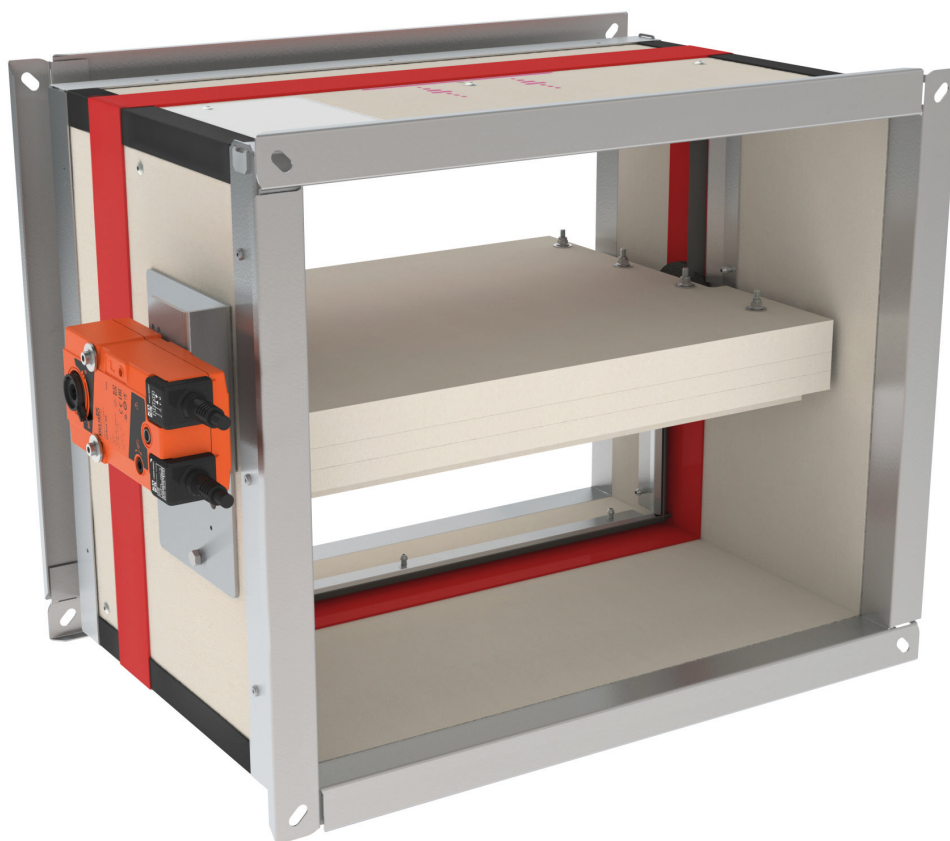


VUW120

Rectangular smoke control damper for installation in a wall.



CE 1812 UK CA



Table of content

Declaration of performance	3
Product presentation VUW120	4
Range and dimensions VUW120	4
Evolution - kits	6
Options - at the time of order	6
Flange types - at the time of order	6
Storage and handling	7
Installation	7
Installation at a minimal distance from another smoke control damper or from an adjacent wall/floor	8
Installation in rigid wall	9
Installation in a multi / single compartment application	10
Installation with multi compartment application on both sides	11
Operation and mechanisms	12
Electrical connection	13
Weights	14
Selection data	15
Sample order	18
Approvals and certificates	18

Explanation of the abbreviations and pictograms

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

	large dimensions		optimal free air passage and minimal pressure loss
	superior air tightness (tested at 1500 Pa)		suitable for installation in rigid wall
	intermediate dimensions on request		

DECLARATION OF PERFORMANCE

UKCA DoP Rf-t V27 EN - D-01/01/2025

1. Unique identification code of the product-type:	VUW120
2. Intended use/s:	Smoke control damper 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. Designated standard / Approved body; certificate of constancy of performance:	BS EN 12101-8:2011, Efectis UK/Ireland Ltd 2822; Efectis-2822-UKCA-CPR-0015
6. Declared performance according to BS EN 12101-8:2011	(Fire resistance according to BS EN 1366-10, classification according to BS EN 13501-4)



Essential characteristics				Performance	
Range	Type	Material	Sealing	Installation	Classification
300x300 mm ≤ VUW120 ≤ 1500x1000 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar	1	EI 120 (V _{se} , I ± o) S 1500 AA multi C10000
1	Type of installation: built-in 0/180° 				
Nominal activation conditions/sensitivity:					
Response delay (response time): closure time		Pass - automatic activation	Integrity (E)	120 minutes	
Operational reliability: cycling		Pass - automatic activation	Insulation (EI)	120 minutes	
Durability of response delay:		BEN - 10000 cycles (C10000) (no load)	Smoke leakage (EIS)	120 minutes	
High operational temperature (HOT 400/30):		Pass	Mechanical stability (under E)	Pass	
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.		NPD (no performance determined)	Maintenance of cross section (under E)	Pass	

Designated standard
BS EN 12101-8:2011

Signed for and on behalf of the manufacturer by:
Duchan Laplace, R&D Manager

Oosterzele, 01/01/2025



Product presentation VUW120

The rectangular VUW120 smoke control damper is suitable for installation in a wall and offers a fire-resistance up to 120 minutes. The damper is available in large dimensions and with an optional thermal housing for the operating mechanism.

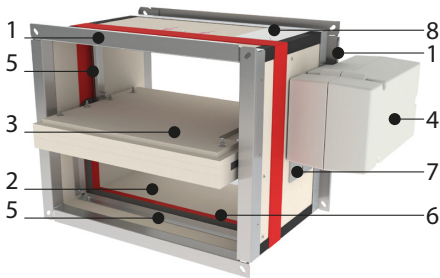
Smoke control shutters and dampers are suitable for use in ventilating protected lobbies, venting to shafts either naturally or mechanically. They open to evacuate smoke in emergency situations whilst maintaining fire resistant integrity in both directions in standby position.

- ✓ superior air tightness (tested at 1500 Pa)
- ✓ optimal free air passage and minimal pressure loss
- ✓ large dimensions



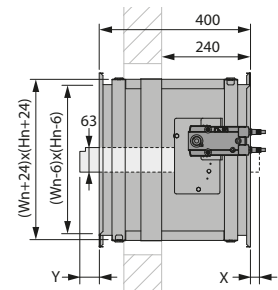
- tested according to EN 1366-10
- compliant with BS EN 12101-8
- suitable for installation in rigid wall
- maintenance-free
- for indoor use
- intermediate dimensions on request

- 1. connection flange PG30
- 2. casing made of refractory material
- 3. damper blade
- 4. operating mechanism in thermal housing (option)
- 5. sealing and blade bumper
- 6. intumescent strip
- 7. transmission
- 8. product identification



Range and dimensions VUW120

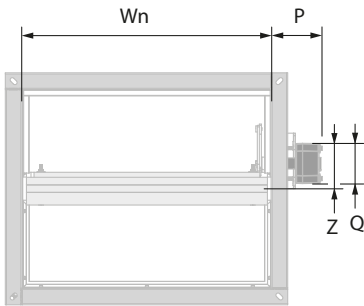
	≥	≤
(W x H) mm	300x300	1500x1000



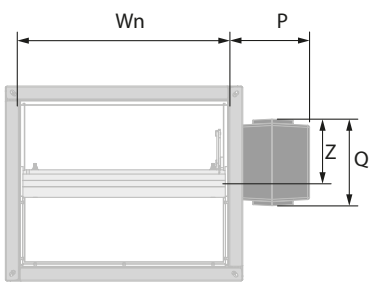
Wn/Hn in steps of 50 mm
Exceeding blade: X = on the mechanism side, Y = on the wall side

Hn (mm)	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
x	-	-	-	-	-	1	26	51	76	101	126	151	176	201	226
y	2	27	52	77	102	127	152	177	202	227	252	277	302	327	352

VUW120 + BEN



VUW120 + BEN + BOX



	BEN
P	103
Q	90
Z	80

	BEN + BOX
P	193
Q	205
Z	152

Evolution - kits



KIT BEN24

Servomotor BEN 24V



KIT BEN230

Servomotor BEN 230V



KIT BEN24-ST

Servomotor BEN 24V with plug (ST)



MECT

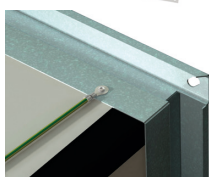
Testbox for mechanisms 24/48 V (magnet, motor, beginning and end of range switches)

Options - at the time of order



UL

Inspection shutter (set of 2)



EQ

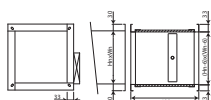
Equipotential connection



BOX

The BOX is an optional thermal protection housing. It is specially designed to protect the motor against high temperatures.

Flange types - at the time of order



PG30

Connection to ducts with 30 mm flanges (either by sliding profile, or with bolts, or with clamps). Elliptical holes $\varnothing 8,5 \times 16$ mm.

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:

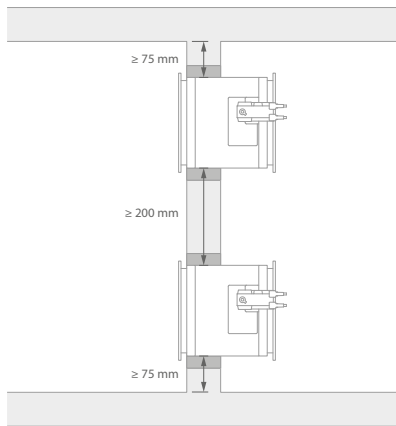
- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

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.
 - ⚠ 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.

Installation at a minimal distance from another smoke control damper or from an adjacent wall/floor

1

1. European test standard EN 1366-10 specifies the minimum required distance between 2 smoke control dampers and between a smoke control damper and a supporting construction when applied at a compartment boundary (wall mounted classification):

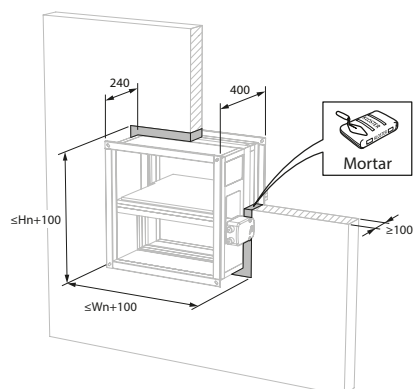
- 200 mm between 2 smoke control dampers (measured from damper tunnel to damper tunnel, without taking the connecting flanges into account)
- 75 mm between a smoke control damper and a supporting construction (measured from the damper tunnel, without taking the connection flanges into account)

Installation in rigid wall

The product was tested and approved in:

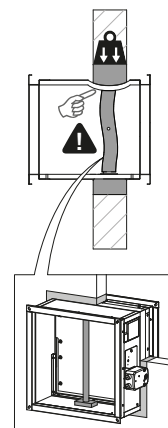
Range	Wall type	Sealing	Classification
$300 \times 300 \text{ mm} \leq \text{VUW120} \leq 1500 \times 1000 \text{ mm}$	Rigid wall	Aerated concrete $\geq 100 \text{ mm}$	Mortar
EI 120 ($v_e, w_i \leftrightarrow o$) S 1500 AA multi C10000			

1



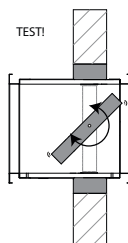
1. Make the necessary openings $\leq (W_n + 100 \text{ mm}) \times (H_n + 100 \text{ mm})$ in the wall. Mount the damper in the opening. Seal the rest of the opening with standard mortar.

2



2. Support the body and block the damper blade in its closed position to prevent deformation of the body during the drying process of the sealing.

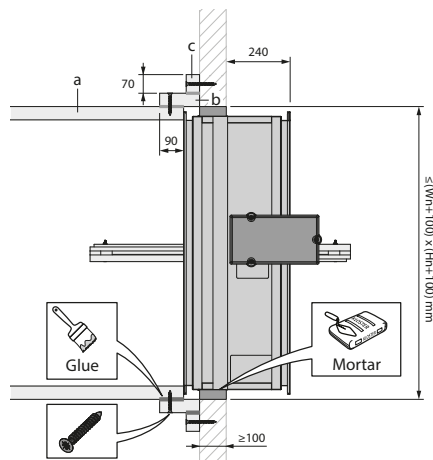
3



3. Check the movement of the damper blade. Test the mechanism of the damper.

Installation in a multi / single compartment application

1



1. On the multi-compartment side:
Connect the damper to a smoke control duct, tested according to EN 1366-8, with a classification of EI120S -1500/+500Pa.

Example:

Promatect L500 $\geq$ 50 mm
Duct adhesive: Promat K84
Screws: $\varnothing 5 \times 90$ with thread

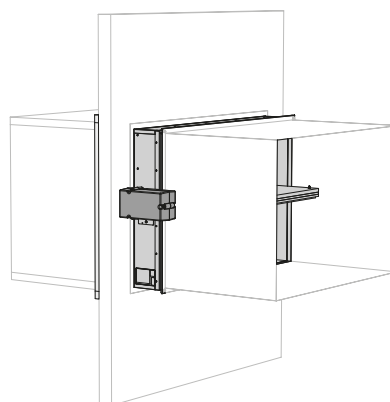
Place the smoke control duct (a) against the flange of the damper. A frame (b), made of the same material, connects the duct to the wall. This frame has an overlap on the duct of at least 90 mm. Fix the frame to the duct using screws ($\varnothing 5 \times 90$ mm) every 150 mm and matching duct glue. A second frame (c) 70 mm high, made of the same duct material, is screwed to the wall with screws suitable for that application.

Other possible types of smoke control ducts

(list not exhaustive):

- Geotec
- Geoflam (Light)
- System with steel ducts
- ...

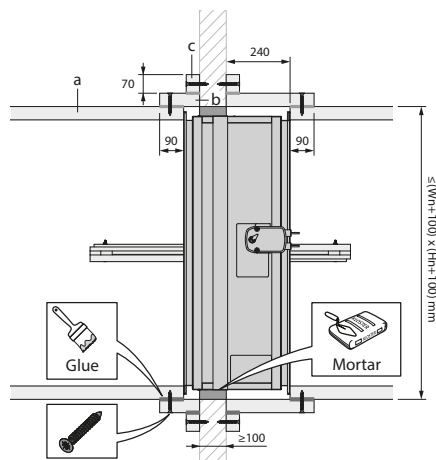
2



2. If required, connect a single compartment smoke control duct using the PG30 flange on the VUW120. The actuator could be protected by a thermal insulating box. This is not a requirement for the AA classification.

Installation with multi compartment application on both sides

1



1. Connect the damper to a smoke control duct on both sides, tested according to EN 1366-8, with a classification of EI120S -1500/+500Pa.

Example:

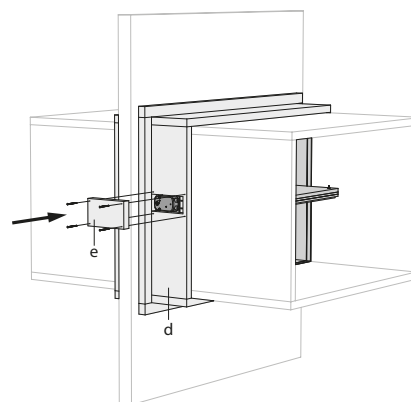
Promatect L500 $\geq$ 50 mm
Duct adhesive: Promat K84
Screws: $\varnothing$ 5x90 with thread

Place the smoke control duct (a) against the flange of the damper. A frame (b), made of the same material, connects the duct to the wall. This frame has an overlap on the duct of at least 90 mm. Fix the frame to the duct using screws ($\varnothing$ 5x90 mm) every 150 mm and matching duct glue. A second frame (c) 70 mm high, made of the same duct material, is screwed to the wall with screws suitable for that application.

Other possible types of smoke control ducts (list not exhaustive):

- Geotec
- Geoflam (Light)
- System with steel ducts
- ...

2



2. Provide a protected opening for access to the actuator.

Example (not exhaustive - see 1.):
Promatect L500 $\geq$ 50 mm

Make an opening in the frame (d) of 230 x 110 mm. Make a cover plate (e) of 280 x 210 mm made of the same duct material to cover the actuator (fasten with 4 $\varnothing$ 5x90 mm screws). Seal the opening around the power cables with a fire-resistant mastic (e.g. BMS).

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



BEN Remotely controlled servomotor

The BEN servomotor is specifically designed for remote control of smoke control dampers.

1. access for manual operation



Options - at the time of order

BP FM

Base plate for a bus communication module (Markage MB)

Unlocking

- **manual unlocking:** turn the enclosed handle anticlockwise (VRE; VU120) or clockwise (MARKAGE MB; VUW120).
- **remote unlocking:** power cables 1 and 2.

Caution:

⚠ Do not use a drill or powered screwdriver.

Resetting

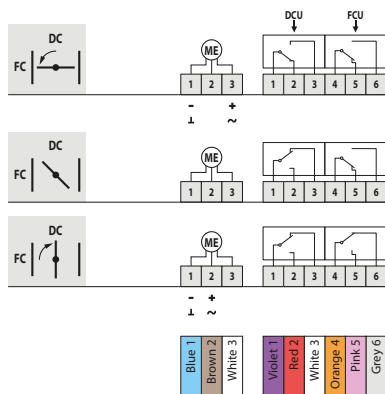
- **manual resetting:** turn the enclosed handle clockwise (VRE; VU120) or anticlockwise (MARKAGE MB; VUW120).
- **motorised resetting:** power cables 1 and 3.

Caution:

⚠ Do not use a drill or powered screwdriver.

Electrical connection

BEN



MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches	Resetting time motor
BEN24	24 V AC/DC		0,1 W	3 W	1mA...3A, AC 250V	< 30 s (90°)
BEN230	230 V AC		0,4 W	4 W	1mA...3A, AC 250V	< 30 s (90°)
BEN24-ST	24 V AC/DC		0,1 W	3 W	1mA...3A, AC 250V	< 30 s (90°)

MEC	Running time spring	Noise level motor	Noise level spring	Cable supply / control	Cable auxiliary switch	Protection class
BEN24		58 dB (A)		1 m, 3 x 0.75 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BEN230		58 dB (A)		1 m, 3 x 0.75 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BEN24-ST		58 dB (A)		1 m, 3 x 0.75 mm ² (halogen-free), with plug connectors	1 m, 6 x 0.75 mm ² (halogen-free), with plug connectors	IP 54

Weights

VUW120 + BEN

+ additional weight of 8.0 kg in combination with option BOX

Hn\Wn [mm]		300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
300	kg	16,3	17,9	19,4	21,0	22,5	24,1	25,6	27,2	28,7	30,3	31,8	33,4	34,9	36,5	38,0
350	kg	17,9	19,6	21,2	22,9	24,5	26,2	27,9	29,5	31,2	32,9	34,5	36,2	37,9	39,5	41,2
400	kg	19,4	21,2	22,9	24,7	26,5	28,3	30,1	31,9	33,6	35,4	37,2	39,0	40,8	42,6	44,3
450	kg	20,9	22,8	24,7	26,6	28,5	30,4	32,3	34,2	36,1	38,0	39,9	41,8	43,7	45,6	47,5
500	kg	22,4	24,4	26,4	28,4	30,4	32,5	34,5	36,5	38,5	40,5	42,5	44,5	46,6	48,6	50,6
550	kg	23,9	26,0	28,1	30,3	32,4	34,5	36,7	38,8	40,9	43,1	45,2	47,3	49,5	51,6	53,7
600	kg	25,3	27,6	29,8	32,1	34,3	36,6	38,8	41,3	43,6	45,8	48,1	50,3	52,6	54,8	57,1
650	kg	26,8	29,2	31,6	33,9	36,3	38,7	41,3	43,6	46,0	48,4	50,7	53,1	55,5	57,8	60,2
700	kg	28,3	30,8	33,3	35,8	38,3	41,0	43,5	46,0	48,4	50,9	53,4	55,9	58,4	60,9	63,3
750	kg	29,8	32,4	35,0	37,6	40,5	43,1	45,7	48,3	50,9	53,5	56,1	58,7	61,3	63,9	66,5
800	kg	31,3	34,1	36,8	39,7	42,4	45,2	47,9	50,6	53,3	56,0	58,7	61,5	64,2	66,9	69,6
850	kg	32,8	35,7	38,7	41,6	44,4	47,2	50,1	52,9	55,7	58,6	61,4	64,2	67,1	69,9	72,7
900	kg	34,3	37,5	40,5	43,4	46,4	49,3	52,3	55,2	58,2	61,1	64,1	67,0	70,2	73,2	76,1
950	kg	36,1	39,1	42,2	45,3	48,3	51,4	54,5	57,5	60,6	63,7	66,7	70,0	73,1	76,2	79,2
1000	kg	37,6	40,8	43,9	47,1	50,3	53,5	56,7	59,8	63,0	66,2	69,6	72,8	76,0	79,2	82,4

Hn\Wn [mm]		1050	1100	1150	1200	1250	1300	1350	1400	1450	1500					
300	kg	39,6	41,1	42,7	44,2	45,8	47,3	48,9	50,4	52,0	53,5					
350	kg	42,9	44,5	46,2	47,9	49,5	51,2	52,9	54,5	56,2	57,9					
400	kg	46,1	47,9	49,7	51,5	53,2	55,0	56,8	58,6	60,4	62,2					
450	kg	49,4	51,3	53,2	55,1	57,0	58,8	60,8	62,7	64,5	66,4					
500	kg	52,6	54,6	56,6	58,7	60,7	62,7	64,7	66,7	68,7	70,7					
550	kg	55,9	58,0	60,1	62,3	64,4	66,5	68,7	70,8	72,9	75,0					
600	kg	59,3	61,6	63,8	66,1	68,3	70,6	72,8	75,1	77,3	79,6					
650	kg	62,6	64,9	67,3	69,7	72,0	74,4	76,8	79,1	81,5	83,9					
700	kg	65,8	68,3	70,8	73,3	75,7	78,2	80,7	83,2	85,7	88,2					
750	kg	69,1	71,7	74,3	76,9	79,5	82,1	84,7	87,3	89,9	92,5					
800	kg	72,3	75,0	77,8	80,5	83,2	85,9	88,6	91,3	94,0	96,8					
850	kg	75,6	78,4	81,2	84,1	86,9	89,7	92,6	95,4	98,2	101,1					
900	kg	79,1	82,0	85,0	87,9	90,8	93,8	96,8	99,7	102,6	105,6					
950	kg	82,3	85,4	88,4	91,5	94,6	97,6	100,7	103,8	106,8	109,9					
1000	kg	85,6	88,7	91,9	95,1	98,3	101,5	104,7	107,8	111,0	114,2					

Selection data

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

Hn\Wn [mm]		300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
300	ζ [-]	1,04	0,94	0,87	0,82	0,79	0,76	0,73	0,71	0,70	0,68	0,67	0,66	0,65	0,64	0,63
350	ζ [-]	0,92	0,83	0,77	0,73	0,69	0,67	0,64	0,63	0,61	0,60	0,59	0,58	0,57	0,57	0,56
400	ζ [-]	0,82	0,75	0,69	0,65	0,62	0,60	0,58	0,56	0,55	0,54	0,53	0,52	0,51	0,51	0,50
450	ζ [-]	0,75	0,68	0,63	0,59	0,57	0,55	0,53	0,51	0,50	0,49	0,48	0,48	0,47	0,46	0,46
500	ζ [-]	0,69	0,63	0,58	0,55	0,52	0,50	0,49	0,47	0,46	0,45	0,45	0,44	0,43	0,43	0,42
550	ζ [-]	0,65	0,58	0,54	0,51	0,49	0,47	0,45	0,44	0,43	0,42	0,41	0,41	0,40	0,40	0,39
600	ζ [-]	0,60	0,55	0,51	0,48	0,46	0,44	0,42	0,41	0,40	0,39	0,39	0,38	0,38	0,37	0,37
650	ζ [-]	0,57	0,51	0,48	0,45	0,43	0,41	0,40	0,39	0,38	0,37	0,37	0,36	0,35	0,35	0,35
700	ζ [-]	0,54	0,49	0,45	0,43	0,41	0,39	0,38	0,37	0,36	0,35	0,35	0,34	0,34	0,33	0,33
750	ζ [-]	0,51	0,46	0,43	0,40	0,39	0,37	0,36	0,35	0,34	0,33	0,33	0,32	0,32	0,31	0,31
800	ζ [-]	0,49	0,44	0,41	0,39	0,37	0,35	0,34	0,33	0,33	0,32	0,31	0,31	0,30	0,30	0,30
850	ζ [-]	0,47	0,42	0,39	0,37	0,35	0,34	0,33	0,32	0,31	0,30	0,30	0,29	0,29	0,29	0,28
900	ζ [-]	0,45	0,40	0,38	0,35	0,34	0,32	0,31	0,31	0,30	0,29	0,29	0,28	0,28	0,28	0,27
950	ζ [-]	0,43	0,39	0,36	0,34	0,32	0,31	0,30	0,29	0,29	0,28	0,28	0,27	0,27	0,26	0,26
1000	ζ [-]	0,42	0,38	0,35	0,33	0,31	0,30	0,29	0,28	0,28	0,27	0,27	0,26	0,26	0,25	0,25

Hn\Wn [mm]		1050	1100	1150	1200	1250	1300	1350	1400	1450	1500					
300	ζ [-]	0,63	0,62	0,62	0,61	0,61	0,60	0,60	0,60	0,59	0,59					
350	ζ [-]	0,55	0,55	0,54	0,54	0,53	0,53	0,53	0,53	0,52	0,52					
400	ζ [-]	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47	0,47	0,47					
450	ζ [-]	0,45	0,45	0,45	0,44	0,43	0,43	0,43	0,43	0,43	0,43					
500	ζ [-]	0,42	0,41	0,41	0,41	0,40	0,40	0,40	0,40	0,39	0,39					
550	ζ [-]	0,39	0,38	0,38	0,38	0,37	0,37	0,37	0,37	0,37	0,37					
600	ζ [-]	0,36	0,36	0,36	0,35	0,35	0,35	0,34	0,34	0,34	0,34					
650	ζ [-]	0,34	0,34	0,34	0,33	0,33	0,33	0,33	0,33	0,32	0,32					
700	ζ [-]	0,32	0,32	0,32	0,32	0,31	0,31	0,31	0,31	0,30	0,30					
750	ζ [-]	0,31	0,30	0,30	0,30	0,30	0,29	0,29	0,29	0,29	0,29					
800	ζ [-]	0,29	0,29	0,29	0,29	0,28	0,28	0,28	0,28	0,28	0,28					
850	ζ [-]	0,28	0,28	0,28	0,28	0,27	0,27	0,27	0,27	0,27	0,26					
900	ζ [-]	0,27	0,27	0,27	0,27	0,26	0,26	0,26	0,25	0,25	0,25					
950	ζ [-]	0,26	0,26	0,26	0,26	0,25	0,25	0,25	0,25	0,24	0,24					
1000	ζ [-]	0,25	0,25	0,25	0,25	0,24	0,24	0,24	0,24	0,24	0,23					

VUW120

Hn\Wn [mm]		300	350	400	450	500	550	600	650	700	750
300	Sn [m²]	0,0531	0,0631	0,0732	0,0832	0,0933	0,1033	0,1134	0,1234	0,1335	0,1435
	Sn [%]	61,39	62,41	63,16	63,75	64,22	64,60	64,91	65,18	65,41	65,61
350	Sn [m²]	0,0663	0,0788	0,0914	0,1039	0,1165	0,1290	0,1416	0,1541	0,1667	0,1792
	Sn [%]	65,52	66,60	67,41	68,04	68,53	68,94	69,28	69,57	69,81	70,02
400	Sn [m²]	0,0795	0,0945	0,1096	0,1246	0,1397	0,1547	0,1698	0,1848	0,1999	0,2149
	Sn [%]	68,60	69,73	70,58	71,23	71,76	72,18	72,54	72,84	73,09	73,32
450	Sn [m²]	0,0927	0,1102	0,1278	0,1453	0,1629	0,1804	0,1980	0,2155	0,2331	0,2506
	Sn [%]	70,99	72,16	73,03	73,71	74,25	74,69	75,06	75,37	75,64	75,87

Hn\Wn [mm]		300	350	400	450	500	550	600	650	700	750
500	Sn [m ²]	0,1059	0,1259	0,1460	0,1660	0,1861	0,2061	0,2262	0,2462	0,2663	0,2863
	Sn [%]	72,89	74,09	74,99	75,69	76,24	76,70	77,07	77,39	77,67	77,90
550	Sn [m ²]	0,1191	0,1416	0,1642	0,1867	0,2093	0,2318	0,2544	0,2769	0,2995	0,3220
	Sn [%]	74,44	75,67	76,59	77,30	77,87	78,33	78,72	79,04	79,32	79,56
600	Sn [m ²]	0,1323	0,1573	0,1824	0,2074	0,2325	0,2575	0,2826	0,3076	0,3327	0,3577
	Sn [%]	75,74	76,99	77,92	78,64	79,22	79,69	80,08	80,41	80,70	80,94
650	Sn [m ²]	0,1455	0,1730	0,2006	0,2281	0,2557	0,2832	0,3108	0,3383	0,3659	0,3934
	Sn [%]	76,83	78,10	79,04	79,78	80,36	80,84	81,24	81,57	81,86	82,11
700	Sn [m ²]	0,1587	0,1887	0,2188	0,2488	0,2789	0,3089	0,3390	0,3690	0,3991	0,4291
	Sn [%]	77,76	79,05	80,01	80,75	81,34	81,82	82,23	82,57	82,86	83,11
750	Sn [m ²]	0,1719	0,2044	0,2370	0,2695	0,3021	0,3346	0,3672	0,3997	0,4323	0,4648
	Sn [%]	78,57	79,87	80,84	81,59	82,19	82,67	83,08	83,42	83,72	83,97
800	Sn [m ²]	0,1851	0,2201	0,2552	0,2902	0,3253	0,3603	0,3954	0,4304	0,4655	0,5005
	Sn [%]	79,28	80,59	81,56	82,32	82,93	83,42	83,83	84,17	84,47	84,73
850	Sn [m ²]	0,1983	0,2358	0,2734	0,3109	0,3485	0,3860	0,4236	0,4611	0,4987	0,5362
	Sn [%]	79,90	81,22	82,21	82,97	83,58	84,07	84,49	84,84	85,13	85,39
900	Sn [m ²]	0,2115	0,2515	0,2916	0,3316	0,3717	0,4117	0,4518	0,4918	0,5319	0,5719
	Sn [%]	80,45	81,78	82,78	83,54	84,16	84,66	85,07	85,42	85,72	85,98
950	Sn [m ²]	0,2247	0,2672	0,3098	0,3523	0,3949	0,4374	0,4800	0,5225	0,5651	0,6076
	Sn [%]	80,95	82,29	83,28	84,06	84,67	85,18	85,60	85,95	86,25	86,51
1000	Sn [m ²]	0,2379	0,2829	0,3280	0,3730	0,4181	0,4631	0,5082	0,5532	0,5983	0,6433
	Sn [%]	81,39	82,74	83,74	84,52	85,14	85,65	86,07	86,42	86,73	86,99

Hn\Wn [mm]		800	850	900	950	1000	1050	1100	1150	1200	1250
300	Sn [m ²]	0,1536	0,1636	0,1737	0,1837	0,1938	0,2038	0,2139	0,2239	0,2340	0,2440
	Sn [%]	65,78	65,94	66,07	66,19	66,30	66,40	66,49	66,57	66,65	66,72
350	Sn [m ²]	0,1918	0,2043	0,2169	0,2294	0,2420	0,2545	0,2671	0,2796	0,2922	0,3047
	Sn [%]	70,21	70,37	70,52	70,65	70,76	70,87	70,96	71,05	71,13	71,21
400	Sn [m ²]	0,2300	0,2450	0,2601	0,2751	0,2902	0,3052	0,3203	0,3353	0,3504	0,3654
	Sn [%]	73,51	73,68	73,83	73,97	74,09	74,20	74,30	74,39	74,48	74,55
450	Sn [m ²]	0,2682	0,2857	0,3033	0,3208	0,3384	0,3559	0,3735	0,3910	0,4086	0,4261
	Sn [%]	76,07	76,24	76,40	76,54	76,67	76,78	76,89	76,98	77,07	77,15
500	Sn [m ²]	0,3064	0,3264	0,3465	0,3665	0,3866	0,4066	0,4267	0,4467	0,4668	0,4868
	Sn [%]	78,11	78,29	78,45	78,59	78,72	78,84	78,95	79,05	79,13	79,22
550	Sn [m ²]	0,3446	0,3671	0,3897	0,4122	0,4348	0,4573	0,4799	0,5024	0,5250	0,5475
	Sn [%]	79,77	79,96	80,12	80,27	80,40	80,52	80,63	80,73	80,82	80,91
600	Sn [m ²]	0,3828	0,4078	0,4329	0,4579	0,4830	0,5080	0,5331	0,5581	0,5832	0,6082
	Sn [%]	81,16	81,35	81,51	81,66	81,80	81,92	82,03	82,13	82,22	82,31
650	Sn [m ²]	0,4210	0,4485	0,4761	0,5036	0,5312	0,5587	0,5863	0,6138	0,6414	0,6689
	Sn [%]	82,33	82,52	82,69	82,84	82,98	83,10	83,21	83,32	83,41	83,50
700	Sn [m ²]	0,4592	0,4892	0,5193	0,5493	0,5794	0,6094	0,6395	0,6695	0,6996	0,7296
	Sn [%]	83,33	83,52	83,69	83,85	83,99	84,11	84,22	84,33	84,42	84,51
750	Sn [m ²]	0,4974	0,5299	0,5625	0,5950	0,6276	0,6601	0,6927	0,7252	0,7578	0,7903
	Sn [%]	84,19	84,39	84,56	84,72	84,86	84,99	85,10	85,21	85,30	85,39
800	Sn [m ²]	0,5356	0,5706	0,6057	0,6407	0,6758	0,7108	0,7459	0,7809	0,8160	0,8510
	Sn [%]	84,95	85,15	85,32	85,48	85,62	85,75	85,87	85,97	86,07	86,16

Hn\Wn [mm]		800	850	900	950	1000	1050	1100	1150	1200	1250
850	Sn [m ²]	0,5738	0,6113	0,6489	0,6864	0,7240	0,7615	0,7991	0,8366	0,8742	0,9117
	Sn [%]	85,62	85,82	86,00	86,15	86,30	86,42	86,54	86,65	86,75	86,84
900	Sn [m ²]	0,6120	0,6520	0,6921	0,7321	0,7722	0,8122	0,8523	0,8923	0,9324	0,9724
	Sn [%]	86,21	86,41	86,59	86,75	86,89	87,02	87,14	87,25	87,35	87,44
950	Sn [m ²]	0,6502	0,6927	0,7353	0,7778	0,8204	0,8629	0,9055	0,9480	0,9906	1,0331
	Sn [%]	86,74	86,94	87,12	87,28	87,43	87,56	87,68	87,78	87,88	87,97
1000	Sn [m ²]	0,6884	0,7334	0,7785	0,8235	0,8686	0,9136	0,9587	1,0037	1,0488	1,0938
	Sn [%]	87,22	87,42	87,60	87,76	87,91	88,04	88,16	88,27	88,37	88,46

Hn\Wn [mm]		1300	1350	1400	1450	1500					
300	Sn [m ²]	0,2541	0,2641	0,2742	0,2842	0,2943					
	Sn [%]	66,78	66,84	66,90	66,95	66,99					
350	Sn [m ²]	0,3173	0,3298	0,3424	0,3549	0,3675					
	Sn [%]	71,27	71,34	71,39	71,45	71,50					
400	Sn [m ²]	0,3805	0,3955	0,4106	0,4256	0,4407					
	Sn [%]	74,62	74,69	74,75	74,81	74,86					
450	Sn [m ²]	0,4437	0,4612	0,4788	0,4963	0,5139					
	Sn [%]	77,22	77,29	77,35	77,41	77,47					
500	Sn [m ²]	0,5069	0,5269	0,5470	0,5670	0,5871					
	Sn [%]	79,29	79,36	79,43	79,49	79,54					
550	Sn [m ²]	0,5701	0,5926	0,6152	0,6377	0,6603					
	Sn [%]	80,98	81,05	81,12	81,18	81,24					
600	Sn [m ²]	0,6333	0,6583	0,6834	0,7084	0,7335					
	Sn [%]	82,39	82,46	82,53	82,59	82,65					
650	Sn [m ²]	0,6965	0,7240	0,7516	0,7791	0,8067					
	Sn [%]	83,58	83,65	83,72	83,78	83,84					
700	Sn [m ²]	0,7597	0,7897	0,8198	0,8498	0,8799					
	Sn [%]	84,59	84,67	84,74	84,80	84,86					
750	Sn [m ²]	0,8229	0,8554	0,8880	0,9205	0,9531					
	Sn [%]	85,47	85,55	85,62	85,68	85,74					
800	Sn [m ²]	0,8861	0,9211	0,9562	0,9912	1,0263					
	Sn [%]	86,24	86,32	86,39	86,45	86,51					
850	Sn [m ²]	0,9493	0,9868	1,0244	1,0619	1,0995					
	Sn [%]	86,92	86,99	87,07	87,13	87,19					
900	Sn [m ²]	1,0125	1,0525	1,0926	1,1326	1,1727					
	Sn [%]	87,52	87,60	87,67	87,74	87,80					
950	Sn [m ²]	1,0757	1,1182	1,1608	1,2033	1,2459					
	Sn [%]	88,06	88,14	88,21	88,28	88,34					
1000	Sn [m ²]	1,1389	1,1839	1,2290	1,2740	1,3191					
	Sn [%]	88,54	88,62	88,69	88,76	88,82					

Sample order

VUW120	300	300	PG30	PG30	BEN230	UL	BOX
1	2	3	4	5	6	7	8

1. product
2. width
3. height
4. frame on the side of the mechanism
5. frame on the side of the wall
6. mechanism type
7. option: inspection shutter
8. option: thermal protection housing

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.



Efectis-1812-CPR-1596

Efectis-2822-UKCA-CPR-0015