounting frame:
Coat the edges of the opening with adhesive plaster type PLACOL (in case of Geoflam) or GEOCOL (S) (in case of Geotec).
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster or with GEOCOL (S) (in case of Geotec).
In case of Geotec you can also assemble the sleeve with glue and screws Ø 5 x (2 x e) mm and affix the assembled sleeve to the shaft wall with glue and screws Ø 5 x (2 x e) mm every 100 mm.

Installation into vertical shaft TECNIVER

The product was tested and approved in:

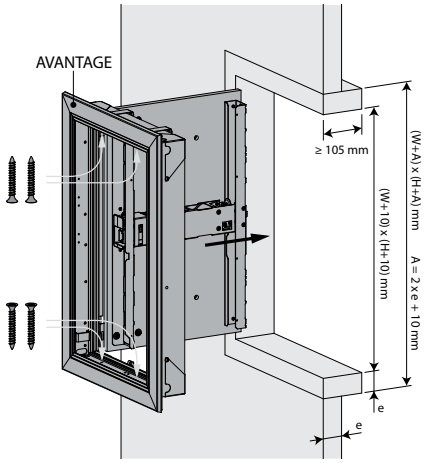
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Tecniver ≥ 35 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Tecniver ≥ 45 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Tecniver ≥ 50 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Installation with mounting frame:
Put glue type CF GLUE on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws Ø5 x 70 mm at 150 mm intervals.
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. First coat the opening with glue CF GLUE. Glue the mounting frame to the lining taking care not to misshape it. The finished opening must have the same size as the mounting frame (W+10) x (H+10) mm.

2



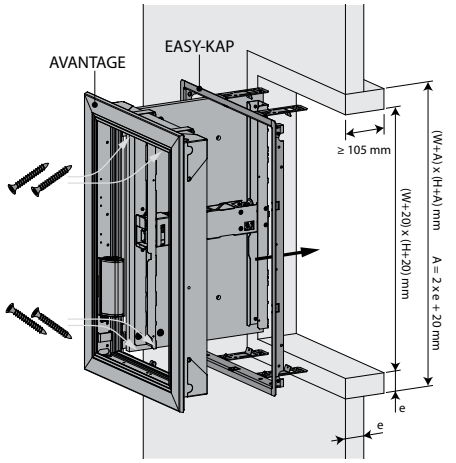
2. Installation without mounting frame:
Put glue type CF GLUE on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws Ø5 x 70 mm at 150 mm intervals.

Installation into vertical shaft GLASROC F V500

The product was tested and approved in:

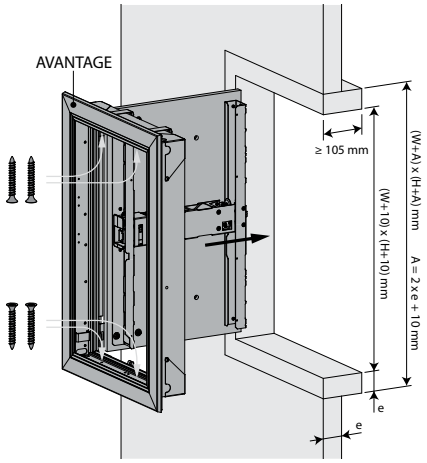
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Glasroc F V500 ≥ 35 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Glasroc F V500 ≥ 50 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Installation with mounting frame:
Put glue type GLASROC F V500 on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws Ø5 x 70 mm at 150 mm intervals.
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. First coat the opening with glue GLASROC F V500. Glue the mounting frame to the lining taking care not to misshape it. The finished opening must have the same size as the mounting frame (W+10) x (H+10) mm.

2



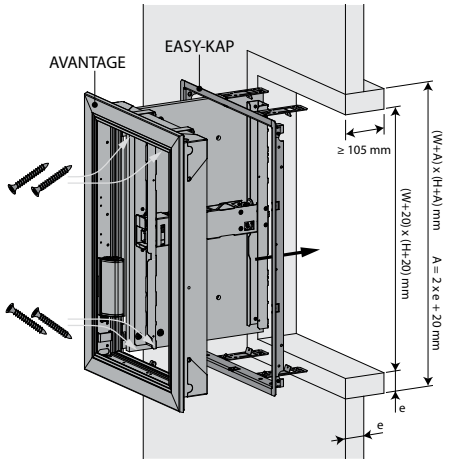
2. Installation without mounting frame:
Put glue type GLASROC F V500 on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws Ø5 x 70 mm at 150 mm intervals.

Installation into vertical shaft EXTHAMAT

The product was tested and approved in:

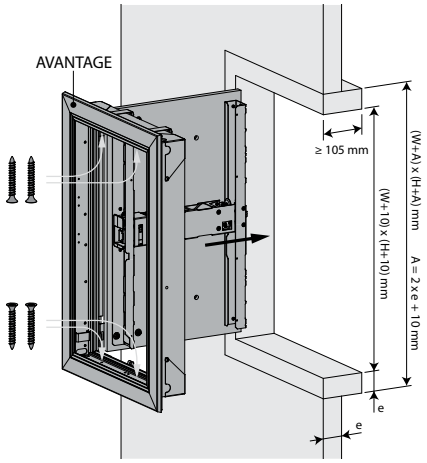
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Exthamat ≥ 25 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Exthamat ≥ 35 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi
			Exthamat ≥ 30 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Installation with mounting frame:
Coat the edges of the opening with adhesive plaster.
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. Caulk the mounting frame to the duct with vegetable fiber caulking and plaster and taking care not to misshape it. The finished opening must have the same size as the mounting frame
(W+10) x (H+10) mm.

2



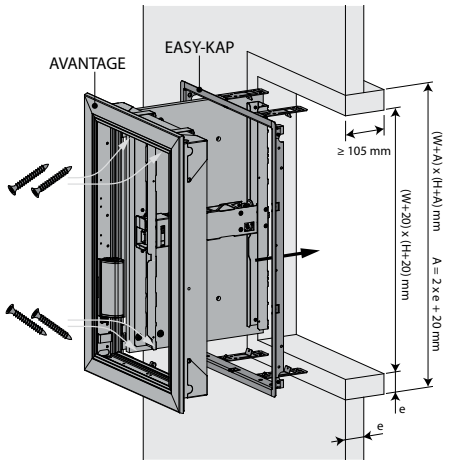
2. Installation without mounting frame:
Coat the edges of the opening with adhesive plaster.
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

Installation into vertical shaft DESENFIRE (HD/THD/STR)

The product was tested and approved in:

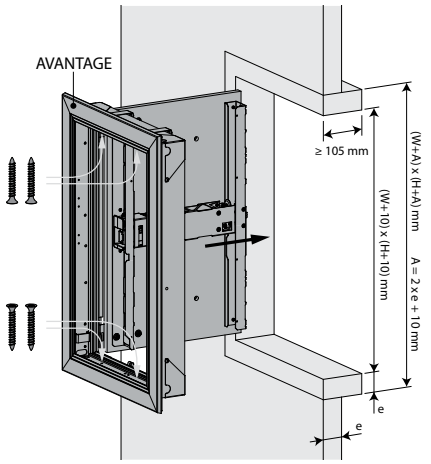
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Desenfire HD ≥ 25 mm	EI 60 (v_{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Desenfire HD ≥ 35 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi
			Desenfire ≥ 45 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi
			Desenfire THD ≥ 25 mm	EI 90 (v_{ed} i ↔ o) S 1500 AA multi
			Desenfire STR ≥ 25 mm	EI 120 (v_{ed} i ↔ o) S 1500 AA multi

1



1. Installation with mounting frame:
Coat the edges of the opening with adhesive plaster, type FACILIS.
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.
Two fixing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. Caulk the mounting frame to the duct with vegetable fiber caulking and plaster and taking care not to misshape it. The finished opening must have the same size as the mounting frame
(W+10) x (H+10) mm.

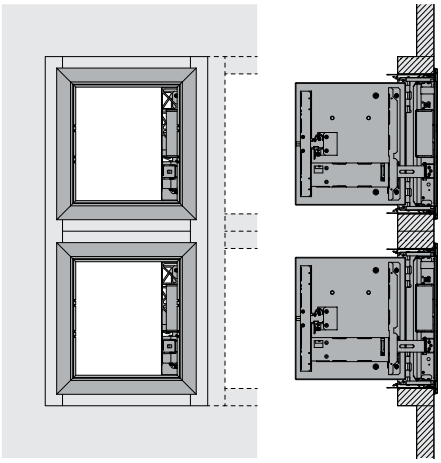
2



2. Installation without mounting frame:
Coat the edges of the opening with adhesive plaster, type FACILIS.
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

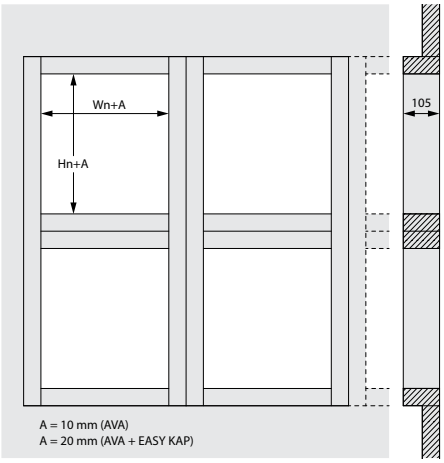
Installation at minimal distances

1



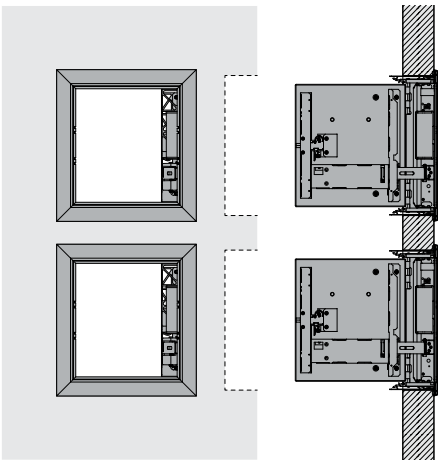
1. The shutters can be installed at minimal distance on top of or next to each other, if they are mounted in separate sleeves made from the shaft material with the required fire resistance. It is advised not to exceed a 4 x 2 configuration (W x H).

2



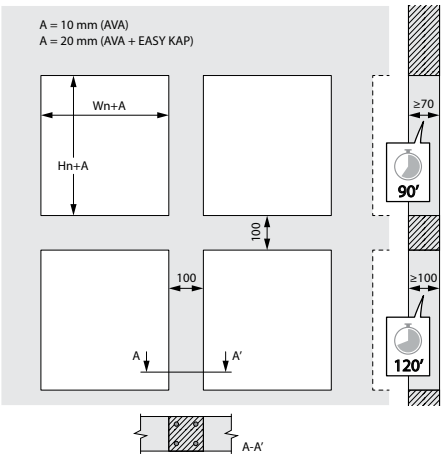
2. In case several shutters are mounted at a minimal distance, the bearing and reinforcement points of the shaft must be adjusted in proportion to the increased weight. The installation of the shaft must comply with the classification report delivered by the shaft manufacturer.

3



3. When mounting in a concrete shaft, you need to provide a continuous reinforcement in the vertical columns of at least 4 x Ø 8 mm.

4



Maintenance

- No specific maintenance required.
- Schedule at least 2 visual checks each year.
- Remove dust and all other particles before use.
- Follow local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.

Operation and mechanisms

Operation: general points

- See under 'Installation' (manual opening and closing).
  ⚠ Caution : please note dampers must be fully open before starting supply and/or extract fans.

VA MEC Remote controlled unlocking by a magnet.

Remote controlled unlocking by an electric impulse (VD) or by interruption (VM) of the magnet's power supply.

Options - at the time of order

VD24	Natural magnet 24 V DC
VD48	Natural magnet 48 V DC
VM24	Electromagnet 24 V DC (not applicable for ME and H model)
VM48	Electromagnet 48 V DC (not applicable for ME and H model)
FDCB	Auxiliary limit switch 'open/closed'
FDCU	Limit switch 'open/closed' (Incl. exc. for H model)

Unlocking

- **manual unlocking**: with the key (delivered in the bag together with the installation guidelines)
- **automatic unlocking**: n/a
- **remote unlocking**: by electrical impulse (VD) or interruption (VM) of current to the magnet.

Resetting

- **manual resetting**: with the key (delivered in the bag together with the installation guidelines)

VA ME MEC Remote controlled unlocking by a magnet and motorised resetting.

Remote controlled unlocking by an electric impulse (VD) to the magnet's power supply. Motorised resetting (ME motor).

Options - at the time of order

VD24	Natural magnet 24 V DC
VD48	Natural magnet 48 V DC
FDCB	Auxiliary limit switch 'open/closed'
FDCU	Limit switch 'open/closed' (Incl. exc. for H model)
ME	Resetting motor ME 24V/48V

Unlocking

- **manual unlocking**: with the key (delivered in the bag together with the installation guidelines)
- **automatic unlocking**: n/a
- **remote unlocking**: by electrical impulse (VD) of current to the magnet.

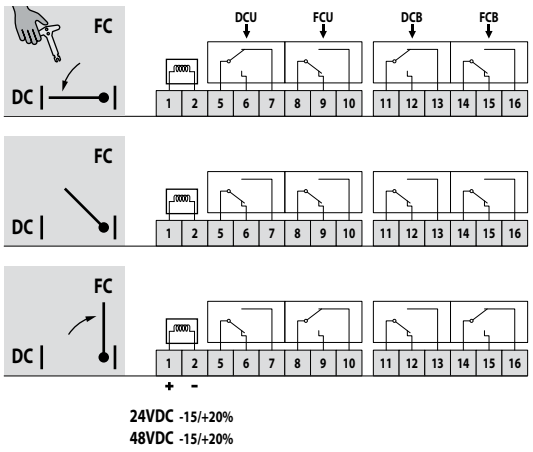
Resetting

- **manual resetting**: with the key (delivered in the bag together with the installation guidelines)
- **motorised resetting**: remote resetting with ME motor

Electrical connection

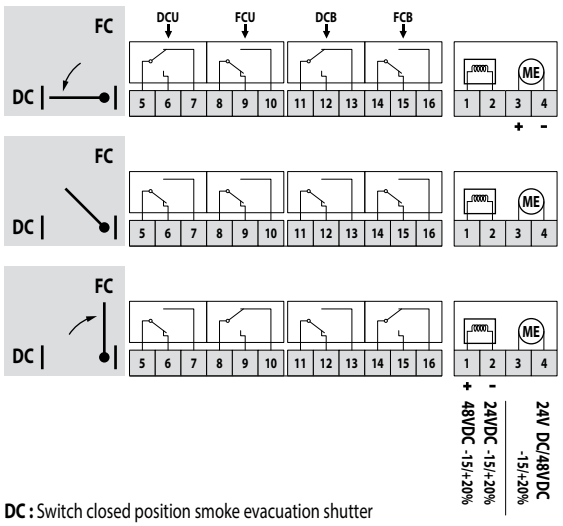
Electrical connection

VA MEC



DC : Switch closed position smoke evacuation shutter
FC : Switch open position smoke evacuation shutter

VA ME MEC



DC : Switch closed position smoke evacuation shutter
FC : Switch open position smoke evacuation shutter

MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches	Protection class
VA MEC	N/A	24/48 V DC	VM: 1,5W / VD: -	VM: - / VD: 3,5W	1mA...6A, DC 5V...AC 250V	IP 42
VA ME MEC	24/48 V DC (-15/+20%) (automatic conversion)	24/48 V DC	VD: - / ME: -	VD: 3,5W / ME: Pmax 20W (24V)/40W (48V)	1mA...6A, DC 5V...AC 250V	IP 42

Weights

AVANTAGE 1V60 - 1V120

Hn\Wn [mm]		300	330	350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	kg	5,7	5,9	6,1	6,3	6,5	6,8	6,9	7,2	7,4	7,6	7,8	8,1	8,2	8,5	8,7	8,9	9,1
415	kg	5,9	6,2	6,3	6,6	6,8	7,1	7,2	7,5	7,7	8,0	8,1	8,4	8,6	8,9	9,0	9,3	9,5
430	kg	6,0	6,3	6,5	6,8	6,9	7,2	7,4	7,7	7,9	8,1	8,3	8,6	8,8	9,0	9,2	9,5	9,7
445	kg	6,4	6,7	6,9	7,2	7,4	7,7	7,8	8,1	8,3	8,6	8,8	9,1	9,3	9,6	9,8	10,1	10,3
475	kg	6,4	6,7	6,9	7,2	7,4	7,7	7,9	8,2	8,4	8,7	8,9	9,2	9,4	9,7	9,9	10,2	10,4
480	kg	6,6	6,9	7,1	7,4	7,6	7,9	8,1	8,5	8,7	9,0	9,2	9,5	9,7	10,0	10,2	10,5	10,7
505	kg	6,8	7,1	7,3	7,7	7,9	8,2	8,4	8,7	8,9	9,2	9,4	9,8	10,0	10,3	10,5	10,8	11,0
530	kg	6,9	7,2	7,4	7,7	7,9	8,2	8,4	8,8	9,0	9,3	9,5	9,8	10,0	10,3	10,6	10,9	11,1
535	kg	7,1	7,4	7,7	8,0	8,2	8,5	8,7	9,1	9,3	9,6	9,8	10,2	10,4	10,7	10,9	11,3	11,5
565	kg	7,2	7,6	7,8	8,1	8,3	8,7	8,9	9,2	9,5	9,8	10,0	10,3	10,6	10,9	11,1	11,5	11,7
580	kg	7,4	7,7	7,9	8,3	8,5	8,8	9,1	9,4	9,6	10,0	10,2	10,5	10,8	11,1	11,3	11,7	11,9
595	kg	7,6	7,9	8,2	8,5	8,8	9,1	9,4	9,7	9,9	10,3	10,5	10,9	11,1	11,5	11,7	12,0	12,3
625	kg	7,6	8,0	8,2	8,6	8,8	9,2	9,4	9,8	10,0	10,3	10,6	10,9	11,2	11,5	11,8	12,1	12,4
630	kg	7,8	8,2	8,4	8,8	9,0	9,4	9,7	10,0	10,3	10,6	10,9	11,2	11,5	11,8	12,1	12,4	12,7
655	kg	8,0	8,4	8,7	9,0	9,3	9,7	9,9	10,3	10,5	10,9	11,1	11,5	11,8	12,1	12,4	12,8	13,0
680	kg	8,1	8,5	8,7	9,1	9,3	9,7	10,0	10,3	10,6	11,0	11,2	11,6	11,8	12,2	12,5	12,8	13,1
685	kg	8,3	8,7	9,0	9,4	9,6	10,0	10,3	10,6	10,9	11,3	11,5	11,9	12,2	12,6	12,8	13,2	13,5
715	kg	8,4	8,8	9,1	9,5	9,8	10,1	10,4	10,8	11,1	11,5	11,7	12,1	12,4	12,8	13,0	13,4	13,7
730	kg	8,6	9,0	9,2	9,6	9,9	10,3	10,6	11,0	11,2	11,6	11,9	12,3	12,6	12,9	13,2	13,6	13,9
745	kg	8,8	9,2	9,5	9,9	10,2	10,6	10,9	11,3	11,5	12,0	12,2	12,6	12,9	13,3	13,6	14,0	14,3
775	kg	8,8	9,3	9,5	9,9	10,2	10,6	10,9	11,3	11,6	12,0	12,3	12,7	13,0	13,4	13,7	14,1	14,3
780	kg	9,0	9,5	9,8	10,2	10,5	10,9	11,2	11,6	11,9	12,3	12,6	13,0	13,3	13,7	14,0	14,4	14,7
805	kg	9,2	9,7	10,0	10,4	10,7	11,1	11,4	11,8	12,1	12,6	12,8	13,3	13,6	14,0	14,3	14,7	15,0
830	kg	9,2	9,7	10,0	10,4	10,7	11,1	11,4	11,8	12,1	12,6	12,8	13,3	13,6	14,0	14,3	14,7	15,0
835	kg	9,3	9,7	10,0	10,4	10,7	11,2	11,5	11,9	12,2	12,6	12,9	13,3	13,6	14,1	14,4	14,8	15,1
865	kg	9,5	10,0	10,3	10,7	11,0	11,5	11,8	12,2	12,5	12,9	13,2	13,7	14,0	14,4	14,7	15,2	15,5
880	kg	9,7	10,1	10,4	10,9	11,2	11,6	11,9	12,4	12,7	13,1	13,4	13,9	14,2	14,6	14,9	15,4	15,7
895	kg	9,8	10,2	10,5	11,0	11,3	11,8	12,1	12,5	12,8	13,3	13,6	14,0	14,3	14,8	15,1	15,6	15,9
925	kg	10,0	10,5	10,8	11,3	11,6	12,1	12,4	12,8	13,1	13,6	13,9	14,4	14,7	15,2	15,5	16,0	16,3
955	kg	10,3	10,7	11,1	11,5	11,9	12,3	12,7	13,1	13,5	13,9	14,3	14,7	15,1	15,6	15,9	16,4	16,7
985	kg	10,5	11,0	11,3	11,8	12,1	12,6	13,0	13,5	13,8	14,3	14,6	15,1	15,4	15,9	16,3	16,7	17,1
1015	kg	10,7	11,2	11,6	12,1	12,4	12,9	13,3	13,8	14,1	14,6	14,9	15,5	15,8	16,3	16,6	17,1	17,5
1045	kg	11,0	11,5	11,8	12,4	12,7	13,2	13,6	14,1	14,4	14,9	15,3	15,8	16,1	16,7	17,0	17,5	17,9
1075	kg	11,2	11,8	12,1	12,6	13,0	13,5	13,9	14,4	14,7	15,3	15,6	16,2	16,5	17,0	17,4	17,9	18,3

Weights

AVANTAGE 2V60 - 2V120

Hn\Wn [mm]		350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	kg	7,9	8,2	8,4	8,7	8,9	9,2	9,4	9,6	9,8	10,1	10,3	10,6	10,8	11,1	11,2
415	kg	8,3	8,6	8,8	9,0	9,2	9,5	9,7	10,0	10,2	10,5	10,7	11,0	11,2	11,5	11,7
430	kg	8,4	8,7	8,9	9,2	9,4	9,7	9,9	10,2	10,4	10,7	10,9	11,2	11,4	11,7	11,9
445	kg	8,6	8,9	9,1	9,4	9,6	9,9	10,1	10,4	10,6	10,9	11,2	11,5	11,7	12,0	12,2
475	kg	8,9	9,2	9,4	9,8	10,0	10,3	10,5	10,8	11,0	11,4	11,6	11,9	12,1	12,4	12,6
480	kg	9,0	9,3	9,5	9,8	10,0	10,4	10,6	10,9	11,1	11,4	11,6	12,0	12,2	12,5	12,7
505	kg	9,2	9,6	9,8	10,1	10,3	10,7	10,9	11,2	11,5	11,8	12,0	12,3	12,6	12,9	13,1
530	kg	9,5	9,9	10,1	10,4	10,7	11,0	11,2	11,6	11,8	12,1	12,4	12,7	12,9	13,3	13,5
535	kg	9,6	9,9	10,1	10,5	10,7	11,1	11,3	11,6	11,9	12,2	12,4	12,8	13,0	13,3	13,6
565	kg	9,9	10,3	10,5	10,8	11,1	11,4	11,7	12,0	12,3	12,6	12,9	13,2	13,4	13,8	14,0
580	kg	10,1	10,4	10,7	11,0	11,3	11,6	11,9	12,2	12,5	12,8	13,1	13,4	13,7	14,0	14,3
595	kg	10,2	10,6	10,8	11,2	11,5	11,8	12,1	12,4	12,7	13,0	13,3	13,7	13,9	14,3	14,5
625	kg	10,6	10,9	11,2	11,6	11,8	12,2	12,5	12,8	13,1	13,5	13,7	14,1	14,3	14,7	15,0
630	kg	10,6	11,0	11,2	11,6	11,9	12,3	12,5	12,9	13,1	13,5	13,8	14,2	14,4	14,8	15,0
655	kg	10,9	11,3	11,5	11,9	12,2	12,6	12,8	13,2	13,5	13,9	14,1	14,5	14,8	15,2	15,4
680	kg	11,2	11,6	11,8	12,2	12,5	12,9	13,2	13,6	13,8	14,2	14,5	14,9	15,2	15,6	15,8
685	kg	11,2	11,6	11,9	12,3	12,6	13,0	13,2	13,6	13,9	14,3	14,6	15,0	15,2	15,6	15,9
715	kg	11,5	12,0	12,2	12,6	12,9	13,3	13,6	14,0	14,3	14,7	15,0	15,4	15,7	16,1	16,4
730	kg	11,7	12,1	12,4	12,8	13,1	13,5	13,8	14,2	14,5	14,9	15,2	15,6	15,9	16,3	16,6
745	kg	11,9	12,3	12,6	13,0	13,3	13,7	14,0	14,4	14,7	15,1	15,4	15,8	16,1	16,6	16,8
775	kg	12,2	12,6	12,9	13,4	13,7	14,1	14,4	14,8	15,1	15,6	15,8	16,3	16,6	17,0	17,3
780	kg	12,3	12,7	13,0	13,4	13,7	14,2	14,5	14,9	15,2	15,6	15,9	16,4	16,6	17,1	17,4
805	kg	12,5	13,0	13,3	13,7	14,0	14,5	14,8	15,2	15,5	16,0	16,3	16,7	17,0	17,5	17,8
830	kg	12,9	13,3	13,6	14,1	14,4	14,9	15,2	15,6	15,9	16,4	16,7	17,2	17,5	17,9	18,2
835	kg	12,8	13,3	13,6	14,0	14,3	14,8	15,1	15,6	15,9	16,3	16,6	17,1	17,4	17,8	18,2
865	kg	13,2	13,7	14,0	14,4	14,8	15,2	15,6	16,0	16,3	16,8	17,1	17,6	17,9	18,4	18,7
880	kg	13,4	13,8	14,2	14,6	14,9	15,4	15,7	16,2	16,5	17,0	17,3	17,8	18,1	18,6	18,9
895	kg	13,5	14,0	14,3	14,8	15,1	15,6	15,9	16,4	16,7	17,2	17,6	18,0	18,4	18,8	19,2
925	kg	13,8	14,3	14,7	15,2	15,5	16,0	16,3	16,8	17,2	17,6	18,0	18,5	18,8	19,3	19,6
930	kg	13,9	14,4	14,7	15,2	15,6	16,1	16,4	16,9	17,2	17,7	18,0	18,5	18,9	19,4	19,7
955	kg	14,2	14,7	15,0	15,5	15,9	16,4	16,7	17,2	17,6	18,1	18,4	18,9	19,3	19,8	20,1
980	kg	14,4	15,0	15,3	15,8	16,2	16,7	17,0	17,6	17,9	18,4	18,8	19,3	19,6	20,1	20,5
985	kg	14,5	15,0	15,4	15,9	16,2	16,8	17,1	17,6	18,0	18,5	18,8	19,4	19,7	20,2	20,6
1015	kg	14,8	15,4	15,7	16,2	16,6	17,1	17,5	18,0	18,4	18,9	19,3	19,8	20,1	20,7	21,0
1030	kg	15,0	15,5	15,9	16,4	16,8	17,3	17,7	18,2	18,6	19,1	19,5	20,0	20,4	20,9	21,3
1045	kg	15,2	15,7	16,1	16,6	17,0	17,5	17,9	18,4	18,8	19,3	19,7	20,2	20,6	21,1	21,5
1075	kg	15,5	16,0	16,4	17,0	17,3	17,9	18,3	18,8	19,2	19,7	20,1	20,7	21,0	21,6	22,0
1080	kg	15,5	16,1	16,5	17,0	17,4	18,0	18,3	18,9	19,3	19,8	20,2	20,7	21,1	21,7	22,0
1105	kg	15,8	16,4	16,8	17,3	17,7	18,3	18,7	19,2	19,6	20,2	20,5	21,1	21,5	22,0	22,4

Hn\Wn [mm]		730	750	780	800	830	850	880	900	930	950	980	1000	1050	1100	
385	kg	11,5	11,7	12,0	12,2	12,5	12,7	13,0	13,1	13,4	13,6	13,9	14,1	14,6	15,0	
415	kg	12,0	12,2	12,5	12,7	13,0	13,2	13,5	13,7	14,0	14,2	14,5	14,7	15,2	15,7	
430	kg	12,2	12,4	12,7	13,0	13,3	13,5	13,8	14,0	14,3	14,5	14,8	15,0	15,5	16,0	
445	kg	12,5	12,7	13,0	13,2	13,5	13,7	14,0	14,2	14,5	14,7	15,1	15,3	15,8	16,3	
475	kg	13,0	13,2	13,5	13,7	14,0	14,2	14,6	14,8	15,1	15,3	15,6	15,8	16,4	16,9	
480	kg	13,0	13,3	13,6	13,8	14,1	14,3	14,6	14,9	15,2	15,4	15,7	15,9	16,5	17,0	
505	kg	13,4	13,7	14,0	14,2	14,5	14,8	15,1	15,3	15,6	15,9	16,2	16,4	17,0	17,5	
530	kg	13,8	14,1	14,4	14,6	15,0	15,2	15,5	15,8	16,1	16,3	16,7	16,9	17,5	18,0	
535	kg	13,9	14,1	14,5	14,7	15,1	15,3	15,6	15,9	16,2	16,4	16,8	17,0	17,6	18,1	
565	kg	14,4	14,6	15,0	15,2	15,6	15,8	16,2	16,4	16,8	17,0	17,4	17,6	18,2	18,8	
580	kg	14,6	14,9	15,2	15,5	15,8	16,1	16,4	16,7	17,0	17,3	17,6	17,9	18,5	19,1	
595	kg	14,9	15,1	15,5	15,7	16,1	16,3	16,7	16,9	17,3	17,6	17,9	18,2	18,8	19,4	
625	kg	15,4	15,6	16,0	16,2	16,6	16,9	17,2	17,5	17,9	18,1	18,5	18,8	19,4	20,0	
630	kg	15,4	15,7	16,1	16,3	16,7	17,0	17,3	17,6	18,0	18,2	18,6	18,9	19,5	20,1	
655	kg	15,8	16,1	16,5	16,7	17,1	17,4	17,8	18,0	18,4	18,7	19,1	19,3	20,0	20,6	
680	kg	16,2	16,5	16,9	17,2	17,6	17,8	18,2	18,5	18,9	19,2	19,6	19,8	20,5	21,2	
685	kg	16,3	16,6	17,0	17,2	17,6	17,9	18,3	18,6	19,0	19,3	19,7	19,9	20,6	21,3	
715	kg	16,8	17,1	17,5	17,7	18,2	18,4	18,9	19,1	19,5	19,8	20,2	20,5	21,2	21,9	
730	kg	17,0	17,3	17,7	18,0	18,4	18,7	19,1	19,4	19,8	20,1	20,5	20,8	21,5	22,2	
745	kg	17,3	17,5	18,0	18,3	18,7	19,0	19,4	19,7	20,1	20,4	20,8	21,1	21,8	22,5	
775	kg	17,7	18,0	18,5	18,8	19,2	19,5	19,9	20,2	20,7	20,9	21,4	21,7	22,4	23,1	
780	kg	17,8	18,1	18,5	18,8	19,3	19,6	20,0	20,3	20,7	21,0	21,5	21,8	22,5	23,2	
805	kg	18,2	18,5	19,0	19,3	19,7	20,0	20,5	20,8	21,2	21,5	22,0	22,3	23,0	23,7	
830	kg	18,7	19,0	19,5	19,8	20,2	20,5	21,0	21,3	21,8	22,1	22,5	22,8	23,6	24,4	
835	kg	18,6	18,9	19,4	19,7	20,1	20,4	20,9	21,2	21,7	22,0	22,4	22,7	23,5	24,3	
865	kg	19,2	19,5	20,0	20,3	20,7	21,1	21,5	21,8	22,3	22,6	23,1	23,4	24,2	25,0	
880	kg	19,4	19,7	20,2	20,5	21,0	21,3	21,8	22,1	22,6	22,9	23,4	23,7	24,5	25,3	
895	kg	19,6	20,0	20,5	20,8	21,3	21,6	22,1	22,4	22,9	23,2	23,7	24,0	24,8	25,6	
925	kg	20,1	20,5	21,0	21,3	21,8	22,1	22,6	22,9	23,4	23,8	24,3	24,6	25,4	26,2	
930	kg	20,2	20,5	21,0	21,4	21,9	22,2	22,7	23,0	23,5	23,9	24,4	24,7	25,5	26,3	
955	kg	20,6	20,9	21,4	21,8	22,3	22,6	23,1	23,5	24,0	24,3	24,8	25,2	26,0	26,9	
980	kg	21,0	21,3	21,9	22,2	22,7	23,1	23,6	23,9	24,4	24,8	25,3	25,7	26,5	27,4	
985	kg	21,1	21,4	21,9	22,3	22,8	23,2	23,7	24,0	24,5	24,9	25,4	25,8	26,6	27,5	
1015	kg	21,6	21,9	22,4	22,8	23,3	23,7	24,2	24,6	25,1	25,5	26,0	26,3	27,2	28,1	
1030	kg	21,8	22,2	22,7	23,0	23,6	23,9	24,5	24,8	25,4	25,7	26,3	26,6	27,5	28,4	
1045	kg	22,0	22,4	22,9	23,3	23,8	24,2	24,7	25,1	25,7	26,0	26,6	26,9	27,8	28,7	
1075	kg	22,5	22,9	23,4	23,8	24,4	24,7	25,3	25,7	26,2	26,6	27,1	27,5	28,4	29,4	
1080	kg	22,6	23,0	23,5	23,9	24,4	24,8	25,4	25,7	26,3	26,7	27,2	27,6	28,5	29,5	
1105	kg	23,0	23,4	23,9	24,3	24,9	25,3	25,8	26,2	26,8	27,1	27,7	28,1	29,0	30,0	

Weights

AVANTAGE 1V60 ME - 1V120 ME

Hn\Wn [mm]		350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	kg	7,8	8,0	8,2	8,5	8,6	8,9	9,1	9,3	9,5	9,8	9,9	10,2	10,4	10,6	10,8
415	kg	8,0	8,3	8,5	8,8	8,9	9,2	9,4	9,7	9,8	10,1	10,3	10,6	10,7	11,0	11,2
430	kg	8,2	8,5	8,6	8,9	9,1	9,4	9,6	9,8	10,0	10,3	10,5	10,7	10,9	11,2	11,4
445	kg	8,3	8,6	8,8	9,1	9,2	9,5	9,7	10,0	10,2	10,5	10,7	10,9	11,1	11,4	11,6
475	kg	8,6	8,9	9,1	9,4	9,5	9,8	10,0	10,3	10,5	10,8	11,0	11,3	11,5	11,8	12,0
480	kg	8,6	8,9	9,1	9,4	9,6	9,9	10,1	10,4	10,6	10,9	11,1	11,4	11,6	11,9	12,1
505	kg	8,8	9,1	9,3	9,6	9,8	10,2	10,4	10,7	10,9	11,2	11,4	11,7	11,9	12,2	12,4
530	kg	9,0	9,4	9,6	9,9	10,1	10,4	10,6	10,9	11,1	11,5	11,7	12,0	12,2	12,5	12,7
535	kg	9,1	9,4	9,6	9,9	10,1	10,5	10,7	11,0	11,2	11,5	11,7	12,0	12,3	12,6	12,8
565	kg	9,4	9,7	9,9	10,2	10,4	10,8	11,0	11,3	11,5	11,9	12,1	12,4	12,6	13,0	13,2
580	kg	9,5	9,8	10,0	10,4	10,6	10,9	11,2	11,5	11,7	12,0	12,3	12,6	12,8	13,2	13,4
595	kg	9,6	10,0	10,2	10,5	10,8	11,1	11,3	11,7	11,9	12,2	12,5	12,8	13,0	13,4	13,6
625	kg	9,9	10,2	10,5	10,8	11,1	11,4	11,6	12,0	12,2	12,6	12,8	13,2	13,4	13,7	14,0
630	kg	9,9	10,3	10,5	10,9	11,1	11,5	11,7	12,0	12,3	12,6	12,9	13,2	13,5	13,8	14,1
655	kg	10,1	10,5	10,7	11,1	11,4	11,7	12,0	12,3	12,6	12,9	13,2	13,5	13,8	14,1	14,4
680	kg	10,4	10,7	11,0	11,4	11,6	12,0	12,2	12,6	12,8	13,2	13,5	13,8	14,1	14,5	14,7
685	kg	10,4	10,8	11,0	11,4	11,7	12,0	12,3	12,7	12,9	13,3	13,5	13,9	14,2	14,5	14,8
715	kg	10,7	11,1	11,3	11,7	12,0	12,3	12,6	13,0	13,2	13,6	13,9	14,3	14,5	14,9	15,2
730	kg	10,8	11,2	11,5	11,8	12,1	12,5	12,8	13,2	13,4	13,8	14,1	14,5	14,7	15,1	15,4
745	kg	10,9	11,3	11,6	12,0	12,3	12,7	12,9	13,3	13,6	14,0	14,3	14,6	14,9	15,3	15,6
775	kg	11,2	11,6	11,9	12,3	12,6	13,0	13,2	13,7	13,9	14,3	14,6	15,0	15,3	15,7	16,0
780	kg	11,2	11,6	11,9	12,3	12,6	13,0	13,3	13,7	14,0	14,4	14,7	15,1	15,4	15,8	16,0
805	kg	11,5	11,9	12,2	12,6	12,9	13,3	13,6	14,0	14,3	14,7	15,0	15,4	15,7	16,1	16,4
830	kg	11,7	12,1	12,4	12,8	13,1	13,5	13,8	14,3	14,5	15,0	15,3	15,7	16,0	16,4	16,7
835	kg	11,7	12,1	12,4	12,9	13,2	13,6	13,9	14,3	14,6	15,0	15,3	15,8	16,1	16,5	16,8
865	kg	12,0	12,4	12,7	13,2	13,5	13,9	14,2	14,6	14,9	15,4	15,7	16,1	16,4	16,9	17,2
870	kg	12,1	12,6	12,9	13,3	13,6	14,1	14,4	14,8	15,1	15,6	15,9	16,3	16,6	17,1	17,4
895	kg	12,2	12,7	13,0	13,5	13,8	14,2	14,5	15,0	15,3	15,7	16,0	16,5	16,8	17,3	17,6
925	kg	12,5	13,0	13,3	13,8	14,1	14,5	14,8	15,3	15,6	16,1	16,4	16,9	17,2	17,7	18,0
955	kg	12,8	13,2	13,6	14,0	14,4	14,8	15,2	15,6	16,0	16,4	16,8	17,3	17,6	18,1	18,4
985	kg	13,0	13,5	13,8	14,3	14,7	15,2	15,5	16,0	16,3	16,8	17,1	17,6	18,0	18,4	18,8
1015	kg	13,3	13,8	14,1	14,6	15,0	15,5	15,8	16,3	16,6	17,2	17,5	18,0	18,3	18,8	19,2
1045	kg	13,5	14,1	14,4	14,9	15,3	15,8	16,1	16,6	17,0	17,5	17,8	18,4	18,7	19,2	19,6
1075	kg	13,8	14,3	14,7	15,2	15,6	16,1	16,4	17,0	17,3	17,9	18,2	18,7	19,1	19,6	20,0

Selection data

$$\Delta p = 0{,}6 \times v^2 \times \zeta$$

AVANTAGE 1V60 - 1V120

Hn\Wn [mm]		300	330	350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	ζ [-]	3,149	2,702	2,484	2,253	2,051	1,924	1,747	1,674	1,523	1,478	1,350	1,320	1,213	1,191	1,101	1,083	1,009
415	ζ [-]	2,826	2,455	2,235	2,047	1,848	1,748	1,576	1,521	1,375	1,343	1,220	1,199	1,096	1,082	0,996	0,984	0,913
430	ζ [-]	2,657	2,347	2,175	1,957	1,833	1,671	1,578	1,454	1,381	1,283	1,225	1,146	1,099	1,034	0,995	0,940	0,907
445	ζ [-]	2,564	2,247	2,031	1,873	1,682	1,600	1,436	1,392	1,253	1,229	1,113	1,097	1,001	0,990	0,910	0,900	0,834
475	ζ [-]	2,347	2,069	1,862	1,725	1,544	1,473	1,319	1,282	1,152	1,131	1,023	1,011	0,921	0,911	0,837	0,829	0,768
480	ζ [-]	2,311	2,042	1,892	1,702	1,594	1,454	1,372	1,265	1,201	1,116	1,066	0,997	0,956	0,899	0,865	0,818	0,789
505	ζ [-]	2,163	1,915	1,719	1,597	1,427	1,364	1,220	1,186	1,066	1,047	0,947	0,935	0,853	0,844	0,776	0,767	0,712
530	ζ [-]	2,040	1,802	1,670	1,503	1,407	1,283	1,211	1,116	1,060	0,986	0,941	0,880	0,844	0,794	0,764	0,722	0,697
535	ζ [-]	2,007	1,781	1,597	1,485	1,326	1,268	1,135	1,103	0,992	0,974	0,882	0,870	0,794	0,785	0,723	0,714	0,663
565	ζ [-]	1,872	1,663	1,491	1,387	1,239	1,185	1,061	1,030	0,928	0,910	0,825	0,812	0,743	0,733	0,676	0,666	0,621
580	ζ [-]	1,822	1,610	1,492	1,342	1,257	1,146	1,082	0,997	0,947	0,880	0,840	0,786	0,754	0,709	0,682	0,645	0,622
595	ζ [-]	1,755	1,559	1,399	1,300	1,163	1,110	0,996	0,966	0,872	0,853	0,776	0,762	0,699	0,687	0,636	0,625	0,584
625	ζ [-]	1,651	1,466	1,317	1,223	1,096	1,044	0,939	0,908	0,822	0,802	0,732	0,716	0,659	0,646	0,600	0,588	0,551
630	ζ [-]	1,644	1,452	1,346	1,211	1,134	1,034	0,976	0,899	0,854	0,794	0,758	0,709	0,680	0,640	0,615	0,582	0,561
655	ζ [-]	1,559	1,383	1,245	1,153	1,037	0,985	0,889	0,857	0,778	0,756	0,692	0,676	0,624	0,609	0,568	0,554	0,522
680	ζ [-]	1,495	1,320	1,224	1,101	1,031	0,940	0,888	0,818	0,777	0,722	0,689	0,645	0,618	0,582	0,560	0,529	0,510
685	ζ [-]	1,477	1,309	1,181	1,091	0,983	0,932	0,843	0,811	0,739	0,716	0,657	0,639	0,593	0,576	0,540	0,524	0,496
715	ζ [-]	1,404	1,241	1,122	1,035	0,935	0,884	0,802	0,769	0,703	0,678	0,626	0,606	0,564	0,547	0,514	0,497	0,472
730	ζ [-]	1,369	1,209	1,121	1,008	0,944	0,861	0,813	0,749	0,712	0,661	0,631	0,591	0,566	0,533	0,512	0,484	0,467
745	ζ [-]	1,337	1,179	1,070	0,983	0,892	0,840	0,765	0,730	0,671	0,645	0,597	0,576	0,539	0,519	0,491	0,472	0,451
775	ζ [-]	1,277	1,123	1,022	0,936	0,853	0,800	0,732	0,696	0,641	0,614	0,571	0,549	0,515	0,495	0,469	0,450	0,431
780	ζ [-]	1,261	1,114	1,033	0,929	0,870	0,793	0,749	0,690	0,656	0,609	0,582	0,544	0,522	0,491	0,472	0,446	0,431
805	ζ [-]	1,222	1,072	0,979	0,893	0,817	0,763	0,701	0,664	0,615	0,586	0,547	0,523	0,494	0,472	0,450	0,429	0,413
830	ζ [-]	1,168	1,032	0,956	0,860	0,806	0,735	0,694	0,639	0,607	0,564	0,539	0,504	0,483	0,455	0,437	0,413	0,399
835	ζ [-]	1,172	1,024	0,939	0,854	0,784	0,729	0,673	0,635	0,590	0,560	0,526	0,500	0,474	0,451	0,432	0,410	0,397
865	ζ [-]	1,126	0,981	0,902	0,818	0,753	0,698	0,647	0,608	0,567	0,536	0,505	0,479	0,456	0,432	0,415	0,393	0,382
880	ζ [-]	1,087	0,960	0,890	0,801	0,750	0,684	0,645	0,595	0,565	0,525	0,501	0,469	0,450	0,423	0,407	0,385	0,371
895	ζ [-]	1,083	0,940	0,868	0,784	0,725	0,670	0,623	0,583	0,546	0,514	0,487	0,459	0,439	0,414	0,400	0,377	0,368
925	ζ [-]	1,044	0,903	0,837	0,753	0,699	0,643	0,601	0,559	0,527	0,494	0,470	0,441	0,424	0,398	0,386	0,362	0,355
955	ζ [-]	1,007	0,868	0,808	0,724	0,675	0,618	0,580	0,538	0,509	0,475	0,454	0,424	0,409	0,383	0,373	0,348	0,343
985	ζ [-]	0,973	0,836	0,781	0,697	0,653	0,595	0,561	0,518	0,492	0,457	0,439	0,408	0,396	0,368	0,361	0,335	0,332
1015	ζ [-]	0,941	0,806	0,756	0,672	0,632	0,574	0,543	0,499	0,476	0,441	0,425	0,394	0,383	0,355	0,349	0,323	0,321
1045	ζ [-]	0,912	0,778	0,732	0,648	0,612	0,554	0,526	0,482	0,462	0,425	0,412	0,380	0,371	0,343	0,339	0,312	0,311
1075	ζ [-]	0,884	0,751	0,710	0,626	0,593	0,535	0,510	0,465	0,448	0,411	0,399	0,367	0,360	0,331	0,329	0,301	0,302

AVANTAGE 2V60 - 2V120

Hn\Wn [mm]		350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	ζ [-]	2,822	2,496	2,384	2,204	2,078	1,977	1,852	1,795	1,677	1,645	1,537	1,520	1,422	1,414	1,326
415	ζ [-]	2,597	2,328	2,198	2,056	1,918	1,844	1,711	1,674	1,550	1,534	1,422	1,418	1,316	1,319	1,228
430	ζ [-]	2,451	2,253	2,139	1,989	1,901	1,784	1,714	1,620	1,563	1,485	1,437	1,372	1,332	1,276	1,241
445	ζ [-]	2,410	2,182	2,043	1,927	1,785	1,728	1,593	1,569	1,444	1,438	1,325	1,329	1,228	1,236	1,146
475	ζ [-]	2,253	2,055	1,912	1,815	1,672	1,628	1,493	1,478	1,354	1,354	1,243	1,251	1,152	1,164	1,076
480	ζ [-]	2,214	2,036	1,933	1,797	1,718	1,612	1,549	1,463	1,412	1,342	1,299	1,240	1,203	1,153	1,122
505	ζ [-]	2,117	1,943	1,799	1,716	1,574	1,539	1,407	1,397	1,277	1,280	1,173	1,183	1,087	1,100	1,015
530	ζ [-]	2,022	1,859	1,765	1,641	1,569	1,472	1,414	1,336	1,289	1,225	1,186	1,132	1,099	1,053	1,024
535	ζ [-]	2,000	1,843	1,701	1,627	1,490	1,460	1,332	1,325	1,209	1,215	1,111	1,122	1,030	1,044	0,962
565	ζ [-]	1,897	1,753	1,615	1,548	1,415	1,389	1,266	1,261	1,150	1,156	1,056	1,068	0,980	0,993	0,915
580	ζ [-]	1,863	1,712	1,626	1,512	1,445	1,356	1,303	1,231	1,188	1,128	1,092	1,043	1,012	0,970	0,944
595	ζ [-]	1,807	1,673	1,539	1,477	1,349	1,325	1,207	1,203	1,097	1,103	1,008	1,019	0,935	0,947	0,874
625	ζ [-]	1,726	1,600	1,471	1,413	1,290	1,267	1,155	1,150	1,050	1,054	0,965	0,974	0,895	0,906	0,836
630	ζ [-]	1,728	1,588	1,508	1,402	1,341	1,258	1,209	1,142	1,102	1,047	1,013	0,967	0,939	0,900	0,875
655	ζ [-]	1,653	1,533	1,410	1,354	1,237	1,214	1,108	1,102	1,007	1,011	0,926	0,934	0,859	0,868	0,803
680	ζ [-]	1,612	1,482	1,407	1,309	1,251	1,174	1,128	1,066	1,028	0,977	0,946	0,903	0,876	0,839	0,817
685	ζ [-]	1,587	1,472	1,354	1,300	1,189	1,166	1,065	1,059	0,968	0,970	0,890	0,897	0,826	0,834	0,772
715	ζ [-]	1,528	1,417	1,304	1,251	1,145	1,122	1,026	1,018	0,933	0,934	0,858	0,863	0,797	0,802	0,745
730	ζ [-]	1,512	1,390	1,320	1,228	1,173	1,101	1,058	1,000	0,964	0,916	0,887	0,847	0,822	0,787	0,766
745	ζ [-]	1,473	1,365	1,258	1,205	1,105	1,081	0,991	0,981	0,901	0,900	0,829	0,831	0,769	0,773	0,719
775	ζ [-]	1,423	1,317	1,216	1,163	1,068	1,043	0,958	0,947	0,871	0,868	0,802	0,802	0,744	0,746	0,696
780	ζ [-]	1,425	1,310	1,244	1,157	1,106	1,037	0,997	0,942	0,909	0,863	0,836	0,798	0,774	0,742	0,722
805	ζ [-]	1,377	1,273	1,177	1,124	1,035	1,008	0,928	0,915	0,844	0,839	0,777	0,775	0,721	0,721	0,674
830	ζ [-]	1,348	1,239	1,176	1,094	1,046	0,981	0,943	0,891	0,859	0,816	0,790	0,754	0,732	0,702	0,683
835	ζ [-]	1,335	1,232	1,141	1,088	1,003	0,976	0,900	0,886	0,819	0,812	0,753	0,750	0,700	0,698	0,654
865	ζ [-]	1,295	1,194	1,108	1,054	0,974	0,945	0,874	0,858	0,795	0,787	0,732	0,727	0,680	0,676	0,636
880	ζ [-]	1,279	1,175	1,116	1,038	0,992	0,931	0,894	0,845	0,815	0,775	0,750	0,716	0,695	0,666	0,648
895	ζ [-]	1,258	1,158	1,077	1,022	0,947	0,917	0,850	0,832	0,773	0,763	0,712	0,705	0,661	0,656	0,618
925	ζ [-]	1,224	1,124	1,048	0,993	0,922	0,890	0,827	0,808	0,753	0,741	0,693	0,685	0,644	0,637	0,602
930	ζ [-]	1,217	1,119	1,062	0,988	0,944	0,886	0,851	0,804	0,776	0,737	0,714	0,681	0,661	0,634	0,617
955	ζ [-]	1,192	1,093	1,020	0,965	0,898	0,865	0,806	0,786	0,734	0,720	0,675	0,665	0,627	0,619	0,587
980	ζ [-]	1,161	1,068	1,014	0,943	0,901	0,846	0,812	0,768	0,741	0,704	0,681	0,650	0,631	0,605	0,588
985	ζ [-]	1,162	1,063	0,995	0,938	0,876	0,842	0,786	0,764	0,716	0,700	0,659	0,647	0,612	0,602	0,572
1015	ζ [-]	1,134	1,035	0,971	0,914	0,855	0,819	0,767	0,744	0,699	0,682	0,643	0,630	0,598	0,586	0,559
1030	ζ [-]	1,111	1,021	0,970	0,902	0,862	0,809	0,777	0,734	0,708	0,673	0,652	0,622	0,604	0,578	0,563
1045	ζ [-]	1,107	1,008	0,948	0,890	0,835	0,798	0,749	0,725	0,683	0,664	0,629	0,614	0,584	0,571	0,546
1075	ζ [-]	1,082	0,983	0,927	0,868	0,816	0,779	0,733	0,707	0,667	0,648	0,615	0,599	0,571	0,557	0,534
1080	ζ [-]	1,065	0,979	0,930	0,865	0,826	0,775	0,745	0,704	0,679	0,645	0,625	0,596	0,579	0,555	0,540
1105	ζ [-]	1,058	0,959	0,907	0,847	0,799	0,760	0,717	0,690	0,653	0,632	0,601	0,584	0,559	0,543	0,523

Hn\Wn [mm]		730	750	780	800	830	850	880	900	930	950	980	1000	1050	1100	
385	ζ [-]	1,322	1,245	1,243	1,175	1,173	1,113	1,111	1,059	1,055	1,012	1,005	0,969	0,930	0,895	
415	ζ [-]	1,233	1,153	1,159	1,088	1,094	1,032	1,036	0,982	0,984	0,938	0,938	0,898	0,862	0,830	
430	ζ [-]	1,193	1,163	1,121	1,095	1,058	1,035	1,002	0,982	0,952	0,934	0,907	0,891	0,852	0,816	
445	ζ [-]	1,156	1,076	1,086	1,016	1,025	0,963	0,971	0,917	0,923	0,876	0,879	0,839	0,806	0,776	
475	ζ [-]	1,089	1,010	1,023	0,954	0,965	0,905	0,914	0,862	0,869	0,823	0,828	0,788	0,757	0,729	
480	ζ [-]	1,078	1,051	1,013	0,990	0,956	0,935	0,906	0,887	0,860	0,844	0,820	0,805	0,770	0,737	
505	ζ [-]	1,029	0,954	0,967	0,901	0,913	0,854	0,864	0,814	0,821	0,777	0,783	0,745	0,715	0,689	
530	ζ [-]	0,985	0,960	0,925	0,904	0,873	0,854	0,827	0,810	0,786	0,771	0,749	0,735	0,703	0,673	
535	ζ [-]	0,976	0,904	0,917	0,854	0,866	0,810	0,820	0,772	0,779	0,737	0,742	0,706	0,679	0,653	
565	ζ [-]	0,929	0,860	0,873	0,813	0,824	0,771	0,780	0,735	0,741	0,702	0,706	0,673	0,646	0,622	
580	ζ [-]	0,907	0,884	0,852	0,832	0,804	0,787	0,762	0,746	0,724	0,710	0,690	0,677	0,647	0,620	
595	ζ [-]	0,886	0,821	0,833	0,776	0,786	0,736	0,744	0,702	0,707	0,670	0,674	0,642	0,617	0,594	
625	ζ [-]	0,847	0,786	0,796	0,743	0,752	0,705	0,712	0,672	0,676	0,642	0,644	0,615	0,591	0,569	
630	ζ [-]	0,841	0,820	0,791	0,772	0,746	0,730	0,707	0,692	0,671	0,658	0,640	0,628	0,600	0,575	
655	ζ [-]	0,812	0,755	0,763	0,714	0,720	0,677	0,682	0,645	0,648	0,617	0,618	0,591	0,568	0,547	
680	ζ [-]	0,785	0,765	0,738	0,721	0,696	0,681	0,659	0,646	0,627	0,614	0,597	0,586	0,560	0,537	
685	ζ [-]	0,780	0,726	0,733	0,687	0,692	0,652	0,655	0,621	0,622	0,594	0,593	0,569	0,547	0,526	
715	ζ [-]	0,750	0,700	0,705	0,662	0,665	0,628	0,630	0,599	0,599	0,572	0,571	0,549	0,527	0,508	
730	ζ [-]	0,736	0,718	0,692	0,676	0,653	0,639	0,619	0,606	0,588	0,576	0,560	0,550	0,526	0,504	
745	ζ [-]	0,723	0,677	0,680	0,640	0,641	0,607	0,607	0,579	0,577	0,553	0,550	0,530	0,509	0,491	
775	ζ [-]	0,698	0,655	0,656	0,619	0,619	0,588	0,586	0,560	0,557	0,535	0,531	0,513	0,493	0,475	
780	ζ [-]	0,694	0,676	0,652	0,637	0,615	0,602	0,583	0,571	0,554	0,543	0,528	0,518	0,495	0,475	
805	ζ [-]	0,674	0,634	0,634	0,600	0,598	0,569	0,566	0,543	0,538	0,519	0,513	0,497	0,478	0,460	
830	ζ [-]	0,656	0,640	0,617	0,602	0,582	0,569	0,551	0,540	0,524	0,513	0,499	0,490	0,468	0,449	
835	ζ [-]	0,653	0,615	0,613	0,582	0,579	0,553	0,548	0,527	0,521	0,503	0,496	0,483	0,464	0,447	
865	ζ [-]	0,632	0,598	0,594	0,565	0,561	0,537	0,531	0,512	0,505	0,489	0,481	0,469	0,451	0,434	
880	ζ [-]	0,623	0,607	0,585	0,571	0,552	0,540	0,523	0,512	0,497	0,487	0,473	0,465	0,444	0,426	
895	ζ [-]	0,613	0,582	0,576	0,550	0,544	0,522	0,515	0,498	0,489	0,476	0,466	0,456	0,439	0,423	
925	ζ [-]	0,595	0,566	0,560	0,536	0,528	0,509	0,500	0,485	0,475	0,464	0,453	0,445	0,427	0,412	
930	ζ [-]	0,593	0,578	0,557	0,544	0,526	0,514	0,498	0,488	0,473	0,464	0,451	0,442	0,423	0,405	
955	ζ [-]	0,579	0,552	0,544	0,522	0,513	0,496	0,486	0,473	0,462	0,452	0,440	0,433	0,417	0,401	
980	ζ [-]	0,566	0,551	0,531	0,519	0,502	0,491	0,475	0,465	0,451	0,443	0,430	0,422	0,404	0,387	
985	ζ [-]	0,563	0,539	0,529	0,509	0,499	0,484	0,473	0,461	0,449	0,441	0,428	0,423	0,406	0,392	
1015	ζ [-]	0,548	0,526	0,515	0,498	0,486	0,473	0,460	0,450	0,437	0,431	0,417	0,413	0,397	0,382	
1030	ζ [-]	0,541	0,527	0,508	0,497	0,480	0,469	0,454	0,445	0,432	0,423	0,411	0,404	0,386	0,370	
1045	ζ [-]	0,534	0,514	0,502	0,486	0,474	0,462	0,449	0,440	0,426	0,421	0,406	0,404	0,388	0,374	
1075	ζ [-]	0,521	0,503	0,489	0,476	0,462	0,452	0,437	0,431	0,416	0,412	0,396	0,395	0,380	0,366	
1080	ζ [-]	0,519	0,506	0,487	0,476	0,460	0,450	0,436	0,427	0,414	0,406	0,394	0,387	0,370	0,355	
1105	ζ [-]	0,508	0,492	0,478	0,465	0,451	0,442	0,427	0,421	0,406	0,403	0,386	0,387	0,372	0,358	

AVANTAGE 1V60 ME - 1V120 ME

Hn\Wn [mm]		350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	ζ [-]	2,522	2,208	2,079	1,883	1,768	1,638	1,540	1,447	1,365	1,293	1,227	1,168	1,114	1,064	1,021
415	ζ [-]	2,263	2,004	1,869	1,711	1,592	1,489	1,388	1,315	1,231	1,177	1,107	1,063	1,006	0,968	0,923
430	ζ [-]	2,130	1,915	1,793	1,635	1,544	1,423	1,353	1,258	1,202	1,125	1,079	1,017	0,978	0,926	0,894
445	ζ [-]	2,053	1,833	1,698	1,566	1,448	1,363	1,264	1,205	1,122	1,078	1,009	0,974	0,918	0,887	0,842
475	ζ [-]	1,879	1,688	1,556	1,442	1,328	1,256	1,160	1,111	1,031	0,994	0,927	0,898	0,844	0,819	0,774
480	ζ [-]	1,852	1,666	1,560	1,423	1,344	1,240	1,179	1,096	1,047	0,981	0,941	0,887	0,854	0,808	0,780
505	ζ [-]	1,732	1,563	1,437	1,336	1,227	1,164	1,073	1,029	0,953	0,921	0,858	0,833	0,781	0,759	0,717
530	ζ [-]	1,634	1,471	1,378	1,258	1,188	1,096	1,042	0,970	0,927	0,868	0,833	0,785	0,756	0,715	0,691
535	ζ [-]	1,607	1,454	1,334	1,243	1,141	1,084	0,998	0,959	0,887	0,858	0,799	0,776	0,727	0,707	0,667
565	ζ [-]	1,500	1,358	1,246	1,162	1,066	1,013	0,933	0,897	0,829	0,803	0,747	0,726	0,680	0,662	0,625
580	ζ [-]	1,460	1,315	1,232	1,125	1,063	0,981	0,933	0,868	0,830	0,777	0,746	0,703	0,677	0,641	0,619
595	ζ [-]	1,406	1,274	1,169	1,090	1,001	0,951	0,876	0,842	0,779	0,754	0,702	0,681	0,639	0,621	0,587
625	ζ [-]	1,323	1,199	1,101	1,027	0,943	0,895	0,826	0,793	0,735	0,710	0,662	0,642	0,603	0,585	0,554
630	ζ [-]	1,318	1,187	1,113	1,017	0,961	0,887	0,843	0,785	0,750	0,703	0,675	0,636	0,612	0,580	0,560
655	ζ [-]	1,250	1,132	1,041	0,969	0,892	0,846	0,781	0,749	0,695	0,671	0,627	0,607	0,571	0,553	0,524
680	ζ [-]	1,200	1,081	1,014	0,926	0,875	0,808	0,768	0,715	0,684	0,641	0,615	0,580	0,558	0,529	0,511
685	ζ [-]	1,185	1,072	0,987	0,918	0,846	0,801	0,741	0,709	0,660	0,635	0,595	0,575	0,542	0,524	0,498
715	ζ [-]	1,126	1,017	0,938	0,871	0,805	0,760	0,705	0,673	0,628	0,603	0,566	0,546	0,516	0,498	0,474
730	ζ [-]	1,100	0,992	0,930	0,850	0,803	0,742	0,705	0,657	0,628	0,588	0,565	0,532	0,513	0,486	0,469
745	ζ [-]	1,073	0,968	0,895	0,829	0,767	0,724	0,673	0,641	0,599	0,574	0,540	0,519	0,492	0,474	0,452
775	ζ [-]	1,025	0,922	0,855	0,790	0,733	0,690	0,643	0,611	0,573	0,548	0,517	0,495	0,471	0,452	0,433
780	ζ [-]	1,015	0,915	0,858	0,784	0,741	0,685	0,651	0,606	0,580	0,543	0,522	0,492	0,474	0,448	0,433
805	ζ [-]	0,981	0,881	0,818	0,755	0,703	0,659	0,616	0,584	0,549	0,523	0,495	0,473	0,451	0,432	0,415
830	ζ [-]	0,942	0,849	0,796	0,728	0,688	0,635	0,604	0,563	0,538	0,504	0,484	0,457	0,440	0,416	0,402
835	ζ [-]	0,941	0,843	0,785	0,723	0,674	0,631	0,591	0,559	0,527	0,501	0,475	0,453	0,433	0,413	0,398
865	ζ [-]	0,904	0,808	0,755	0,693	0,648	0,605	0,568	0,536	0,507	0,480	0,457	0,435	0,417	0,396	0,383
870	ζ [-]	0,890	0,802	0,752	0,688	0,650	0,601	0,571	0,532	0,509	0,477	0,458	0,432	0,416	0,394	0,380
895	ζ [-]	0,870	0,775	0,726	0,665	0,624	0,581	0,547	0,514	0,488	0,461	0,440	0,417	0,401	0,381	0,369
925	ζ [-]	0,838	0,745	0,700	0,639	0,602	0,558	0,528	0,495	0,470	0,443	0,425	0,401	0,387	0,366	0,356
955	ζ [-]	0,809	0,717	0,676	0,615	0,581	0,537	0,510	0,476	0,454	0,427	0,410	0,386	0,374	0,353	0,344
985	ζ [-]	0,782	0,691	0,653	0,593	0,562	0,518	0,493	0,459	0,439	0,412	0,397	0,372	0,362	0,340	0,332
1015	ζ [-]	0,757	0,667	0,632	0,572	0,544	0,500	0,477	0,443	0,425	0,397	0,384	0,359	0,350	0,328	0,322
1045	ζ [-]	0,733	0,644	0,613	0,553	0,527	0,483	0,462	0,428	0,412	0,384	0,372	0,347	0,339	0,317	0,312
1075	ζ [-]	0,711	0,623	0,594	0,534	0,511	0,467	0,448	0,414	0,400	0,371	0,361	0,336	0,329	0,307	0,303

AVANTAGE 1V60 - 1V120 - - Free air passage (m^2)

Hn\Wn [mm]		300	330	350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	Sn [m^2]	0,0980	0,1090	0,1160	0,1270	0,1340	0,1450	0,1520	0,1630	0,1700	0,1810	0,1880	0,1990	0,2060	0,2170	0,2240	0,2350	0,2420
415	Sn [m^2]	0,1070	0,1180	0,1260	0,1380	0,1450	0,1570	0,1650	0,1770	0,1840	0,1960	0,2040	0,2160	0,2230	0,2350	0,2430	0,2540	0,2620
430	Sn [m^2]	0,1110	0,1230	0,1310	0,1430	0,1510	0,1630	0,1710	0,1830	0,1910	0,2040	0,2120	0,2240	0,2320	0,2440	0,2520	0,2640	0,2720
445	Sn [m^2]	0,1150	0,1270	0,1360	0,1480	0,1570	0,1690	0,1780	0,1900	0,1990	0,2110	0,2200	0,2320	0,2410	0,2530	0,2610	0,2740	0,2820
475	Sn [m^2]	0,1230	0,1360	0,1450	0,1590	0,1680	0,1810	0,1900	0,2040	0,2130	0,2260	0,2350	0,2490	0,2580	0,2710	0,2800	0,2940	0,3030
480	Sn [m^2]	0,1240	0,1380	0,1470	0,1610	0,1700	0,1830	0,1920	0,2060	0,2150	0,2290	0,2380	0,2520	0,2610	0,2740	0,2830	0,2970	0,3060
505	Sn [m^2]	0,1310	0,1460	0,1550	0,1700	0,1790	0,1940	0,2030	0,2170	0,2270	0,2410	0,2510	0,2650	0,2750	0,2890	0,2990	0,3130	0,3230
530	Sn [m^2]	0,1380	0,1530	0,1630	0,1780	0,1880	0,2040	0,2140	0,2290	0,2390	0,2540	0,2640	0,2790	0,2890	0,3040	0,3140	0,3300	0,3400
535	Sn [m^2]	0,1390	0,1550	0,1650	0,1800	0,1900	0,2060	0,2160	0,2310	0,2410	0,2570	0,2670	0,2820	0,2920	0,3070	0,3180	0,3330	0,3430
565	Sn [m^2]	0,1480	0,1640	0,1750	0,1910	0,2020	0,2180	0,2290	0,2450	0,2550	0,2720	0,2820	0,2990	0,3090	0,3260	0,3360	0,3530	0,3630
580	Sn [m^2]	0,1520	0,1680	0,1790	0,1960	0,2070	0,2240	0,2350	0,2520	0,2630	0,2790	0,2900	0,3070	0,3180	0,3350	0,3460	0,3620	0,3730
595	Sn [m^2]	0,1560	0,1730	0,1840	0,2010	0,2130	0,2300	0,2410	0,2580	0,2700	0,2870	0,2980	0,3150	0,3270	0,3440	0,3550	0,3720	0,3840
625	Sn [m^2]	0,1640	0,1820	0,1940	0,2120	0,2240	0,2420	0,2540	0,2720	0,2840	0,3020	0,3140	0,3320	0,3440	0,3620	0,3740	0,3920	0,4040
630	Sn [m^2]	0,1650	0,1840	0,1960	0,2140	0,2260	0,2440	0,2560	0,2740	0,2860	0,3040	0,3160	0,3350	0,3470	0,3650	0,3770	0,3950	0,4070
655	Sn [m^2]	0,1720	0,1910	0,2040	0,2230	0,2350	0,2540	0,2670	0,2860	0,2980	0,3170	0,3300	0,3480	0,3610	0,3800	0,3920	0,4110	0,4240
680	Sn [m^2]	0,1790	0,1990	0,2120	0,2320	0,2450	0,2640	0,2770	0,2970	0,3100	0,3300	0,3430	0,3620	0,3750	0,3950	0,4080	0,4280	0,4410
685	Sn [m^2]	0,1810	0,2000	0,2140	0,2330	0,2460	0,2660	0,2790	0,2990	0,3120	0,3320	0,3450	0,3650	0,3780	0,3980	0,4110	0,4310	0,4440
715	Sn [m^2]	0,1890	0,2090	0,2230	0,2440	0,2580	0,2780	0,2920	0,3130	0,3270	0,3470	0,3610	0,3820	0,3950	0,4160	0,4300	0,4510	0,4640
730	Sn [m^2]	0,1930	0,2140	0,2280	0,2490	0,2630	0,2840	0,2980	0,3200	0,3340	0,3550	0,3690	0,3900	0,4040	0,4250	0,4390	0,4600	0,4740
745	Sn [m^2]	0,1970	0,2190	0,2330	0,2550	0,2690	0,2900	0,3050	0,3260	0,3410	0,3620	0,3770	0,3980	0,4130	0,4340	0,4490	0,4700	0,4850
775	Sn [m^2]	0,2050	0,2280	0,2430	0,2650	0,2800	0,3030	0,3180	0,3400	0,3550	0,3770	0,3920	0,4150	0,4300	0,4520	0,4670	0,4900	0,5050
780	Sn [m^2]	0,2070	0,2290	0,2440	0,2670	0,2820	0,3050	0,3200	0,3420	0,3570	0,3800	0,3950	0,4180	0,4330	0,4550	0,4700	0,4930	0,5080
805	Sn [m^2]	0,2130	0,2370	0,2520	0,2760	0,2910	0,3150	0,3300	0,3540	0,3690	0,3930	0,4080	0,4320	0,4470	0,4710	0,4860	0,5090	0,5250
830	Sn [m^2]	0,2200	0,2440	0,2600	0,2850	0,3010	0,3250	0,3410	0,3650	0,3810	0,4050	0,4210	0,4450	0,4610	0,4860	0,5020	0,5260	0,5420
835	Sn [m^2]	0,2220	0,2460	0,2620	0,2860	0,3030	0,3270	0,3430	0,3670	0,3830	0,4080	0,4240	0,4480	0,4640	0,4890	0,5050	0,5290	0,5450
865	Sn [m^2]	0,2300	0,2550	0,2720	0,2970	0,3140	0,3390	0,3560	0,3810	0,3980	0,4230	0,4400	0,4650	0,4820	0,5070	0,5240	0,5490	0,5650
880	Sn [m^2]	0,2340	0,2600	0,2770	0,3020	0,3190	0,3450	0,3620	0,3880	0,4050	0,4300	0,4470	0,4730	0,4900	0,5160	0,5330	0,5590	0,5760
895	Sn [m^2]	0,2380	0,2640	0,2820	0,3080	0,3250	0,3510	0,3680	0,3950	0,4120	0,4380	0,4550	0,4810	0,4990	0,5250	0,5420	0,5680	0,5860
925	Sn [m^2]	0,2460	0,2730	0,2910	0,3180	0,3360	0,3630	0,3810	0,4080	0,4260	0,4530	0,4710	0,4980	0,5160	0,5430	0,5610	0,5880	0,6060
955	Sn [m^2]	0,2550	0,2820	0,3010	0,3290	0,3470	0,3750	0,3940	0,4220	0,4400	0,4680	0,4870	0,5150	0,5330	0,5610	0,5800	0,6080	0,6260
985	Sn [m^2]	0,2630	0,2920	0,3110	0,3390	0,3590	0,3870	0,4070	0,4350	0,4550	0,4830	0,5030	0,5310	0,5500	0,5790	0,5980	0,6270	0,6460
1015	Sn [m^2]	0,2710	0,3010	0,3200	0,3500	0,3700	0,4000	0,4190	0,4490	0,4690	0,4980	0,5180	0,5480	0,5680	0,5970	0,6170	0,6470	0,6670
1045	Sn [m^2]	0,2790	0,3100	0,3300	0,3610	0,3810	0,4120	0,4320	0,4630	0,4830	0,5140	0,5340	0,5650	0,5850	0,6150	0,6360	0,6660	0,6870
1075	Sn [m^2]	0,2870	0,3190	0,3400	0,3710	0,3920	0,4240	0,4450	0,4760	0,4970	0,5290	0,5500	0,5810	0,6020	0,6340	0,6550	0,6860	0,7070

Selection data

AVANTAGE 2V60 - 2V120 - - Free air passage (m^2)

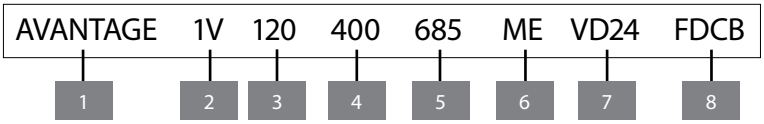
Hn\Wn [mm]		350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	Sn [m^2]	0,1060	0,1170	0,1240	0,1350	0,1420	0,1530	0,1600	0,1700	0,1780	0,1880	0,1960	0,2060	0,2140	0,2240	0,2310
415	Sn [m^2]	0,1150	0,1260	0,1340	0,1460	0,1540	0,1650	0,1730	0,1850	0,1920	0,2040	0,2120	0,2240	0,2310	0,2430	0,2510
430	Sn [m^2]	0,1190	0,1310	0,1390	0,1510	0,1590	0,1720	0,1800	0,1920	0,2000	0,2120	0,2200	0,2320	0,2400	0,2520	0,2600
445	Sn [m^2]	0,1240	0,1360	0,1440	0,1570	0,1650	0,1780	0,1860	0,1990	0,2070	0,2200	0,2280	0,2410	0,2490	0,2620	0,2700
475	Sn [m^2]	0,1320	0,1460	0,1550	0,1680	0,1770	0,1910	0,2000	0,2130	0,2220	0,2360	0,2450	0,2580	0,2670	0,2810	0,2900
480	Sn [m^2]	0,1340	0,1470	0,1570	0,1700	0,1790	0,1930	0,2020	0,2160	0,2250	0,2380	0,2470	0,2610	0,2700	0,2840	0,2930
505	Sn [m^2]	0,1410	0,1560	0,1650	0,1800	0,1890	0,2030	0,2130	0,2270	0,2370	0,2510	0,2610	0,2750	0,2850	0,2990	0,3090
530	Sn [m^2]	0,1490	0,1640	0,1740	0,1890	0,1990	0,2140	0,2240	0,2390	0,2490	0,2640	0,2750	0,2900	0,3000	0,3150	0,3250
535	Sn [m^2]	0,1500	0,1650	0,1760	0,1910	0,2010	0,2160	0,2260	0,2420	0,2520	0,2670	0,2770	0,2930	0,3030	0,3180	0,3280
565	Sn [m^2]	0,1590	0,1750	0,1860	0,2020	0,2130	0,2290	0,2400	0,2560	0,2670	0,2830	0,2940	0,3100	0,3210	0,3370	0,3480
580	Sn [m^2]	0,1630	0,1800	0,1910	0,2080	0,2190	0,2350	0,2460	0,2630	0,2740	0,2910	0,3020	0,3180	0,3300	0,3460	0,3570
595	Sn [m^2]	0,1680	0,1850	0,1960	0,2130	0,2250	0,2420	0,2530	0,2700	0,2820	0,2990	0,3100	0,3270	0,3380	0,3560	0,3670
625	Sn [m^2]	0,1770	0,1950	0,2070	0,2250	0,2360	0,2540	0,2660	0,2840	0,2960	0,3140	0,3260	0,3440	0,3560	0,3740	0,3860
630	Sn [m^2]	0,1780	0,1960	0,2080	0,2260	0,2380	0,2570	0,2690	0,2870	0,2990	0,3170	0,3290	0,3470	0,3590	0,3770	0,3890
655	Sn [m^2]	0,1850	0,2040	0,2170	0,2360	0,2480	0,2670	0,2800	0,2990	0,3110	0,3300	0,3430	0,3620	0,3740	0,3930	0,4060
680	Sn [m^2]	0,1930	0,2120	0,2250	0,2450	0,2580	0,2780	0,2910	0,3110	0,3240	0,3430	0,3560	0,3760	0,3890	0,4090	0,4220
685	Sn [m^2]	0,1940	0,2140	0,2270	0,2470	0,2600	0,2800	0,2930	0,3130	0,3260	0,3460	0,3590	0,3790	0,3920	0,4120	0,4250
715	Sn [m^2]	0,2030	0,2240	0,2380	0,2580	0,2720	0,2930	0,3060	0,3270	0,3410	0,3620	0,3750	0,3960	0,4100	0,4300	0,4440
730	Sn [m^2]	0,2080	0,2290	0,2430	0,2640	0,2780	0,2990	0,3130	0,3340	0,3480	0,3690	0,3840	0,4050	0,4190	0,4400	0,4540
745	Sn [m^2]	0,2120	0,2340	0,2480	0,2690	0,2840	0,3050	0,3200	0,3410	0,3560	0,3770	0,3920	0,4130	0,4280	0,4490	0,4640
775	Sn [m^2]	0,2210	0,2430	0,2580	0,2810	0,2960	0,3180	0,3330	0,3560	0,3710	0,3930	0,4080	0,4310	0,4460	0,4680	0,4830
780	Sn [m^2]	0,2220	0,2450	0,2600	0,2830	0,2980	0,3200	0,3350	0,3580	0,3730	0,3960	0,4110	0,4330	0,4480	0,4710	0,4860
805	Sn [m^2]	0,2300	0,2530	0,2690	0,2920	0,3080	0,3310	0,3460	0,3700	0,3850	0,4090	0,4240	0,4480	0,4630	0,4870	0,5020
830	Sn [m^2]	0,2370	0,2610	0,2770	0,3010	0,3170	0,3420	0,3580	0,3820	0,3980	0,4220	0,4380	0,4620	0,4780	0,5020	0,5180
835	Sn [m^2]	0,2380	0,2630	0,2790	0,3030	0,3190	0,3440	0,3600	0,3840	0,4000	0,4250	0,4410	0,4650	0,4810	0,5050	0,5220
865	Sn [m^2]	0,2470	0,2730	0,2890	0,3140	0,3310	0,3560	0,3730	0,3980	0,4150	0,4400	0,4570	0,4820	0,4990	0,5240	0,5410
880	Sn [m^2]	0,2520	0,2770	0,2940	0,3200	0,3370	0,3630	0,3800	0,4050	0,4230	0,4480	0,4650	0,4910	0,5080	0,5340	0,5510
895	Sn [m^2]	0,2560	0,2820	0,3000	0,3260	0,3430	0,3690	0,3870	0,4130	0,4300	0,4560	0,4730	0,5000	0,5170	0,5430	0,5600
925	Sn [m^2]	0,2650	0,2920	0,3100	0,3370	0,3550	0,3820	0,4000	0,4270	0,4450	0,4720	0,4900	0,5170	0,5350	0,5620	0,5800
930	Sn [m^2]	0,2660	0,2940	0,3120	0,3390	0,3570	0,3840	0,4020	0,4290	0,4470	0,4740	0,4920	0,5200	0,5380	0,5650	0,5830
955	Sn [m^2]	0,2740	0,3020	0,3200	0,3480	0,3670	0,3950	0,4130	0,4410	0,4600	0,4880	0,5060	0,5340	0,5530	0,5800	0,5990
980	Sn [m^2]	0,2810	0,3100	0,3290	0,3580	0,3770	0,4050	0,4240	0,4530	0,4720	0,5010	0,5200	0,5480	0,5670	0,5960	0,6150
985	Sn [m^2]	0,2830	0,3110	0,3310	0,3590	0,3790	0,4070	0,4270	0,4550	0,4750	0,5030	0,5220	0,5510	0,5700	0,5990	0,6180
1015	Sn [m^2]	0,2920	0,3210	0,3410	0,3710	0,3900	0,4200	0,4400	0,4700	0,4890	0,5190	0,5390	0,5680	0,5880	0,6180	0,6380
1030	Sn [m^2]	0,2960	0,3260	0,3460	0,3760	0,3960	0,4260	0,4470	0,4770	0,4970	0,5270	0,5470	0,5770	0,5970	0,6270	0,6470
1045	Sn [m^2]	0,3000	0,3310	0,3510	0,3820	0,4020	0,4330	0,4530	0,4840	0,5040	0,5350	0,5550	0,5860	0,6060	0,6370	0,6570
1075	Sn [m^2]	0,3090	0,3410	0,3620	0,3930	0,4140	0,4460	0,4670	0,4980	0,5190	0,5510	0,5710	0,6030	0,6240	0,6550	0,6760
1080	Sn [m^2]	0,3110	0,3420	0,3630	0,3950	0,4160	0,4480	0,4690	0,5000	0,5220	0,5530	0,5740	0,6060	0,6270	0,6590	0,6800
1105	Sn [m^2]	0,3180	0,3500	0,3720	0,4040	0,4260	0,4580	0,4800	0,5120	0,5340	0,5660	0,5880	0,6200	0,6420	0,6740	0,6960

Hn\Wn [mm]		730	750	780	800	830	850	880	900	930	950	980	1000	1050	1100
385	Sn [m²]	0,2420	0,2490	0,2600	0,2670	0,2780	0,2850	0,2960	0,3030	0,3140	0,3210	0,3320	0,3390	0,3570	0,3750
415	Sn [m²]	0,2620	0,2700	0,2820	0,2900	0,3010	0,3090	0,3210	0,3290	0,3400	0,3480	0,3600	0,3680	0,3870	0,4060
430	Sn [m²]	0,2730	0,2810	0,2930	0,3010	0,3130	0,3210	0,3330	0,3410	0,3530	0,3610	0,3740	0,3820	0,4020	0,4220
445	Sn [m²]	0,2830	0,2910	0,3040	0,3120	0,3250	0,3330	0,3460	0,3540	0,3670	0,3750	0,3870	0,3960	0,4170	0,4380
475	Sn [m²]	0,3030	0,3120	0,3250	0,3340	0,3480	0,3570	0,3700	0,3790	0,3930	0,4020	0,4150	0,4240	0,4470	0,4690
480	Sn [m²]	0,3060	0,3150	0,3290	0,3380	0,3520	0,3610	0,3740	0,3840	0,3970	0,4060	0,4200	0,4290	0,4520	0,4740
505	Sn [m²]	0,3230	0,3330	0,3470	0,3570	0,3710	0,3810	0,3950	0,4050	0,4190	0,4290	0,4430	0,4530	0,4770	0,5000
530	Sn [m²]	0,3400	0,3500	0,3650	0,3750	0,3900	0,4010	0,4160	0,4260	0,4410	0,4510	0,4660	0,4760	0,5010	0,5270
535	Sn [m²]	0,3430	0,3540	0,3690	0,3790	0,3940	0,4050	0,4200	0,4300	0,4450	0,4550	0,4710	0,4810	0,5060	0,5320
565	Sn [m²]	0,3640	0,3740	0,3910	0,4010	0,4180	0,4280	0,4450	0,4550	0,4720	0,4820	0,4980	0,5090	0,5360	0,5630
580	Sn [m²]	0,3740	0,3850	0,4020	0,4130	0,4290	0,4400	0,4570	0,4680	0,4850	0,4960	0,5120	0,5230	0,5510	0,5790
595	Sn [m²]	0,3840	0,3950	0,4120	0,4240	0,4410	0,4520	0,4690	0,4810	0,4980	0,5090	0,5260	0,5380	0,5660	0,5940
625	Sn [m²]	0,4040	0,4160	0,4340	0,4460	0,4640	0,4760	0,4940	0,5060	0,5240	0,5360	0,5540	0,5660	0,5960	0,6260
630	Sn [m²]	0,4080	0,4200	0,4380	0,4500	0,4680	0,4800	0,4980	0,5100	0,5280	0,5400	0,5590	0,5710	0,6010	0,6310
655	Sn [m²]	0,4240	0,4370	0,4560	0,4680	0,4870	0,5000	0,5190	0,5310	0,5500	0,5630	0,5820	0,5940	0,6260	0,6570
680	Sn [m²]	0,4410	0,4540	0,4740	0,4870	0,5070	0,5200	0,5390	0,5520	0,5720	0,5850	0,6050	0,6180	0,6510	0,6830
685	Sn [m²]	0,4450	0,4580	0,4780	0,4910	0,5110	0,5240	0,5440	0,5570	0,5760	0,5900	0,6090	0,6230	0,6560	0,6890
715	Sn [m²]	0,4650	0,4790	0,4990	0,5130	0,5340	0,5480	0,5680	0,5820	0,6030	0,6170	0,6370	0,6510	0,6850	0,7200
730	Sn [m²]	0,4750	0,4890	0,5100	0,5240	0,5450	0,5600	0,5810	0,5950	0,6160	0,6300	0,6510	0,6650	0,7000	0,7360
745	Sn [m²]	0,4850	0,5000	0,5210	0,5360	0,5570	0,5710	0,5930	0,6070	0,6290	0,6430	0,6650	0,6790	0,7150	0,7510
775	Sn [m²]	0,5050	0,5200	0,5430	0,5580	0,5800	0,5950	0,6180	0,6330	0,6550	0,6700	0,6930	0,7080	0,7450	0,7830
780	Sn [m²]	0,5090	0,5240	0,5460	0,5620	0,5840	0,5990	0,6220	0,6370	0,6600	0,6750	0,6970	0,7120	0,7500	0,7880
805	Sn [m²]	0,5260	0,5410	0,5650	0,5800	0,6040	0,6190	0,6430	0,6580	0,6810	0,6970	0,7200	0,7360	0,7750	0,8140
830	Sn [m²]	0,5430	0,5590	0,5830	0,5990	0,6230	0,6390	0,6630	0,6790	0,7030	0,7190	0,7440	0,7600	0,8000	0,8400
835	Sn [m²]	0,5460	0,5620	0,5860	0,6030	0,6270	0,6430	0,6670	0,6830	0,7080	0,7240	0,7480	0,7640	0,8050	0,8450
865	Sn [m²]	0,5660	0,5830	0,6080	0,6250	0,6500	0,6670	0,6920	0,7090	0,7340	0,7510	0,7760	0,7930	0,8350	0,8770
880	Sn [m²]	0,5760	0,5930	0,6190	0,6360	0,6620	0,6790	0,7040	0,7210	0,7470	0,7640	0,7900	0,8070	0,8500	0,8920
895	Sn [m²]	0,5860	0,6040	0,6300	0,6470	0,6730	0,6910	0,7170	0,7340	0,7600	0,7780	0,8040	0,8210	0,8640	0,9080
925	Sn [m²]	0,6070	0,6250	0,6520	0,6700	0,6970	0,7150	0,7410	0,7590	0,7860	0,8040	0,8310	0,8490	0,8940	0,9390
930	Sn [m²]	0,6100	0,6280	0,6550	0,6730	0,7000	0,7180	0,7460	0,7640	0,7910	0,8090	0,8360	0,8540	0,8990	0,9440
955	Sn [m²]	0,6270	0,6450	0,6730	0,6920	0,7200	0,7380	0,7660	0,7850	0,8130	0,8310	0,8590	0,8780	0,9240	0,9710
980	Sn [m²]	0,6440	0,6630	0,6910	0,7110	0,7390	0,7580	0,7870	0,8060	0,8350	0,8540	0,8820	0,9010	0,9490	0,9970
985	Sn [m²]	0,6470	0,6660	0,6950	0,7140	0,7430	0,7620	0,7910	0,8100	0,8390	0,8580	0,8870	0,9060	0,9540	1,0020
1015	Sn [m²]	0,6670	0,6870	0,7170	0,7370	0,7660	0,7860	0,8160	0,8360	0,8650	0,8850	0,9150	0,9340	0,9840	1,0330
1030	Sn [m²]	0,6770	0,6980	0,7280	0,7480	0,7780	0,7980	0,8280	0,8480	0,8780	0,8980	0,9280	0,9490	0,9990	1,0490
1045	Sn [m²]	0,6880	0,7080	0,7390	0,7590	0,7900	0,8100	0,8400	0,8610	0,8910	0,9120	0,9420	0,9630	1,0140	1,0650
1075	Sn [m²]	0,7080	0,7290	0,7600	0,7810	0,8130	0,8340	0,8650	0,8860	0,9180	0,9390	0,9700	0,9910	1,0440	1,0960
1080	Sn [m²]	0,7110	0,7320	0,7640	0,7850	0,8170	0,8380	0,8690	0,8900	0,9220	0,9430	0,9750	0,9960	1,0490	1,1010
1105	Sn [m²]	0,7280	0,7500	0,7820	0,8040	0,8360	0,8580	0,8900	0,9120	0,9440	0,9650	0,9980	1,0190	1,0730	1,1270

AVANTAGE 1V60 ME - 1V120 ME - Free air passage (m²)

Hn\Wn [mm]		350	380	400	430	450	480	500	530	550	580	600	630	650	680	700
385	Sn [m²]	0,1090	0,1200	0,1270	0,1380	0,1450	0,1560	0,1630	0,1740	0,1810	0,1920	0,1990	0,2090	0,2170	0,2270	0,2350
415	Sn [m²]	0,1190	0,1300	0,1380	0,1500	0,1580	0,1690	0,1770	0,1890	0,1960	0,2080	0,2160	0,2280	0,2350	0,2470	0,2550
430	Sn [m²]	0,1240	0,1360	0,1440	0,1560	0,1640	0,1760	0,1840	0,1960	0,2040	0,2160	0,2250	0,2370	0,2450	0,2570	0,2650
445	Sn [m²]	0,1280	0,1410	0,1490	0,1620	0,1700	0,1830	0,1910	0,2040	0,2120	0,2250	0,2330	0,2460	0,2540	0,2670	0,2750
475	Sn [m²]	0,1380	0,1520	0,1610	0,1740	0,1830	0,1960	0,2050	0,2190	0,2280	0,2410	0,2500	0,2640	0,2730	0,2860	0,2950
480	Sn [m²]	0,1400	0,1530	0,1620	0,1760	0,1850	0,1990	0,2080	0,2210	0,2310	0,2440	0,2530	0,2670	0,2760	0,2900	0,2990
505	Sn [m²]	0,1480	0,1620	0,1720	0,1860	0,1960	0,2100	0,2200	0,2340	0,2440	0,2580	0,2680	0,2820	0,2920	0,3060	0,3150
530	Sn [m²]	0,1560	0,1710	0,1810	0,1960	0,2060	0,2210	0,2320	0,2470	0,2570	0,2720	0,2820	0,2970	0,3070	0,3220	0,3320
535	Sn [m²]	0,1580	0,1730	0,1830	0,1980	0,2080	0,2240	0,2340	0,2490	0,2590	0,2750	0,2850	0,3000	0,3100	0,3260	0,3360
565	Sn [m²]	0,1670	0,1830	0,1940	0,2100	0,2210	0,2370	0,2480	0,2640	0,2750	0,2910	0,3020	0,3180	0,3290	0,3450	0,3560
580	Sn [m²]	0,1720	0,1890	0,2000	0,2160	0,2280	0,2440	0,2550	0,2720	0,2830	0,3000	0,3110	0,3270	0,3380	0,3550	0,3660
595	Sn [m²]	0,1770	0,1940	0,2050	0,2230	0,2340	0,2510	0,2620	0,2790	0,2910	0,3080	0,3190	0,3360	0,3480	0,3650	0,3760
625	Sn [m²]	0,1870	0,2050	0,2170	0,2350	0,2470	0,2650	0,2770	0,2950	0,3070	0,3240	0,3360	0,3540	0,3660	0,3840	0,3960
630	Sn [m²]	0,1880	0,2060	0,2190	0,2370	0,2490	0,2670	0,2790	0,2970	0,3090	0,3270	0,3390	0,3570	0,3700	0,3880	0,4000
655	Sn [m²]	0,1960	0,2150	0,2280	0,2470	0,2590	0,2780	0,2910	0,3100	0,3220	0,3410	0,3540	0,3730	0,3850	0,4040	0,4170
680	Sn [m²]	0,2050	0,2240	0,2370	0,2570	0,2700	0,2900	0,3030	0,3220	0,3350	0,3550	0,3680	0,3880	0,4010	0,4200	0,4330
685	Sn [m²]	0,2060	0,2260	0,2390	0,2590	0,2720	0,2920	0,3050	0,3250	0,3380	0,3580	0,3710	0,3910	0,4040	0,4240	0,4370
715	Sn [m²]	0,2160	0,2370	0,2500	0,2710	0,2850	0,3050	0,3190	0,3400	0,3540	0,3740	0,3880	0,4090	0,4230	0,4430	0,4570
730	Sn [m²]	0,2210	0,2420	0,2560	0,2770	0,2910	0,3120	0,3260	0,3470	0,3620	0,3830	0,3970	0,4180	0,4320	0,4530	0,4670
745	Sn [m²]	0,2260	0,2470	0,2620	0,2830	0,2980	0,3190	0,3330	0,3550	0,3690	0,3910	0,4050	0,4270	0,4410	0,4630	0,4770
775	Sn [m²]	0,2350	0,2580	0,2730	0,2950	0,3100	0,3330	0,3480	0,3700	0,3850	0,4080	0,4230	0,4450	0,4600	0,4820	0,4970
780	Sn [m²]	0,2370	0,2600	0,2750	0,2970	0,3120	0,3350	0,3500	0,3730	0,3880	0,4100	0,4250	0,4480	0,4630	0,4860	0,5010
805	Sn [m²]	0,2450	0,2680	0,2840	0,3070	0,3230	0,3460	0,3620	0,3850	0,4010	0,4240	0,4400	0,4630	0,4790	0,5020	0,5180
830	Sn [m²]	0,2530	0,2770	0,2930	0,3170	0,3340	0,3580	0,3740	0,3980	0,4140	0,4380	0,4540	0,4780	0,4940	0,5180	0,5350
835	Sn [m²]	0,2550	0,2790	0,2950	0,3190	0,3360	0,3600	0,3760	0,4000	0,4170	0,4410	0,4570	0,4810	0,4970	0,5220	0,5380
865	Sn [m²]	0,2640	0,2900	0,3060	0,3320	0,3480	0,3740	0,3900	0,4160	0,4320	0,4570	0,4740	0,4990	0,5160	0,5410	0,5580
870	Sn [m²]	0,2660	0,2910	0,3080	0,3340	0,3510	0,3760	0,3930	0,4180	0,4350	0,4600	0,4770	0,5020	0,5190	0,5450	0,5620
895	Sn [m²]	0,2740	0,3000	0,3180	0,3440	0,3610	0,3870	0,4050	0,4310	0,4480	0,4740	0,4910	0,5180	0,5350	0,5610	0,5780
925	Sn [m²]	0,2840	0,3110	0,3290	0,3560	0,3740	0,4010	0,4190	0,4460	0,4640	0,4910	0,5090	0,5360	0,5540	0,5810	0,5990
955	Sn [m²]	0,2940	0,3220	0,3400	0,3680	0,3870	0,4140	0,4330	0,4610	0,4790	0,5070	0,5260	0,5540	0,5720	0,6000	0,6190
985	Sn [m²]	0,3030	0,3320	0,3510	0,3800	0,3990	0,4280	0,4470	0,4760	0,4950	0,5240	0,5430	0,5720	0,5910	0,6200	0,6390
1015	Sn [m²]	0,3130	0,3430	0,3630	0,3920	0,4120	0,4420	0,4610	0,4910	0,5110	0,5410	0,5600	0,5900	0,6100	0,6390	0,6590
1045	Sn [m²]	0,3230	0,3530	0,3740	0,4040	0,4250	0,4550	0,4760	0,5060	0,5270	0,5570	0,5780	0,6080	0,6290	0,6590	0,6790
1075	Sn [m²]	0,3330	0,3640	0,3850	0,4160	0,4370	0,4690	0,4900	0,5210	0,5420	0,5740	0,5950	0,6260	0,6470	0,6790	0,7000

Sample order



1. product
2. 1 shutter (1V) / 2 shutters (2V)
3. fire resistance of 60 or 120 minutes
4. width
5. height
6. option: resetting motor
7. option: type magnet and voltage
8. option: bipolar end of range switch (FDCU included)

Approvals and certificates

All our products are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of the products.

CE
1812

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18.25 & 18.26

The NF-label guarantees: conformity with the standard NF S 61-937 Parts 1 and 10: “Systèmes de Sécurité Incendie Dispositifs Actionnés de Sécurité”; conformity with the national decree of March 22, 2004, changed on 14 March 2011 for the classification of fire resistance; the values of the characteristics mentioned in this document. Organisme Certificateur: AFNOR Certification, 11 Rue Francis de Pressensé, F93571 La Plaine Saint-Denis Cedex; Website: http://www.afnor.org http://www.marque-nf.com; Phone: +33 (0)1.41.62.80.00, Fax: +33 (0)1.49.17.90.00, Email: certification@afnor.org