



element control
systems

commercial louvres,
solar shading, ventilation
& fire protection

ECS D SERIES DRAINABLE WEATHERPROOF & STORM PROOF LOUVRE SYSTEM

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APPLICATIONS

ECS D Series Drainable horizontal louvre System is a single pass System produced from Extruded Aluminium.

Designed to aesthetically conceal wall-mounted intake and exhaust openings, associated with air conditioning and ventilation systems whilst providing high defence against wind and rain with limited pressure drop and resistance to air flow .

Given its stunning external appearance, the D series s often used as a decorative cladding whilst still providing a weather proof facade/inlet. The versatility enables the system to be used in both horizontal and vertical configuration where the requirement is for a continuous effect across openings or as a screen to conceal plant and equipment.

Aesthetic and architectural appearance

The **D Series Drainable Louvre** may be installed as individual panels both Horizontal and vertically with no limits to height or widths with unique internal drainage system. The systems exclusive configuration and spacing provides privacy, with the **D Series** being non-transparent from inside and out.

Economic

Cost savings result from the ability to meet exact requirements with versatile standard components.

The unique design and state of the art engineered machinery enable the louvre system to be manufactured in lengths of up to 6500mm wide and height is unlimited, not compromising quality or structural integrity.

This benefit enables us to provide faster turnaround times and cost reductions with on site installation.

Optional accessories

Louvre Doors, bird, vermin guards, insect mesh, blanking panels, insulation panels, flashings and trims are available.

Material finishes

Powder - coated / anodised

Principle of operation

The **D Series** louvre is a Horizontal or Vertical positioned louvre ventilation system, designed to meet harsh Australian conditions with respect of wind and rain defense. The louvre utilises its special shape and interlocking feature to achieve optimum air-flow and rain elimination whilst providing a very robust structural configuration to meet all wind load and external challenges.

Technical Details

Louvre Pitch: 100mm
Depth: 140 mm
Free open area: 53%
Blade span: 6500mm
Weight: 11 Kilograms m ²

TYPICAL SPECIFICATION

Louvres shall be Element Control Systems D Series Single Pass horizontal / vertical louvre system manufactured from Extruded aluminum 6060 alloy. Finish can also be applied via powder coating or anodising. Various warranties available.

The louvre system depth shall be 140mm overall with blades at 100mm pitch.

PERFORMANCE

ECS-D SERIES LOUVRE SYSTEM AIRFLOW TEST

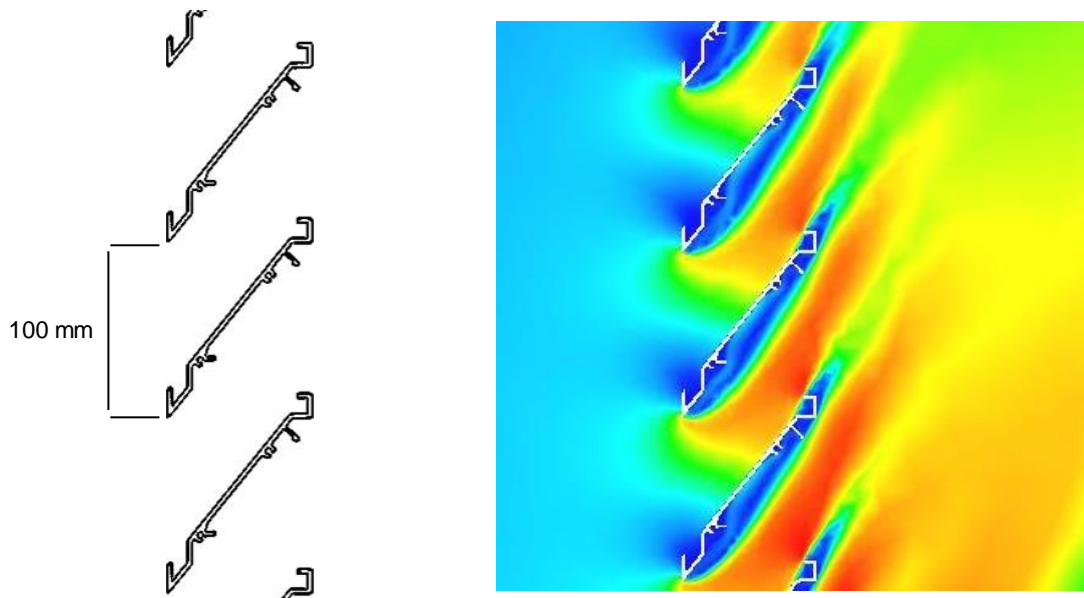


Figure 1: ECS-D Series Louvre CFD Testing

ECS-D Series Louvre System was tested in CFD (Computational Fluid Dynamics) software to obtain its Aerodynamic performance.

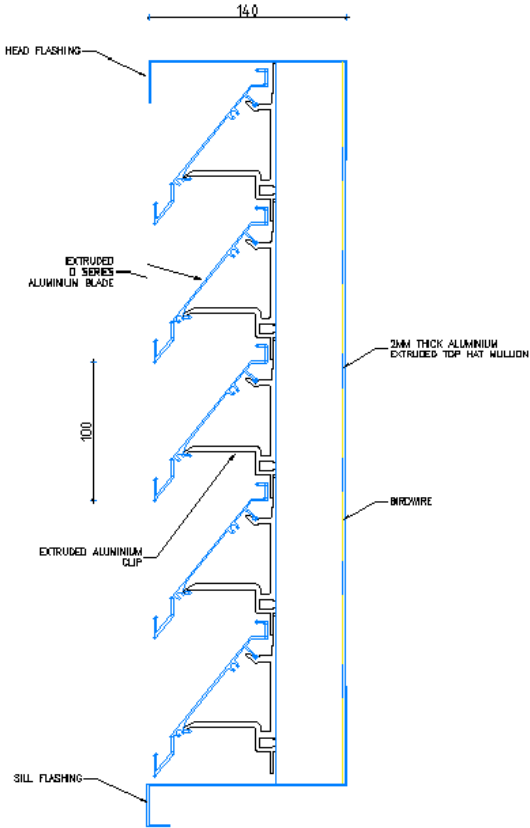
CFD Simulation was used to perform a steady-state analysis to obtain credible data on this louvre. 6 test velocities were used to obtain pressure drops at each instance (Table 1). These pressure drops were then used to calculate the C_i value for each instance and averaged out to a C_d value for the product.

These were all done according to AS4740: 2000, “Natural Ventilators, Classification and Performance”, Appendix D.

PERFORMANCE SPECIFICATIONS:

FOA ¹	Cd ²	EFA ³	Performance Level ⁴
53%	0.61	0.32	Class 2

- ¹Free Open Area (Throat area / Between blade minimum area)
- ²Coefficient of Discharge
- ³Effective Aerodynamic Area
- ⁴According to AS 4740: 2000 (Natural Ventilators—Classification and Performance)



The ECS D Series Drainable Storm Proof and Weather proof Louvre system is produced from Extruded Aluminium and designed to aesthetically conceal wall-mounted intake and exhaust openings, associated with air conditioning and ventilation systems whilst providing high defence against wind and rain. **This system is especially suited when there is a requirement for natural ventilation with a high percentage free area but with the added feature of effective weatherability .**

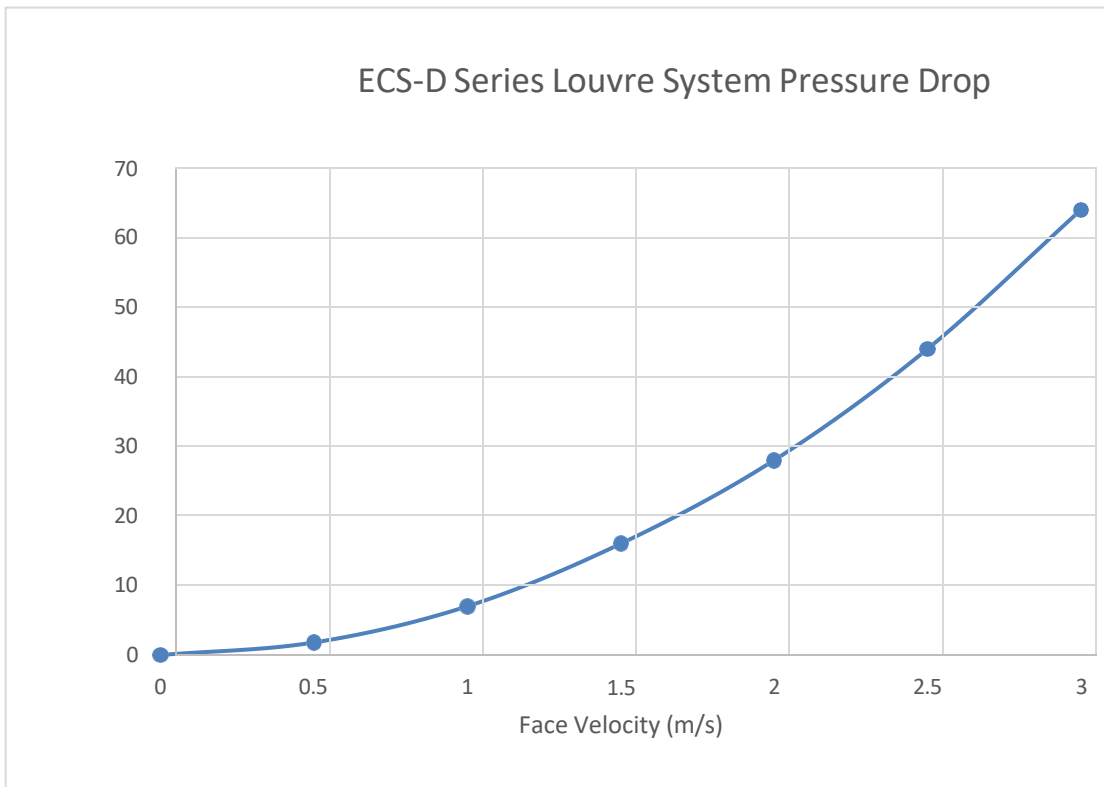


Figure 2: ECS-D Series Louvre System Pressure Drop vs Face Velocity.

Table 1. ECS-D Series Louvre Airflow test data

Face Velocity (m/s)	Throat Velocity (m/s)	Pressure Drop (Pa)	Ci (-)
0.5	1.1	1.8	0.61
1	2.1	7.0	0.62
1.5	3.2	16	0.61
2	4.2	28	0.62
2.5	5.3	44	0.62
3	6.3	64	0.61

ECS-D SERIES LOUVRE SYSTEM RAIN RESISTANCE PERFORMANCE

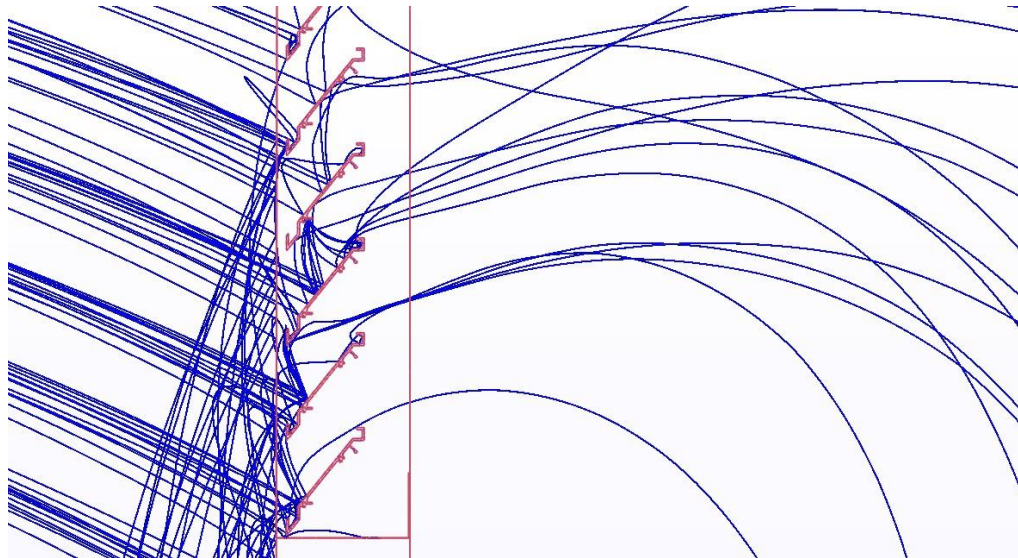


Figure 1: ECS-D Series Louvre System (1000 mm x 1000 mm) Rain Resistance CFD Test

ECS-D Series louvre System was tested in CFD (Computational Fluid Dynamics) software to obtain its rain resistance performance. Rain penetration analysis was tested with CFD based on AS/NZS 4740: 2000, “Natural Ventilators, Classification and Performance”, Appendix B.

Test conducted for a rain flow rate of 75 L/h.m² with airflow rates ranging from 0.5 m³/s to 3.5 m³/s (0.5 m/s to 3.5 m/s core velocities). The test outcomes are summarised in Table 1 and Figure 2.

The ECS-D SERIES Louvre’s average rain penetration effectiveness at core velocities from 0 to 3.5 m/s was a value of 0.934 effective achieving a Class C rating according to AS4740: 2000, Table 1.1 & Table B1.

PERFORMANCE SPECIFICATIONS:

- Average Effectiveness: **0.93**
- Rain Resistance: **Class C***

*According to AS 4740: 2000 (Natural Ventilators—Classification and performance)

Table 1. ECS-D Series Louvre System Rain Resistant Performance Data
(AS4740: 2000 Appendix B)

Core Velocity (m/s):	0	0.5	1	1.5	2	2.5	3	3.5
Penetration Rate (L/h.m²):	0.0	1.0	2.6	4.2	5.7	6.8	8.9	10.4
Effectiveness:	1.00	0.99	0.97	0.94	0.92	0.91	0.88	0.86
Rain Penetration Class:	A	A	B	C	C	C	C	C

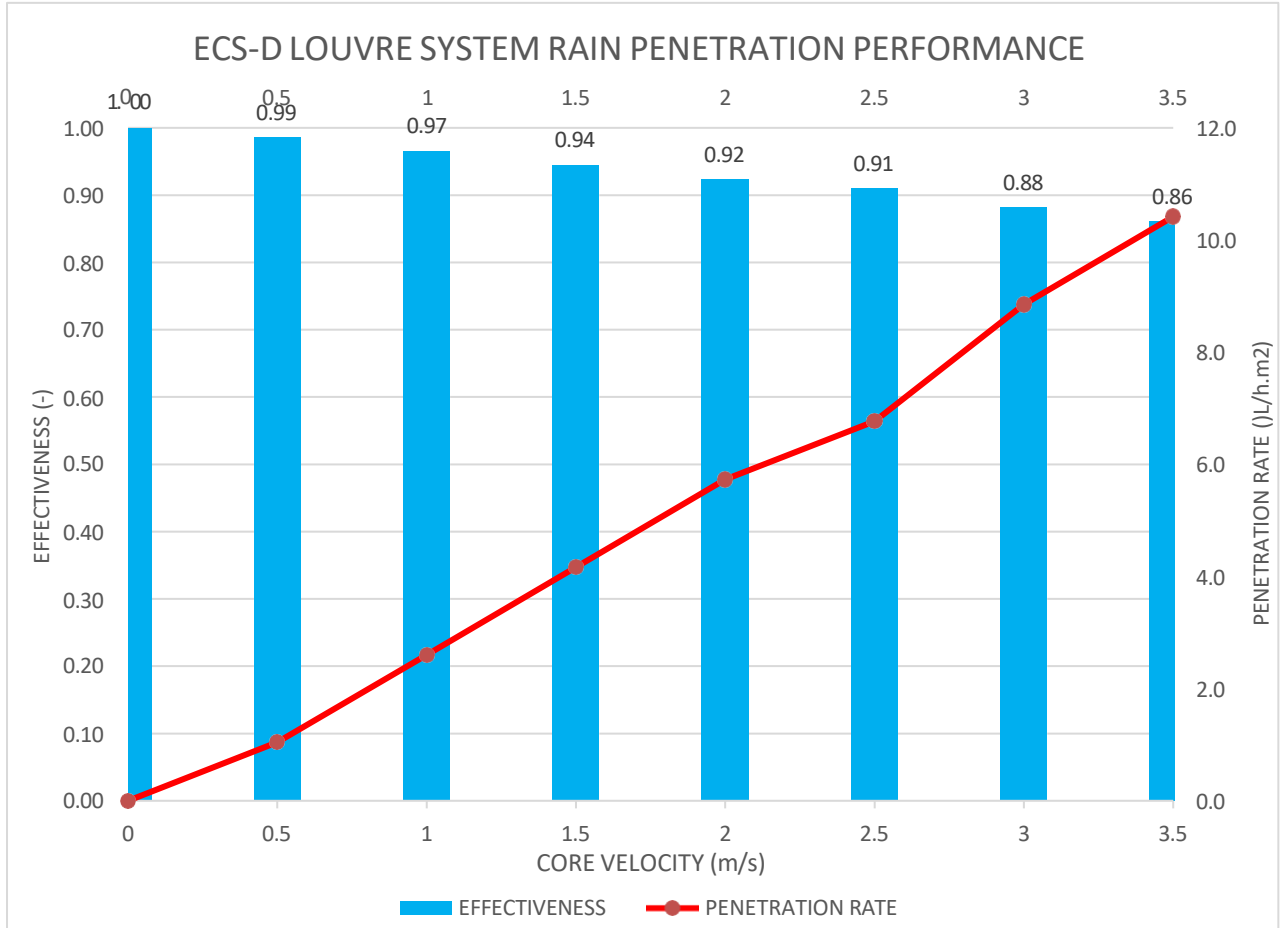


Figure 2. ECS-D Series Louvre System Rain Resistance Test Results