

Advantage Cleanroom Wall System™

PART 1 -- GENERAL

1.1 WORK INCLUDED

- A. This Section specifies the requirements necessary to furnish and install, complete, cleanroom wall system (CRW) including, but not limited to:
 - 1. Cleanroom wall systems, both structural and non-loadbearing, completely demountable, non-progressive, including all installation attachments.
 - 2. Wall panel material including paint, coating, or finish.
 - 3. Reinforcing and bracing as necessary to maintain wall system structural integrity.
 - 4. Trim closure strips and non-outgassing type gasketing.
 - 5. Glazed wall panels.
 - 6. All labor, supervision and equipment for the cleanroom wall installation.
 - 7. Grilles with dampers.
 - 8. Related work specified elsewhere.
- B. Inspect all building areas prior to installation, where support system will be installed, for any job condition that will alter the layout or details shown on the Drawings. Coordinate installation with other trades to avoid conflicts.

1.2 WARRANTY

- A. Submit three copies of written warranty agreeing to repair or replace wall components which appear to have failed in general durability or any other forms of apparent deterioration.
- B. Two year limited standard warranty against excessive fading, excessive fading, excessive nonuniformity of color or shade, cracking, peeling, pitting or corrosion.

1.3 QUALITY ASSURANCE

- A. Cleanroom wall system installer shall be trained and approved by the manufacturer and shall be experienced in the installation of this cleanroom wall system.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Wall system panels shall be delivered with an approved protective coating and packaged to prevent transit and construction dust from contaminating surfaces. Stripping of packaging and coatings to be done outside the cleanroom area.
- B. Deliver materials in their original, unopened packages.
- C. Exercise extreme care in handling all cleanroom wall system components to prevent

- damage.
- D. Store materials in such manner as to prevent damage or intrusion of foreign matter.
- E. Conspicuously mark "Rejected" on materials which have been damaged, and remove from the jobsite.

PART 2 -- PRODUCTS

2.1 CLEANROOM WALL PANEL

A. Manufacturer: CLEANPAK International

B. Wall Panel Characteristics:

1. Shall consist of two layers of sheet aluminum with two glue lines bonding a non-faced honeycomb aluminum core. Components can vary due to make-up of panel thickness and over all size.
2. Overall panel thickness: Total bonded panel including core, glue lines and face sheets shall be: .25" (single wall) or 1.87" (double wall).
3. All aluminum face skins shall conform to the following general standard: 3000 series aluminum sheet, half hard, .032 thick x specified with by various levered lengths.
4. Finish: The finished sides of the panels shall have a mill applied paint finish per the following paint schedule:
 - a. The paint application method shall be by reverse roll coat and shall be smooth with a dry film thickness of .70 - .80 mills. The substrate (aluminum sheet) shall be pre-treated to allow for a superior bond.
 - b. All finishes will comply with required specifications. A variety of finish types are available. Panels, framing members, and fittings are typically factory finished, roll or powder coated, baked epoxy. Resistivity per owners specifications. An example of an electrostatic dissipative coating specification is included below:

Example:	
Coating type:	Epoxy
Color:	No Restrictions
Gloss: (50 Degrees):	70% maximum, no minimum
Dry film thickness:	0.4 - 1.0 mils
Pencil Hardness:	2H (NCAA IT-12)
Adhesion:	No Removal
Tabor:	<10mg (cs 10,1000 GM 1 cycles)

- C. Outgassing: Outgassing of volatile fraction of the entire wall system, including panels, battens, trim, fittings and finishes is less than .15 parts per million.
- D. Design Criteria: Vertical loading: Dead Load = Component weight
Stiffness: 1/120 at 9psf at 12 feet
- E. Support of Ancillary Systems: The batten system will allow the connection of workstations or other attachments at any point along the batten. This system allows for a 500 pound pull-out load using 3 connection points over a 7 inch length on a 4 foot horizontal member.
- F. Deflection Capability: Can accommodate deflection requirements up to 3/4".

2.2 CLEANROOM WALL FRAMING SYSTEM

- A. Manufacturer: CLEANPAK International
- B. Aluminum Wall Framing System: Advantage Cleanroom Wall System™ with all hardware including headtrack, floor track, corner details, and appurtenances.
 - 1. Construction:
 - a. Headtrack: Extruded aluminum for connection to the ceiling grid. Headtrack to provide vibration isolation between CRW and ceiling system. Allow 3/4-inch minimum vertical movement, in addition to wall system support and removal; 2-inch-wide maximum.
 - b. Studs: Standard intermediate stud and standard corner stud shall be common components of all framed wall systems, maintaining a nominal 2" thickness.
 - 1. For single wall (1/4" panel on one side): Extruded aluminum with continuous threaded screw boss for attachment of batten, and continuous open slot on other side to accept pipe-clamps and fittings, or vinyl closure.
Or
For single wall (1/4" panel on one side, but removable from either side) : Extruded aluminum with continuous threaded screw boss for attachment of standard 3" batten on front and back.
 - 2. For double wall (1/4" on each side): Standard aluminum stud with a continuous threaded screw boss on either side for attachment of batten.
 - 3. For flush wall (nominal 2" panel): Standard aluminum stud with a continuous threaded screw boss on either side for attachment of batten.
 - 4. For studless wall (nominal 2" panel): Same standard 3" wide battens as used on single or double wall. The two battens fasten to each other with a standard #10-24 machine screw into a double-sided threaded screwboss,

capturing a 1-7/8" panel. It is a non-loadbearing wall allowing battens and panels to be removed from either side.

5. For liner wall (1/4" panel): Same standard 3" wide batten as used on single or double wall. Secures 1/4" panel to existing wall or framing.
 6. The single and double wall provides an optional horizontal framing member at the 8'0" level with moment connections to vertical struts above and below.
 - c. Corner Studs: A common one-piece corner stud with standard 3" removable battens shall be utilized on all framed wall systems.
 - d. Connectors: Framing members are fastened together with an aluminum block fastened to the end of the stud with standard #8 x 1" sheet metal screws. The assembly can then be fastened to the vertical studs with #10-24 screws and mini-channel nuts by using a common Allen wrench. The framing members can be fastened together with 90° fittings as an option.
 - e. Floor Track: Extruded aluminum pre-punched at 6" for connection to cleanroom floor at 6" on center.
 - f. Panel Batten: 3" wide extruded aluminum, pre-punched for connection to framing studs at 4" on center. Accepts standard mini-channel nuts for attachment of a workstation bracket. A continuous vinyl closure covers fasteners.
 - g. Miscellaneous Components - Door Frames, Bulkhead Frames.
2. Finish
- a. Aluminum Head Track, Studs, Battens, and Floor Track: Custom painted, powder coated or clear anodized.
 - b. Vinyl Closures: Standard colors - white, shell, and others upon request.

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. The nature of the completed facility demands special attention to maintaining an overall cleanliness in the project area.
- B. All installation methods shall be in accordance with the latest recommendations of the component manufacturer and in conformance with this Specification. Accurately align and securely anchor framing and finish members in accordance with Drawings. Position framing vertically, spaced as required. Locate framing adjacent to door frames, openings, door pockets, partition intersections, and comers. Lock wall panels securely in place, flush with adjacent panels.
- C. Assemble partition components 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 pre-planned and craftsman-like installation.

3.2 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.

3.3 ERECTION

- A. Verify dimensions of supporting structure by field measurements to insure cleanroom wall will be accurately designed, fabricated, and fitted to the structure.
- B. Coordinate cleanroom wall work with the work of related sections. Provide items to be placed during the installation of other work at the proper time to avoid delays in the Work. Place such items, including inserts and anchors, accurately in relation to the final location of the cleanroom wall system components using locking type devices at all connections.
- C. Erect all component parts of the cleanroom wall in accordance with the manufacturers written instructions and recommendations.
- D. Erection Tolerances - erect all component parts within the following tolerances: Variations from plumb or angle shown: 1/8" maximum variation in height or 10-foot run, noncumulative.
- E. Cutting and Trimming of Component 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.
 - 2. Field cutting shall conform to fire safety requirements.
 - 3. Field cut and drill panels for installation of electrical and telephone device box blockouts and conduit at locations indicated.
- F. Do not erect members which are observed to be warped, bowed, deformed, or otherwise damaged or defaced to such extent 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.

3.4 CLEANING

- A. Provide cleaning in accordance with Project Specifications.
- B. Provide cleaning methods required for each component part as recommended by the manufacturer.
- C. The nature of the project requires special attention to minimizing potential contamination of the fully developed cleanroom environment. All construction dust

and contaminants left on surfaces or in recesses that will be exposed to cleanroom air will have the effect of unduly loading up the filter system. Daily cleanup and vacuuming of the work area is essential for an ongoing control of contaminants, especially as the cleanroom fit-up progresses.

3.5 PROTECTION

- A. Protect the cleanroom wall system throughout the construction period in a clean and properly protected condition so it will be without any indication of use or damage at the time of Substantial Completion.
- B. Protect the Work during shipment, storage, erection and construction so as to avoid development of non-uniformity of appearance or other deleterious effects in the Work.
- C. Remove protection when no longer required.
- D. Materials found to be defective or improperly installed shall be replaced.