



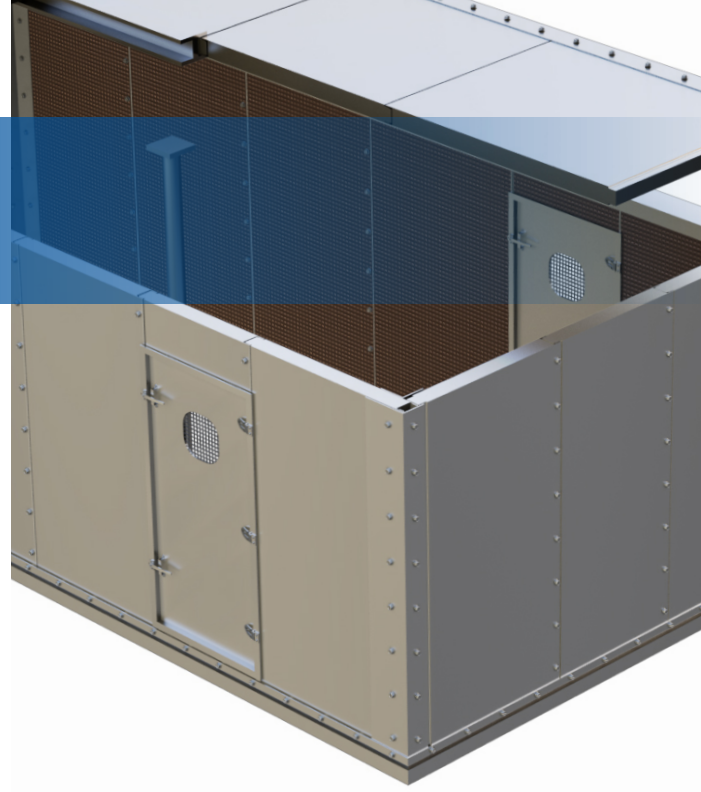
SOUND CONTROL PRODUCTS

MODULAR ACOUSTICAL PANEL SYSTEM



Ruskin Acoustical Panels and Doors have been designed and tested to meet the highest of industry standards. Primarily used for plenum, enclosure, and barrier wall applications, the panels can be designed for use in a variety of applications requiring enclosure silencing.

RUSKIN SOUND CONTROL ACOUSTICAL PANELS



Ruskin Sound Control acoustical panels are designed in our state-of-the-art laboratory. These factory-designed panels can be used to create any size plenum, enclosure or barrier wall.

Our modular panels are pre-fabricated and acoustically insulated double wall construction, with fully insulated tongue and groove joints. Ruskin Sound Control's tongue and groove construction minimizes condensation, ensures acoustical integrity and has fewer parts, requiring less labor.

Years of experience allow Ruskin Sound Control to service your project's needs with high quality products, a strong design team, R&D, and exceptional performance.

Solving Noise Control Problems

The main advantage of Ruskin Sound Control's modular panels are their ability to save labor, time and money, while at the same time solving your noise control problems.

The panel system both absorbs sound and blocks it. The inside of the enclosure will be 100% protected by perforated steel; no absorptive fill will be left exposed. The outside of the panel blocks any access noise from breaking out of the plenum.

These panels are ideal to lower the acoustical energy not only in the system but also by preventing any unwanted noise from effecting nearby noise sensitive spaces.

Selecting a Modular Panel System

Utilizing Ruskin Sound Control's modular panel system is easy. Simply provide the project drawings or sketches and let Ruskin's engineers know the system parameters such as pressure class, acoustical and thermal requirements — Ruskin's engineers will take it from there.

Computer Aided Design

Ruskin Sound Control's design staff has many years of experience laying out a system to meet your needs. We will design a system that will not only satisfy the system requirements but one that can be easily installed on site.

Our modular panel system is also more than just a truck load of parts. The key to our success has been in offering the whole package. Long before parts arrive at the job site the engineering has been completed with each part marked and tagged with assembly instructions to match the drawings provided with the system.



PRODUCT TESTING

Ruskin's modular panel system is designed in our state of the art laboratory in Kansas City, MO, to meet the highest of industry standards.

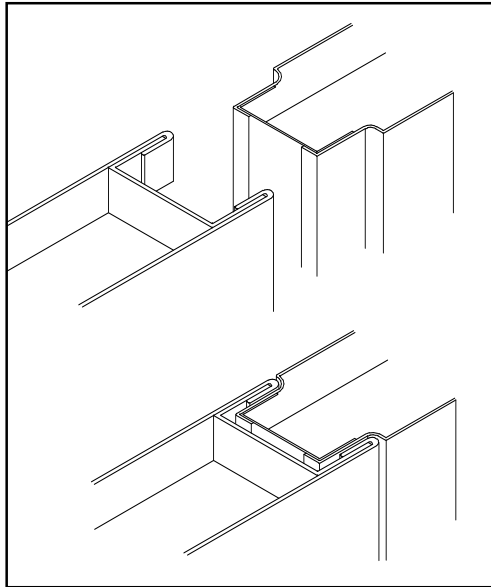
What makes our product perfect for a diverse set of applications is that Ruskin Sound Control panels have been tested for structural rigidity, acoustical transmission loss, acoustical absorption coefficients, and thermal conductivity.

All of this testing has allowed Ruskin Sound Control to offer a superior double wall panel at a reduced cost.



Ruskin Acoustical Panels

Design and Performance



THERMAL PERFORMANCE

Panel U Factor

2"	4"
.10	.07

The panel (heat transfer) factor is noted in BTU/hour/square foot/degree F.

STRUCTURAL PERFORMANCE

Static Pressure	Max. Unreinforced Panel Span	
	2"	4"
10 in. W.G.	10'-0"	12'-0"
5 in. W.G.	12'-0"	16'-0"
2in. W.G.	15'-0"	18'-0"

Structural spans were determined by an independent and licensed structural engineer to limit deflection to 1/240th of the unsupported span.

FIRE HAZARD CLASSIFICATION

Test	Fire Hazard Classification
Flame Spread	15
Smoke Developed	0
Fuel Contributed	0

Fire hazard classification values were determined by tests conducted in strict accordance with ASTM-E84, NFPA-255 and UL-723 test methods.

Standard Panel Construction

- 4" (102) double wall interlocking tongue and groove design
- G90 galvanized steel, 18 gauge (1.3) solid exterior, 22 gauge (.9) perforated interior
- Packed with 4.0 pound density thermafiber insulation
- 18 gauge (1.3) internal stiffeners placed 16" (406) on center
- Maximum 46" (1168) panel width
- Gasket, screws, caulking, 16 gauge (1.6) trim and erection drawings
- Structural steel as required

Tongue and Groove Panel Joint

Ruskin Sound Control's panel joint offers an air tight, structurally strong slip fit connection. This joint is factory insulated to prevent thermal break out. The joint also allows for access in the future if you ever need access to the area.

Tongue and groove panel joints require only one set of screws, one bead of caulking and no joint trim (H-Joiner) to be handled during the assembly process. The box framing of the panel has been designed so that the panel's insulation fills the joint; no dirty loose pieces of insulation have to be handled during assembly. Therefore no condensation can build-up on the outside of the plenum. Air tight and thermally sound the first time!

Structural Integrity

Ruskin Sound Control panels have internal stiffeners placed at no more than 16" on-center. The box frame is also welded in the corners of the rails to end caps to assure true and square panels. This makes our panels the most rigid in the industry.

Longer panel spans without the need for additional field supplied high cost structural steel. Another labor saver when it comes to assembly.

Ruskin Sound Control's modular panels can be used to manufacture plenums and enclosures much larger than 20 feet, therefore Ruskin designers can incorporate structure beams and angles to carry increased panel spans, wind loads, live loads and even snow loads. Ruskin has the in-house expertise to design such systems and provide the structural steel required to meet your project requirements. All structural components come factory cut to length and prime painted. Just another manufacturing policy that saves the installer labor, time and money!

ACOUSTICAL PERFORMANCE

Octave Band	Mid Freq. HZ	Absorption Coefficient		Transmission Loss	
		2"	4"	2"	4"
2	125	.24	.66	17	21
3	250	.74	1.22	24	33
4	500	1.08	1.12	32	43
5	1000	1.09	1.06	42	54
6	2000	1.01	1.03	50	57
7	4000	.96	.96	53	62
		NRC	NRC	STC	STC
		1.0	1.1	35	43

Sound Transmission loss data was derived from tests conducted in strict accordance with ASTM-E90-83 by an independent acoustical laboratory. Sound absorption coefficients were derived from tests conducted by an independent laboratory using ASTM-C423-84A test method.

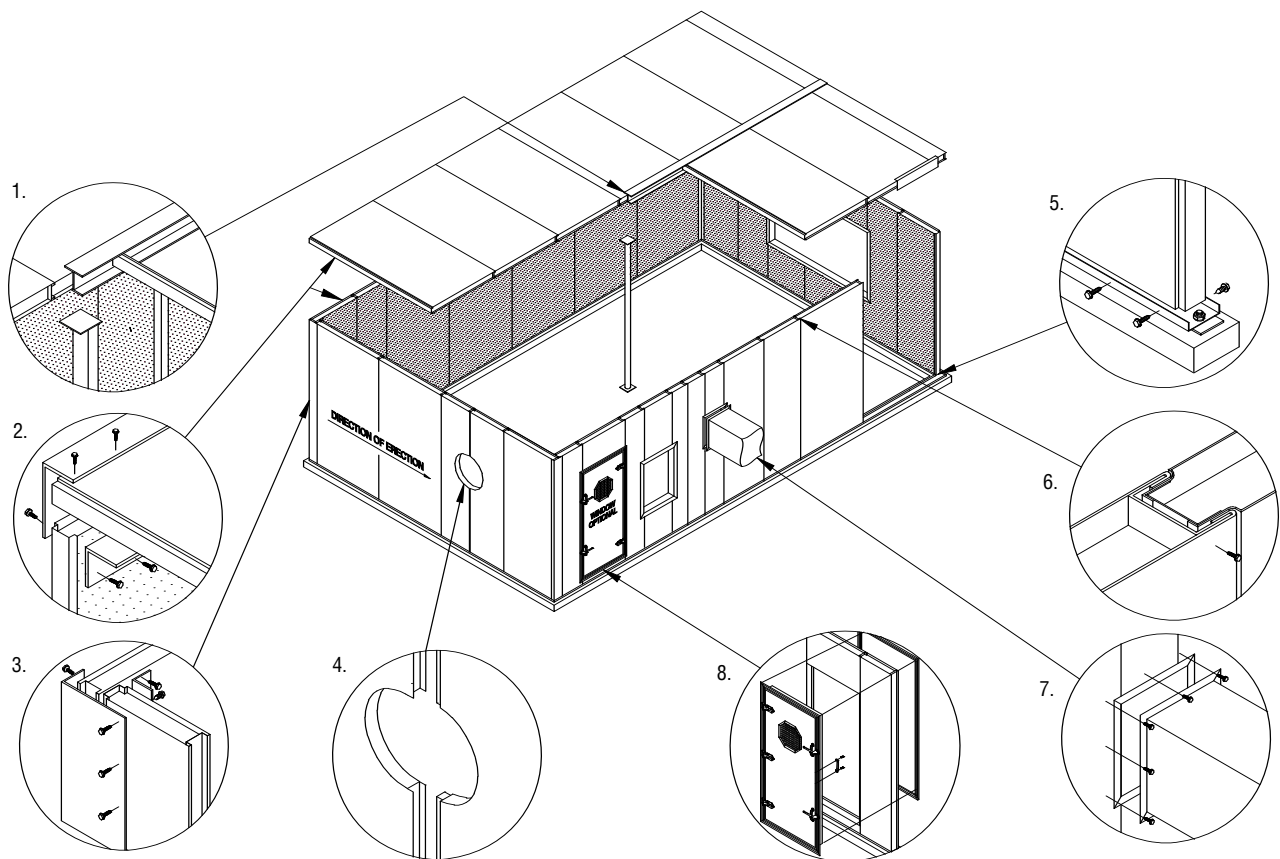


Ruskin Acoustical Panels

Panel and Trim Detail

Ruskin Sound Control's modular panel systems are submitted using the very latest in computer aided design. Your drawings will be provided in a clear and concise format. Eliminate errors with detailed drawings as well as long term (as-built plans) for future reference.

Ruskin fabricates each component part of your enclosure as outlined on your assembly drawings. The final drawings, generated on approval, are complete in every detail right down to the sequence of assembly. This detail allows for easy step-by-step field assembly.



1. Panel with H-Joiner construction and 3" column
2. Roof panel to wall panel detail
3. Corner wall panel to wall panel detail
4. Round, notched, opening

5. Wall panel to floor detail
6. Typical tongue and groove panel joint
7. Rectangular opening. Ductwork by others
8. Access door detail w/optional window

RUSKIN ACOUSTICAL PANELS

Variations, Features and Applications

Ruskin Sound Control's modular panels can be made from many different raw materials for special applications. The majority of the requirements can be met by our standard 4" (102) thick, G90 galvanized construction. However, if special corrosive elements or extremely high transmission loss is required, consult the factory.

Variations of Construction

- 2" (51) thick panels
- Aluminum or stainless steel construction
- Optional interior and exterior gauges available
- High Transmission Loss (HTL) design
- Floor panels 18 gauge (1.3) solid/solid, stiffeners placed 12" on-center
- Septum panels 22 gauge (.9) perf/18 gauge (1.3) solid/22 gauge (.9) perf
- Sloped roof or floor

Options

- Access doors 2" (51) & 4" (102) thick
- Double doors 4" (102) thick
- Door window 12 x 12 (305 x 305) dual pane wire reinforced
- Removable panels
- Fiberglass insulation
- Natural fiber insulation
- Weatherproofing
- Mylar and Tedlar film liners
- Paint Lock (prime coat)

Access Doors

Ruskin Sound Control access doors are 18 gauge (1.3) solid/solid, pre-aligned and mounted in the frame for ease of installation and low-leakage fit. Extruded aluminum frames are double gasketed. Optional 12 x 12 (305 x 305) wire reinforced dual pane window. Door Assemblies are furnished complete with latches, pulls and hinges. Doors are specified as right hand (R.H.) or left hand (L.H.), opening in or out.

Thermal Panels

Designed to withstand a far greater heat differential than the standard panels, the Ruskin Sound Control thermal panels are often the design choice for commercial and industrial applications. Some of the key features include; aluminized steel skins to prevent degradation, a thermal break between inner and outer skins, and non-silicon high-temperature caulking.

Features

- Panel joints are fully insulated tongue and groove construction for the highest thermal and acoustical integrity.
- Internal stiffeners 16" on center for wall panels allowing longer panel spans without the need for structural steel.
- Access doors are pre-aligned and mounted in the frame for ease of installation and a low leakage fit.
- Structural steel columns and beams are pre-cut to length.
- Column end plates are factory welded to columns.
- Each enclosure is color coded and palletized separately, when available.
- Panels are individually tagged to match CAD erection drawings for ease of installation.

Applications

Double wall modular panels are used for a wide variety of applications. The double wall modular panel system can be factory designed to make any size plenum, enclosure or barrier wall.

Examples of common applications:

- Built-up Air Handling Units
- Return/Supply Air Plenums
- Equipment Enclosures
- Barrier Walls
- Mixing Plenums
- Outside Air Plenums
- Blank-Off Panels
- Thermal Enclosures
- Interior and Exterior Applications



Ruskin Acoustical Panels

Specification and Installation Guidelines

Specification

Furnish and install pre-fabricated panel housing as shown on plans. Panels shall exhibit all specified acoustical, thermal and structural characteristics without exception and shall be double wall panels as manufactured by Ruskin sound Control.

Construction

Modular panels shall be double-wall 4" thick, acoustically insulated, pre-fabricated and supplied by a nationally recognized manufacturer with published standards of construction, assembly, and technical performance. The manufacturer shall have produced a standardized pre-fabricated panel system for a minimum of 10 years.

Modular panels shall be of interlocking tongue and groove design. Panel's exterior skin shall be minimum 18 gauge solid G-90 galvanized steel. Interior skin shall be minimum 22 gauge perforated G-90 galvanized steel. Perforations shall be 3/32-inch-diameter round holes on 3/16-inch staggered centers and shall result in a 23% maximum open area. G-60 galvanized steel shall not be substituted in any case without prior written approval by engineer of record.

Modular panel shall be fully framed with 18 gauge galvanized steel channel welded to both exterior and interior skin. Furthermore, the box frame shall be welded from side rail to end cap including corners for added stiffness. Panel shall have internal stiffeners welded to exterior skin and structurally attached to interior skin on not greater than 16" centers.

Panels shall be packed to minimum 5% compression with high density acoustical-thermal insulating material. Panel joints shall be insulated throughout without voids. Accessory angles and channels shall be minimum 16 gauge galvanized steel and furnished in standard 10'-0" lengths.

Access doors shall be solid 18 gauge galvanized steel on both interior and exterior sides. Doors shall be sized as shown on the plans. Doors shall be 4" thick with overlapping seal. Doors shall be located such that they will open against air pressure. Each door shall be supplied with a single continuous air/acoustic seal around sill, jambs and head. Doors shall have a minimum of two hinges and two latches. Each door shall be factory assembled with hinges attached and adjusted in door frame. Door latches to be wedge type lever with inside release handle. Hinges shall be designed to accommodate door size and weight.

Modular Septum panels shall be 4" thick as shown on plans. Modular Septum panels shall conform to wall panel specifications as listed above with the exception that both outer surfaces shall be minimum 22 gauge perforated G-90 galvanized steel. Center sheet shall be minimum 18 gauge solid G-90 galvanized steel. Center sheet shall be completely sealed against box frame to prevent leakage.

Note: 2" panel may be used in lieu of 4." Refer to 2" panel performance.

Performance

Acoustical ratings shall meet the following Transmission Loss (TL) characteristics without exception, as tested in a qualified acoustical laboratory in accordance with ASTM-E90-83

OCTAVE BANDS	2	3	4	5	6	7	
FREQUENCY (Hz)	125	250	500	1000	2000	4000	STC
TL (dB)	21	33	43	54	57	62	43

Panels shall have the minimum Sound Absorption Coefficients without exception, as tested by a qualified laboratory in accordance with ASTM-C 423-84A

OCTAVE BANDS	2	3	4	5	6	7	
FREQUENCY (Hz)	125	250	500	1000	2000	4000	STC
SOUND ABSORPTION COEFFICIENT	.66	1.22	1.12	1.06	1.03	.96	1.10

Thermal — Panels shall have a heat transfer ("U") factor of 0.07 BTU/hr./sq. ft./degree F.

Structural — Plenum shall be self-supporting and shall withstand a pressure differential of +/- 10" WG. Where required, additional structural support shall be provided. At this pressure differential, the casing shall be air-tight and shall not deflect more than L/240 of span.

Fire hazard classification code — Incombustible filler material shall exhibit no more than the following fire hazard classification values when tested in accordance with standard ASTM-E 84, NFPA-255, or UL-723 test methods:

FLAMESPREAD	15
FUEL CONTRIBUTED	0
SMOKE DEVELOPED	0

Installation Guidelines

Acoustical panel housing manufacturer shall furnish complete erection drawings and installation instructions, including a bill of materials. Each piece shall be marked to match the location shown on the drawings. All openings or panel penetrations greater than 6" (diameter or length and width) shall be cut and framed at factory. Openings and penetrations less than 6" shall be located and cut by the installer. All filler sheets and safing between the interior equipment and the acoustical panel housing shall be provided by the installer.



RUSKIN SOUND CONTROL



Since 1966 Ruskin Sound Control has been recognized as a leading manufacturer of acoustical duct silencers and acoustical modular panels. Ruskin Sound Control was founded on the concept that silencers and panels should perform well aerodynamically as well as acoustically.

Over the years Ruskin Sound Control has developed a complete line of acoustical products as well as the experience and knowledge to design product for special applications. Our products have been installed in a wide variety of applications with engineering assistance provided at every step along the way.

ACOUSTICAL LABORATORY

A full acoustical laboratory assures that our customers get the best products on the market. This laboratory is also utilized in the development of project specific solutions to noise problems that require specialized products. If you have a difficult requirement that needs a non-standard product, let the Ruskin Sound Control team show you our capabilities.



SOUND CONTROL PRODUCTS

- ACOUSTICAL SILENCERS
- MODULAR PANELS
- ACOUSTICAL LOUVERS
- INDUSTRIAL SOUND CONTROL
- CUSTOM SOLUTIONS

