

Certificate

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Certificate No: 53317/3

Issue No: 1

Date of issue: 11 August 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 Antamex International Inc
210 Great Gulf Drive
Concord
Ontario
L4K 5W1
Canada

Product L402

Test location BSRIA Ltd
Old Bracknell Lane West
Bracknell
Berkshire, RG12 7AH

Date of test 5 to 6 August 2009

Expiry date 11 August 2012

Test engineer M Roper

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	53317
Date	04/08/2009
Manufacturer	Antamex International Inc
Louvre Model	L402
Material	Aluminium
Painted	No
Blade Height	998 mm
Blade Width	969 mm
Blade Depth	101 mm
Frame Depth	103 mm
No. of Blades	12
Blade Pitch	80 mm
Blade Angle	45 Degrees
No. of Banks	1
Guard Type	None
Guard Spacing	N/A
Side Channels	Yes
Water Drip Tray	Yes (94mm)
Blade Orientation	Horizontal



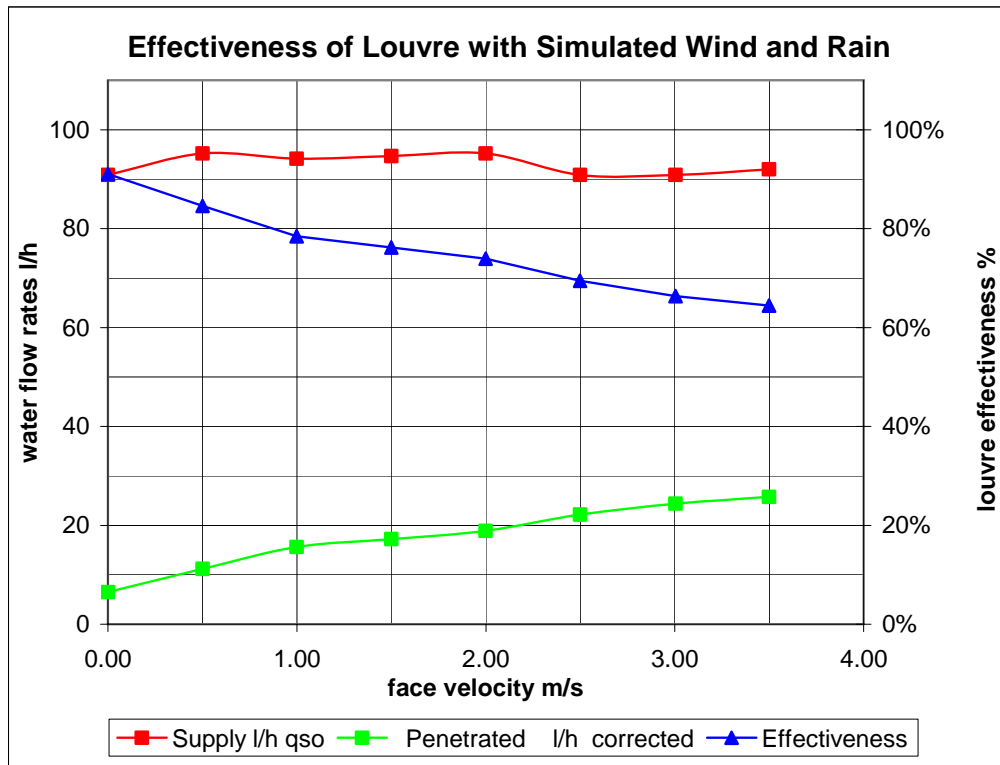
WATER PENETRATION

MANUFACTURER Antamex International Inc
 MODEL L402

Date 04/08/2009
 Contract 53317

Simulated rainfall 75 mm/hr
 Wind speed 13.0 m/s
 louvre height 998 mm
 louvre width 969 mm
 louvre area 0.967 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	90.9	6.5	91.0%	C
0.48	0.50	95.2	11.2	84.6%	C
0.97	1.00	94.1	15.6	78.5%	D
1.45	1.50	94.7	17.3	76.2%	D
1.93	2.00	95.2	18.9	74.0%	D
2.42	2.50	90.9	22.2	69.4%	D
2.91	3.00	90.9	24.4	66.4%	D
3.38	3.50	92.0	25.8	64.5%	D



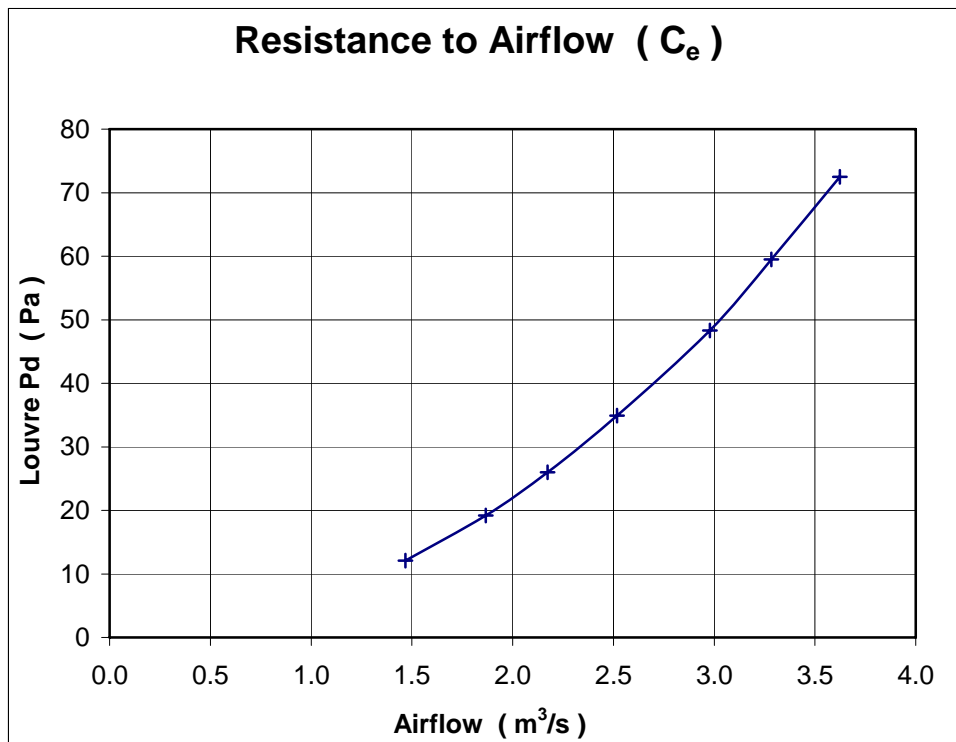
ENTRY LOSS COEFFICIENT

MANUFACTURER Antamex International Inc
 MODEL L402

Date 06/08/2009
 Contract 53317

air temperature 21.6 °C louvre height 998 mm
 barometer 1011 mbar louvre width 969 mm
 air density 1.190 kg/m³ louvre area 0.967 m²

louvres pd Pascals	louvres face velocity	air flow rate		coefficient C _e
	m/s	test m ³ /s	theoretical m ³ /s	
12.1	1.52	1.468	4.360	0.337
19.2	1.93	1.866	5.493	0.340
26.0	2.25	2.173	6.392	0.340
34.9	2.60	2.518	7.405	0.340
48.3	3.08	2.978	8.712	0.342
59.5	3.40	3.283	9.669	0.340
72.5	3.75	3.624	10.673	0.340
mean C _e				0.340
Class				2



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)