

## Avant Garde Stainless Steel Modular Wall Systems



### Product Description

Stainless steel insulated panels are manufactured to precise specifications utilizing state-of-the-art equipment designed specifically for the manufacture of high efficiency panels. The interior and exterior metal surfaces are fabricated in 18 or 20 gauges as specified. The metal is precision formed; the long side of each piece is roll formed to a 90° form with an additional 90° return for maximum strength; the end of each panel is die formed to 90 degrees. The metal panel surfaces, with gasket fitted to the end, are placed in a fixture for foaming, which is built to the exact size of the finished panel. The edges of these foaming fixtures are built to heavy aluminum extrusions, which serve to mold the foam edges to an exact tongue and groove configuration. Cam lock sets are mounted on these rail molds in order to have locks properly located in the finished panel without attachment to either interior or exterior metal surface. With metal locks in place, the temperature controlled fixtures are

sealed under high pressure.

Polyurethane foam is injected into the sealed cavity by mixing two liquid components at a high pressure using a high impingement mixing process. The foam reacts chemically, expands to fill the full cavity at an even and controlled high density per cubic foot. When the reaction is complete, the foam is rigid and has a high structural strength. Panels are then removed from the fixture, cooled and combined with other panels similarly manufactured to give the specified wall panel configuration. Each panel is built to exact size and the insulating polyurethane is uniform at a density, which has been determined to be the most efficient including the panel edges.

Panels manufactured without the extensive equipment required for precision forming and molding of fully foamed-in-place panels typically require attaching wood or high density polyurethane (10 lb/cu. ft.) strips around the perimeter of the panels or by gluing metal to a core of styrene sheet stock.



Panels manufactured using either of these techniques are normally not built to the same exacting tolerance as fully

foamed-in-place molded panels and are not as thermally efficient and soundproof.

## Application

The Avant Garde stainless steel insulated modular wall system is used to bring separation from one lab area to another. Typically, the wall system is used to separate a working lab area from a service space. Harsh environments are typically contained in this service area. Glasswashers, cage washers and

autoclaves generate tremendous amounts of heat and vapors, and these are best isolated from the lab or facility personnel. The panels and related fixtures are blended with the equipment's fascia panels in a seamless fashion. All trim work is provided as final finish.

## Modular Concept

The versatile stainless steel insulated panel's modular concept offers many advantages.

- Tongue and groove sectional panels lock together quickly and simply to form virtually any desired size wall system.
- Modular panels are easily disassembled to enlarge or relocate for future requirements.
- To retain the sound deadening and thermal retention capability.

Tongue and groove panels are used in our modular constructions, assuring a tight, secure fit. PVC gaskets on the

interior and exterior edge of the "tongue" rail are permanently foamed-in-place – won't pull out or "snake," forms are even panel joint. Double return bend of the metal interlocks foam and metal for added strength and rigidity.

The modular panels contain four inches of urethane insulation bonded to metal surfaces for maximum rigidity. No metal or wooden braces are required. The "Posi-Loc" locking assemblies are foamed-in-place in the panel tongue and groove edges. Panels are available in 11-1/2", 23", 34-1/2" and 46" widths.

## Additional Modular Concepts

1. **Corner Panels** are 12" X 12" on the exterior sides, and the interior corner is fully covered. The interior and exterior metal surfaces match the finish of adjacent panels and

contain four inches of foamed-in-place polyurethane insulation.

2. **Tee Walls** can be used in the construction of adjacent walled configurations. By providing a



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complete break in the metal, they prevent thermal conduction from one section to another. These efficient Tee Wall panels eliminate the possibility of misalignment due to field cutting. All Tee walls contain fully coved corners.

3. **Posi-Loc locking assemblies** provide perfect alignment of stainless steel insulated panels and doorframes. The assemblies are permanently foamed-in-place in the tongue and groove edge of all panels. A clockwise turn of the

hex wrench (provided) initiates a cam-type locking action. A locking “hook” is extended over and around a locking “pin” and then retracts to pull the panels tightly together for a secure fit.

4. **Panel Integrity** - these stainless steel insulated panels are strong enough to mount electrical disconnects. These electrical devices are typical for cage wash and autoclave installations. The inside service areas are the perfect location for mounting disconnects.

## Exterior and Interior Walls

The “exterior” can be defined as the wall plane facing the outside area of the facility. This is the side that is flush with the cage wash or autoclave equipment front and back. The “interior” is the side only seen when inside the service enclosed area.

- 18 gauge type 304 Stainless Steel, # 4 finish
- 20 gauge type 304 Stainless Steel, # 4 finish

## Panel Insulation

Every stainless steel insulated panel is filled with foamed-in-place polyurethane – the most advanced insulation material.

Polyurethane offers many advantages over conventional insulation.

The insulation value of four-inch thick polyurethane is equal to 8 ½ inches of fiberglass, polystyrene or Styrofoam.

Unlike batt-type, glass fiber and similar material, polyurethane insulation won’t sag or mat to create air pockets between walls.

The polyurethane permanently bonds itself to the metal surfaces to produce a strong, rigid panel.

Fire retardant polyurethane has been classified according to ASTM E-84 (UL723) with a flame spread rating of 25 or less, and is certified with a UL label (This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.)

A 97% closed-cell structure of polyurethane provides moisture resistance.



Lightweight polyurethane makes sections easier to handle and faster to assemble.

Usable storage area is increased because of polyurethane's superior insulation properties. Thinner walls, ceilings and

floors can be used without sacrificing any temperature loss or strength.

The foamed-in-place polyurethane is dispensed into the panels using a high impingement dispensing system to assure foam density and uniform structure.

## Variable Panel Height

The finished wall panels are available in twenty different heights, ranging in 12" increments, from the shortest height (5' 10-1/4"), to the tallest height (25' 10-1/4"). Additionally, custom heights can be precision cut to the exact measurement. In most vivarium applications, the stainless steel insulated panel height is approximately six inches

higher than the room's ceiling height. This allows for the ceiling contractor to make an exact match up to the modular wall. The wall panels do not run up to the upper decking, so if air differential seals from lab to service areas are needed, then a drywall system would work best from the mod wall panel up to the decking.

## U-Shaped Stainless Steel Channels

The stainless steel insulated panels are mounted into a four inch receiving channel, with matching material and finish. These receiving channels are attached to the finished or unfinished

floor by way of lead anchors. All channel to floor seams are caulked with a compound that is approved by the vivarium.

## Optional Accessories

- Extra corner protection; 3"x 3" 16 gauge ss angle
- View port (windows) for panels or doors
- Air passage louvered grills, stainless steel (specify size \_\_\_\_\_)
- Inside imbedded electrical receptacles and switches
- Intercom system for clean to dirty sides
- Voice passage ports (Terra Universal)

## Access Door Details

### Available Door Sizes

- 24"wide x 80"high \_\_\_\_\_
- 26"wide x 80"high \_\_\_\_\_
- 30"wide x 80"high \_\_\_\_\_
- 34"wide x 80"high \_\_\_\_\_
- 36"wide x 80"high \_\_\_\_\_
- 42"wide x 80"high \_\_\_\_\_
- 48"wide x 80"high \_\_\_\_\_
- 54"wide x 80"high \_\_\_\_\_

Typical Access Panel Door



### Access Door Features

- Standard finish is 20 gauge stainless steel
- Durable FRP (Fiberglass Reinforced Plastic) door perimeter, jamb and threshold.
- Posi-seal closure to cushion door closing
- Durable, rust resistant hardware
- Interior safety release hardware to prevent entrapment
- Four inches of polyurethane insulation
- Flush fit magnetic gasket for air tight seal

The stainless steel insulated panel access doors are designed for the vivarium's hearty environment. The door perimeter and jamb are made from Fiberglass Reinforced Plastic (FRP). This material resists impact from material handling carts and equipment. The material is rust resistant and will not dent or warp.

Doors are equipped with self closing hardware. The hardware includes a posi-seal close mechanism that catches the door and cushions the close movement. This provides noiseless closure and a firmly sealed fit. This closure mechanism incorporates an oil filled cylinder. The spring loaded plunger uses a check valve for easy opening and positive closing.



Typical Soiled Side Vivarium with Avant Garde Modular Wall System

**Project Application Data:**

Job Name:

Location:

Area for partitions:

Equipment to be within the partition:

Panel height:

Ceiling height: (Identify as soiled side and unload side)

Will floor area be epoxy coated for otherwise finished at time of mod wall installation?

Yes       No