

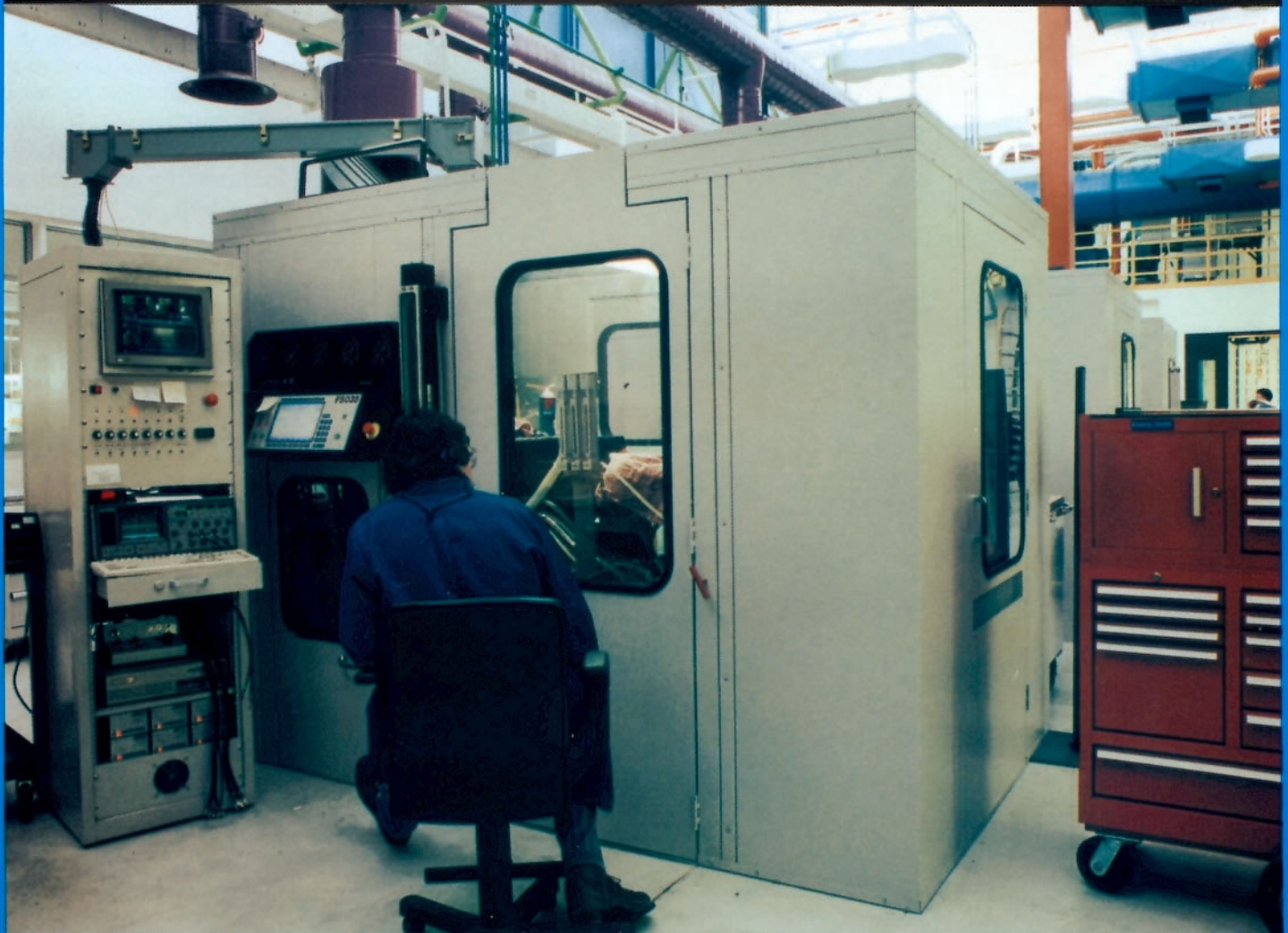
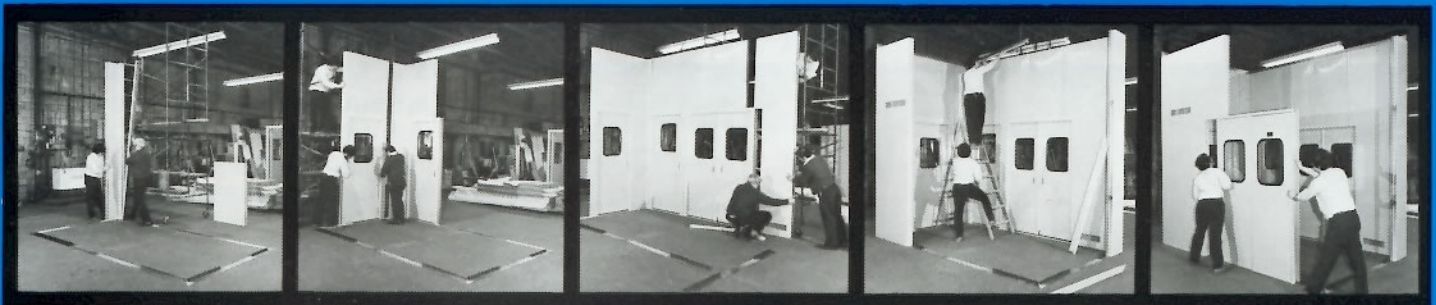
ECKEL
INDUSTRIES, INC.
ACOUSTIC DIVISION

ECKOUSTIC[®] MODULAR PANELS

Series C

The efficient system for
achieving a better acoustic environment

- Easy installation
- Removable and relocatable to meet changing requirements
- Effective noise reduction



ECKEL

ECKOUSTIC[®] MODULAR PANELS

The convenient method for controlling noise as required by OSHA... and improving the work environment...



The Eckoustic Modular Panel (EMPs) system offers an effective long-term solution to industrial/community noise problems... providing quieter, less hazardous, and more productive work areas.

These pre-engineered, structurally strengthened panels combine outstanding sound control properties with unusual versatility in application... 41 or 44 STC panels provide the necessary noise reduction for all industrial applications.

- Highly absorptive acoustical insulation for optimum noise isolation and prevention of reverberant build-up
- Special connectors and flush surfaces, eliminating acoustic leaks
- Rugged building-block construction to best meet present and future needs
- Unique removeability feature — individual panels can be easily dismantled from their structures for access/maintenance of enclosed machinery
- Readily relocated without damaging the acoustic integrity of the system

EMPs — the safeguard system for protecting personnel in manufacturing and processing operations from hearing loss and other noise-related hazards.

Preassembled modular press punch enclosure.

Unique flexibility for walls, partial enclosures, and full enclosures... easy to install and to relocate

The EMP component system of 4" thick sound-rated panels and accessories allows a degree of construction freedom not possible with conventional acoustic panel systems. With Eckoustic Modular Panels, the plant engineer, safety director, OEM manufacturer, architect, or maintenance supervisor can obtain the exact sound-controlling structure necessary for each specific situation.

EMPs are specifically designed for construction of free-standing enclosures of all types. Using the basic components, full enclosures, walls, 2- or 3-sided sound shields, and wall/ceiling partitions can be conveniently erected — to keep the noise inside, away from personnel, or as control rooms and plant offices to protect personnel from exposure to outside noise.

Readily adaptable to changing needs

The EMP system is truly modular. The several basic elements of the system — standard panels, window panels, and door panels — are removeable and interchangeable. Sliding doors also can be incorporated into an EMP structure.

EMP walls/enclosures can be expanded, without loss of acoustic integrity, by the simple addition of more panels... And, since the panels can be disassembled, walls/enclosures can be reerected in different locations using the component parts.

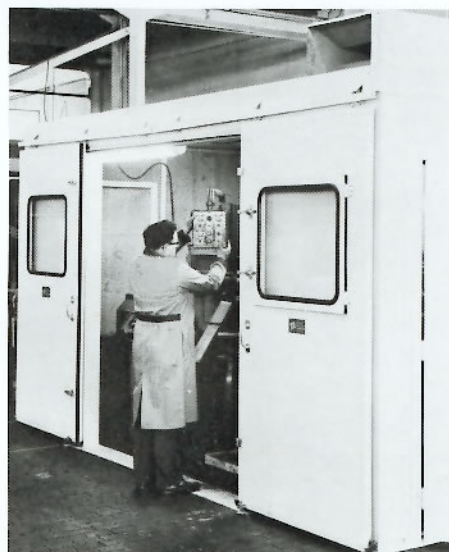
Convenient and quick to install

No special equipment or tools are required to set-up an EMP sound-control structure. "C" batten connectors secure adjacent panels to each other. The patented panel and corner connection insure a tight acoustic fit, without requiring caulking — a labor and time-saving method.

The Standard 4" C Series panels are offered in widths of 18", 30" and 42", with heights of 7', 8', 10', and 12'. For many applications, structures of up to 24' in height can be constructed without additional supports.

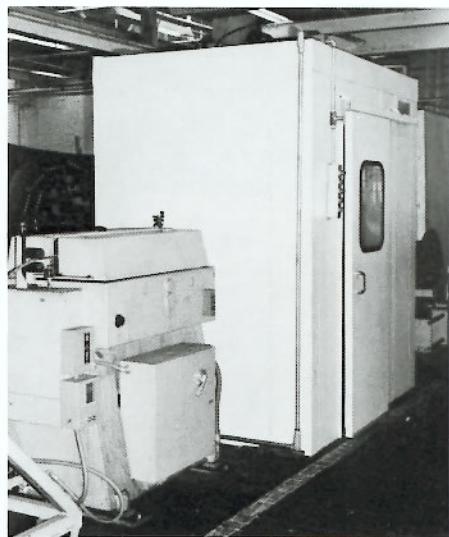
Excellent acoustic control for noisy areas

Both transmission loss and sound absorption are optimized with EMPs. Panels are constructed with a solid steel face on one side, a perforated absorptive face on the other, and an incombustible acoustic fill for additional sound isolation. There are no problems of long-term maintenance of the panel's outstanding acoustic performance. Even dismantling and reassembling EMPs does not degrade their performance.



Cold header EMP enclosure features sliding doors for easy access.

Enclosure can be fitted for any size equipment already on the plant floor, providing excellent noise control.



EMPs

for
Walls,
Partial Enclosures,
Full Enclosures
in
Industrial Noise Control Applications

Effective isolation of personnel from noisy machinery and equipment...for a more productive, safer work environment

Increasing attention is being focused by government legislation on noise control and health problems caused by excessive noise levels of industrial machinery and equipment — within the plant as well as outside it.

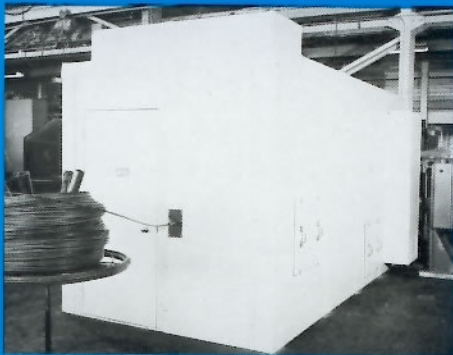
EMPs offer a viable, reasonably-priced method of quieting the industrial environment. They can be used as machinery enclosures to reduce noise levels around existing in-plant machinery.

Similarly, EMPs can be incorporated by manufacturers as part of an OEM "silencing" package for new machinery, eliminating the manufacturer's need for extensive, costly machinery redesign.

Not only do the panels provide noise control but, when properly used, they also can eliminate the requirement for machine guarding.

Another approach is to use the Panels to construct sound conditioned in-plant offices and control rooms. The

Enclosures are provided with necessary access panels, doors, and feeds to accommodate any operation.



enclosure allows personnel to work unhampered by noisy conditions in the production areas. Personnel fatigue is lessened, accidents reduced, and communications improved.

In the outdoor environment, EMP barriers around pumping stations, transformers, and mechanical equipment, and by highways, can lower noise levels significantly.

The versatility of the Eckoustic Modular Panels can be seen in a few typical applications. Performance guaranteed.

PUNCH PRESSES

Noise levels from punch presses can be reduced to less than 85dBA with the rugged EMP enclosures. This type of noise control treatment has proven especially efficient for high speed units — both new equipment and in-place units. All types of automatic punch presses, from 30 tons to over 600 tons, can be readily enclosed with the Panels.

COLD HEADERS, FORMERS, AND BOLT MAKERS

Until the introduction of EMP enclosures, noise problems created by cold headers had been extremely difficult to solve. These easily installed enclosures efficiently and effectively reduce noise levels at the operator's station from levels in excess of 110 dBA to 81dBA. In addition, because of the panel system removeability feature, accessibility for maintenance and repair is assured.

WIRE HOSE BRAIDING

Noise generated by wire hose braid-



EMPs can form an ideal enclosure for isolating workers from excessive noise.

ing equipment can reach 110dBA. With the addition of EMP enclosures, noise levels in the braiding room can be easily brought down to 80dBA.

Since wire hose braiding equipment machines can have one, two, or three stations, EMP enclosures are designed on a modular basis to accommodate the standard spacing of the spinning decks. These enclosures are sized from 7 ft. wide up to 20 ft. long.

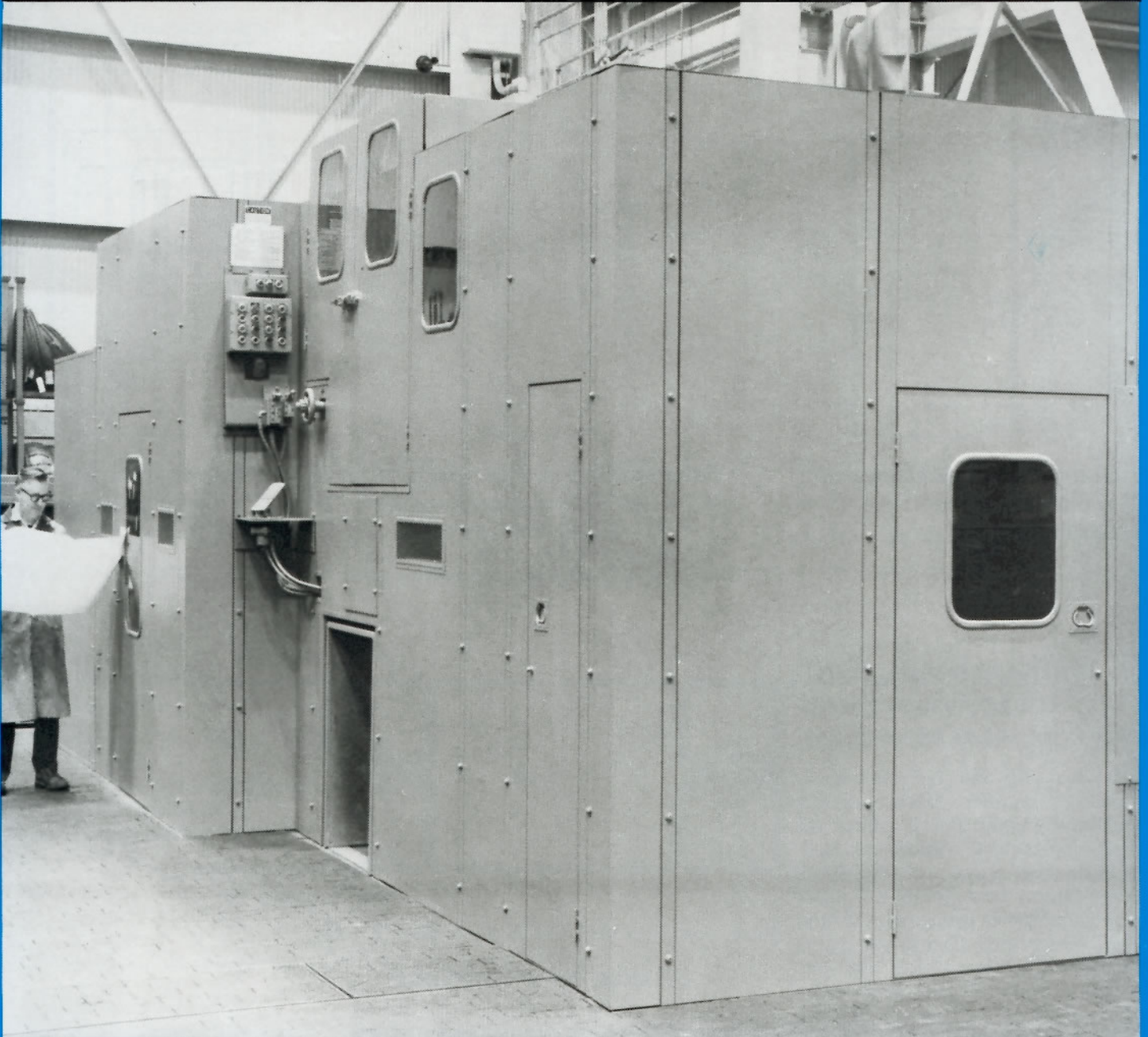
CONTROL ROOMS

EMPs provide a superior system for constructing rooms to protect personnel from excessive noise. The modular aspects of the system allow any size requirements to be met. Lights, ventilation, electrical power, doors, and windows can be incorporated to maintain the operator's effectiveness.

IN-PLANT OFFICES

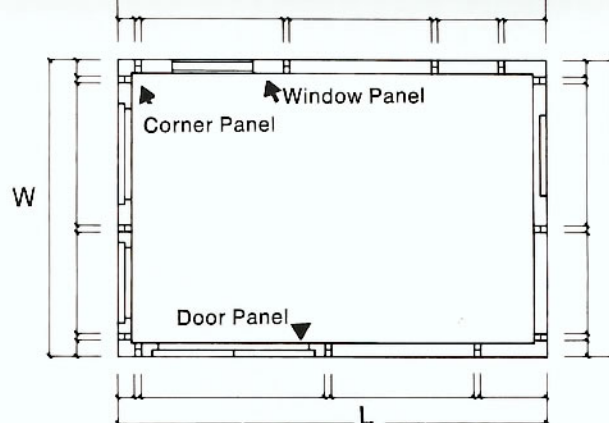
A work station on the factory floor can be quickly created with the EMP system, allowing supervisory personnel to function unhampered by noise problems. Noise and dust proof construction allow production offices to be adjacent to the production area.

EMPs for
controlling noise
at its source in:
Metalworking Operations
Textile Manufacturing
Woodworking Facilities
Pulp and Paper Plants
Automotive Industries
Printing
Public Utilities
Ships
Oil Refineries
Chemical Processing Plants
Transportation Facilities



Construction Features

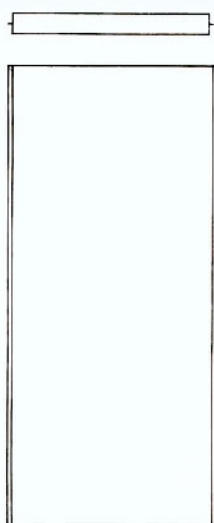
A complete range of components to meet any noise isolation requirement



Standard Panel

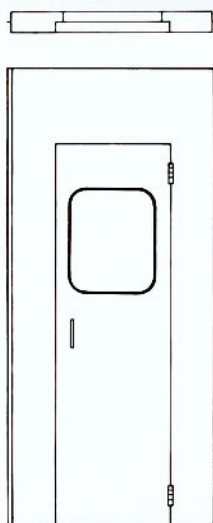
Door Panel

Double Door Panel



Standard Panel Sizes:

Width: 42", 30", 18"
Length: 12', 10', 8', 7'



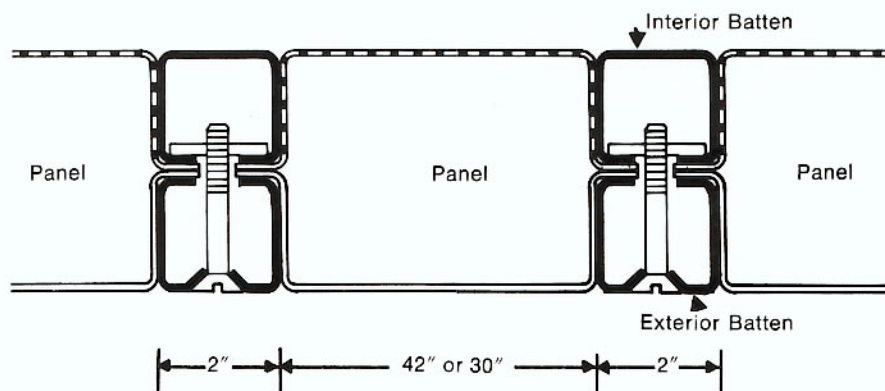
Door Size:

- 24" x 80" x 2" thick door available in 42" and 30" width panels
- 30" x 80" and 36" x 80" x 2" thick doors available in 42" width panel



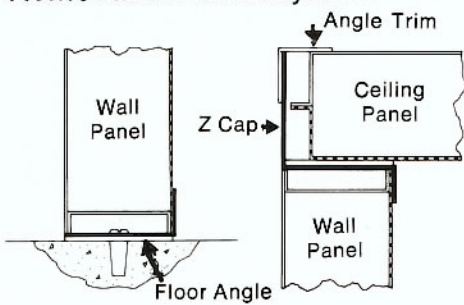
Door Size:

48" x 80" with 18" x 22" glass
54" width panel

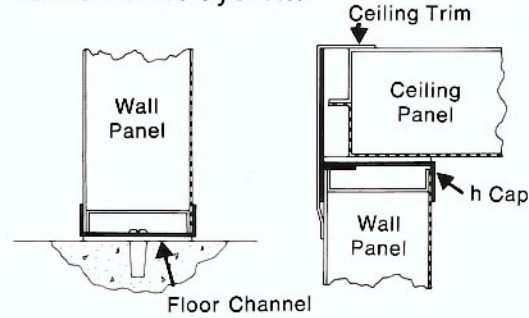


C Batten Panel Connector

Removable Panel System

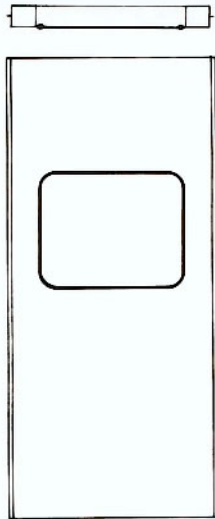


Fixed Panel System



Connectors & Trim

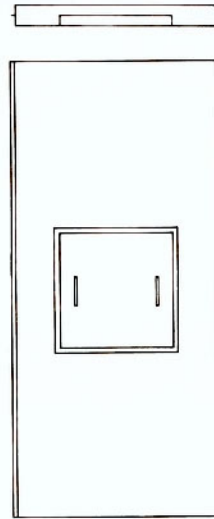
Window Panel



Standard Window Sizes:

24" x 30" or 18" x 22"

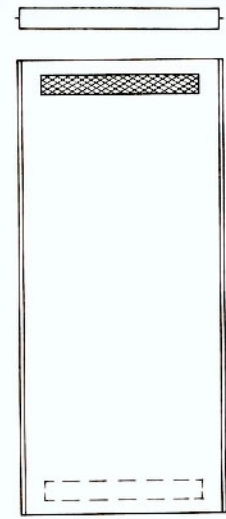
Hatch Panel



Hatch Size and Location:

To customer's specification.

Ventilation Panel



Designed Capacities:

- 30" wide — 500 cfm
- 42" wide — 750 cfm

Other Enclosure Accessories

- Ventilation fans, heating, and air conditioning
- Electrical — lights and receptacles
- Fire protection systems
- Air filtering devices

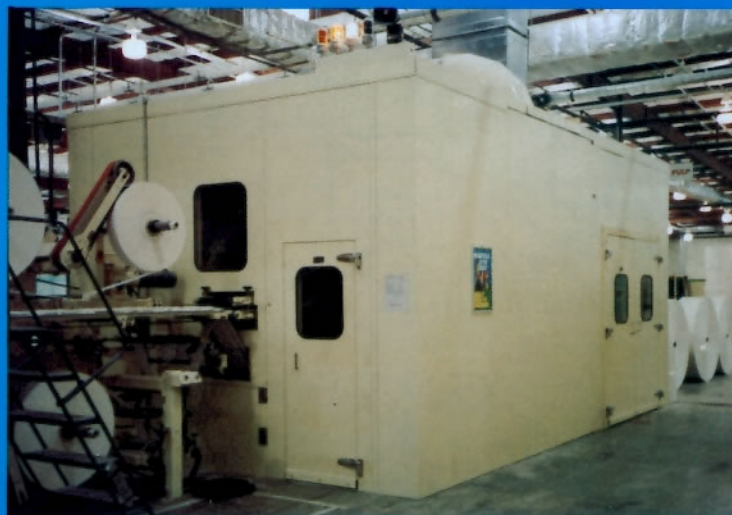
Total engineering and design services for equipment manufacturers

To insure that the proper acoustic environment is achieved in a particular facility, Eckel offers comprehensive engineering evaluations of the noise problem. Since 1952, Eckel has been designing and implementing practical programs for reducing noise in plants, offices, commercial facilities, and public buildings. With this experience and expertise, Eckel can provide the most cost-effective solution to your noise control needs.

Checklist for solving noise problems with EMPs

To obtain a quotation on the best EMP solution to your acoustic problem, submit the following data on your letterhead, accompanied by appropriate drawings.

- Source of noise
- Is noise continuous? intermittent? impact?
- Is vibration also a problem?
- Measured noise level
- Noise level desired
- Any sound absorption methods currently in use? If so, what?
- Location of noise source



Specifications – Eckoustic Modular Panels

ACOUSTICAL PANELS shall be 4" thick Eckoustic Modular Panels, Series C. Panels shall have 16 ga. steel on one face and 22 ga. steel perforated 3/32" round on 3/16" staggered centers on the other face. The acoustic fill shall be wrapped in 1.5 mil PE film or shall be covered with a long glass fibered blanket between the fill and the perforated face. The fill shall be mineral wool and weigh 4 1/4 pounds per cubic foot. Internal panel framing shall be 16 ga., JP galvanized steel channels 24" o.c. minimum. Panel faces shall be welded and riveted to the internal framing. Out-standing flanges shall be spot welded at 5" (max.) o.c.

PANEL FINISH shall be either electro galvanized steel or cold rolled steel finish painted with catalyst polyurethane enamel or standard shop primer.

"C" BATTEN CONNECTORS shall be 14 ga. steel. They shall secure one panel to another by a clamping action. Clamping bolts shall be 3/8" countersunk machine screws spaced at a minimum 18" o.c., 1/4 turn quick disconnects, or hex head machine bolts.

REMOVEABLE EMP PANEL SYSTEM shall have a floor angle of 14 ga. steel with 1/8" felt pad attached to the surface which mates to the floor. The angle shall be attached to the floor with shot-type fasteners or with expansion type anchors. A wall cap "Z" section shall be 14 ga. steel. Individual panels shall be removed by disconnecting adjacent channel batten connectors.

FREE-STANDING EMP PANEL SYSTEM shall be provided with a 16 ga. steel channel which shall be attached to the floor with shot-type fasteners or with expansion type anchors. The "H" cap section shall be of 16 ga. steel.

PANEL ACOUSTIC PERFORMANCE shall have been tested by an independent laboratory. Results of these tests shall be provided and the minimum performance shall be as follows for the standard C Series panels.

The CD panels, with additional mass and damping, shall have the following minimum acoustic performance.

| Frequency (Hz) | Transmission Loss | | Sound Absorption Coefficient | |
|----------------|-------------------|--------|------------------------------|------|
| | "C" | "CD" | "C" | "CD" |
| 125 | 19 | 26 | .71 | .51 |
| 250 | 30 | 33 | 1.14 | 1.10 |
| 500 | 39 | 39 | 1.16 | 1.12 |
| 1000 | 50 | 48 | 1.06 | 1.06 |
| 2000 | 58 | 57 | 1.04 | 1.05 |
| 4000 | 60 | 61 | 1.13 | .93 |
| 8000 | >60 | >60 | | |
| | STC-41 | STC-44 | NRC-.95 | |

DOORS shall be constructed similar to panels and shall have broad faced magnetic gasket seals. Magnet shall be 5/8" wide encased in bellows type vinyl jacket. Doors shall be 2" for 41 STC and 3 5/8" for 44STC application. Size shall be as shown on the drawings. Door shall be factory hung with hardware attached and adjusted.

WINDOWS shall be glazed with acoustical safety glass 9/32" thick. The glass shall be set in a resilient single piece self-sealing locking type neoprene rubber gasket. Single layers are acceptable unless Type CD panels are specified. Then two layers of glass shall be used and shall have a desiccant material installed between them to prevent fogging.

FLOOR PANELS AND VIBRATION ISOLATORS shall be furnished as shown on drawings. Panels shall be constructed with 11 ga. steel top surface and 14 ga. J.P. galvanized steel bottom face. 14 ga. stiffeners shall be 16" o.c. Panel shall be designed to support 300 lbs. per square foot uniform load.

Spring vibration isolators shall be produced to isolate the structure to a natural frequency of less than 3 cycles.

VENTILATION capacity shall be as required. Silencers and/or lined ducts shall be provided to preserve the acoustical integrity of the panel system. Heat loads from equipment and acceptable temperatures for occupancy shall be considered in establishing the volume of air.

LIGHTING requirements shall be as specified on the drawings.

For a quotation, please forward necessary drawings and specifications to our Estimating Department.

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ECKEL
NOISE CONTROL TECHNOLOGIES