Polargy Flat-Pack

Ceiling Supported Containment

Hot/Cold Aisle Containment System Specification

**PART 1 - GENERAL**

* 1. SUMMARY

1. Ceiling Supported Aisle Containment System.  
   1. SYSTEM DESCRIPTION
2. Each HACS/CACS is to consist of an aisle containment plenum supported from the ceiling and independent of the equipment racks. Also, each HACS/CACS will have sliding doors supported from the containment plenum and independent of the server racks.

1.3 DESIGN REQUIREMENTS

1. Prefabrication and flat packaging of components in order to speed HACS/CACS assembly and installation.
2. Each HACS/CACS shall be capable of accommodating 3” of total vertical movement (2” downward, 1” upward) at the interface between the HACS/CACS plenum and the top of the equipment racks.
3. Provide a sliding door at the end of each HACS/CACS. The sliding door should be a dual door, center opening type with auto-close and hold open features.
4. HACS/CACS Vertical Panels shall have sliding access windows for access to the cable trays and power bus-ways.

1.4 PERFORMANCE REQUIREMENTS

1. Each HACS/CACS plenum shall install in less than 4-hours.
2. The HACS/CACS plenum shall have containment integrity such that no gaps are larger than 0.5”.

1.5 SUBMITTALS

1. Bid Submittals:
   1. Product Data: Provide cut sheets, specification sheets, installation instructions, and material characteristics for manufactured products and assemblies.
   2. Indicate HAC/CAC system layout, plans and elevations, rough dimensions, weights, and system components requiring interface with other systems or structures.
   3. Include a schedule of the time required for manufacturing and onsite final fabrication and installation time.
   4. Indicate a preferred sequencing and coordination with other trades and installation activities.
2. Action Submittals:
   1. Product Data: For each product and accessory include dimensions and manufacturers' technical data on features, performance, ratings, and finishes.
   2. Shop Drawings for each HACS/CACS: Dimensioned plans, elevations, sections, and details. Include floor plans showing dimensioned layout and support locations, type of support, and weight on each support.
   3. Documents shall also be submitted in PDF for Drawings and Microsoft Word for text format documents.
3. Closeout Submittals:
   1. Spare and Accessory Part/Price List.

1.6 QUALIFICATIONS

1. Manufacturer: Company specializing in manufacturing products specified with minimum six years documented experience.
2. Installer: Company specializing in the installation of products and systems specified with minimum six years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials to the project site in original wrappings and containers, labeled with manufacturer’s name, and aisle/room/location number, if any.
2. Coordinate with customer for material delivery and staging. The customer shall store/stage materials in their original, undamaged wrappings and containers, inside an area protected from weather, moisture, soiling, extreme temperatures, and humidity.
3. Inspect for dents, scratches, or other damage. Replace damaged products.

1.8 WARRANTY

1. HACS/CACS shall be warranted against defects in materials and workmanship for a one-year period for the first 12 months after initial start-up or 18 months after ship date, whichever occurs first.

**PART 2 – PRODUCTS**

2.1 MANUFACTURERS

1. Basis of Design: Product specified is Polargy Flat-Pack Containment System.
2. Subject to compliance with this specification, the following Manufacturers may be proposed on the project:
   1. Polargy, Inc.
3. Substitutions: Proposed substitutions must be approved prior to bidding.

2.2 PLENUM

1. The aisle containment plenum shall be prefabricated in flat-packed sections that are field assembled on the floor. The plenum panels shall be connected with three-way intermediate connectors and two-way corner connectors.
2. The plenum shall be supported from the overhead with all-thread rods. Edge and corner connectors shall be provisioned with a channel through which the all thread rods shall pass as the plenum is lifted into place. Bolts with washers shall secure the plenum to the rods and hold it to the ceiling.
3. Panels shall incorporate sliding access windows in a track to allow access to the cable trays and bus-ways. Vertical panels above the aisle ends shall be fixed.
4. Assembled plenum weight shall not exceed 1 pound/square foot.
5. Panels shall be clear 16mm thick multiwall polycarbonate and meet ASTM E-84 flame and smoke spread ratings.
6. A 4” tall brush gasket/6” vinyl flap shall seal the gap between the bottom of the plenum and top of the equipment racks.

2.3 DUAL SLIDING DOORS

1. Sliding Doors shall have automatic closing with no threshold to minimize trip hazard.
2. Doors shall include a mechanism for holding the door in an open position.
3. Frame Finish: Clear anodize and or brush aluminum.
4. Dimensions: Dual sliding door frame shall have an opening width of at least 40”. Total unit depth shall be no greater than 3.5 inches.
5. Viewing panels shall be clear 0.125” polycarbonate.

**PART 3 – EXECUTION**

3.1 PREPARATION

1. Ceiling structure for supporting the HACS/CACS will be by others and shall be structurally engineered to support the HACS/CACS.
2. Coordinate sequence of installation with owner and other trades.
3. Assure ceiling height is within allowable tolerances prior to start of installation.

3.2 INSTALLATION

1. Install HACS/CACS in accordance with manufacturer's shop drawings and written instructions.
2. Level and align doorframe prior to permanently fastening.
3. Fill and seal miscellaneous gaps with air dam foam.
4. Installers shall provide appropriate installation hardware as defined by local code or the authority having jurisdiction (AHJ).

3.3 ADJUSTING AND CLEANING

1. Adjust doors for smooth operation, and, when closed, the door shall be centered on the aisle ends.
2. Clean entire HACS/CACS assembly with mild soap and water solution.

END OF SECTION