

Certificate

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Certificate No: 53355/2 Ed 2 Issue No: 1 Date of issue: 18 December 2009

This certificate supersedes 53355/2, issued 22 September 2009. See Page 6 for details

This is to certify that

BSRIA Limited

Has tested a sample of the product described below in accordance with the test methods contained within EN 13030 : 2001 and has determined the item met the detailed classification shown on pages 3, 4 and 5 of this certificate. For further details of the test item see Page 2 of this certificate

Manufacturer/Agent	Renson Projects Maalbeekstraat 6 8790 Waregem Belgium
Product	Renson Louvre L.066V
Test location	BSRIA Ltd Old Bracknell Lane West Bracknell Berkshire, RG12 7AH
Date of test	25 August to 17 September 2009
Expiry date	22 September 2012
Test engineer	M Roper/ A Coulson
Quality approved	Phil Stonard Laboratory Manager Testing & Certification

This certificate must not be reproduced except in full without the written approval of an executive director of BSRIA. It is only intended to be used within the context described in the text.

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TEST ITEM INFORMATION

Contract	53355A
Date	25/08/2009
Manufacturer	Renson
Louvre Model	L.066V
Material	Aluminium
Painted	No
Blade Height	1010 mm
Blade Width	1000 mm
Blade Depth	65 mm
Frame Depth	85 mm
No.of Blades	15
Blade Pitch	66 mm
Blade Angle	45 Degrees
No.of Banks	1
Guard Type	Bird
Guard Spacing	8
Side Channels	No
Water Drip Tray	Yes (13 mm Deep)
Blade Orientation	Horizontal



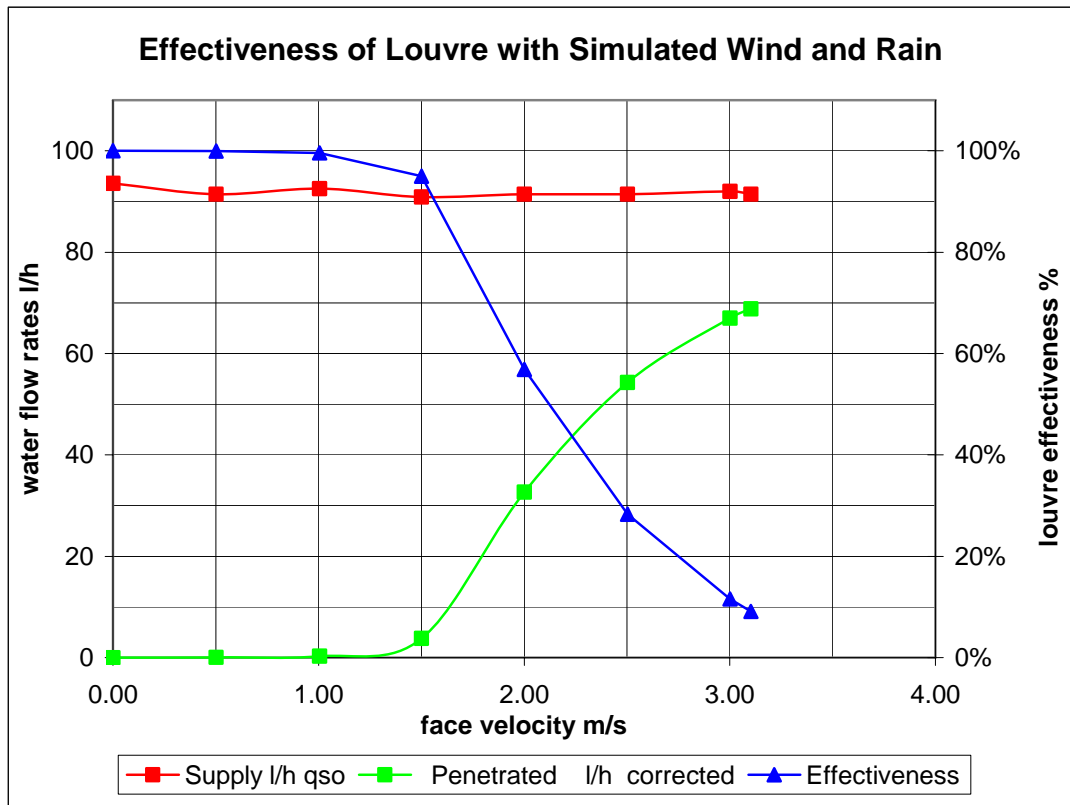
WATER PENETRATION

MANUFACTURER Renson
 MODEL L.066V

Date 14/08/2009
 Contract 53355A

Simulated rainfall 75 mm/hr
 Wind speed 13.0 m/s
 louvre height 1010 mm
 louvre width 1000 mm
 louvre area 1.010 m²

VENTILATION RATE		WATER FLOW RATES		Effectiveness	Class
Volume m ³ /s	Velocity m/s	Supply l/h	Penetrated l/h		
0.00	0.00	93.6	0.0	100.0%	A
0.51	0.50	91.4	0.0	99.9%	A
1.01	1.00	92.5	0.3	99.6%	A
1.52	1.50	90.9	3.8	95.0%	B
2.02	2.00	91.4	32.7	56.9%	D
2.53	2.50	91.4	54.3	28.3%	D
3.03	3.00	92.0	67.0	11.6%	D
3.13	3.10	91.4	68.8	9.1%	D



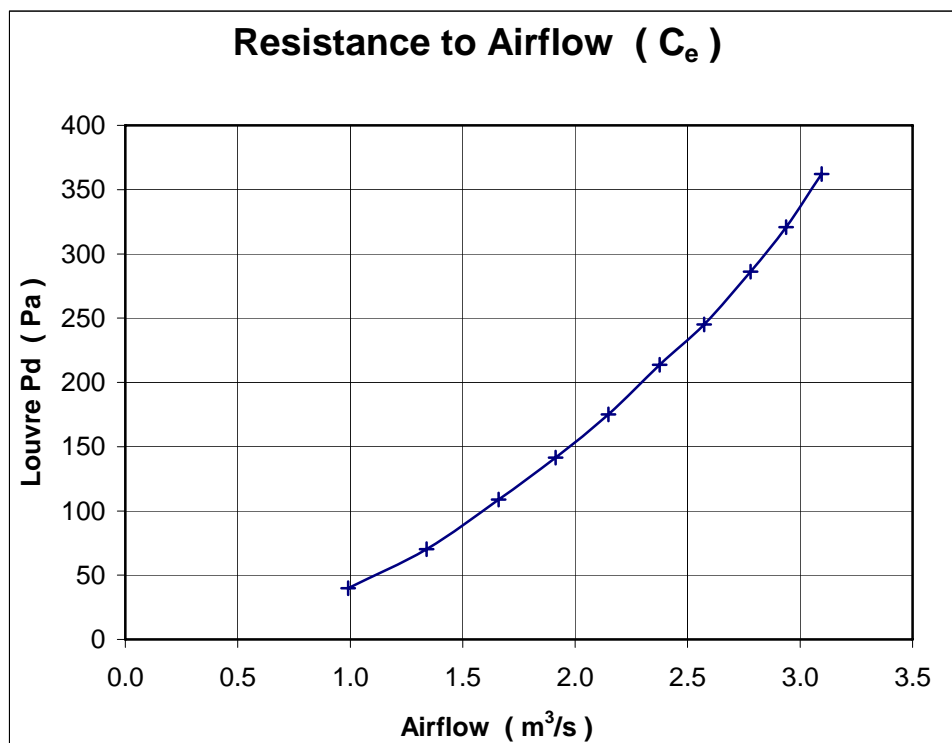
ENTRY LOSS COEFFICIENT

MANUFACTURER Renson
 MODEL L.066V

Date 26/08/2009
 Contract 53355A

air temperature 19.8 °C louvre height 1010 mm
 barometer 1002 mbar louvre width 1000 mm
 air density 1.187 kg/m³ louvre area 1.010 m²

louvre pd Pascals	louvre face velocity		air flow rate		coefficient C _e
	m/s	test m ³ /s	theoretical m ³ /s		
39.9	0.98	0.990	8.282	0.120	
70.3	1.33	1.339	10.993	0.122	
108.8	1.64	1.660	13.676	0.121	
141.4	1.89	1.913	15.591	0.123	
175.2	2.13	2.148	17.355	0.124	
213.7	2.35	2.376	19.167	0.124	
245.1	2.55	2.574	20.527	0.125	
286.3	2.75	2.779	22.185	0.125	
320.8	2.91	2.938	23.484	0.125	
362.1	3.06	3.095	24.950	0.124	
mean C _e				0.123	
Class				4	



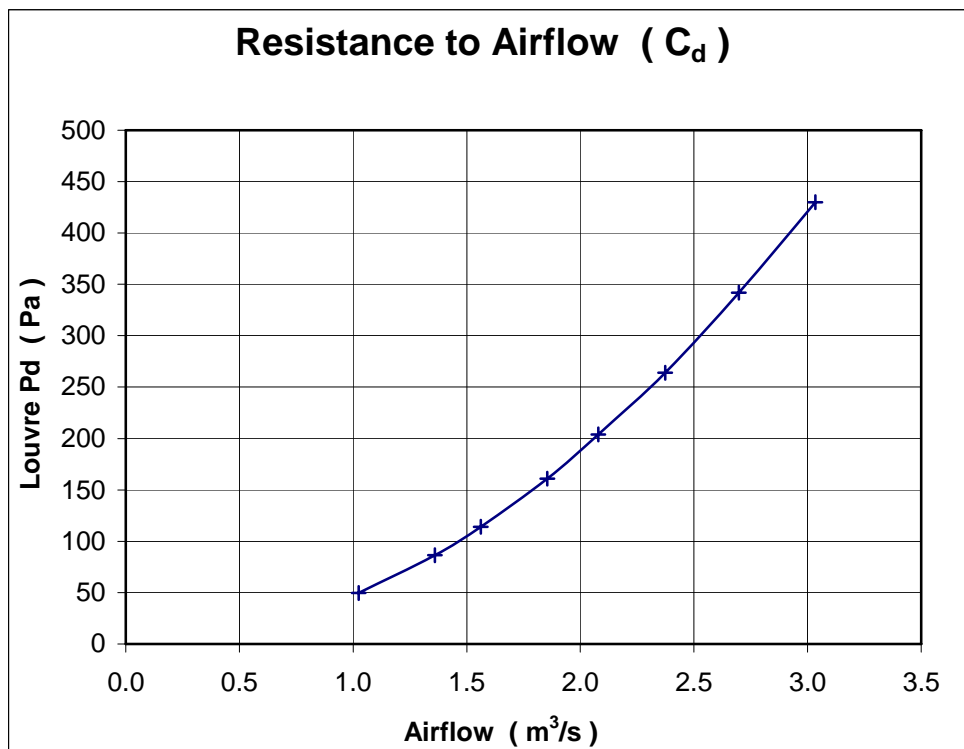
DISCHARGE LOSS COEFFICIENT

MANUFACTURER Renson
 MODEL L.066V

Date 14/08/2009
 Contract 53355A

air temperature 18.9 °C louvre height 1010 mm
 barometer 1014 mbar louvre width 1000 mm
 air density 1.205 kg/m³ louvre area 1.010 m²

louvre pd Pascals	louvre face velocity	air flow rate		coefficient C _d
	m/s	test m ³ /s	theoretical m ³ /s	
49.5	1.01	1.025	9.156	0.112
86.3	1.35	1.361	12.089	0.113
114.0	1.55	1.561	13.895	0.112
161.0	1.84	1.854	16.512	0.112
204.0	2.06	2.079	18.587	0.112
264.0	2.35	2.373	21.144	0.112
342.0	2.67	2.697	24.066	0.112
430.0	3.00	3.034	26.985	0.112
mean C _d				0.112
Class				4



CLASSIFICATION OF WEATHER LOUVRES

Weather louvres shall be classified by their ability to reject simulated rain.

Penetration Classification

Table 1 shows the different classifications based on the maximum simulated rain penetration per square metre of louvre. The classification is determined in accordance with section 8 of EN 13030:2001.

Water penetration rating at a given louvre face velocity is determined by the water penetration while the louvre is subjected to a 13 ms^{-1} simulated wind velocity and a simulated rain fall at the nominal rate.

Table 1 Penetration classification

Class	Effectiveness	Maximum allowed penetration of simulated rain $\text{l.h}^{-1}.\text{m}^{-2}$
A	1 TO 0,99	0,75
B	0,989 TO 0,95	3,75
C	0,949 TO 0,80	15,0
D	Below 0,8	Greater than 15,0

These classifications apply to various core velocities.

Discharge Loss Coefficient

The discharge loss coefficient given in Table 2, shall be determined in accordance with section 7.2 of test standard EN13030:2001.

Table 2 Discharge loss coefficient classification

Class	Discharge Loss Coefficient
1	0,4 and above
2	0,3 to 0,399
3	0,2 to 0,299
4	0,199 and below

(Note: The above also applies to entry loss coefficient)

Changes From Edition 1 of this Certificate

In Edition 1 of this certificate, the water penetration class of the louvre at a velocity of 1.5 m/s, shown on page 3, was incorrectly given as Class C. This has been corrected to Class B. On page 5 of the certificate, the notation “Ce” was used instead of “Cd” in two places in the results table. These have been corrected to state Cd.