

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 product

Natural smoke and heat exhaust ventilator

for fire safety use in natural smoke and heat exhaust systems, with specifications and performances as specified on page 2-5 in this certificate.

Product name: Orion

placed on the market under the name or trademark of

Robertson Ventilation Industries (Pty) Ltd

102 – 105 Kestrel Place, Moddercrest Office Park, Modderfontein, 1609, Johannesburg, South Africa

and produced in the manufacturing plant

Helm Engineering; A division of Consolidated Steel Industries (Pty) Ltd, Cnr Quality and Barlow Road, Kempton Park, Isando, 1601, Johannesburg, South Africa

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 2015-09-29 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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.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

RISE project 6P02043. The validity of this certificate can be verified on our website.



Lennart Aronsson
Product Certification Manager



Martin Tillander
Project Manager

Specifications

Dual purpose NSHEV, intended for comfort ventilation as well as smoke and heat exhaust ventilation under fire conditions. The opening of the NSHEV is type B. Louvre type NSHEV, comprising upstand, base, body and blades.

All parts manufactured from either "ISQ 300" 0,58 mm thick sheet steel, galvanized and/or pre-coated. And/or "AZ150" sheet steel, 0,55 mm thick body and 0,75 mm thick base, zincal and/or pre-coated.

The NSHEV could be equipped with or without a 150 mm high up-stand if roof mounted, it could also be equipped with or without burglar bar and/or bird mesh if roof or wall mounted. The NSHEV could be equipped with or without 50 mm high wind deflectors if roof mounted.

Length and width:	See table 1 for roof mounted See table 2 for wall mounted
Installation angle:	Flat roof up to 15° inclination, wall mounted
Opening angle louvre blades:	81°
Opening mechanism:	24V Linear actuator or 24V spring return actuator
Opening mechanism, supplier and type:	XuZhou Enhancer Window Control Co. Ltd., ENCO-L100-600-150 Belimo Automation AG, SF24A

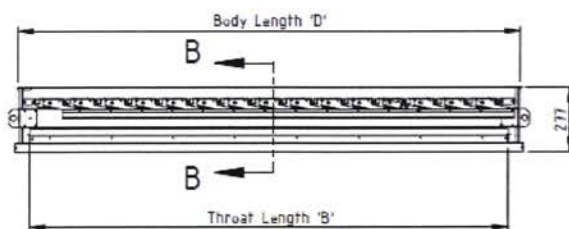
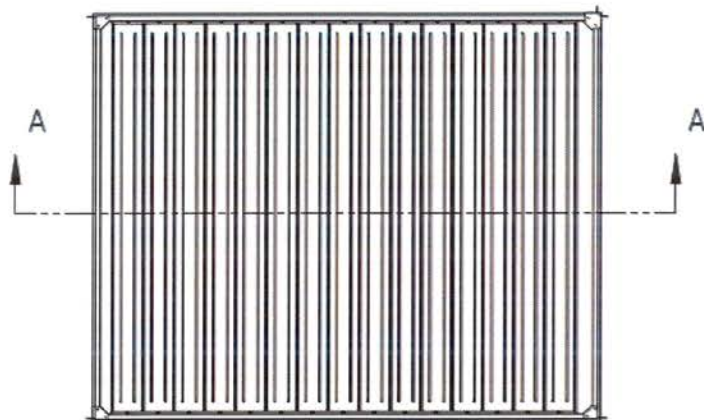
Performances

Aerodynamic free area:	See table 3 for roof mounted ventilator See table 4 for wall mounted ventilator
Reliability:	Re 100
Snow load:	SL 0
Low ambient temperature:	T(00)
Wind load:	WL 2 300
Resistance to heat:	B 300
Reaction to fire classification Steel:	A1

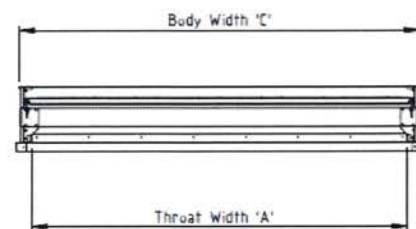


Table 1, dimensions for roof mounted NSHEV

Ventilator Code	Throat Width (mm) 'A'	Throat length (mm) 'B'	Body width (mm) 'C'	Body length (mm) 'D'
A10	1 316	1 394	1 420	1 503
A12		1 660		1 769
A14		1 926		2 035
A15		2 059		2 168
B10	1 616	1 394	1 720	1 503
B12		1 660		1 769
B14		1 926		2 035
B15		2 059		2 168



SECTION A-A

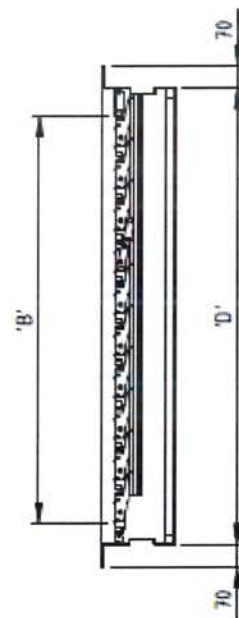
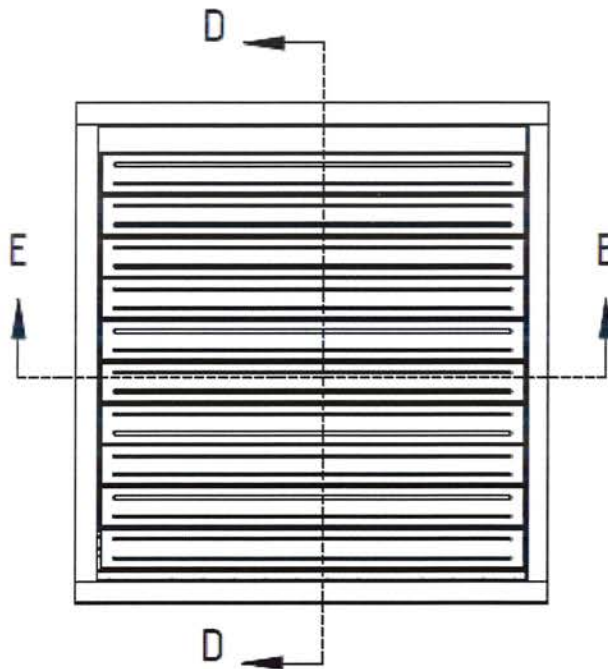


SECTION B-B

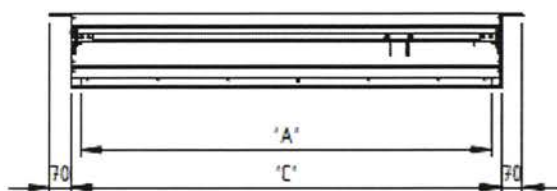


Table 2, dimensions for wall mounted NSHEV

Ventilator Code	Throat Width (mm) 'A'	Throat length (mm) 'B'	Body width (mm) 'C'	Body length (mm) 'D'
A10	1 320	1 305	1 383	1 458
A12		1 571		1 724
A14		1 837		1 990
A15		1 970		2 123
B10	1 620	1 305	1 683	1 458
B12		1 571		1 724
B14		1 837		1 990
B15		1 970		2 123



SECTION D-D



SECTION E-E

Table 3, C_v-values for roof mounted NSHEV, tested with and without side wind

Ventilator Code	C _v -value, without wind deflectors, without upstand	C _v -value, without wind deflectors, with upstand	C _v -value, with wind deflectors, without upstand	C _v -value, with wind deflectors, with upstand
A10	0,59	0,60	-	-
A12	0,59	0,60	-	-
A14	0,58	0,59	0,61	0,62
A15	0,57	0,58	0,62	0,63
B10	0,60	0,61	-	-
B12	0,60	0,61	-	-
B14	0,56	0,57	0,62	0,63
B15	0,55	0,56	0,63	0,64

In case of an installation of a burglar bar the above mentioned C_v-values are to be reduced by 4%.
In case of an installation of a bird mesh the above mentioned C_v-values are to be reduced by 13%.

Table 4, C_v-values for wall mounted NSHEV, tested without side wind only i.e. for use in walls only

Ventilator Code	C _v -value, without wind deflectors, without upstand
A10	0,59
A12	0,59
A14	0,58
A15	0,57
B10	0,60
B12	0,60
B14	0,56
B15	0,55

In case of an installation of a burglar bar the above mentioned C_v-values are to be reduced by 4%.
In case of an installation of a bird mesh the above mentioned C_v-values are to be reduced by 13%.

Calculation of aerodynamic free area

The aerodynamic free area is calculated according to the following formula: $A_a = C_v \times A_v$

A_a = aerodynamic free area

C_v = coefficient of discharge

A_v = geometric area of the ventilator (throat width x throat length)

