

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction products

Natural smoke and heat exhaust ventilator

for fire safety use in natural smoke and heat exhaust systems, with specification and performance as specified on page 2-11 in this certificate.

Product name: Pyromax Electrique

placed on the market under the name or trademark of

Skydôme

Entre deux villes
02270 Sons et Ronchères, France

and produced in the manufacturing plant
same as above

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in annex ZA of the standard

EN 12101-2:2003

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 2020-07-03 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Issued by notified body 0402.

The validity of this certificate can be verified at RISE homepage.



Martin Tillander
Director Product Certification

Specification

Dual purpose natural smoke and heat exhaust ventilator (NSHEV), intended for comfort ventilation as well as smoke and heat exhaust ventilation under fire conditions. The opening of the NSHEV is type B.

The upstand is made from galvanized steel and aluminium profiles with insulation made of expanded perlite. The frame of the flap is made from aluminium profiles and sheets with fillings of polycarbonate or aluminium with insulation of polystyrene and with or without an inside sheet made of polycarbonate. See drawing 5 for details.

The NSHEV is for roof mounting, and is tested with and without side wind.

The ventilator can also be mounted on an on-site fabricated frame with the height of minimum 310 mm, made of wood, concrete or steel, provided that the shape of the upstand corresponds to the tested samples. See drawing 1-4 for more information about the different upstand types.

Length (outer):	2175-3175 mm
Width (outer):	1375-2375 mm
Length (throat):	2000-3000 mm
Width (throat):	1200-2200 mm
Height vertical upstand:	310 mm or 410 mm
Installation angle:	Up to 20° inclination if hinge parallel to slope
Installation angle	Up to 3° inclination if hinge perpendicular to slope
Opening angle (fire opening):	90°
Opening angle (comfort opening):	20°
Opening mechanism:	Electrical actuator
Opening mechanism, supplier and type:	Actulux A/S, SA Power Mini/Mini+ twin, for voltage see table 1

Performance

Actuator	SA Power Mini/Mini+ twin	
	1	2
Number of actuators	1	2
Aerodynamic free area	See table 2-8	
Reliability	Re 1000	
Snow load	See table 1 for all sizes and actuators configurations	
Low ambient temperature	T(-15)	
Wind load	WL 1500	WL 3000
Resistance to heat	B300	

Material	Reaction to fire classification
Galvanized steel	A1
Aluminium	A1
Multiwalled polycarbonate (transparent)	B - s1, d0
Multiwalled polycarbonate (coloured)	B - s2, d0
Polystyrene	F
Expanded perlite	A1

Table 1: Snow load for flaps according to drawing 5

Inner width [mm]	Inner length [mm]	SL125	SL250	SL 500	SL 800	SL 1000	SL 1500
1200	2000	1	1	1	1	1	1
1200	2100	1	1	1	1	1	1
1200	2200	1	1	1	1	1	1
1200	2300	1	1	1	1	1	1
1200	2400	1	1	1	1	1	1
1200	2500	1	1	1	1	1	1
1200	2600	1	1	1	1	1	1
1200	2700	1	1	1	1	1	1
1200	2800	1	1	1	1	1	1
1200	2900	1	1	1	1	1	1
1200	3000	1	1	1	1	1	1
1400	1400	1	1	1	1	1	1
1400	1500	1	1	1	1	1	1
1400	1600	1	1	1	1	1	1
1400	1700	1	1	1	1	1	1
1400	1800	1	1	1	1	1	1
1400	1900	1	1	1	1	1	1
1400	2000	1	1	1	1	1	1
1400	2100	1	1	1	1	1	1
1400	2200	1	1	1	1	1	1
1400	2300	1	1	1	1	1	1
1400	2400	1	1	1	1	1	1
1400	2500	1	1	1	1	1	1
1400	2600	1	1	1	1	1	1
1400	2700	1	1	1	1	1	1
1400	2800	1	1	1	1	1	1
1400	2900	1	1	1	1	1	1
1400	3000	1	1	1	1	1	1
1500	1500	1	1	1	1	1	1
1500	1600	1	1	1	1	1	1
1500	1700	1	1	1	1	1	1
1500	1800	1	1	1	1	1	1
1500	1900	1	1	1	1	1	1
1500	2000	1	1	1	1	1	1
1500	2100	1	1	1	1	1	1
1500	2200	1	1	1	1	1	1
1500	2300	1	1	1	1	1	1
1500	2400	1	1	1	1	1	1
1500	2500	1	1	1	1	1	1
1500	2600	1	1	1	1	1	1
1500	2700	1	1	1	1	1	1
1500	2800	1	1	1	1	1	1
1500	2900	1	1	1	1	1	1

Table 1: Snow load for flaps according to drawing 5 (continued)

1500	3000	1	1	1	1	1	1
1600	1600	1	1	1	1	1	N/A
1600	1700	1	1	1	1	1	N/A
1600	1800	1	1	1	1	1	N/A
1600	1900	1	1	1	1	1	N/A
1600	2000	1	1	1	1	1	N/A
1600	2100	1	1	1	1	1	N/A
1600	2200	1	1	1	1	1	N/A
1600	2300	1	1	1	1	1	N/A
1600	2400	1	1	1	1	1	N/A
1600	2500	1	1	1	1	1	N/A
1600	2600	1	1	1	1	1	N/A
1600	2700	1	1	1	1	1	N/A
1600	2800	1	1	1	1	1	N/A
1600	2900	1	1	1	1	1	N/A
1600	3000	1	1	1	1	1	N/A
1800	1800	1	1	1	1	1	N/A
1800	1900	1	1	1	1	1	N/A
1800	2000	1	1	1	1	1	N/A
1800	2100	1	1	1	1	1	N/A
1800	2200	1	1	1	1	1	N/A
1800	2300	1	1	1	1	1	N/A
1800	2400	1	1	1	1	1	N/A
1800	2500	1	1	1	1	1	N/A
1800	2600	1	1	1	1	1	N/A
1800	2700	1	1	1	1	1	N/A
1800	2800	1	1	1	1	1	N/A
1800	2900	1	1	1	1	1	N/A
1800	3000	1	1	1	1	1	N/A
2000	2000	1	1	1	1	1	N/A
2000	2100	1	1	1	1	1	N/A
2000	2200	1	1	1	1	1	N/A
2000	2300	1	1	1	1	2	N/A
2000	2400	1	1	1	1	2	N/A
2000	2500	1	1	1	2	2	N/A
2000	2600	1	1	1	2	2	N/A
2000	2700	1	1	1	2	2	N/A
2000	2800	1	1	1	2	2	N/A
2000	2900	1	1	1	2	2	N/A
2000	3000	1	1	1	2	2	N/A
2200	2000	1	1	1	1	1	N/A
2200	2100	1	1	1	1	1	N/A
2200	2200	1	1	1	1	1	N/A
2200	2300	1	1	1	1	2	N/A

Table 1: Snow load for flaps according to drawing 5 (continued)

2200	2400	1	1	1	1	2	N/A
2200	2500	1	1	1	2	2	N/A
2200	2600	1	1	1	2	2	N/A
2200	2700	1	1	1	2	2	N/A
2200	2800	1	1	1	2	2	N/A
2200	2900	1	1	1	2	2	N/A
2200	3000	1	1	1	2	2	N/A

- 1 2X SA mini twin 2A/1A (24V/48V)
- 1 2X SA mini twin 4A/2A (24V/48V)
- 2 4X SA mini twin 4A/2A (24V/48V)

Table 2: Aerodynamic performance with straight upstand 310 mm, with or without safety grills
Without inside airduct, without deflectors

Length (mm)	Width (mm)	C_{v0} [-]	C_{vw} [-]	C_v [-]	A_a [m ²]
2000	1200	0.60	0.55	0.55	1.32
2500	1200	0.60	0.53	0.53	1.59
3000	1200	0.60	0.52	0.52	1.87
2000	1400	0.60	0.50	0.50	1.41
2500	1400	0.60	0.48	0.48	1.68
3000	1400	0.60	0.47	0.47	1.97
2000	1600	0.60	0.47	0.47	1.50
2500	1600	0.60	0.45	0.45	1.78
3000	1600	0.60	0.43	0.43	2.08
2000	1800	0.60	0.44	0.44	1.59
2500	1800	0.60	0.42	0.42	1.88
3000	1800	0.59	0.40	0.40	2.18
2000	2000	0.60	0.42	0.42	1.68
2500	2000	0.59	0.39	0.39	1.97
3000	2000	0.59	0.38	0.38	2.28

Table 3: Aerodynamic performance with straight upstand 310 mm, with or without safety grills
Without inside airduct, with deflectors 300 mm

Length (mm)	Width (mm)	C_{v0} [-]	C_{vw} [-]	C_v [-]	A_a [m ²]
2000	1200	0.58	0.96	0.58	1.39
2500	1200	0.59	0.90	0.59	1.78
3000	1200	0.60	0.84	0.60	2.16
2000	1400	0.59	0.92	0.59	1.66
2500	1400	0.61	0.86	0.61	2.12
3000	1400	0.61	0.80	0.61	2.58
2000	1600	0.61	0.89	0.61	1.94
2500	1600	0.62	0.83	0.62	2.47
3000	1600	0.62	0.77	0.62	2.98
2000	1800	0.61	0.85	0.61	2.21
2500	1800	0.62	0.79	0.62	2.79
3000	1800	0.62	0.73	0.62	3.35
2000	2000	0.62	0.81	0.62	2.48
2500	2000	0.62	0.75	0.62	3.10
3000	2000	0.62	0.69	0.62	3.72

Table 4: Aerodynamic performance with straight upstand 310 mm, with or without safety grills
With inside airduct, with deflectors 500 mm

Length (mm)	Width (mm)	C_{v0} [-]	C_{vw} [-]	C_v [-]	A_a [m ²]
2000	1200	0.63	0.95	0.63	1.51
2500	1200	0.66	0.90	0.66	1.98
3000	1200	0.68	0.85	0.68	2.45
2000	1400	0.67	0.91	0.67	1.86
2500	1400	0.68	0.86	0.68	2.38
3000	1400	0.68	0.85	0.68	2.86
2000	1600	0.68	0.87	0.68	2.18
2500	1600	0.68	0.82	0.68	2.72
3000	1600	0.68	0.85	0.68	3.28
2000	1800	0.68	0.83	0.68	2.45
2500	1800	0.68	0.82	0.68	3.07
3000	1800	0.69	0.85	0.69	3.71
2000	2000	0.68	0.79	0.68	2.72
2500	2000	0.69	0.82	0.69	3.43
3000	2000	0.69	0.85	0.69	4.14

Table 5: Aerodynamic values with skewed upstand 310 mm, with or without safety grills
Without inside airduct, without deflectors

Length (mm)	Width (mm)	C_{v0} [-]	C_{vw} [-]	C_v [-]	A_a [m ²]
2000	2000	0.59	0.39	0.39	1.56
2500	2000	0.61	0.38	0.38	1.90
3000	2000	0.63	0.37	0.37	2.22
2000	2200	0.59	0.38	0.38	1.67
2500	2200	0.61	0.37	0.37	2.04
3000	2200	0.63	0.36	0.36	2.38

Table 6: Aerodynamic values with skewed upstand 310 mm, with or without safety grills
With inside airduct, without deflector

Length (mm)	Width (mm)	C_{v0} [-]	C_{vw} [-]	C_v [-]	A_a [m ²]
2000	2000	0.65	0.38	0.38	1.52
2500	2000	0.66	0.38	0.38	1.90
3000	2000	0.66	0.37	0.37	2.22
2000	2200	0.66	0.37	0.37	1.63
2500	2200	0.66	0.37	0.37	2.04
3000	2200	0.66	0.37	0.37	2.44

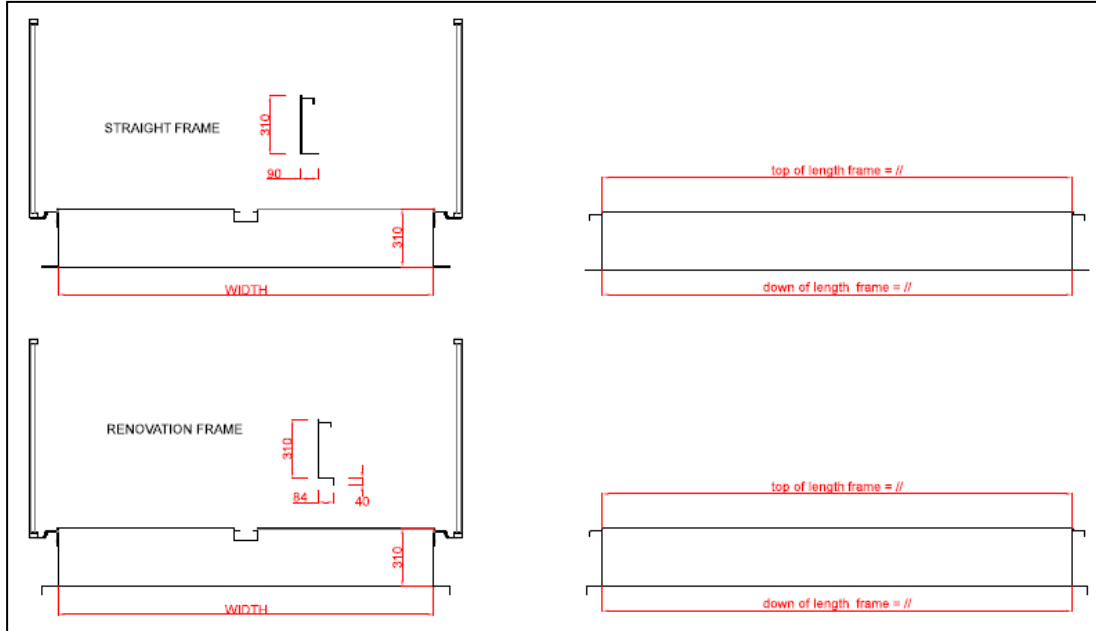
Table 7: Aerodynamic performance with straight upstand 410 mm

Length (mm)	Width (mm)	A _a [m ²] Without deflector, without inside airduct	A _a [m ²] With deflector 300 mm without inside airduct	A _a [m ²] With deflector 500 mm, with inside airduct
1200	2000	1.32	1.56	1.66
	2500	1.62	1.99	2.11
	3000	1.94	2.41	2.56
1400	2000	1.44	1.86	1.97
	2500	1.73	2.32	2.50
	3000	2.06	2.75	3.01
1600	2000	1.56	2.14	2.28
	2500	1.83	2.61	2.87
	3000	2.17	3.10	3.47
1800	2000	1.68	2.39	2.58
	2500	1.97	2.97	3.25
	3000	2.29	3.44	3.92
2000	2000	1.80	2.64	2.88
	2500	2.10	3.33	3.62
	3000	2.40	3.78	4.38

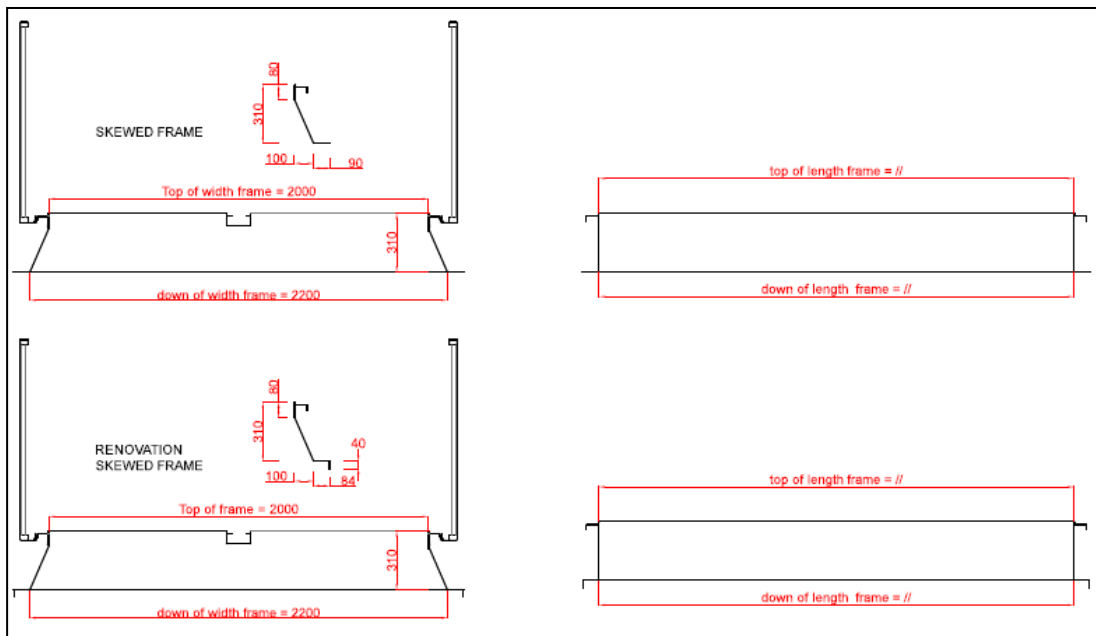
Table 8: Aerodynamic performance with Skewed upstand 410 mm

Length (m)	Width (m)	A _a [m ²] Without deflector, without inside airduct	A _a [m ²] With deflector 300 mm without inside airduct	A _a [m ²] With deflector 500 mm, with inside airduct
2200	2000	1.80	2.77	2.90
	2500	2.10	3.47	3.63
	3000	2.40	4.16	4.36

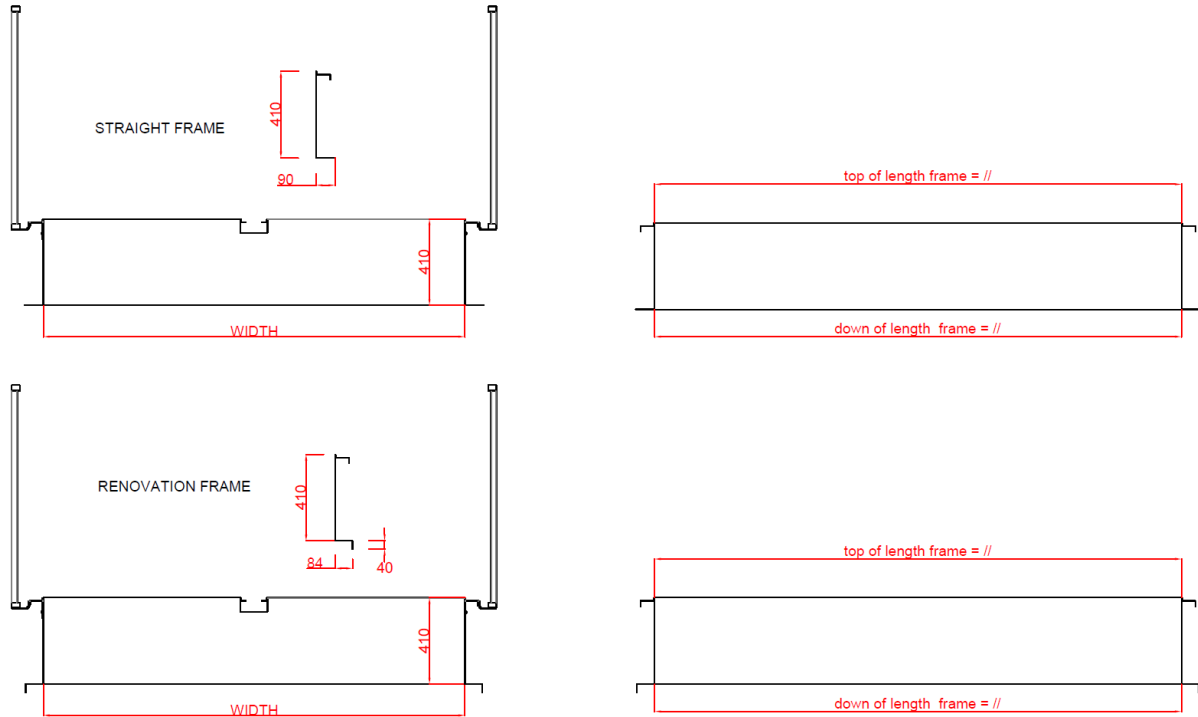
Drawing 1 straight upstand 310 mm



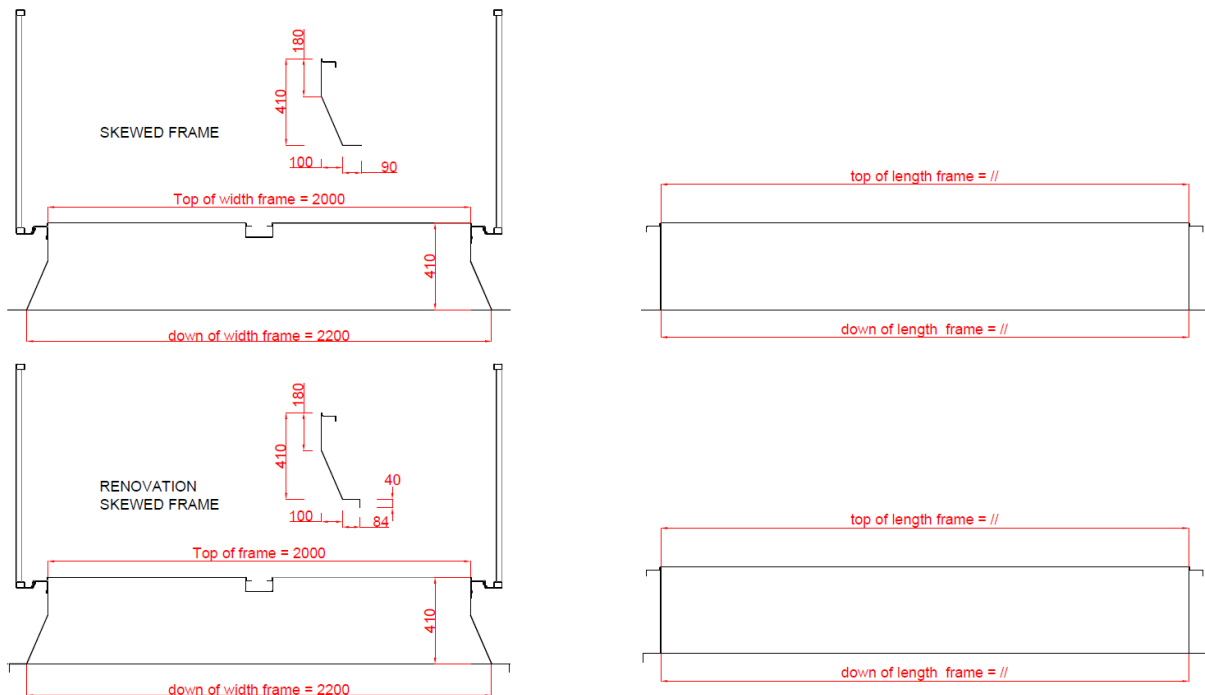
Drawing 2 skewed upstand 310 mm



Drawing 3 Straight upstand 410 mm



Drawing 4 Skewed upstand 410 mm



Drawing 5 Flaps design and material

