

**SECTION [13200]
FRAMED 2000 CLEANROOM WALL SYSTEM**

SECTION 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section specifies all requirements necessary to furnish and install a complete framed modular cleanroom wall system including, but not limited to the following:
 - 1. 2.00" thick framed cleanroom wall system, non-loadbearing, completely demountable, non-progressive, as indicated on the Drawings, including all installation attachments.
 - 2. Cleanroom wall panel material including paint, coating, or finish.
 - 3. Extrusions, fasteners, trim finishing strips and non-outgassing type gasketing necessary to maintain wall system structural integrity and airtight installation.
 - 4. Prefabricated door modules with hardware installed as scheduled in Section 08710, *Door Hardware*, and Section 08790, *Door Schedule*.
 - 5. Window panels with glazing as scheduled in Section 08800, *Glazing*.
 - 6. Product design.
- B. All building areas must be inspected by cleanroom wall installer prior to installation for any job condition that will alter the layout or the details. Coordinate installation with other trades to avoid conflicts.

1.02 RELATED SECTIONS

- A. This Section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for the referenced framed cleanroom wall system.
 - 1. Division 1 sections included in the project specifications.
 - 2. The Subcontract.
 - 3. Section 08710 - *Door Hardware*
 - 4. Section 08790 - *Door Schedule*
 - 5. Section 08800 - *Glazing*
 - 6. Section 10270 - *Cleanroom Access Flooring*
 - 7. Section 13028 - *Cleanroom Modular Flush Filtered Ceiling System*
 - 8. Section 13201 - *Batten Cleanroom Wall System*
 - 9. Section 13202 - *Furring Cleanroom Wall System*
- B. In the event of conflict regarding requirements for framed modular cleanroom wall systems between this Section and any other sections, the provisions of this Section shall govern.

1.03 REFERENCES

- A. Refer to *Porta-Fab Modular Cleanroom Wall System Specifications* website for technical data, design requirements and additional information.

1.04 SUBMITTALS

- A. Submit the following in addition to the standard requirements.

1. Manufacturer's literature, specifications, details, and installation instructions for each cleanroom wall component proposed for use, including technical data as may be required to show compliance with the specifications.
2. One sample of wall system components with specified finish, gasketing, and connectors. Include any other components as necessary to illustrate a completed wall assembly.
3. One set of samples of each finish and color required. Submit sample finishes on aluminum having the specified alloy, temper, finish-coating treatment, and thickness of metal required for the work. Provide 12-inch square samples. Samples will be reviewed for color and finish only. Compliance with all other requirements is the exclusive responsibility of the Subcontractor.

1.05 QUALITY ASSURANCE

- A. Manufacturer:
 1. Like items of materials provided hereunder shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.
 2. Award the work to a firm who is experienced in the manufacturing of cleanroom wall system components.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in their original, unopened packages.
- B. Wall system panels shall be delivered with an approved clear PVC film. Wall system shall be packaged to prevent transit and construction dust from contaminating surfaces. Stripping of packaging and coatings to be done after installation of wall panels.
- C. Exercise extreme care in handling all cleanroom wall system components to prevent damage.
- D. Store materials within the building in the space designated for cleanroom component storage. Store materials in such manner as to prevent damage or intrusion of foreign matter. Conspicuously mark "Rejected" on materials, which have been damaged, and remove from the job-site.

1.07 WARRANTY

- A. Porta-Fab Modular Cleanroom Wall Systems are warranted against defects and workmanship for a period of one (1) year from date of original shipment. Porta-Fab is not responsible for or liable for modifications, alterations, misapplication or repairs made to the products in the field.

1.08 MAINTENANCE

- A. Additional Materials
 1. Wall Panels, Extrusions, and Hardware: Provide material as specified by Customer.

1.09 TECHNICAL SERVICES

- A. Porta-Fab Corporation offers technical service support. For services regarding layout, design and product selection, as well as suggested specifications, contact the main office (Section 2.02).

SECTION 2 PRODUCTS

2.01 PRODUCT NAME

- A. Cleanroom Modular Wall System - FabLine Framed 2000

2.02 MANUFACTURER

- A. Porta-Fab Corporation
18080 Chesterfield Airport Road
Chesterfield, MO 63005 U.S.A.
Phone: (636) 537-5555
- B. The use of a manufacturer's name, model or catalog number is for the purpose of establishing the standard of quality and general configuration.

2.03 PRODUCT DESCRIPTION

Basic Uses: The FabLine Framed 2000 Modular Cleanroom Wall System is designed to add the same protection, strength and reliability to a new or existing cleanroom, ensuring performance geared to the expectations for which the cleanroom is being installed. The wall panels shall install within a framework providing a smooth, flush wall finish on both sides. The FabLine Framed 2000 Modular Cleanroom Wall System is designed for use in environments up to a sub-M1 classification where maximum performance, strength and reliability are required. The FabLine Framed 2000 Modular Cleanroom Wall System is designed for easy removal of wall panels without disturbing adjacent panels or ceiling (non-progressive) minimizing contamination possibilities to the cleanroom environment. The wall system is designed for environments within the microelectronics industry and all supporting and related industries.

- A. The wall system shall have the capability to be finished flush on both sides and minimize the need for field cutting.
- B. Cleanroom Wall Support System:
 - 1. Framing Components - General:
 - a. All studs and battens shall be 6063-T5 aluminum extrusions with 201R1 anodized clear finish. Studs and battens shall fasten together tightly creating a sealed joint connection and secure alignment of panels. All connections of horizontal and vertical framing shall be secured utilizing a slotted angle bracket to pull all joints together. The battens shall clamp against both sides of the post and permit the attachment of conduit, shelving, and utility hardware through the screw boss in the batten. A removable enclosure cap conceals fasteners of the battens to the stud post. Studs and battens shall allow wall panels to be installed or removed easily without disturbing adjacent wall panels or ceiling.
 - b. All vertical framing, except corners, shall have the capability of being placed anywhere along the wall plane without loss of strength.
 - c. The framing system shall be coordinated with building structure to perform under vertical and lateral design loads and seismic requirements.
 - d. Deflection head must be capable of 3/4" of downward movement.
 - e. Materials and connections shall be manufacturer's standard, capable of supporting design forces. Provision shall be made for movement of surrounding structure in design of separations and joints. Structural members shall be sufficiently stiff to allow proper operations of vibration isolation equipment and ceiling filter sealant systems.

2. Materials:
 - a. Metal Framing: Aluminum 6063-T5 alloy.
 - b. Fittings: ASTM-A36 or ASTM-A635.
3. Finish for Aluminum Extrusions: 201R1 anodized, clear finish.
- C. Cleanroom Wall Panel - General:
 1. Panel Constructions – Standards:
 - a. Panel #1 - Panels shall be .032" smooth aluminum with a smooth conductive epoxy finish laminated to both sides of an aluminum honeycomb core. Wall panel shall have a surface resistivity in the range of 10^6 to 10^9 ohms/square per ASTM D-257.
 - b. *Non-conductive Polyester* - Panels shall be .032" smooth aluminum with a smooth non-conductive polyester finish laminated to both sides of an aluminum honeycomb core.
 2. Panel Thickness: Panel thickness as specified.
 - a. 1.88"
 3. Colors: As selected by the Owner from manufacturer's standard panel color.
- D. Glass Panel: 1/4" tempered safety glass as specified.
- E. Return Air Grilles: Provide return air grilles to fit wall system manufacturer's standard installation details.

2.04 FABRICATION

- A. Metal Framing Requirements:
 1. Section shall be as required.
 2. Thickness: 2.00" maximum for complete component system.
- B. Metal framing shall conform accurately to the shape and dimensions as shown on the Drawings.
- C. Cut edges shall be true to line and free from projections.
- D. Clear away chips and filings from cut extrusion prior to handling to reduce damage to the raw surfaces.

SECTION 3 EXECUTION

3.01 INSTALLATION

- A. Final installation of partition components shall assemble into a rigid structure with tight straight-line joints. Completed installation shall be free of exposed bolts, nuts, rivets, and fasteners within the cleanroom area and shall interface with all mechanical and electrical work in a clearly preplanned and craftsman-like installation.

3.02 CONDITIONS OF SURFACES

- A. Examine substrates and adjoining construction and conditions under which work is to be installed. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.03 INVENTORY

- A. Inspect all materials upon arrival to job-site to ensure correct quantity, finishes, and quality of product. Report, in writing, any conditions to the materials that appear to have failed in general durability or any other form of apparent deterioration.

3.04 ERECTION

- A. Verify dimensions of supporting structure by field measurements so that cleanroom wall will be accurately designed, fabricated, and fitted to the structure.
- B. Coordinate cleanroom wall work with the work of related sections and provide items to be placed during installation of other work at the proper time to avoid delays in the work.
- C. Erect all component parts of the cleanroom wall in accordance with the manufacturer's written instructions and recommendations.
- D. Erection Tolerances:
 - 1. Erect all component parts within the following tolerances - variations from plumb of angle shown: 1/8" maximum variation in height or 10' length, noncumulative.
 - 2. Offsets in end-to-end or edge-to-edge alignment of consecutive members: 1/16" maximum offset in any alignment, noncumulative.
- E. Cutting and Trimming of Components Parts:
 - 1. Cut and trim component parts of the cleanroom wall during erection only with the approval of the manufacturer or fabricator and in accordance with their recommendations. Restore finish completely to protect material and remove all evidence of cutting and trimming. All cutting and trimming to be done outside the cleanroom area.
- F. Do not erect members which are observed to be warped, bowed, deformed or otherwise damaged or defaced to such as to impair strength or appearance. Remove and replace members damaged in the process of erection.
- G. Set units level, plumb and true to line with uniform joints. Support and secure in place by bolting to clip angles and similar supports anchored to supporting structure.

3.05 CLEANING

- A. Provide cleaning methods required for each component part as recommended by the respective manufacturers.
- B. Cleaning methods shall be carefully selected, applied and maintained so that finishes will not become uneven or otherwise impaired.
- C. The nature of the project requires special attention to minimizing potential contamination of the fully developed cleanroom environment. Daily cleanup and vacuuming of the work area is essential to an ongoing control of contaminants, especially as the cleanroom fit-up progresses.

3.06 PROTECTION

- A. Protect the cleanroom wall system throughout the construction period in a clean and properly protected condition so that it will be without any indication of use or damage at the time of substantial completion.
- B. All work must be protected during shipment, storage, erection and construction so as to avoid development of nonconformity of appearance or other deleterious effects in the work.
- C. Protection should be removed when requested by the construction manager for inspection of finishes.
- D. Remove protection when no longer required. Any materials found to be defective or improperly installed shall be replaced.

End of Section