

Certificate

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Certificate No: 53276/1

Issue No: 1

Date of issue: 22 July 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 : 2001 and has 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	ALU+ LTD Unit 1 Maguire Industrial Estate 219 Torrington Avenue Coventry CV4 9AP
Product	SLS34
Test location	BSRIA Old Bracknell West Bracknell Berkshire RG12 7AH
Date of test	30 June 2009
Expiry date	22 July 2012
Test engineer	Andrew 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	53276A
Date	30/06/2009
Manufacturer	ALU+ LTD
Louvre Model	SLS34
Material	Aluminium
Painted	No
Blade Height	929 mm
Blade Width	948 mm
Blade Depth	20 mm
Frame Depth	37 mm
No.of Blades	27
Blade Pitch	35 mm
Blade Angle	45 Degrees
No.of Banks	1
Guard Type	Insect
Guard Spacing	37
Side Channels	No
Water Drip Tray	Yes
Blade Orientation	Horizontal



WATER PENETRATION

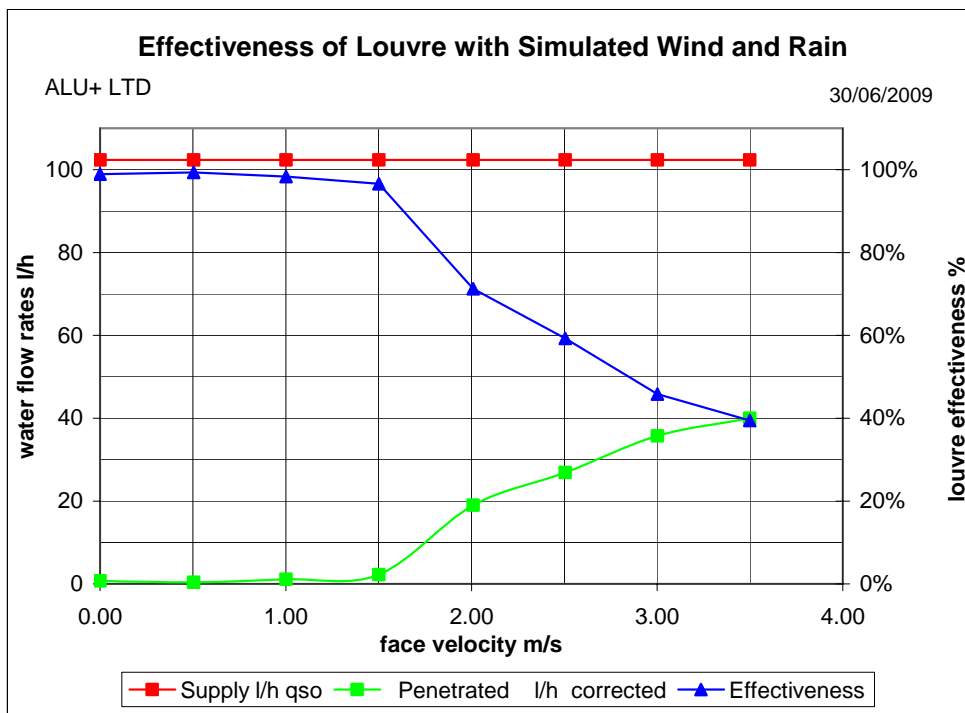
Certification test

MANUFACTURER ALU+ LTD
MODEL SLS34

Date 30/06/2009
Contract 53276A

Simulated rainfall 75 mm/hr
Wind speed 13.0 m/s
louvre height 929 mm
louvre width 948 mm
louvre area 0.881 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	102.4	0.7	98.9%	B
0.44	0.50	102.4	0.4	99.4%	A
0.88	1.00	102.4	1.1	98.3%	B
1.32	1.50	102.4	2.2	96.6%	B
1.77	2.01	102.4	19.0	71.2%	D
2.21	2.51	102.4	26.9	59.2%	D
2.64	3.00	102.4	35.8	45.8%	D
3.08	3.50	102.4	40.0	39.4%	D



ENTRY LOSS COEFFICIENT

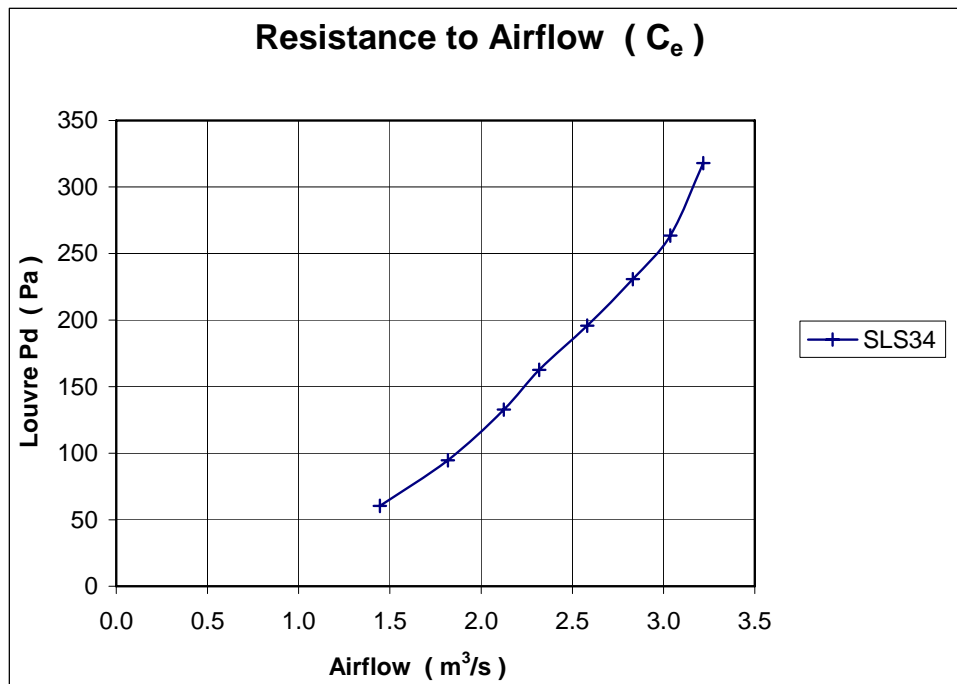
Certification test

MANUFACTURER ALU+ LTD
MODEL SLS34

Date 30/06/2009
Contract 53276A

air temperature	29.9 °C	louvre height	929 mm
barometer	1011 mbar	louvre width	948 mm
air density	1.158 kg/m ³	louvre area	0.881 m ²

louvre pd Pascals	louvre face velocity	air flow rate		coefficient C _e
	m/s	test m ³ /s	theoretical m ³ /s	
60.5	1.64	1.445	9.004	0.161
94.8	2.06	1.818	11.271	0.161
132.7	2.41	2.124	13.335	0.159
162.6	2.63	2.318	14.762	0.157
195.9	2.93	2.582	16.203	0.159
230.8	3.22	2.832	17.587	0.161
263.4	3.45	3.036	18.788	0.162
317.9	3.65	3.217	20.640	0.156
mean C _e				0.159
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 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)