

WEATHER LOUVRE TEST

448D

Carried out for
Renson Ventilation NV
[Report 107939/2 Final](#)

Compiled by Daniel Hernandez
04 March 2026



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Weather Louvre Test

448D

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Contract: Report 107939/2 Final

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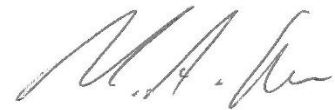
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QUALITY ASSURANCE

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1 INTRODUCTION

This report concerns tests conducted on a louvre to determine the Rainwater Penetration and the Pressure Drop versus Airflow Curves, with the associated Coefficient of Entry and Coefficient of Discharge, using the test methods contained within BS EN 13030:2001. It should be noted that BS EN 13030:2001 simply provides a method for testing and rating louvre samples, there are no minimum permitted values or recommendations for louvre performance.

Items received for test

Test Item	BSRIA ID
448D	107939/A2

1.1 TEST ITEM INFORMATION

Contract	107939
Date	11/12/2025
Manufacturer	Renson
Louvre Model	448D
Material	Aluminium
Painted	Yes
Core Area Height	848
Core Area Width	970
Blade Pack Depth	67
Frame Depth	87
No. of Blades	5
Blade Pitch	150
Blade Angle	45°
No. of Banks	1
Guard Type	Insect
Guard Spacing	15
Side Channels	No
Water Drip Tray	No
Blade Orientation	Horizontal

Note: Weather louvre core area - product of the minimum height H and minimum width W of the front opening in the weather louvre assembly with the louvre blades removed.

Blade Pack Depth refers to the distance from front of first bank to rear of last bank.

All measurements are of the physical sample tested in this report and done to the best of our ability where possible, some measurements may not be possible due to access within the test sample. For true measurements refer to the manufacturer and/or technical drawings if supplied.

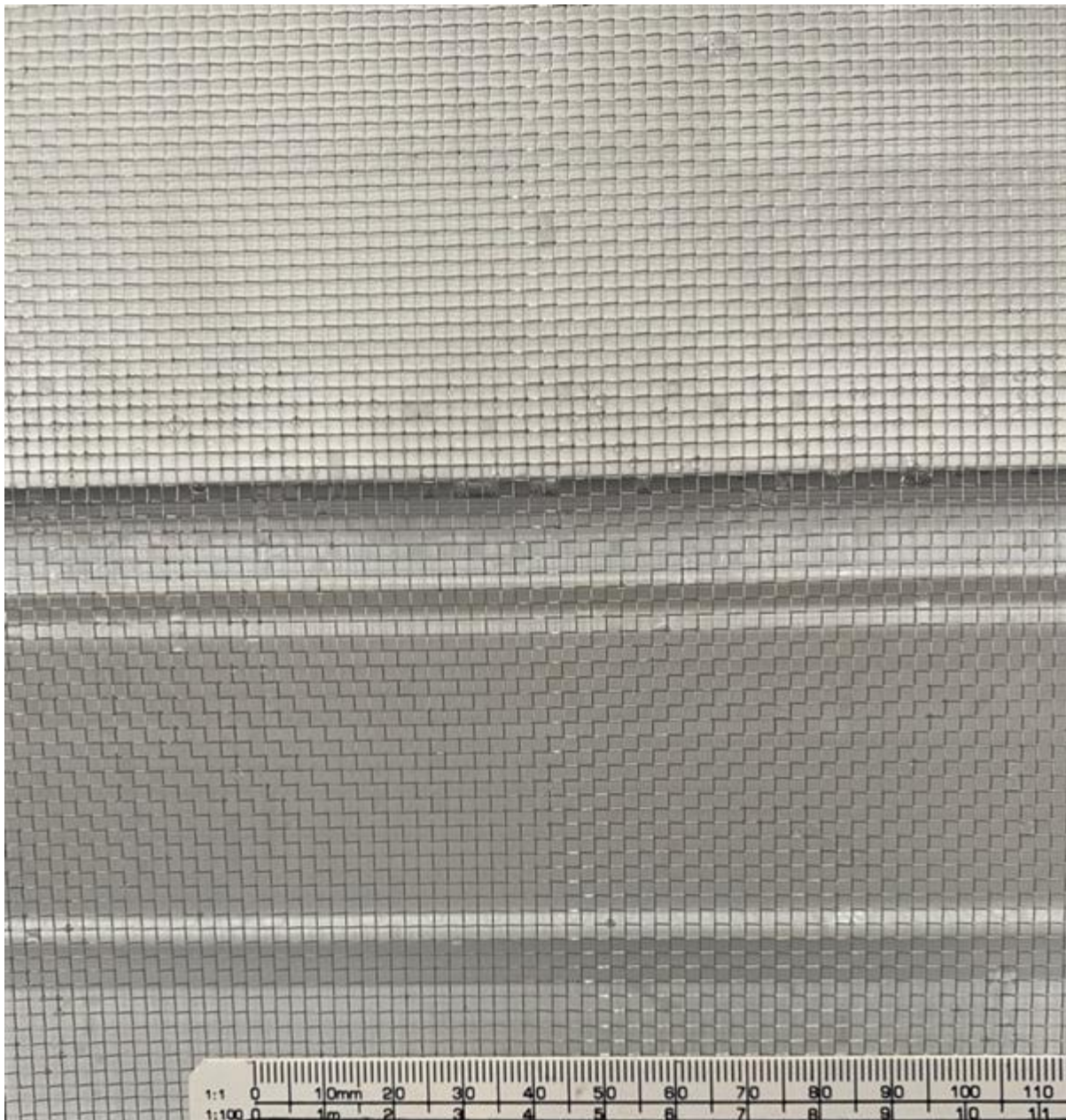
Figure 1 Test item 107939A2 (front)



Figure 2 Test item 107939A2 (rear)

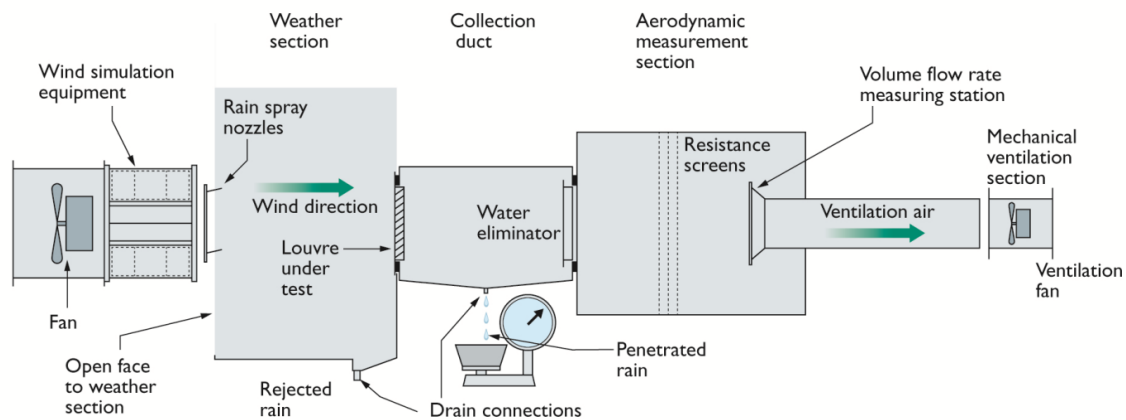


Figure 3 Test item 107939A2 (close-up of guard)



2 TEST METHOD

A schematic representation of the rig used during testing



The test comprises of two parts:

2.1 WATER PENETRATION

The weather louvre is subjected to fan driven wind at a speed of 13 m/s and water sprayed as rainfall at a rate of 75 l/h (+10% / -0%). In addition to the simulated wind and rain, air is drawn through the louvre at various set velocities (0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 and 3.5 m/s). Each test is preceded by a suitable 'pre-test' soak which is typically around 30 minutes. Each test is run until the results become stable, and in any case, for a minimum of 30 minutes. The penetrated water is collected in the collection duct and is measured and recorded against time elapsed. A range of measurements are taken to give the characteristic curve for the test louvre.

2.2 PRESSURE DROP

For this test, the Aerodynamic Measuring Section (AMS) is separated from the main rig. The louvre is then mounted in the upstream opening of the AMS.

Pressure tappings in the plenum walls of the AMS allow measurement of the static pressure within the plenum during testing. The airflow volume is calculated from the differential pressure at the measuring cones. The plenum has a set of settling screens within to produce even flow through the cones and therefore gives an accurate reading of the total volume. By adjusting the fan speed, the total airflow through the system varies and therefore changes the pressure on the louvre under test. A range of measurements are taken to give the characteristic curve for the test louvre.

2.3 TEST EQUIPMENT USED

Test equipment	BSRIA ID	Calibration Expiry Date
Airflow cones	364	20-12-26
Fan	484	04-02-27
Digital Pressure Gauge (CPG2400)	120663	23-05-26
Micromanometer (FCO510)	116110	14-03-26
Temperature (PRT)	2811	13-08-26
Barometric Pressure	881	17-07-26
Scales	7012	12-01-27
Flow meter	1688	8-04-26

3 RESULTS

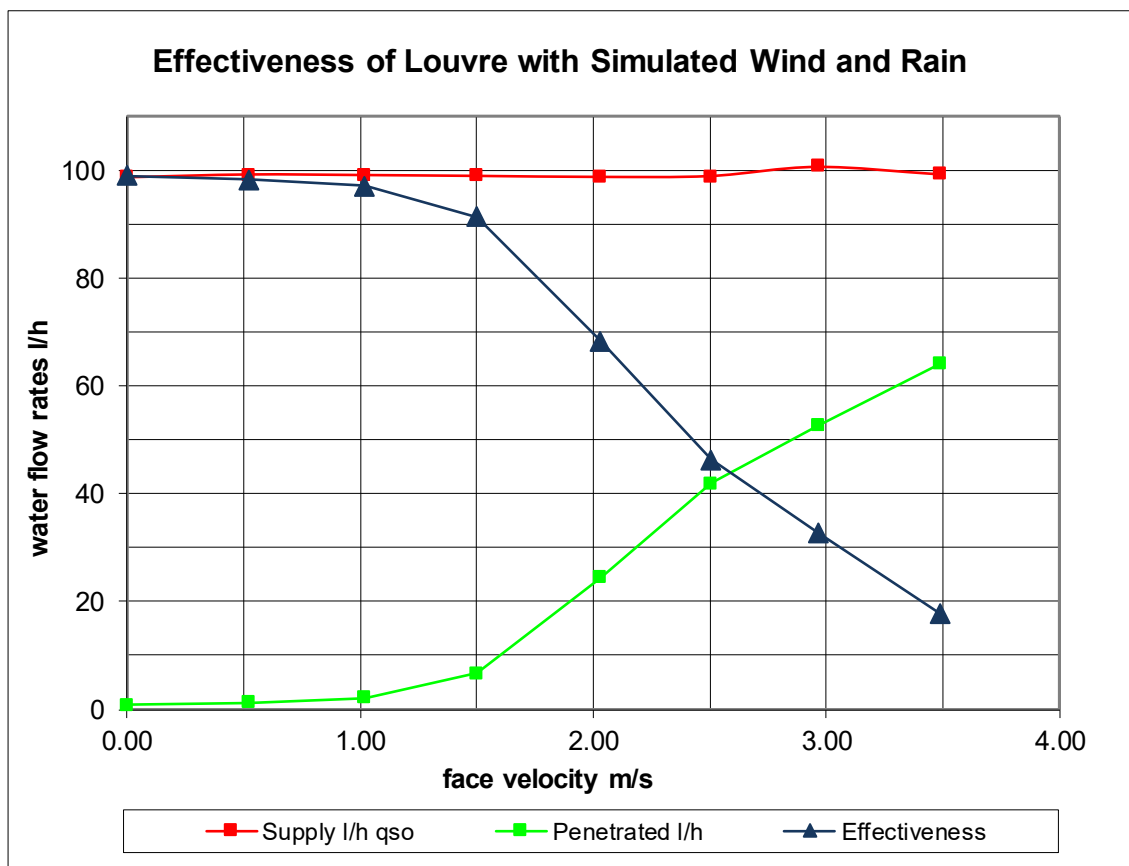
3.1 RAINWATER PENETRATION

Manufacturer Renson
Model 448D

Date 20/02/2026
Contract 107939

Simulated Rainfall	75 (+10% / -0%)	mm/hr	Core Area Height	848	mm
Wind Speed	13 (+/-10%)	m/s	Core Area Width	970	mm
			Core Area Area	0.823	m ²

Ventilation Rate		Water Flow Rates		Effectiveness %	Class
Volume m ³ /s	Velocity m/s	Supply l/h	Penetrated l/h		
0.00	0.00	98.7	0.8	99.0	A
0.43	0.52	99.3	1.3	98.3	B
0.84	1.02	99.1	2.2	97.1	B
1.23	1.50	99.0	6.7	91.4	C
1.67	2.03	98.8	24.4	68.4	D
2.06	2.50	98.9	41.9	46.4	D
2.44	2.96	100.8	52.6	32.8	D
2.87	3.49	99.3	64.1	17.8	D



3.2 COEFFICIENT OF ENTRY

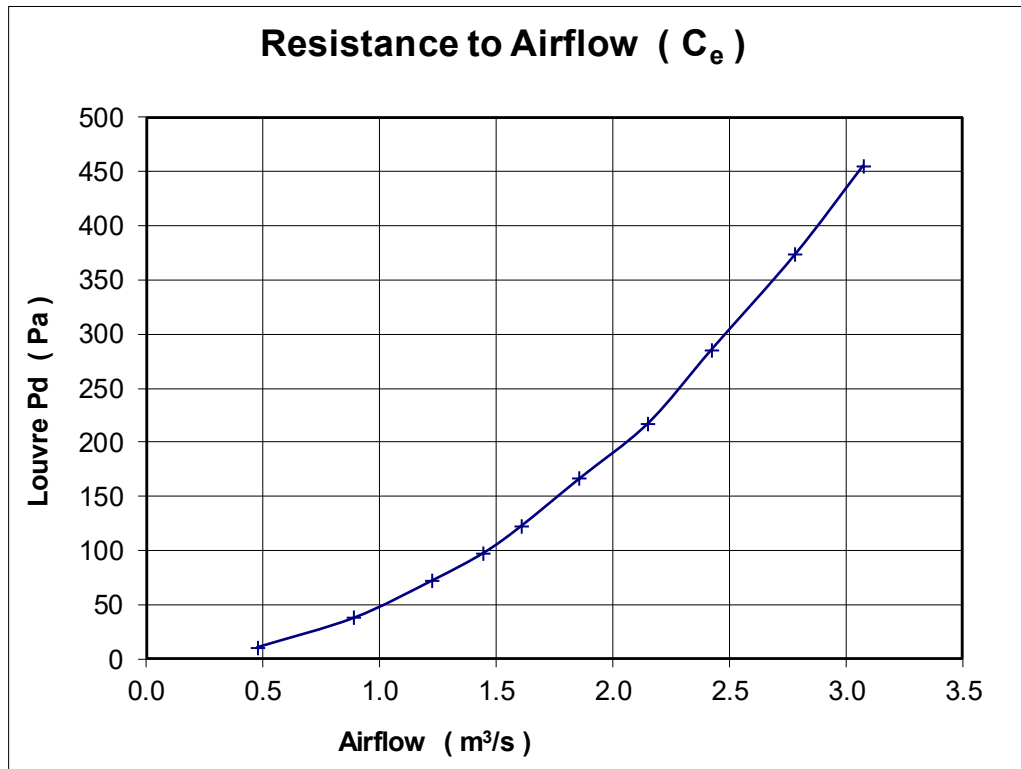
Manufacturer Renson
Model 448D

Date 11/12/2025
Contract 107939

Air Temperature 11.1 °C
Barometer 1010.0 mbar
Air Density 1.233 kg/m³

Core Area Height 848 mm
Core Area Width 970 mm
Core Area Area 0.823 m²

Louvre p.d. Pa	Louvre Face Velocity	Air Flow Rate		Coefficient C _e
	m/s	Test m ³ /s	Theoretical m ³ /s	
10.0	0.58	0.478	3.313	0.144
37.3	1.09	0.893	6.399	0.140
71.7	1.49	1.228	8.871	0.138
97.1	1.76	1.447	10.324	0.140
122.0	1.96	1.609	11.572	0.139
166.0	2.26	1.860	13.498	0.138
217.0	2.62	2.154	15.433	0.140
285.0	2.95	2.425	17.687	0.137
373.0	3.38	2.784	20.234	0.138
455.0	3.74	3.075	22.348	0.138
Mean C _e				0.139
Class				4



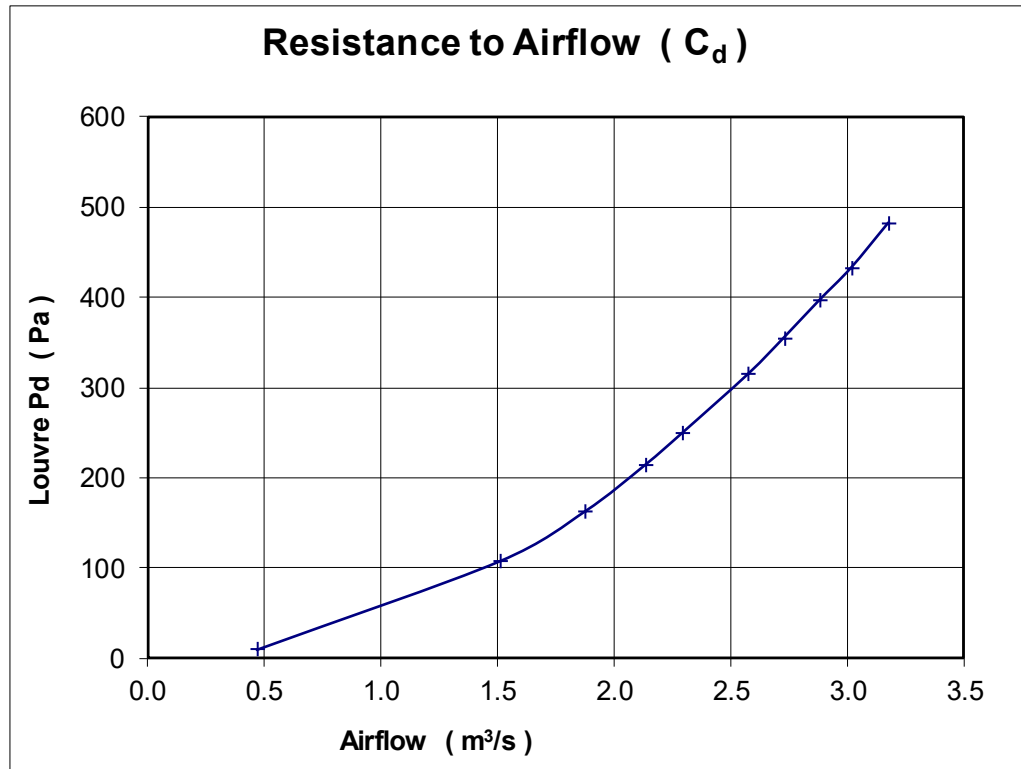
3.3 COEFFICIENT OF DISCHARGE

Manufacturer Renson
Model 448D

Date 11/12/2025
Contract 107939

Air Temperature	12.0	°C	Core Area Height	848	mm
Barometer	1010.0	mbar	Core Area Width	970	mm
Air Density	1.229	kg/m ³	Core Area Area	0.823	m ²

Louvre p.d. Pa	Louvre Face Velocity	Air Flow Rate		Coefficient C _d
	m/s	Test m ³ /s	Theoretical m ³ /s	
10.0	0.57	0.473	3.318	0.142
107.7	1.84	1.513	10.890	0.139
163.0	2.28	1.879	13.398	0.140
214.0	2.60	2.135	15.351	0.139
250.0	2.79	2.297	16.592	0.138
315.0	3.14	2.579	18.625	0.138
355.0	3.32	2.732	19.772	0.138
396.0	3.50	2.882	20.883	0.138
432.0	3.67	3.019	21.811	0.138
482.0	3.87	3.180	23.039	0.138
Mean C _d				0.139
Class				4



APPENDIX A: MANUFACTURER'S DRAWING

