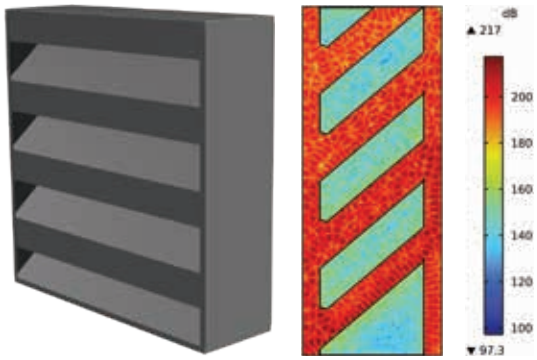
# AIRBORNE SOUND REDUCTION SL4-30




The Sonic Series acoustic louvre SL4-30 is specifically designed to reduce airborne sound transmission while maintaining optimal airflow. With a high Sound Transmission Loss (STL) rating, the SL4-30 helps minimise noise pollution from industrial equipment, HVAC systems, and mechanical plant enclosures. Its innovative blade design, sound-absorbing materials, and durable construction provide exceptional noise reduction, making it the ideal choice for demanding applications.

## SL4-30 ACOUSTIC LOUVRE SOUND REDUCTION

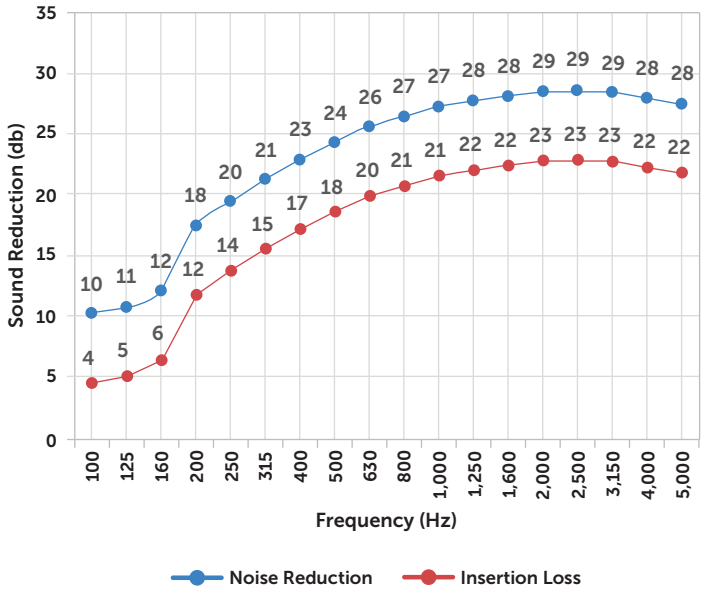



Figure 1: SL4-30 Acoustic Lourve Sound Reduction

## TABLE 1: RESULTS FOR SONIC SERIES ACOUSTIC LOUVRE SL4-30

| Frequency (Hz)-1/3 Octave | Noise Reduction | |
|---|---|---|
| | 1/3 Octave | 1/1 Octave |
| 100 | 10 | **11** |
| 125 | 11 | |
| 160 | 12 | |
| 200 | 18 | **19** |
| 250 | 20 | |
| 315 | 21 | |
| 400 | 23 | **24** |
| 500 | 24 | |
| 630 | 26 | |
| 800 | 27 | **27** |
| 1000 | 27 | |
| 1250 | 28 | |
| 1600 | 28 | **28** |
| 2000 | 29 | |
| 2500 | 29 | |
| 3150 | 29 | **28** |
| 4000 | 28 | |
| 5000 | 28 | |

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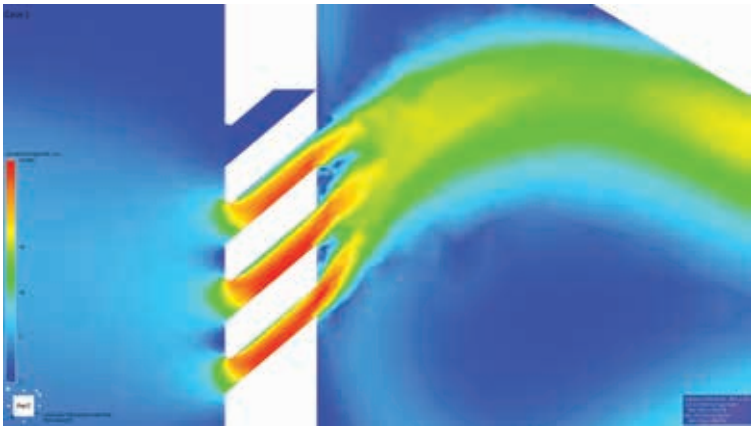
# AIRFLOW TEST SL4-30



The Flexshield SL4-30 Louvre was tested using Computational Fluid Dynamics (CFD) software to assess its aerodynamic performance. Steady-state analysis was conducted in the CFD simulation to generate accurate data for the Louvre. Six test velocities were applied to measure the pressure drops at each instance (see Table 1).

These pressure drops were then used to calculate the Ci value for each test, which was averaged to determine the Cd value for the product. All testing was carried out in accordance with **AS4740 standards**, and the SST k-omega SAS turbulence model was used.

## SL4-30 LOUVRE PRESSURE DROP

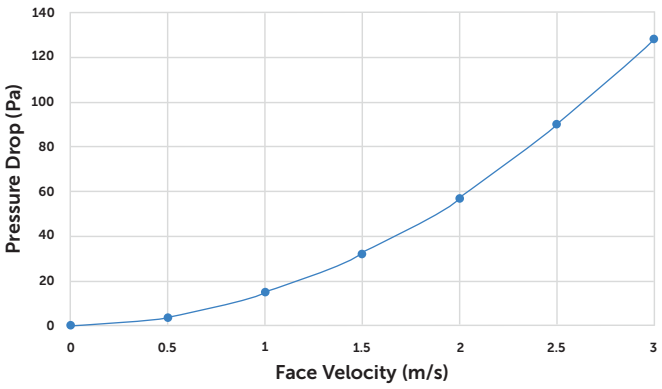



**Figure 1: SL4-30 Louvre Pressure Drop vs Face Velocity**

## TABLE 1: SL4-30 LOUVRE AIRFLOW TEST DATA

| Face Velocity (m/s) | Throat Velocity (m/s) | Pressure Drop (Pa) | Ci (-) |
|---|---|---|---|
| 0.5 | 2 | 3.5 | 0.83 |
| 1 | 4 | 15 | 0.80 |
| 1.5 | 6 | 32 | 0.82 |
| 2 | 8 | 57 | 0.82 |
| 2.5 | 10 | 90 | 0.81 |
| 3 | 12 | 128 | 0.82 |

## TABLE 2: SL4-30 FREE OPEN AREA (FOA)

| FOA[1] | Cd[2] | EFA[3] | Performance Level[4] |
|---|---|---|---|
| 35% | 0.82 | 0.29 | Class 1 |

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

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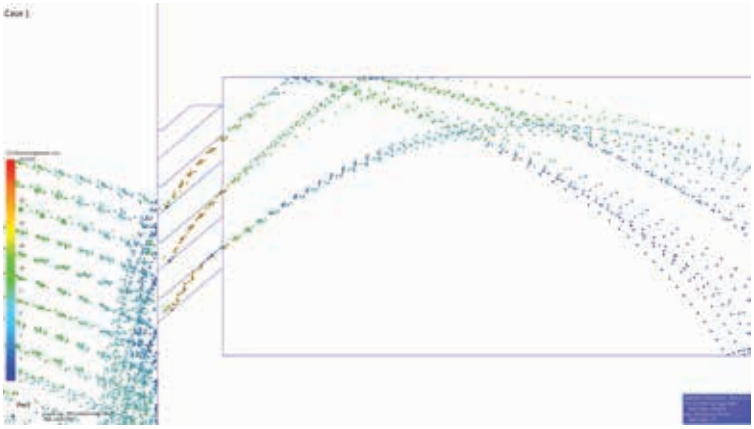
# RAIN RESISTANCE PERFORMANCE SL4-30



The SL4-30 Louvre was tested using Computational Fluid Dynamics (CFD) software to assess its rain resistance performance. The rain penetration analysis was conducted in compliance with **AS/NZS 4740:2000**.

The test was performed with a rain flow rate of 75 L/h.m$^2$ and airflow rates ranging from 0.5 m$^3$/s to 3.5 m$^3$/s (core velocities from 0.5 m/s to 3.5 m/s). The results of the test are summarised in Table 1 and Figure 1.

The SL4-30 Louvre achieved an average rain penetration effectiveness of 0.886 at core velocities from 0 to 3.5 m/s, earning a Class C rating as per **AS4740:2000**.

## SL4-30 LOUVRE RAIN PENETRATION PERFORMANCE

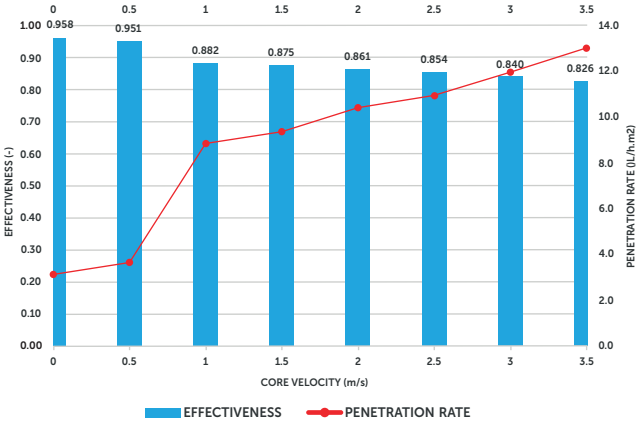



**Figure 1. SL4-30 Louvre Rain Resistance Test Results**

## TABLE 1: SL4-30 LOUVRE RAIN RESISTANT PERFORMANCE DATA

| Core Velocity (m/s) | Penetration Rate (L/h.m$^2$) | Effectiveness | Rain Penetration Class |
|---|---|---|---|
| 0 | 3.1 | 0.958 | B |
| 0.5 | 3.6 | 0.951 | B |
| 1 | 8.9 | 0.882 | C |
| 1.5 | 9.4 | 0.875 | C |
| 2 | 10.4 | 0.861 | C |
| 2.5 | 10.9 | 0.854 | C |
| 3 | 12.0 | 0.840 | C |
| 3.5 | 13.0 | 0.826 | C |

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