

Certificate

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Certificate No: 52874/1

Issue No: 1

Date of issue: 6 March 2009

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 : 2002 and have determined the item met the detailed classification shown on pages 3 and 4 of this certificate. For further details of the test item see Page 2 of this certificate

Manufacturer/Agent	Emtec Enterprise House Blyth Road Hayes Middlesex UB3 1DD
Product	WLAC100DP(AL) double pass weather louvre
Test location	BSRIA Old Bracknell West Bracknell Berkshire RG12 7AH
Date of test	26 February to 2 March 2009
Expiry date	6 March 2012
Test engineer	M Roper / M Evans
Quality approved	Phil Stonard Principal Engineer MicroClimate & Test

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	FS0052874A
Date	26/02/2009
Manufacturer	Emtec
Louvre Model	WLAC100DP(AL)
Material	Aluminium
Painted	No
Blade Height	963 mm
Blade Width	1082 mm
Blade Depth	90 mm
Frame Depth	330 mm
No.of Blades	19
Blade Pitch	50 mm
Blade Angle	45 Degrees
No.of Banks	2
Guard Type	Bird
Guard Spacing	30
Side Channels	No
Water Drip Tray	Yes (200mm depth)
Blade Orientation	Horizontal



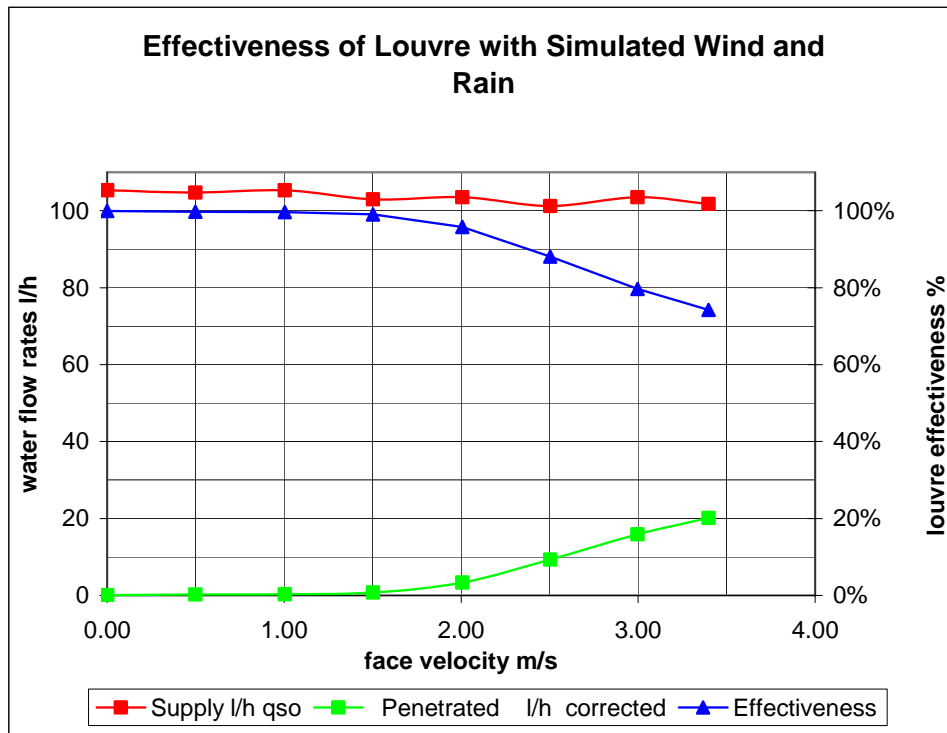
WATER PENETRATION

MANUFACTURER Emtec
 MODEL WLAC100DP(AL)

Date 26/02/2009
 Contract FS0052874A

Simulated rainfall 75 mm/hr
 Wind speed 13.0 m/s
 louvre height 963 mm
 louvre width 1082 mm
 louvre area 1.042 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	105.3	0.1	99.9%	A
0.52	0.50	104.7	0.2	99.7%	A
1.05	1.00	105.3	0.3	99.6%	A
1.56	1.50	103.0	0.8	99.0%	A
2.09	2.01	103.5	3.3	95.8%	B
2.61	2.50	101.2	9.3	88.1%	C
3.12	3.00	103.5	15.9	79.7%	D
3.54	3.40	101.8	20.1	74.2%	D



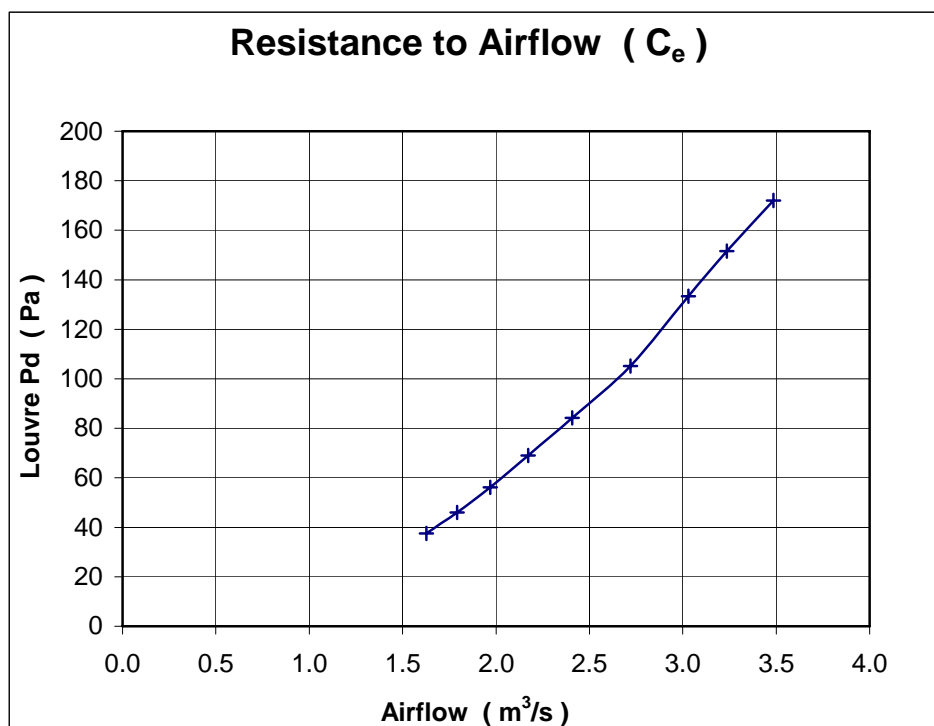
ENTRY LOSS COEFFICIENT

MANUFACTURER Emtec
 MODEL WLAC100DP(AL)

Date 26/02/2009
 Contract FS0052874A

air temperature 14 °C louvre height 963 mm
 barometer 1016 mbar louvre width 1082 mm
 air density 1.227 kg/m³ louvre area 1.042 m²

louvre pd Pascals	louvre face velocity	air flow rate		coefficient C _e
	m/s	test m ³ /s	theoretical m ³ /s	
37.6	1.56	1.627	8.154	0.200
46.1	1.72	1.791	9.028	0.198
56.2	1.89	1.970	9.968	0.198
69.0	2.08	2.172	11.051	0.197
84.2	2.31	2.407	12.204	0.197
105.2	2.61	2.720	13.640	0.199
133.4	2.91	3.030	15.360	0.197
151.6	3.11	3.235	16.379	0.198
172.1	3.35	3.485	17.450	0.200
mean C _e				0.198
Class				4



CLASSIFICATION OF WEATHER LOUVRES

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

Penetration Classification

Table 1 shows difference classifications based on the maximum simulated rain penetration per square metre of louvre. The effectiveness 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 6.2.4.

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)