



# Sonic System Acoustic Modular Panel V50

The Science of Silence

## PRODUCT OVERVIEW

The Sonic System acoustic modular panel V50 is engineered to control airborne noise through a **combination of sound absorption and sound attenuation**, making it suitable for industrial environments where reverberation control and moderate noise reduction are required.

Featuring a 50mm Rockwool core with a perforated internal steel face (38% open area) and solid external skin, the V50 delivers strong mid- to high-frequency absorption while maintaining effective barrier performance. Tested in accordance with AS ISO 354 and AS/NZS 1191, with Rw determined to AS/NZS ISO 717.1, the panel achieves NRC 1.00 and Rw 31, with transmission loss reaching 52.1dB at 5000 Hz.

Designed for both permanent and temporary installations, the V50 is suitable for wall linings, plant enclosures, and acoustic screening applications where balanced acoustic performance and structural reliability are required.

## KEY FEATURES

- High absorption coefficients across mid - to high-frequency ranges
- Transmission loss up to **52.1dB** at 5 kHz (Rw 31)
- Load tested and engineering-assessed in accordance with AS 1170.2
- Modular system for permanent or temporary installation
- Available in standard panels or **custom sizes**
- Fire resistance tested in accordance with AS 1530.4-2014, achieving FRL -/120/- for panel integrity when tested as an isolated element.4

## APPLICATIONS

- Industrial acoustic walls and partitions
- Acoustic enclosures for machinery and equipment
- External acoustic noise walls
- Wall linings for manufacturing facilities
- Sound control in infrastructure projects
- Temporary and permanent noise mitigation solutions

## TECHNICAL SPECIFICATIONS

|                       |  |
|-----------------------|--|
| Panel construction    | Internal steel sheet: 0.50mm   External steel sheet: 0.70mm   Rockwool core   Perforated internal face (38% open area) |
| Standard sizes        | Cover Width: 450mm standard   Overlap connection: 25mm   Thickness: 50mm   |
| Weight                | 15.6 kg/m <sup>2</sup>   |
| Surface finish        | Anti-corrosive treatment with epoxy primer, painted finish, available in pre-finished 'off-white'                      |
| Customisation         | Custom lengths and colours available to meet project requirements  |
| Thermal transmittance | 0.70 W/m <sup>2</sup> K  |
| Installation          | Modular system for rapid assembly and disassembly  |
| Acoustic rating       | Rw 31dB determined in accordance with AS/NZS ISO 717.1, NRC 1.00   |
| Fire rating           | FRL -/120/- in accordance with AS 1530.4-2014 Sections 1, 2 & 3  |



# Sonic System Acoustic Modular Panel V50

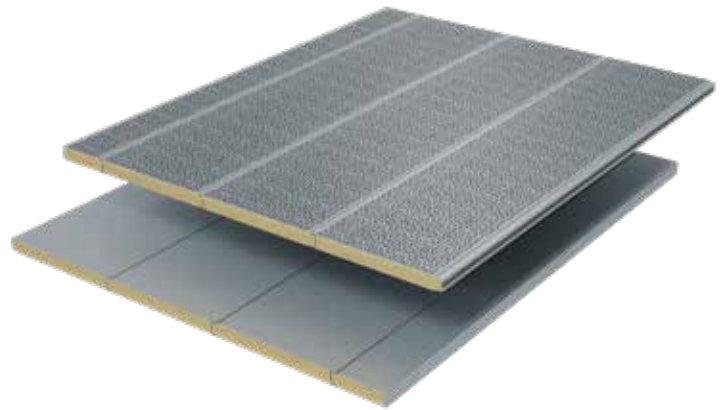
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## ACOUSTIC PERFORMANCE – SOUND TRANSMISSION LOSS

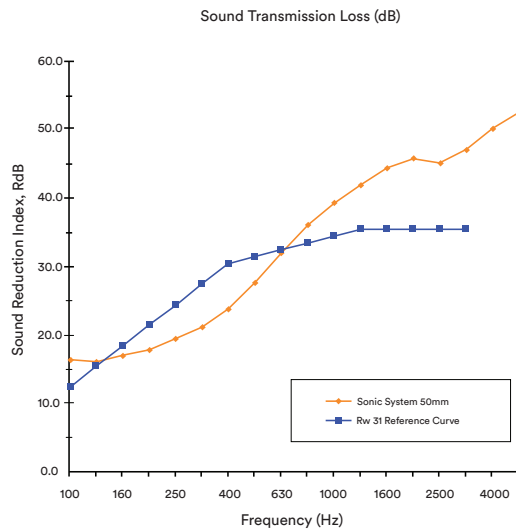
The V50 is as resilient as it is absorptive. Acoustic testing confirms an  $R_w$  31, with performance exceeding 40dB reduction above 1000 Hz. This delivers reliable barrier performance in environments where keeping noise contained is just as important as controlling reflections.

### HIGHLIGHTS

- $R_w$  31
- Maximum transmission loss is stated as 52.1dB at 5000 Hz
- Consistent attenuation across a wide frequency range



### TRANSMISSION LOSS CURVE DEMONSTRATING BARRIER PERFORMANCE RISING STEADILY TO MORE THAN 50dB AT HIGH FREQUENCIES.



### MEASURED TRANSMISSION LOSS BY 1/3 OCTAVE BAND

| 1/3 Octave Centre Frequency Hz | Sound Transmission Loss: R dB | $R_w$ 31 Reference Curve | 95% Confidence levels, dB |
|--------------------------------|-------------------------------|--------------------------|---------------------------|
| 100                            | 15.9                          | 12                       | 2.7                       |
| 125                            | 15.7                          | 15                       | 2.0                       |
| 160                            | 16.6                          | 18                       | 1.7                       |
| 200                            | 17.4                          | 21                       | 1.6                       |
| 250                            | 19.0                          | 24                       | 1.2                       |
| 315                            | 20.8                          | 27                       | 1.4                       |
| 400                            | 23.4                          | 30                       | 0.6                       |
| 500                            | 27.3                          | 31                       | 0.7                       |
| 630                            | 31.6                          | 32                       | 0.6                       |
| 800                            | 35.6                          | 33                       | 0.7                       |
| 1000                           | 38.8                          | 34                       | 0.6                       |
| 1250                           | 41.6                          | 35                       | 0.5                       |
| 1600                           | 44.0                          | 35                       | 0.6                       |
| 2000                           | 45.4                          | 35                       | 0.6                       |
| 2500                           | 44.7                          | 35                       | 0.6                       |
| 3150                           | 46.6                          | 35                       | 0.6                       |
| 4000                           | 49.7                          | -                        | 0.7                       |
| 5000                           | 52.1                          | -                        | 0.9                       |



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## ACOUSTIC PERFORMANCE – SOUND ABSORPTION

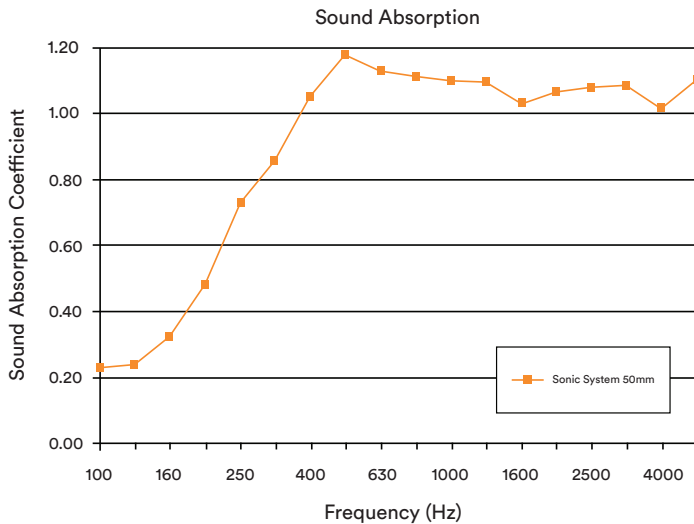
Independent reverberation room testing demonstrates exceptional absorption values, with coefficients ( $\alpha_s$ ) peaking at 1.18. This ensures the V50 controls reflections as effectively as it blocks airborne noise.

### HIGHLIGHTS

- NRC 1.00
- $\alpha_s$  greater than 1.0 from 400 Hz to 5000 Hz
- Confidence intervals confirm repeatable and reliable results
- Ideal for reducing reverberation in large industrial spaces



ABSORPTION CURVE SHOWING STRONG PERFORMANCE ACROSS CRITICAL MID - TO HIGH-FREQUENCY RANGES.



ABSORPTION COEFFICIENTS ACROSS FREQUENCY RANGE

| Octave Centre Frequency Bands, Hz | Average RTs for empty room. $T60_e$ | Average RTs f or room with sample $T60_{e+s}$ | Sound Absorption Coefficient $\alpha_s$ | 95% Confidence Interval for $\alpha_s$ |
|-----------------------------------|-------------------------------------|---|---|--|
| 100                               | 7.145                               | 5.963   | 0.23                                    | 0.13                                   |
| 125                               | 6.508                               | 5.467   | 0.24                                    | 0.11                                   |
| 160                               | 8.395                               | 6.319   | 0.32                                    | 0.11                                   |
| 200                               | 9.319                               | 6.008   | 0.48                                    | 0.09                                   |
| 250                               | 9.351                               | 5.094   | 0.73                                    | 0.06                                   |
| 315                               | 7.830                               | 4.296   | 0.86                                    | 0.06                                   |
| 400                               | 7.055                               | 3.698   | 1.05                                    | 0.07                                   |
| 500                               | 6.682                               | 3.400   | 1.18                                    | 0.06                                   |
| 630                               | 6.299                               | 3.365   | 1.13                                    | 0.06                                   |
| 800                               | 6.210                               | 3.359   | 1.11                                    | 0.06                                   |
| 1000                              | 5.589                               | 3.189   | 1.10                                    | 0.06                                   |
| 1250                              | 5.122                               | 3.032   | 1.10                                    | 0.04                                   |
| 1600                              | 4.550                               | 2.891   | 1.03                                    | 0.04                                   |
| 2000                              | 4.085                               | 2.663   | 1.06                                    | 0.05                                   |
| 2500                              | 3.622                               | 2.449   | 1.08                                    | 0.03                                   |
| 3150                              | 3.121                               | 2.204   | 1.08                                    | 0.06                                   |
| 4000                              | 2.576                               | 1.951   | 1.01                                    | 0.08                                   |
| 5000                              | 2.193                               | 1.692   | 1.10                                    | 0.16                                   |



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## STRUCTURAL PERFORMANCE – WIND LOAD RESISTANCE

Engineered for real-world resilience, the V50 modular panel has been load tested and engineering-assessed in accordance with AS 1170.2. Depending on support spacing, it withstands ultimate wind loads up to 6.0 kPa.

## SUPPORT CENTRES VS LOAD CAPACITY

| Panel Support Centres (m) | Maximum Ultimate Wind Load Pressure (kPa) |
|---------------------------|---|
| 0.9m                      | 6.0 kPa*                                  |
| 1.2m                      | 6.0 kPa*                                  |
| 1.5m                      | 6.0 kPa*                                  |
| 1.8m                      | 4.3 kPa*                                  |
| 2.1m                      | 3.1 kPa*                                  |
| 2.4m                      | 2.4 kPa*                                  |
| 2.7m                      | 1.9 kPa*                                  |

\*Certified loading pressure test reports available upon request

## COMPLIANCE AND TESTING

- Sound absorption tested in accordance with AS ISO 354
- Tested in accordance with AS 1191-2002, with  $R_w$  determined to AS/NZS ISO 717.1
- Load tested and engineering-assessed in accordance with AS 1170.2
- Fire safety tested to AS 1530.4-2014 (Sections 1, 2 & 3)
- All testing conducted by NATA-accredited laboratories. Full test certificates available upon request.

## ORDERING AND SUPPORT

- AcousTech panels are available in both standard and **fully custom configurations**. From tailored dimensions to project-specific colour finishes, our team will engineer the right fit for your site.
- To discuss your project, contact AcousTech and discover how the Science of Silence can work for you.
- Ultimate wind load pressures shown; not applicable to cyclonic wind regions.

## HOW TO SPECIFY TO FIT YOUR PROJECT

|                             |   |
|-----------------------------|---|
| <b>System</b>               | Flexshield Sonic System acoustic modular panel V50  |
| <b>Construction</b>         | 50mm acoustic panel with solid steel faces, perforated internal face and high-density Rockwool core |
| <b>Finish</b>               | Corrosion-resistant perforated steel  |
| <b>Acoustic Performance</b> | <b>R<sub>w</sub></b> : 31dB <b>NRC</b> : 1.00   |



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## FIRE SAFETY STANDARDS

### FIRE RATING & TESTING COMPLIANCE

| Fire Safety Category        | Standard/Test Method               | Result/Rating          | Details   |
|-----------------------------|------------------------------------|------------------------|---|
| Fire Resistance Level (FRL) | AS 1530.4-2014 (Sections 1, 2 & 3) | -/120/-                | <ul style="list-style-type: none"><li>• Structural Adequacy: - (N/A)</li><li>• Integrity: 120 minutes</li><li>• Insulation: - (Not rated)</li></ul> |
| Ignitability Index          | AS/NZS 1530.3:1999 (R2016)         | 0                      | Scale: 0-20 (0 = best performance)  |
| Spread of Flame Index       | AS/NZS 1530.3:1999 (R2016)         | 0                      | Scale: 0-10 (0 = best performance)  |
| Heat Evolved Index          | AS/NZS 1530.3:1999 (R2016)         | 0                      | Scale: 0-10 (0 = best performance)  |
| Smoke Developed Index       | AS/NZS 1530.3:1999 (R2016)         | 1                      | Scale: 0-10 (lower = better)  |
| Combustibility              | AS 1530.1:1994 (R2016)             | <b>Non-Combustible</b> | Rockwool core is inorganic and non-combustible  |

### MATERIAL FIRE PROPERTIES

| Component         | Material               | Thickness/Density          | Fire Characteristics  |
|-------------------|------------------------|----------------------------|---|
| Internal Face     | Perforated Steel Sheet | 0.50mm (38% FOA)           | Non-combustible metal   |
| Core              | Rockwool               | 50mm / 70kg/m <sup>3</sup> | <ul style="list-style-type: none"><li>• Non-combustible</li><li>• Inorganic, amorphous</li><li>• No toxic fumes</li><li>• Maintains integrity at high temps</li></ul> |
| External Face     | Solid Steel Sheet      | 0.70mm                     | Non-combustible metal   |
| Surface Treatment | Epoxy Primer + Paint   | Anti-corrosive coating     | Protective coating system   |

### COMPLIANCE & CERTIFICATION

| Category                 | Details  |
|--------------------------|--|
| Testing Laboratory       | NATA-accredited facilities   |
| Documentation Available  | <ul style="list-style-type: none"><li>• Full AS 1530.4-2014 fire resistance certificate</li><li>• AS/NZS 1530.3 test reports</li><li>• Material Safety Data Sheets (MSDS)</li><li>• Fire engineering reports</li></ul> |
| BCA/NCC Compliance       | Suitable for fire-rated partitions and acoustic enclosures (subject to engineering assessment)   |
| Certificate Availability | Full fire test results available upon request  |

### FIRE SAFETY PERFORMANCE SUMMARY

| Performance Metric        | V50 Rating  | Interpretation                                     |
|---------------------------|-------------|--|
| Fire Barrier Integrity    | 120 minutes | Maintains barrier for 2 hours during fire exposure |
| Contribution to Fire Load | Zero        | Non-combustible construction throughout            |
| Flame Spread              | Zero        | Does not support flame propagation                 |
| Smoke Generation          | Low         | Low smoke generation during fire exposure          |
| Toxic Fume Production     | None        | Inorganic materials do not produce toxic gases     |



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## QUICK REFERENCE SPECIFICATIONS

| Category                  | Specification  |
|---------------------------|--|
| Acoustic Absorption       | $\alpha_s$ up to <b>1.18</b> (AS ISO 354) NRC: <b>1.00</b> - reliable performance from 400 Hz - 5000 Hz  |
| Acoustic Transmission     | <b>Rw 31</b> Rw comes from AS/NZS ISO 717.1 Maximum transmission loss is stated as 52.1dB at 5000 Hz   |
| Structural Performance    | Load tested and engineering-assessed in accordance with AS 1170.2 Up to <b>6.0 kPa</b> at 0.9–1.5 m support centres, decreasing to 1.9 kPa at 2.7 m support centres  |
| Hydrophobic Rockwool core | Actively repels water on contact. Rain simply beads off and runs away; the core does not absorb or wick moisture.  |
| Inorganic Rockwool        | Will not support biological growth even if minor moisture is present (ASTM C1104). Remains clean and stable indefinitely.  |
| Water absorption          | 0.5kg/m <sup>2</sup> (partial immersion test, BS EN ISO 29767) if core is submerged, uptake is negligible and dries out immediately with no long-term retention.   |
| Panel Construction        | <b>Internal steel sheet:</b> 0.50mm<br><b>External steel sheet:</b> 0.70mm<br>Rockwool<br>Perforated internal face (38% perforated surface)  |
| Standard Sizes            | <b>Cover Width:</b> 450mm standard<br><b>Overlap connection:</b> 25mm<br><b>Thickness:</b> 50mm  |
| Custom Options            | <b>Custom sizes and colours available</b>  |
| Weight                    | 15.6 kg/m <sup>2</sup>   |
| Surface Finish            | Anti-corrosive treatment with epoxy primer,<br>Painted finish,<br>Available in pre-finished 'off-white'  |
| Thermal Transmittance     | 0.70 W/m <sup>2</sup> K  |
| Installation              | Interlocking modular panel system with screwless assembly  |
| Compliance                | <b>AS ISO 354</b> – Sound absorption<br><b>AS 1191-2002</b> – Airborne sound transmission loss<br><b>AS/NZS ISO 717.1</b> – Rw determination<br><b>AS 1170.2</b> – Wind actions (engineering assessment)<br><b>AS 1530.1 / AS/NZS 1530.3</b> – Reaction to fire<br><b>AS 1530.4-2014</b> – Fire resistance |
| Branding                  | AcousTech - Part of the Flexshield Group Pty Ltd (ABN 42 631 902 899 ACN 631 902 899)  |