

Cleanroom Wall Systems

Fabline Modular Cleanroom Wall Systems For The Most Demanding Cleanroom Requirements

Innovative Industries Demand Flexibility

FabLine modular cleanroom wall systems make it easier and more cost-effective than ever before to create ultra-clean facilities meeting the critical environmental conditions demanded in precision microelectronics manufacturing.

Rapid market life cycles and continuous product development dictate facilities designed to adapt quickly, with minimum disruption or down time to the operation.

FabLine cleanroom wall systems are designed for such change.

Our systems have design flexibility built in. Nonprogressive construction allows easy removal of panels from either side of the wall without disturbing adjacent panels, ceiling or framework for minimum contamination.

With FabLine, there's no need to start from ground zero to meet new requirements in current manufacturing space. The entire wall system can be utilized with all types of existing construction elements: ceilings, floors, and walls.

A Total Cleanroom Wall System

The PortaFab FabLine Series includes three wall systems for Framing, Batten and Furring applications.

Pre-engineered wall panels are interchangeable within all three systems, for consistent appearance, easier inventory and faster installation.

Engineered for use in any Class cleanroom, FabLine wall panels are non-outgassing, non-particle shedding and anti-static, decreasing product contamination.

All components can be packaged within a cleanroom environment.

Proven Quality

With nearly two decades of cleanroom fabrication experience Porta-Fab is a leader in modular cleanroom technology.

Our high quality in standards and customer service are now extended to the next level of technological advancement in FabLine cleanroom wall system components.

Turnkey Solutions

PortaFab's commitment to maintaining the highest quality standards extends to the international network of specialized contractors for our cleanroom wall systems.

These contractors must meet the most exacting industry standards of customer service, industry knowledge and expert installation procedures. Their experience in constructing Class 1 facilities has made them the preferred source for most of the leading microelectronics producers.

Among the largest in the industry, our contractor network maintain their own quality control programs to assure compliance with all critical standards. As independent contractors, they choose to work with PortaFab because our FabLine Cleanroom Wall System is the most cost-effective product available for constructing a quality cleanroom envelope.

Tax Advantages

FabLine wall systems may be subject to tax advantages of seven year depreciation. Check with your financial advisors.



A Wall System For Clean Fabs and Cleanrooms

As the demands and requirements of the microelectronics industry have increased in recent years, so have the needs for a high-performing, cost-efficient designed solution. Reduced construction schedules and increased quality levels place greater emphasis on product turn around and reliable product design. Porta-Fab has engineered three wall systems designed to adapt to all the demands within the high tech manufacturing industry down to a sub-Class 1 level.

The turn to 300mm technology will drive more changes and demand more flexibility in the way fabs are designed and operated. Increased tool footprints and heights demand overall wall and ceiling heights to 16' or taller.

With these standards in mind, we developed a wall system capable of obtaining such heights while meeting the deflection criteria for taller wall conditions. Porta-Fab has designed the FabLine wall system to meet the new challenges within the industry through our structural design.

Superior Panel Performance

Product contamination from outgassing remains an issue in maintaining the highest product yield levels. Tested in accordance with ASTM E595, our wall systems meet the stringent demands for percentage of weight loss.

FabLine wall systems have the ability to withstand most chemicals, acids and solvents involved in nearby manufacturing and cleaning processes. Standard panel finish can withstand various concentrations and time exposures including: sulfuric acid, nitric acid, hydrofluoric acid, sodium hydroxide, and xylene at 50% concentration for 30 minutes with no attack on the finish, allowing enough time to wipe down panel surfaces.

The smooth and uniform epoxy roll-coat finish of our cleanroom panels ensures a uniformly anti-static panel surface with no specks or textures providing a more consistent appearance without any variations in quality common with powder coat operations. Panels are shipped with a protective film to ensure cleanliness and prevent damage from installation. And because our paint is baked onto our wall panels, there is a greater resistance to abrasions and scratches.

Resistance Against ESD Contamination

With the critical requirements demanded of micro-electronics manufacturing, many processes have become even more vulnerable to the effects of electro-static discharging. FabLine Wall Systems provide long-term performance in cleanrooms offering static control, which improves quality and reduces manufacturing costs. Standard panel surface resistivity of 10^8 to 10^9 ohms/square, in accordance with EOS/ESD-S11.11-1993, and an electrostatic decay of $<10\%$ IN .5/sec, per Federal Standard 101B Method 4066, provides optimum static protection in most applications. Framework and doors are also available to meet the same criteria in a variety of colors.

Proven Reliability

Porta-Fab has earned the reputation as a leader in cleanroom wall systems. A U.S. corporation with representatives and distributors throughout the world, we specialize in cleanroom environments. Our technology yields products that exhibit permanence and consistency in performance. We can apply that technology to your specific application.



FabLine Framed Wall Systems

A durable wall system with broad design flexibility, FabLine Framed Cleanroom Wall Systems provide the optimum combination of high durability, design versatility, and simple installation.

Ideal for environments up to sub-Class 1 classification, FabLine Wall Systems are available in three panel thicknesses.

Bulkheading Capabilities

The ideal wall system for cleanrooms requiring a flush surface on both sides of the wall panel, FabLine Framed Wall Systems are designed for extensive gasketed bulkheading around tools.

Vertical and horizontal members are easily connected to each other to simplify use of bulkheading. Bulkheading capabilities allow gasketed air tight seals around equipment tooling for minimum loss of room pressurization.

Highly Flexible

Wall systems utilize common components providing maximum flexibility while minimizing inventory of parts. Interfaces with ceiling grid systems, flooring systems, existing modular wall systems and conventional construction.

Walls can be supported from the floor or ceiling to accommodate openings. Stud post and batten support the attachment of shelves and utility runs on wall face.

Floating head track is available allowing for ceiling deflection and minimizing wall vibration. Minimal connection hardware allows for quick installation.

Single-glazed or double-glazed windows are available. Panel finishes provide chemical resistance.

Patent Pending

Adaptable to Constant Change

Adapting to changing requirements is fast and simple with FabLine Framed Wall Systems. Nonprogressive construction allows easy removal of wall panels from either the front or back without disturbing adjacent panels, ceiling or the framing post.

For construction simplicity, a strut clamp can be used to attach conduit and piping on the rear of the wall.





FabLine Framed 250

Utilizes a 0.25" thick (6mm) wall panel. The cost-effective solution for bay/chase cleanroom designs requiring small and large gasketed bulkheads.



FabLine Framed 500

The 0.50" thick (12mm) wall panels provide a flush wall surface on one side ideal for mechanical and plenum chase applications.

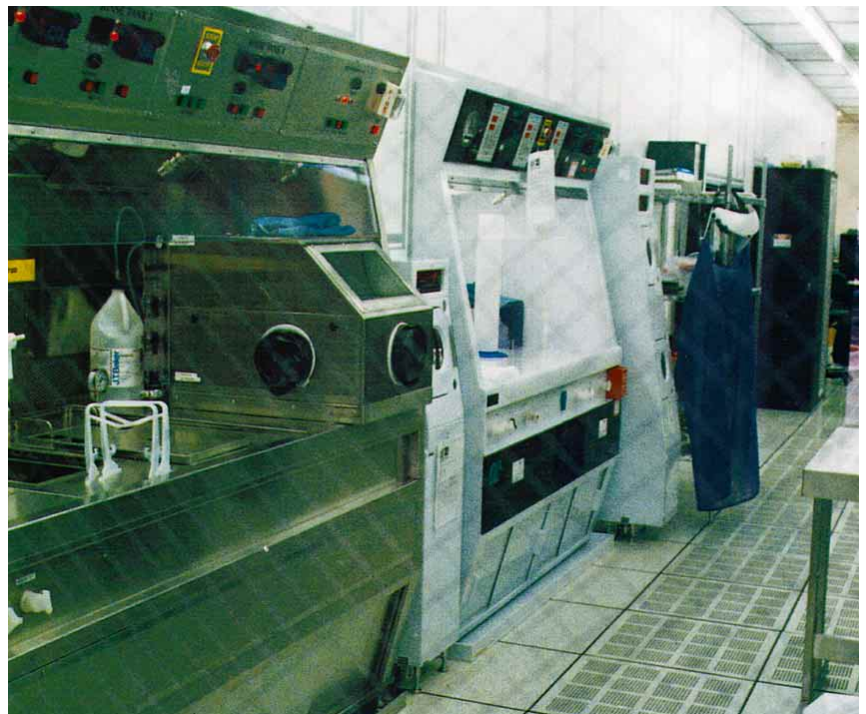


FabLine Framed 2000

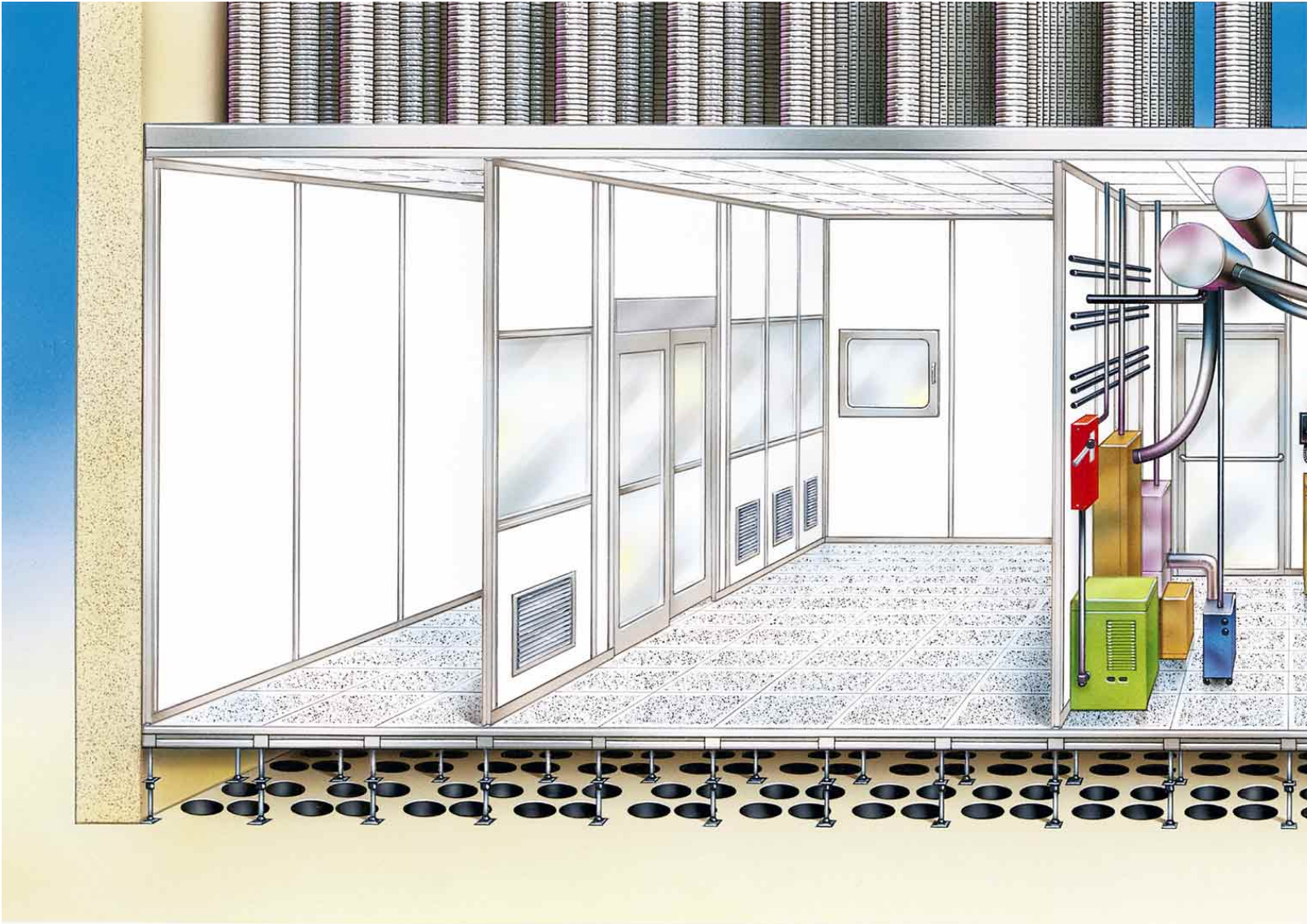
The ideal 2.00" (50mm) thick wall system for cleanrooms requiring a flush surface on both sides of the wall panel.



FabLine Framed Wall Systems can easily accommodate tool fit-ups and bulkheading while allowing integrated support for piping, conduit and related equipment.



FabLine Architectural Applications



FabLine Furring Wall Systems

Furring Wall allows ability to quickly skin an existing wall or channels.

Batten Wall System

Floor to ceiling wall provides fast installation abilities with a flush surface on both sides of the wall.

Electric Sliding Doors

Aluminum sliding doors are easily accommodated by interfacing with our wall systems

Framed Windows

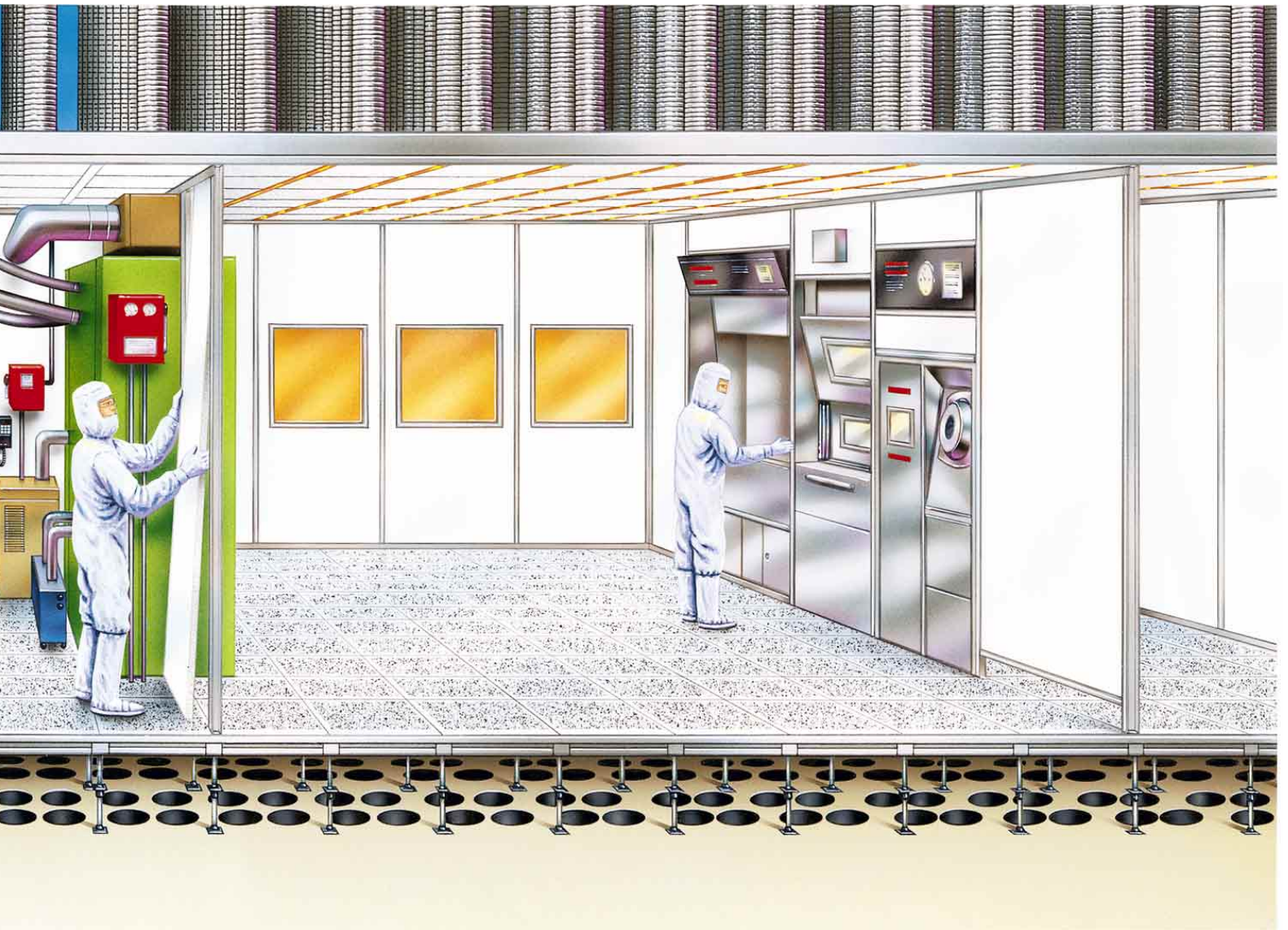
Single or double flush windows can be glazed from stud to stud for full glass viewing.

Grille Openings

Return air grilles can be easily installed into our wall panels in the field, or at the factory, reducing field labor costs.

Wall Penetrations

Pass thus, piping and equipment can penetrate wall panels through simple field modifications.



Doors

Aluminum rail and stile doors provide an attractive appearance with a variety of hardware options available.

Framed Wall Systems

Provides flush wall surface on cleanroom side with integrated support on the chase side for piping, conduit and related equipment required to service the cleanroom.

Ceiling/Head Track Interface

Our gasketed head tracks can interface with standard grids and flush grids providing a virtually seamless transition.

Factory Installed Windows

Pre-installed windows with mitered corners provide flush glazing with a beveled back allowing for an easy wipe down.

Framed Wall System

Tool fit-ups and equipment bulkheading can be easily integrated into the Framed Wall System for a sealed interface.

Elevated Wall Panel

Panels can be elevated for side wall returns. Egg crate and wire mesh can be integrated with the studs to conceal mechanical plenums.

FabLine Batten 2000

When extensive bulkheading is not required, this 2.00" (50mm) thick wall system provides an effective, double-flush surface partition system.

The Batten 2000 Wall System offers a fully demountable wall system without the need for a framing post, which provides a more cost-effective wall system installation.

When future changes or expansion is needed, the nonprogressive design allows individual wall panels to be moved without disturbing adjacent walls or ceiling.

Easy to install design features fewer components and lightweight panels which allow the wall system to be installed more quickly than a framed wall system or conventional construction, reducing labor costs for the project.

Versatile

Wall systems utilize common components providing maximum flexibility while minimizing inventory of different parts.

Interfaces with ceiling grid systems, flooring systems, existing modular wall systems and conventional construction.

Panel finishes provide chemical resistance. Gasketed wall system provides an air-tight seal for minimum loss of room pressurization.

Walls can be supported from the floor or ceiling to accommodate openings. Stud post and batten support the attachment of shelves and utility runs on wall face.

Floating head track available allowing for ceiling deflection and minimizing wall vibration. Minimal connection hardware allows for quick installation.

Windows can be installed in full size panel, reducing labor costs and time in the field. Single-glazed or double-glazed windows available.

Batten 2000 Wall System offers quality appearance and superior performance at an unmatched value. No other construction method can match the uncompromising quality and performance of the Batten 2000 Wall System dollar for dollar.

For 300mm technology and mini environments, the Batten 2000 offers the capability for a tall wall requirement while meeting the deflection criteria demanded of building codes.

When tool bulkheading is required, Batten 2000 Wall System can easily interface with the Framed Wall System to accommodate tool and equipment requirements without disturbing the aesthetics of the wall installation.

U.S. Patent No. D392,054





Batten Bulkhead Gasket
Provides an air tight seal around tools and equipment



Batten Window
Factory installed windows provide single flush glazing and beveled backs for convenient wipe downs.



Floor Track Connection
Battens are aligned flush at the basetrack providing a flush connection thus eliminating ledges where particles can accumulate.



FabLine Furring

This economical system provides the ability to create a cleanroom out of an existing room or upgrade a cleanroom already in use.

FabLine Furring Wall Systems offer an attractive, cost-efficient wall system for installation over existing block or gypsum walls, drywall studs, and columns.

The functional design also allows it to be installed on strut-type framing to create a mechanical chase.

Wall panels provide a flush surface on one side while creating a consistent appearance with the ballroom or plenum walls.

Complete flexibility allows the wall system to be designed for any configuration

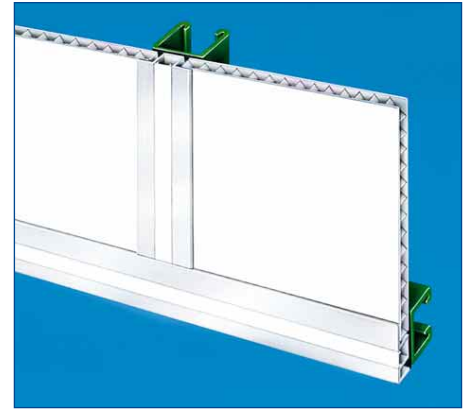
Fast, Simple Installation

Furring over existing walls allows for a quick and cost-effective method of lining the cleanroom.

Panels can be installed without the need for gasketed spacer strips behind the panel or battens allowing for a quick installation.

Ideal for environments up to a sub-Class 1 classification.

Patent Pending



FabLine Furring 500 On Strut

This 0.50" (12mm) thick wall allows you to create side wall returns and mechanical chases while controlling costs.



Trimming at Existing Openings

Furring Wall Systems are designed to skin and trim around most wall openings and penetrations including doors, windows, and equipment.



FabLine Furring 250 On Existing Wall

This 0.25" (6mm) thick wall system can be used to skin existing block and gypsum walls as well as channels to give the cleanroom a consistent appearance.

FabLine Accessories

Door Options

• Aluminum Rail Stile Doors

Full glass or half glass architectural aluminum doors are available with a variety of hardware options, including pivot hinges, surface-mounted closers, concealed closers, panic hardware and locksets. All horizontal glazing clips are beveled eliminating difficulty to wipe down corners, reducing particle accumulations.

• Steel Door

Glazed or flush steel doors integrate into the aluminum door frames utilizing butt hinges at the jamb connection.

• Electric Sliding

Sliding doors easily integrate into our wall systems and are available in a any size with a variety of hardware available including push button entries and motion sensors and non-outgassing seals.

Panel Options

• In addition to all aluminum construction in the panel design, alternate surfaces and cores are available to meet the requirements of the cleanroom, allowing a customized panel based on the project requirements. Surfaces offered include melamine, vinyl, painted steel, stainless steel, Fiberglas™ reinforced plastic(FRP), polyvinyl chloride(PVC), high pressure laminates or porcelainized steel.

• Panel cores are available in expanded polystyrene, paper honeycomb, aluminum honeycomb, gypsum, isocyanurate and mineral wool.

Flush Grid Connections

• Flush grid ceiling can interface easily with the FabLine wall system utilizing a head track clip to join the flush grid and head track together into one unit, thus eliminating seams and joints at this connection point.

Grill Openings/Cutouts

• Grill openings and cutouts for pass-thus, windows or equipment can be factory-installed, reducing field labor costs, and saving time.

Wiring Stud

• The need for communication, utility and electrical lines are of the utmost importance in any facility. The wiring stud post provides capabilities for running vertical and horizontal wiring/communication lines without having to cut out openings into the wall panels or affecting the structural integrity of the wall.

Glazing Options

• Windows and doors can be glazed with a variety of options, as specified by the project requirements, including: tempered glass, tinted glass, lexan, acrylic, static dissipative, film-covered glass or solid panels.

Paint Finishes

• A variety of painted finishes are available with aluminum or steel surfaces, including: conductive epoxy, non-conductive epoxy acrylics, polyester, or powder coating.

Cleanroom Envelopes

Mezzanine Structures

• The need to support mechanical equipment, piping and ceiling systems is critical in cleanrooms, so when an existing facility is unable to offer this criteria, our mezzanine structures provide the “envelope” structure without tying into the existing building. These free-standing structures can be designed to any configuration and size requirements.

Cleanwall Series

• As industry requirements demand more and more from manufacturers and suppliers, so does their ability to produce products or supply services conducive to increased stringent quality control.

Our Cleanwall Series provides a free-standing envelope structure without the need for a separate structure. Available in a variety of panel constructions and options, the Cleanwall Series provides a smart alternative to projects where large capital outlays are not available.



Mini Environment enclosures



Large windows for maximum visibility

Specifications

Framed System

General

Modular cleanroom wall systems covered by this section shall be of the flush-panel type; no framing or trim shall protrude more than 1/16" from the finished surfaces except head track which shall not protrude more than 1/4". Finished walls shall not exceed 2" thickness except at top where thickness shall not exceed 2 1/2". All exposed aluminum shall be of architectural grade extruded aluminum 6063-T5 and shall be anodized 201R1.

Scope of Work

The modular cleanroom wall system shall be FabLine Framed Wall System as manufactured by Porta-Fab Corporation, Chesterfield, Missouri. Manufacturer must have a minimum of 20 years experience designing and manufacturing cleanroom wall systems. Installation shall be according to standard details as described by the manufacturer.

Aluminum Wall Panels

Standard wall panels shall be 1 7/8", 1/2", or 1/4" thick consisting of .032" aluminum with a smooth epoxy conductive roll-coat finish laminated to both sides of an aluminum honeycomb core. Wall panels shall have a surface resistivity in the range of 10⁶ to 10⁹ ohms/square per EOS/ESD-S11.11-1993, which supersedes ASTM-D257, and an electrostatic decay of <10% IN, .5/sec. per method 4066 Federal Test Method Standard 101B. Unless otherwise indicated on drawings, panels shall be 45 3/4" wide x specified height.

Framed Stud Posts and Battens

All studs and battens shall be 6063-T5 aluminum extrusions with 201R1 anodized clear finish. Studs and battens fasten together creating a sealed joint connection and secure exact panel alignment. The battens shall clamp against the framed stud post and permit the attachment of conduit, shelving, and utility lines utilizing a system clamp. A removable closure strip conceals fasteners of batten to the stud post. Studs and battens shall allow wall panels to be installed or removed easily without disturbing adjacent wall panels, stud posts or ceiling.

Floor Track

The floor track shall act as an alignment track for the wall system. Floor track is pre-drilled every 6" on center.

Head Track

Head track shall provide a seal at panel and stud assembly connection, vibration isolation, and a deflection head capable of 3/4" of downward movement. Head track is pre-slotted every 6" on center.

Doors

Standard door shall be architectural aluminum, full glass stile and rail doors to include narrow stiles (2 1/8") with a 4" bottom rail. Door to include pivot hinges, push/pull hardware, MS lockset (MS 1850) with thumbturn/key function and surface mounted closer. Door glazing shall be by means of an interior and exterior fixed gasket of extruded elastomeric material. Door frame shall have a continuous extruded gasket at the head and jamb members. Door glass stops shall be snap-in with beveled horizontals to ease in wipe down.

Batten System

General

Modular cleanroom wall system covered by this section shall be of the flush-panel type; no framing or trim shall protrude more than 1/16" from the finished surfaces except head track which shall not protrude more than 1/4". Finished walls shall not exceed 2" thickness except at top where thickness shall not exceed 2 1/2". All exposed aluminum shall be of architectural grade extruded aluminum 6063-T5 and shall be anodized 201R1.

Scope of Work

The modular cleanroom wall system shall be FabLine Batten Wall System as manufactured by Porta-Fab Corporation, Chesterfield, Missouri. Manufacturer must have a minimum of 20 years experience designing and manufacturing cleanroom wall systems. Installation shall be according to standard details as described by the manufacturer.

Aluminum Wall Panels

Standard wall panels shall be 1 7/8" thick consisting of .032" aluminum with a smooth epoxy conductive roll-coat finish laminated to both sides of an aluminum honeycomb core. Wall panels shall have a surface resistivity in the range of 10⁶ to 10⁹ ohms/square per EOS/ESD-S11.11-1993, which supersedes ASTM-D257, and an electrostatic decay of <10% IN, .5/sec. per method 4066 Federal Test Method Standard 101B. Unless otherwise indicated on drawings, panels shall be 45 3/4" wide x specified height.

Batten Stud Posts and Battens

All studs and battens shall be 6063-T5 aluminum extrusions with 201R1 anodized clear finish. Studs and battens fasten together creating a sealed joint connection and secure exact panel alignment. The battens shall clamp against the batten stud post and permit the attachment of conduit or shelving. A removable closure strip conceals fasteners of batten to the stud post. Studs and battens shall allow wall panels to be installed or removed easily without disturbing adjacent wall panels, stud posts or ceiling.

Floor Track

The floor track shall act as an alignment track for the wall system. Floor track is pre-drilled every 6" on center.

Head Track

Head track shall provide a gasketed seal at panel and stud assembly connection, vibration isolation, and a deflection head capable of 3/4" of downward movement. Head track is pre-slotted every 6" on center.

Doors

Standard door shall be architectural aluminum, full glass stile and rail doors to include narrow stiles (2 1/8") with a 4" bottom rail. Door to include pivot hinges, push/pull hardware, MS lockset (MS 1850) with thumbturn/key function and surface mounted closer. Door glazing shall be by means of an interior and exterior fixed gasket of extruded elastomeric material. Door frame shall have a continuous extruded gasket at the head and jamb members. Door glass stops shall be snap-in with beveled horizontals to ease in wipe down.

Furring System

General

Modular cleanroom wall systems covered by this section shall be of the flush-panel type; no framing or trim shall protrude more than 1/16" from the finished surfaces. All exposed aluminum shall be of architectural grade extruded aluminum 6063-T5 and shall be anodized 201R1.

Scope of Work

The modular cleanroom wall system shall be FabLine Furring Wall System as manufactured by Porta-Fab Corporation, Chesterfield, Missouri. Manufacturer must have a minimum of 20 years experience designing and manufacturing cleanroom wall systems. Installation shall be according to standard details as described by the manufacturer.

Aluminum Wall Panels

Standard wall panels shall be 1/2" or 1/4" thick consisting of .032" aluminum with a smooth epoxy conductive roll-coat finish laminated to both sides of an aluminum honeycomb core. Wall panels shall have a surface resistivity in the range of 10⁶ to 10⁹ ohms/square per EOS/ESD-S11.11-1993, which supersedes ASTM-D257, and an electrostatic decay of <10% IN, .5/sec. per method 4066 Federal Test Method Standard 101B. Unless otherwise indicated on drawings, panels shall be 47 1/8" wide x specified height.

Furring Panel Connectors

All panel connectors shall be 6063-T5 aluminum extrusions with 201R1 anodized clear finish. Panel connectors fasten against the existing wall or framework, with fasteners not supplied by Porta-Fab, creating a sealed joint connection and secure exact panel alignment. A removable closure strip conceals fasteners of panel connector to existing wall or framework. Panel connectors shall allow wall panels to be installed or removed easily without disturbing adjacent wall panels or ceiling.

Floor Track

The floor track shall act as an alignment track for the wall system. Floor track is pre-slotted every 6" on center.

Head Track

The head track shall act as an alignment track for the wall system. Head track is pre-slotted every 6" on center.

PORTAFAB
Cleanroom Wall Systems

Manufactured by:

Porta-Fab Corporation
18080 Chesterfield Airport Road
Chesterfield, MO 63005 USA
1-800-325-3781 • 1-314-537-5555
Fax 1-314-537-2955
e-mail: info@portafab.com
www.portafab.com

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