ACOUSTIC LOUVER SPECIFICATIONS
Model: V150-2 Acoustic Louver

Performance:	Noise Reduction – Good
Type:	Horizontal, Fixed, Single Blade
Aesthetic:	Mullion Line (Visible Mullion) System
Blade Spacing:	250mm; System Depth: 150mm.

PART 1 GENERAL

1.01 Summary

A. Provide shutters, bird screens and/or blank panels and attachment brackets, all as shown in the project drawings and provided as specified for proper installation.
B. Relevant sections include Part 7 "Joint sealants" applies to sealants installed on the perimeter joints between the louver frame and adjacent structures.

1.02 References

A. ASTM E90-09 “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions”.
B. British European Standard: BS EN 13030:2001 “Ventilation for buildings. Terminals. Performance testing of Louvres subjected to simulated rain”.
C. The Aluminum Association Incorporated
    1. Aluminum Standards and Data
    2. Specifications and Guidelines for Aluminum Structures
D. American Society for Testing and Materials
    1. ASTM B209
    2. ASTM B211
    3. ASTM B221
E. Architectural Aluminum Manufacturers Association
    1. AAMA 800 Voluntary Specifications and Test Methods for Sealants
    2. AAMA 2604-13 ‘Voluntary Specifications for High Performance Organic Coatings on Architectural Extrusions and Panels’

1.03 Submittals

Pre Order

A. Product Data
    1. Acoustic performance test reports complying to ASTM E90-09 “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions”.
    2. Rain Defense and Airflow performance test reports complying to British European Standard: BS EN 13030:2001 “Ventilation for buildings. Terminals. Performance testing of Louvres subjected to simulated rain”.

Post Order

A. Shop Drawings

1. Include elevations, sections, and specific details for each louver.
2. Show anchorage details and connections for all component parts.
3. Include option to provide endorsed structural calculations (at extra over cost).

B. Submit samples and color chips for approval.

1.04 Quality Assurance

A. Single subcontract responsibility: Subcontract the work to a single firm that has a minimum of five years' experience in the design and manufacturing of work like that detailed in this specification.
B. Performance Requirements: Provide ASTM E-90-09 & BS EN 13030:2001 test data as required, to confirm that the louvers have the acoustic, airflow and rain defense performance characteristics.
C. Structural Requirements: Design all materials to withstand wind loads as required by the applicable building code. Maximum allowable deflection for the louver structural members to be l/180 or 19.0 mm, whichever is less. Maximum allowable deflection for the louver blades to be l/120 or 12.5 mm across the weak axis, whichever is less.
D. Professional Engineer Requirements: Drawings and structural calculations to be endorsed by a professional engineer (optional at extra cost).
E. Warranty: Provide a written warranty to the owner that all products will be free of defective materials or workmanship for a period of ten (10) years from the date of supply.

1.05 Delivery, Storage and Handling

A. Delivery: At the time of delivery all materials shall be visually inspected for damage. Any damaged boxes, crates, louver sections, etc. shall be noted on the receiving documents and immediately reported to the delivery company and the material manufacturer.
B. Storage:
   1. Material may be stored either indoors or outdoors.
   2. If stored outdoors the material must be raised sufficiently off the ground to prevent it being exposed to standing water.
   3. If stored outdoors, the material must be covered with weatherproof flame-resistant sheeting or tarpaulin.
C. Handling:
   1. Material shall be handled in accordance with sound material handling practices and in such a way as to minimize racking.
   2. Louver sections may be hoisted by attaching straps to the jambs and lifting the section while in a vertical orientation.
   3. Louver sections should only be lifted and carried by the jambs. Heads, sills and blades are not to be used for lifting or hoisting louver sections.

PART 2 PRODUCTS

2.01 Manufacturers

A. The louvers and related materials herein specified and indicated on the drawings shall be as manufactured by:

WAN SERN SUPPLIES PTE LTD (WSS)
Contact: Email: sam@wanserns.com
Address: 31 Tuas Ave 8, Singapore 639245.

2.02 Materials

A. Aluminum Sheet: ASTM B3209, Alloy 3003. For heads and sills.
B. Aluminum Extrusions: ASTM B211, Alloy 6063-T5. For louver blades and jambs.

2.03 Fabrication, General

A. Provide WAN SERN SUPPLIES louver models, bird screens, blank-off panels and accessories as specified and/or shown on the drawings and detailed in this specification. Materials, sizes, depths, arrangements, and material thickness to be as indicated or as required for optimal performance with respect to strength, durability, and uniform appearance.
B. Louvers to be mechanically assembled using stainless steel grade 300 fasteners only.

2.04 Louver Model

A. WSS Acoustic Louver Model V150-2

1. **Material:** Fixed single blade profile. Fixed extrusions blades and mullions. Heads and sills to be manufactured from 1100 series aluminum alloy with 2.0mm thickness. Interior acoustic material to be 60kg/m3 density rock wool insulation protected by non-woven fire retardant 100% polyester sheeting and expanded mesh. Louver pitch to be spaced at 250mm. Total system depth does not exceed 150 mm. All screws to be non-corrosive.

2. **Acoustic Performance**: Test data shall be from an accredited acoustical laboratory tested in the US (Riverbank Acoustical Laboratories) in accordance with ASTM E-90-09. The minimum acceptable performance through all octave bands is as follows: **STC = 12.**

Frequency (Hz)	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Transmission Loss (dB)	**3**	**7**	**6**	**8**	**11**	**15**	**14**	**13**
Noise Reduction (dB)	**10**	**12**	**11**	**14**	**18**	**22**	**22**	**24**

2.05 Accessories (Optional)

A. Bird Screens
1. If required and indicated, Bird Screens to be Stainless Steel Grade 316 12.7mm x 12.7mm x 0.7mm thick wire mesh assembled complete with mill finish aluminum flat bar framing.

B. Blank Off Panels
1. If required and indicated, Blank-off panels to be a minimum of 2.0 mm thick aluminum sheet. Panels to be finished in the same finish as the louver system. Color to be selected by the architect.

2.06 Finishes

A. General: Comply with AAMA 2604-13 'Voluntary Specifications for High Performance Organic Coatings on Architectural Extrusions and Panels'. Apply finishes in factory. Protect finishes on exposed surfaces prior to shipment. Remove scratches and blemishes from exposed surfaces that will be visible after completing the finishing process. Provide color as indicated or, if not otherwise indicated, as selected by architect.

B. Polyester Powder Coating finish
Louvers to be finished with a single coat to a dry film thickness average of 60-80 microns.
All aluminum shall be thoroughly cleaned, degreased, and etched pretreatment prior to application of coating. The coating shall receive a bake cycle in accordance with the paint manufactures specification. All finishing procedures shall be one continuous operation in the approved plant of the manufacturer's applicator. Manufacturer to furnish limited warranty for a period of ten (10) years for the Polyester Powder coating. This limited warranty shall begin on the date of material shipment.

PART 3 EXECUTION

3.01 Examination: Examine openings to receive the work. Do not proceed until any unsatisfactory conditions have been corrected.

3.02 Installation

A. Comply with manufacturer's instructions and recommendations for installation of the work.
B. Verify dimensions of supporting structure at the site by accurate field measurements so that the louver panels will be accurately designed, fabricated, and fitted to the structure.
C. Anchor louvers to the building substructure as indicated on architectural drawings.
D. Correction: Do not cut or trim louver system on site.
E. Set units level, plumb and true to line, with uniform joints.

3.03 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

3.04 Adjusting and cleaning.

A. Immediately clean exposed surfaces of the louvers to remove fingerprints and dirt accumulation during the installation process. Do not let soiling remain until the final cleaning.
B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to the material finishes. Thoroughly rinse surfaces and dry.
C. Restore louvers and accessory components damaged during installation and construction so no evidence remains of corrective work. If the results of restoration are unsuccessful, as determined by the Architect, remove damaged materials, and replace them with new materials.
D. Touch up minor abrasions in finishes with a compatible air-dried coating that matches the color and gloss of the factory applied coating.

End of Specifications