SECTION 10 22 15

MANUFACTURED PARTITIONS FOR DATA CENTERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes manufactured partition system for Data Centers as indicated on the Drawings. System shall include all channels, anchors, sealant and other accessories for a complete installation.

1.2 DEFINITIONS

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: Technical data including construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include plans, elevations, sections, and mounting and attachment details.
2. Include details of attached equipment assemblies and seals. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection as necessary.
3. Detail fabrication and assembly of a complete acoustic thermal barrier partition system in generator areas and as indicated on the Drawings.
4. Submit details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details, including fabrication and installation layouts of metal panels;
5. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

A. Delegated Design Submittal: Submit for manufactured partitions for data centers, wall framing and panel systems indicated to comply with Performance Requirements and design criteria, analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

B. Samples: Submit each type of exposed finish required, 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other metal composite material panel accessories.

1. Framing: 12 inch long sample of each type of finished extrusion.

2. Panels: 12 inch by 12 inch sample of each panel type included in the Work.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: provide reflected ceiling drawings, wall sections and details of interface with all equipment drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved and the coordination drawings for all MEP systems.

B. Qualification Data: For Installer manufacturer factory-authorized service representative.

C. Welding certificates.

D. Material Product Certificates: For each type of product indicated to verify compliance.

E. Material Test Reports: For each by a qualified testing agency.

F. Product Test Reports: For each panel type, access door or other major component for tests performed by a qualified testing agency.

G. Field quality-control reports.

H. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For completed system to include in maintenance manuals.

B. Operation and Maintenance Data: For completed system to include in operation and maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity having minimum 5 years documented experience that employs installers and supervisors trained and approved or certified by the manufacturer.

B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
1. Build mockup of typical metal panel assembly indicated by the Architect, including corner, openings, door, supports, attachments, and accessories.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – SteelD1.3, "Structural Welding Code - Sheet Steel." As required.

D. Preinstallation Conference: Conduct conference at project site.

E. Coordinate panel partition installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and manufactured items to prevent damage or deformation. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or surface damage.

D. Retain strippable protective covering on metal panels during installation.

1.9 WARRANTY

A. Written warranty signed by manufacturer in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including rupturing, cracking, or puncturing.
      b. Deterioration of metals and materials beyond normal weathering.
   2. Warranty Period: One years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer with experience in the design of metal composite wall panels to design and coordinate the cladding assembly using performance requirements and design criteria indicated.

B. Structural Performance: Provide demountable partitions capable of withstanding the effects of gravity loads and loads and stresses within limits and under conditions indicated:
   1. Load Bearing Capacity of Panel System: Minimum 300 lb (136 kg concentrated); 2.3 lb/linear inch (0.041-kg/linear mm) distributed proof load when tested according to BIFMA X 5.6, Section 6, Table 1.
   2. Transverse Load Capacity of Panel System: Lateral deflection of not more than 1/120 of the overall span when tested under a uniformly distributed load of 5 lb/sq. ft. (24.4 kg/sq. m) according to ASTM E 72.

3. Deflection Limits: Metal faced composite wall panel assemblies shall withstand wind loads with horizontal deflections no greater than 1/240 of the span at the perimeter and 1/60 of the span anywhere in the panel.

C. Fire Test Response Characteristics: Provide demountable partitions complying with requirements:
   1. Where indicated, provide demountable partitions identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or a testing and inspecting agency acceptable to authorities having jurisdiction.
      a. Fire Resistance Ratings: Indicated by design designations from UL *Fire Resistance Directory* or from the listings of another testing and inspecting agency.
      b. Identify items with appropriate markings of applicable testing and inspecting agency.

D. Surface Burning Characteristics: Comply with ASTM E 84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame Spread Index: 25 or less.
   2. Smoke Developed Index: 450 or less.

2.2 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the Containment Wall Partition by Gordon. Subject to compliance with the requirements and acceptance by the Owner comparable products by one of the following may be acceptable:
   1. Polargy
   2. Subzero
   3. Tate

2.3 SITE-ASSEMBLED MANUFACTURED PARTITIONS FOR DATA CENTERS

A. General: Site-assembled, nonprogressive, partition assembly and components that are the standard products of manufacturer.
   1. Products: Subject to compliance with requirements, provide Gordon, Inc., Gordon Partition Wall System.

B. Framing System:
   1. Materials: Framing members shall be manufactured of extruded aluminum alloy 6063, temper T5.
   2. Finish shall be 204-R1 etched and clear anodized.
   3. Post profile shall be a 3” x 3” wide box beam with a continuous integral locking feature for attachment of batten panel retainer to facilitate field installation.
   4. Post and Batten (available up to 14’ nominal length) shall have a continuous snapping feature to allow installation of 16 mm infill panels.

C. Panels:
   1. Upper: Aluminum flat panels, minimum 8 gauge no perforations anodized finish.

2. Lower: Aluminum perforated panels, 1/4 inch round perforations on 3/8 inch staggered pattern, 40 percent openness factor.
    a. Provide extruded aluminum profile trim for panel attachment.

D. Attachment Systems:
1. Top Trade made of 6063-T5 extruded aluminum profiles, which allow for vertical movement of Post, batten, and panels in cases of ceiling or floor displacement. Top track to bolt to ceiling system above every 4'.
2. Top Bracket – 16 Gauge stainless steel #2B brackets shall fit within the hollow Post. Each top bracket to fasten to screw slots in the top track with ¼-20 bolts.
3. Floor Bracket – 16 Gauge stainless steel #2B brackets shall be fastened to the flooring below with fasteners designed for anchoring into the appropriate substrate and fit securely within the hollow Post.

E. Stud and mullion Profile: 3-inch x 3-inch wide box beam with a continuous integral locking feature for attachment of batten panel retainer.

F. Stud and Batten: Continuous, factory-finished, snap-on type; adjustable for variations in floor and ceiling levels.
1. Trim Material: aluminum.
2. Panel Joints: Closure trim.
3. Outside Corner Trim: Square.
4. Base Profile: Flush.
5. Ceiling Trim Profile: As indicated in Drawings.

G. Seals: Manufacturer's standard.

2.4 FABRICATION

A. General: Fabricate demountable walls for installation with concealed fastening devices and pressure-fit members that will not damage ceiling or floor coverings. Fabricate systems for installation with continuous seals at floor, ceiling, and other locations where partitions abut fixed construction.

B. Panels for Site-Assembled Demountable Partitions: Face panels fabricated and finished in modular widths indicated.

2.5 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker over a mechanical finish.

2.7 ACCESSORIES

A. Hangars, bracing and reinforcing: Steel Plates, Shapes, and Bars: ASTM A 36/A 36M. Designed to meet performance requirements and installed as recommended by manufacturer with all penetrations sealed.

B. Miscellaneous Metal Subframing and Furring: ASTM C 645, cold-formed, metallic-coated steel sheet ASTM A 653/A 653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A 792/A 792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide sections required for support and alignment of metal composite material panel system.

C. Anchors: Self tapping anchors designed to withstand design loads. Provide exposed fasteners with heads matching color of metal composite material panels by means of plastic caps or factory applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
B. Examine components before installation. Reject components that are wet, moisture damaged, mold damaged, broken, cracked, chipped, deformed, or unmatched.
C. Examine roughing-in for electrical power to verify actual locations of power connections before partition installation.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 GENERAL INSTALLATION

A. Install demountable partitions after other finishing operations have been completed.
   1. Install partitions rigid, level, plumb, and aligned. Install seals at connections with floors, ceilings, fixed walls, and abutting surfaces to prevent light and sound transmission.
   2. Do not modify manufacturer's standard components.
B. Suspended-Ceiling System: Do not alter suspended-ceiling system.

3.3 PARTITION INSTALLATION

A. Prior to installing the wall system, verify that the structural ceiling grid system above is level and at the proper height above the floor.
B. Attach the aluminum top track to the ceiling system above every 4’ with fasteners deemed acceptable by the structural engineer.
C. Position the first stud against the perimeter wall and align the center of the stud with the center of the screwslot feature of the top track above. Be sure the stud is level in all directions. Mark the stud’s location on the floor and remove. Fasten the floor bracket to the floor using appropriate fasteners for the flooring substrate. Insert the top bracket into the top of the stud and place the stud onto the floor bracket with the snapping feature facing the data hall. Fasten the wing of the top bracket to the screwslot of the top track with 1/4-20 Philips head bolts.
D. Identify the location of the next stud, which should not exceed 48” from the center of the previous stud that was installed. The snap-in filler top piece can be used to locate the next stud 48” from the previous one. Note: Studs with center spacing of less than 48” will require the infill panel and snap-in filler piece to be field cut. Position the stud,

making sure that the stud is level in all directions. Mark the stud's location on the floor and remove. Fasten the floor bracket to the floor using appropriate fasteners for the flooring substrate. Insert two top brackets into the top of the stud and place the stud onto the floor bracket with the snapping feature facing the data hall. Fasten each wing of the top bracket to the screw-slot of the top track with 1/4-20 Philips head bolts.

E. Continue installing studs until complete. There shall be 45" between studs, with studs centered on 48" centerlines.

F. Attach each snap-in filler piece into the top track between each stud.

G. Install Aluminum "J" trims on the bottom edge of the Polycarbonate panels with the longer leg facing the data hall.

H. From the data hall side, insert the polycarbonate panels within the studs. Position two panels in place and secure with an aluminum batten. Begin the installation of each aluminum batten at the bottom of the stud and progressively install upwards toward the ceiling. The batten is best installed with a clean, rubber mallet.

I. After all battens have been installed, insert the aluminum valance strip into the top track.

3.4 ERECTION TOLERANCES

A. Install each demountable partition so surfaces vary not more than 1/8 inch from the plane formed by the faces of adjacent partitions.

END OF SECTION 10 22 15

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