

Certificate of constancy of performance 0402-CPR-SC0856-18

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 2-17 in this certificate.

Product name: Wicona Wicline 65 EVO, Wicona Wicline 75 EVO, Wicona Wicline 75 TOP, Wicona Wicline 75 FP and Wicona Wicline 90SG

placed on the market under the name or trademark of

HS Hansen A/S

Bredgade 4 DK-6940 Lem St., Denmark

and produced in the manufacturing plant

HS Hansen A/S, Bredgade 4, DK-6940 Lem St., Denmark **Hansen Polska Sp.Z.o.o.**, Rudna Mała 47, P-36-060 Głogów Małopolski, Poland

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 2019-09-05 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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.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 on our website.

Johan Åkesson Product Certification Manager Martin Tillander Project Manager

Certificate 0402-CPR-SC0856-18 | issue 1 | 2019-09-05

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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 NSHEV has opening of type B. The NSHEV is not equipped with wind deflectors.

NSHEV consists of frame and sash made of aluminium profiles with insulated glass units, and is mounted as a part of glazed partitions or in a wall.

The glass units should be specified according to fire demand and performances in this certificate.

Height (throat)	See diagram 1-11 and table 1-5
Width (throat)	See diagram 1-11 and table 1-5
Maximum weight (opening part)	See diagram 1-11
Maximum area:	See diagram 1-11 and table 1-5
Installation angle:	Wall mounting
Opening mechanism	Electrical chain actuator
Number of opening mechanisms	1 for casement area up to 1,95 m ²
	2 for casement area up to $4,25 \text{ m}^2$
Opening mechanism types	WindowMaster International A/S, WMU 836-n EN, WMU 842-n EN,
	WMX 823-nxxxxx Ex
Locking motors	WindowMaster International A/S, WMB 801/802-EN,
	WMB 01M/02M-EN

Survey of products Produktübersicht	Sash profile numbe Flügelprofil-Nummer	rs Frame n Blendrahmen	Hinges Bänder
Tilt sash invards opening Kippflügel nach innen öffnend	WICLINE 65 EVO: 1916101 1916102 1916103 1916104 1916105 1916110 1916111 1916112 1916113 1916115 WICLINE 75 EVO: 1917101 1917101 1917102	1916001 1010346 1916002 1916076 1916003 1916004 1916005 1917001 1010346 1917002 1017076	6940267 0x 6940268 0x 6940269 0x 6940270 0x 6940285 0x 6940314 0x
k ^m ax. 1700 min. 425 (*) <i>optional</i> / wahlweise	191/103 191/104 1917105 1917110 1917111 1917112 1917113 1917115 WICLINE 75 TOP:	191/002 191/0/6 1917003 1910134 1917004 1917077 1917005 1910135 1917081 1917082 1917089	6940514 0x 6940515 0x 6940516 0x 6940519 0x
Turn sash inwards opening Drehflügel nach innen öffnend	1017101 1017111 1017102 1017112 1017103 1017113 1017104 1017105 WICLINE 75 FP: 1917146	1017001 1017050 1017003 1017077 1017004 1017081 1017005 1017090 1017006 1312356	
Imax. 1700 min. 425 (*) optional / wahlweise	1917147 1917115	1910148 1311073	

Map



Survey of products Produktübersicht	Sash profile numbers Flügelprofil-Nummern	Frame Blendrahmen	Hinges Bänder
Top-hung sash outwards opening Klappflügel nach außen öffnend	WICLINE 65 EVO: 1916161 1916163* WICLINE 75 EVO: 1917161 1917163*	1916093 1917093	Klappflügel-Band* Top-hung sash hinge* 6950073 0x 6950074 0x Nr./No. 6051871
R [™] ax. 1700 min. 425 (*) optional / wahlweise	(*) Only side hung sashes / Nur bei Drehflügel		
Italien style sash outwards Senk-Klappflügel nach außen öffnend	WICLINE 905G: 3030096	3030095	Senk-Klapp-Schere: Top-hung friction stay: SK1- 40 6050215 SK2- 50 6050216 SK3- 65 6050222 SK3-100 6050217 SK3-150 6050223 SK4-100 6050218 SK5-180 6050219

Performance

Aerodynamic free area: See table 1-5 Reliability: Re 500 Snow load: SL 0 Low ambient temperature: T(-05) Wind load: WL 1500 WL 3000 (Only for Wicona Wicline 65 EVO and Wicona Wicline 75 EVO with outward opening and a maximum area of 2 m^2). Resistance to heat: B 300 Reaction to fire: Е

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Diagram 1







Diagram 2







Diagram 3



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Diagram 4







Diagram 5







Diagram 6







Diagram 7







Diagram 8



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Diagram 9







Diagram 10







Diagram 11







Table 1, Opening, mounting, sizes and Aerodynamic free area (A_a) for inward opening Wicline 65 EVO, Wicline 75 EVO, Wicline 75 TOP and Wicline 75 FP

Opening and mounting Outer sash height Outer sash width Tilt sash/top hung sash, inward opening FAH = 500 mm - 2500 mm FAB = 400 mm - 2500 mm

Geometric area A_v overlapping sash (A_{v max} = 3,76 m²) A_v concealed sash (A_{v max} = 3,61 m²) Aerodynamic free area $\begin{array}{l} \mathsf{A_v} = \mathsf{RLH} \times \mathsf{RLB} \\ \mathsf{A_v} = \mathsf{RLH} \times \mathsf{RLB} = (\mathsf{FAH} - 60 \text{ mm}) \times (\mathsf{FAB} - 60 \text{ mm}) \\ \mathsf{A_v} = \mathsf{RLH} \times \mathsf{RLB} = (\mathsf{FAH} - 98 \text{ mm}) \times (\mathsf{FAB} - 98 \text{ mm}) \\ \mathsf{A_a} = \mathsf{C_v} \times \mathsf{A_v} = \mathsf{C_v} \times (\mathsf{FAH} - \mathsf{X}) \times (\mathsf{FAB} - \mathsf{X}) \end{array}$

C_v-values for different opening angles to calculations above:

each dimensione	discharge coefficient Cv								
	0,30	0,35	0,40	0,45	0,50	0,55	0,60	0,65	
FAB/FAH ≤ 0,5	13°	14°	15°	18°	23°	30°	38°	49°	
0,5 < FAB/FAH ≤ 1,5	18°	23°	28°	34°	40°	47°	56°	-	
FAB/FAH > 1,5	24°	29°	35°	4 1°	49°	58°	-	-	



Note: The distance between the upper edges of open flap of a tilt sash opening inwards and the ceiling has to be min. 500 mm.

The NSHEV is for wall mounting, tested without side wind only i.e. for use in walls only.

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Table 2, Opening, mounting, sizes and Aerodynamic free area (A_a) for outward opening Wicline 65 EVO, Wicline 75 EVO, Wicline 75 TOP and Wicline 75 FP

Opening and mounting	Tilt sash/top hung sash, outward opening
Outer sash height	FAH = 400 mm - 2500 mm
Outer sash width	FAB = 400 mm - 2500 mm
Geometric area	$A_v = RLH \times RLB$
A _v overlapping sash (A _{v max} = 3,51 m²)	$A_v = RLH \times RLB = (FAH - 60 \text{ mm}) \times (FAB - 60 \text{ mm})$
Aerodynamic free area	$A_a = C_v \times A_v = C_v \times (FAH - X) \times (FAB - X)$

C_v-values for different opening angles to calculations above:

aaah dimanajana	discharge coefficient C _V								
sash dimensions	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	
FAB/FAH ≤ 0.5	1 2 °	13°	14°	18°	25°	30°	54°	-	
0.5 < FAB/FAH ≤ 1.5	19°	24°	30°	38°	46°	56°	-	-	
FAB/FAH > 1.5	26°	31°	39°	47°	59°	-	-	-	

The NSHEV is for wall mounting, tested without side wind only i.e. for use in walls only.

Table 3, Opening, mounting, sizes and Aerodynamic free area (A_a) for inward opening Wicline 65 EVO, Wicline 75 EVO, Wicline 75 TOP and Wicline 75 FP

Opening and mounting	Turn sash, inwards opening
Outer sash height	FAH = 600 mm - 2500 mm
Outer sash width	FAB = 400 mm - 1600 mm
Geometric area	$A_v = RLH \times RLB$
A _v overlapping sash (A _{v max} = 3,76 m ²)	$A_v = RLH \times RLB = (FAH - 60 \text{ mm}) \times (FAB - 60 \text{ mm})$
A _v concealed sash (A _{v max} = 3,61 m ²)	$A_v = RLH \times RLB = (FAH - 98 \text{ mm}) \times (FAB - 98 \text{ mm})$
Aerodynamic free area	$A_a = C_v \times A_v = C_v \times (FAH - X) \times (FAB - X)$

 C_{v} -values for different opening angles to calculations above:

each dimonsions		discharge coefficient Cv								
sasii uimensions	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65		
FAB/FAH ≤ 0,7	24°	29°	35°	41°	49°	58°	-	-		
0,7 < FAB/FAH ≤ 2,0	18°	23°	28°	34°	40°	47°	56°	/		
FAB/FAH > 2,0	13°	14°	15°	18°	23°	30°	38°	49°		

The NSHEV is for wall mounting, tested without side wind only i.e. for use in walls only.

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Table 4, Opening, mounting, sizes and Aerodynamic free area (A_a) for outward opening Wicline 65 EVO, Wicline 75 EVO, Wicline 75 TOP and Wicline 75 FP

Opening and mounting	Turn sash, outward opening
Outer sash height	FAH = 600 mm - 2500 mm
Outer sash width	FAB = 400 mm - 1500 mm
Geometric area	$A_v = RLH \times RLB$
A _v overlapping sash (A _{v max} = 3,51 m²)	$A_v = RLH \times RLB = (FAH - 60 mm) \times (FAB - 60 mm)$
Aerodynamic free area	$A_a = C_v \times A_v = C_v \times (FAH - X) \times (FAB - X)$

C_v-values for different opening angles to calculations above:

aaah dimanajana	discharge coefficient C _V								
sash dimensions	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	
FAB/FAH ≤ 0.7	26°	31°	39°	47°	59°	-	-	-	
0.7 < FAB/FAH ≤ 2.0	19°	24°	30°	38°	46°	56°	-	-	
FAB/FAH > 2.0	12°	13°	14°	18°	25°	34°	54°	-	

The NSHEV is for wall mounting, tested without side wind only i.e. for use in walls only.

Table 5, Opening, mounting, sizes and Aerodynamic free area (A_a) for outward opening Wicline 90SG

Opening and mounting Sash-external height Sash-external width

 $A_v (A_{v max} = 3,44 m^2)$ Aerodynamic free area Lowering and projecting top-hung sash, outward opening FAH = 640 mm - 2500 mm FAB = 750 mm - 2000 mm

 $A_v = RLH \times RLB = (FAH - 80 mm) \times (FAB - 80 mm)$ $A_a = C_v \times A_v$

 C_v -values for different opening angles to calculations above:

	coefficient of discharge C _V / [/]								
dimension of the window sash	0,15	0,20	0,25	0,30	0,35	0,40	0,45	0,50	0,55
FAB/FAH < 0,4	1	/	10°	13°	15°	18°	21°	26°	42°
0,4 ≤ FAB/FAH < 1,0	1	10°	12°	15°	18°	21°	25°	31°	1
1,0 ≤ FAB/FAH < 1,5	1	12°	15°	17	21°	24°	29°	36°	1
FAB/FAH ≥ 1,5	11°	13°	16°	19°	23°	27°	32°	39°	/

The NSHEV is for wall mounting, tested without side wind only i.e. for use in walls only.

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