

SECTION [13120]
CLEANLINE PORTAMAX 458 ALUMINUM WALL SYSTEM

SECTION 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section specifies all requirements necessary to furnish and install a complete modular wall system including, but not limited to the following:
 - 1. 4.875" thick modular wall system, completely demountable, non-progressive, as indicated on the Drawings, including all installation attachments.
 - 2. Modular 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 and hardware.
 - 5. Window panels with glazing.
 - 6. Product design.
- B. All building areas must be inspected by modular 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 modular 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*
- B. In the event of conflict regarding requirements for modular 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 Wall System Website* for technical data, design requirements and additional information.

1.04 SUBMITTALS

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

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1. Manufacturer's literature, specifications, details, and installation instructions for each modular 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 alloy, temper, finish-coating treatment, and thickness of metal required for the work. Provide 6-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 modular wall system components.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in their original, unopened packages.
- B. Exercise extreme care in handling all cleanroom wall system components to prevent damage.
- C. Store materials within the building in the space designated for modular wall 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 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. PortaFab Corporation Modular Wall System – PortaMax 458 Aluminum

2.02 MANUFACTURER

- A. Porta-Fab Corporation
18080 Chesterfield Airport Road
Chesterfield, MO 63005 U.S.A.
Phone: (636) 537-5555
Fax: (636) 537-2955
- 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: Provide materials for modular in-plant offices to include, but not limited to the following applications: Offices, Lunchrooms, Break rooms, Two Story Offices, Vision Towers, Office Partitioning, Plant Divider Walls, Equipment Enclosures, Paint Finishing Enclosures, and Clean rooms. The proposed design and materials incorporates the use of modular components to be assembled on site and provides the ability to disassemble this system at a later date and expand, or relocate to a new location.

Modular in-plant offices covered by this section shall be of the flush panel type; no framing shall protrude more than 1/8" from the finished panel surface except base and top trim, which shall not protrude no more than 1/4". Finished walls shall not exceed 4 3/4" thickness, except at base where thickness shall not exceed 4 7/8". All exposed metal parts will be finished with polyester baked enamel.

The modular wall system must be designed to withstand 5 PSF lateral loadings as dictated by the National Building Codes for interior partition walls with a maximum deflection of L/180. The manufacturer of this wall system shall provide detailed submittal drawings for approval. Drawings shall be available for electronic transmission from the manufacturer.

The modular enclosure shall be constructed utilizing PortaMax 458 Aluminum as manufactured by PortaFab Corporation in Chesterfield, MO. Manufacturer must have a minimum of 25 years experience designing in-plant buildings and modular wall systems. Installation shall be performed according to standard details as described by the manufacturer.

- A. Modular Wall Support System:
 - 1. Framing Components - General:
 - a. Stud hats and covers shall be 6063-T5 aluminum extrusions with 201R1 anodized clear finish. Stud channel shall fasten together tightly creating a sealed joint connection and secure alignment of panels. Wiring studs shall permit the removal and installation of an individual wall panel without disturbing adjacent wall panels. Wiring studs shall permit the installation of electrical service vertically and accept standard electrical boxes. A removable cover plate shall allow access to the electrical raceway without disturbing the structural integrity of the wall. Wherever possible, wiring studs shall act as columns on load-bearing roofs and two-story units. All vertical framing, except corners, shall have the capability of being placed anywhere along the wall plane without loss of strength.
 - b. The framing system shall be coordinated with building structure to perform under vertical and lateral design loads and seismic requirements. Each wiring stud shall be capable of supporting a live load for load

bearing applications in addition to the required lateral load without the use of additional structural support.

- c. 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.
2. Materials:
- a. Metal Framing: 6063-T5 Aluminum, with 201R1 anodized clear finish.
 1. Head track to be a one-piece component providing the ability to conceal the dust cover with a 1 3/4" leg. Top cap shall be constructed of 6063-T5 aluminum.
 - b. Floor track will be constructed of 24-gauge galvanized steel. Floor track to allow easy access to the removal of walls panel.
 - c. Vinyl base sections shall be screw on type, easily removable, with no exposed screws or fasteners. Vinyl base shall be applied in 12' lengths where possible and shall cover the floor track.
- B. Modular Wall Panel - General:
1. Panel Constructions - Panel Construction to conform to the International Building Code, section 2603.4, as it relates to "Thermal Barrier." Panel width will be 44-7/8" wide with a center to center of the stud post at 48".
 - a. *Fire & Sound Panel* - Panels shall be 1/2" vinyl-covered gypsum laminated to both sides of a polystyrene core. Panels tested in accordance with ASTM E-84 to meet a minimum flame spread of 5 and smoke density of 20.
 - b. *(Option) Steel Fire & Sound Panel* - Panel construction will be 24ga sheet steel painted with polyester baked enamel on each side. Steel shall be hot melt laminated to 1/2" gypsum board. Gypsum will be laminated to both sides of a 3 9/16" polystyrene core. Panels tested in accordance with ASTM E-84 to meet a minimum flame spread of 0 and smoke density of 10.
 - c. *(Option) Additional Panel Constructions Available* - Consult factory for specifications.
 2. Panel Thickness: Panel thickness as specified.
 - a. 4.625"
 3. Colors: Champagne, White or Gray.
- C. Doors:
1. Doors shall be 20 gauge, 3070 x 1 3/4" and painted Champagne, White or Gray. Door frames shall be 18-gauge. Doors shall be half glazed with 1/4" clear tempered safety glass. Frames shall have 1 1/2 pair of 4 1/2" x 4 1/2" mortised ball bearing hinges and strike plate. Commercial quality lever lockset shall be included, with 2 3/4" backset and mortised face plate. Man doors to be pre-installed into a panel for ease of installation.
 2. Hardware Options:
 - a. *(Option) Best lockset, key in-knob model #63K7AB4CS3626* with green construction core.
 - b. *(Option) Best lockset, lever style model #73KC7AB15D-S3626* with green construction core, MD-lever.
 - c. *(Option) DORMA heavy duty door closure model #8616*
- D. Windows:
1. 1/4" tempered safety glass as specified. All windows to be mounted in 6063-T5 aluminum frame. Window panels to be designed with removable gasket allowing easy replacement of glass. Frame to be finished with a baked enamel finish.
 2. Colors: Anodized Aluminum.

- E. Ceiling:
 - 1. Ceiling consists of pre-painted grid and 5/8" white lay in tiles with class "A" rating.

- F. Roof Deck:
 - 1. Dust Cover:
 - a. The roof deck will be 22-gauge, 1-1/2" deep, prime painted, commercial quality, ribbed steel deck with minimum yield strength of 33,000 PSI.
 - 2. Roof Design:
 - a. Live load deflection for roofs supporting a ceiling will be a minimum of L/240. The roof shall be designed for a load of 15 PSF as a minimum requirement. Structural steel "I" beams located on 12' centers for support.
 - b. (Option) Roof design shall be designed for maintenance load of 25 PSF. Design will utilize structural steel "I" beams located on 8' centers for support.
 - c. (Option) Roof design shall be designed for parts storage of 125 PSF. Design will utilize structural steel "I" beams located on 4' centers for support.

- G. Electrical:
 - 1. Electrical components to include 2' x 4' T8 four-tube recessed fixtures with acrylic lens, 110-volt duplex outlets, 240-volt outlets, switches, 100 amp circuit breaker box with 70 amp main and breakers, handy boxes and conduit. Tubes and wiring not included, or as specified. All electrical components shall bear the UL label.
 - a. (Option) Include () HVAC unit (230v, 12,000c / 10,700h BTU).
 - b. (Option) Include () air conditioner (120V, 8,250c BTU)
 - c. (Option) Include () baseboard heater (120V, 1500w)
 - d. (Option) Include () telephone jacks
 - e. (Option) Include modular wiring package

2.04 FABRICATION

- A. Metal Framing Requirements:
 - 1. Section shall be as required.
 - 2. Thickness
 - a. Portamax 458 Aluminum – 4.875" 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

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 modular wall system area and shall interface with all mechanical and electrical work in a clearly preplanned and craftsman-like installation.

3.02 CONDITIONS OF SURFACES

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 the modular wall will be accurately designed, fabricated, and fitted to the structure.
- B. Coordinate modular 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 modular 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: 1/8" 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 of 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 connecting stud "hat" sections using recommended factory fasteners.

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 process.

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