



Overhead Service Carrier Wing Specifications

PART 1 - GENERAL

Summary: The following specification is written to provide the level of design expectation of the owner and architect in regards to the quality/functionality of the product and installation for the overhead service carrier products.

1.1 SECTION INCLUDES

- A. Overhead Service Carriers.

1.2 RELATED SECTIONS

- A. Division 11 Section 53 00, "Laboratory Equipment"
- B. Division 22 Section 40 00, "Plumbing Fixtures"
- C. Related Work to be Performed by Others:
 - a. Final connection to service lines of all plumbing and electrical fixtures attached to laboratory service carriers.

1.3 SYSTEM DESCRIPTION

- A. The Wing is an overhead service distribution system that is flexible enough to work with current and future service and communication needs and is commonly used with flexible table systems. It can be ordered to accommodate lighting, gas services, electrical services and exhaust snorkels. The modular design of the Wing allows for multiple units to join together for long runs with single or multiple umbilical drops that the building services will feed through. A full-width version is typical and a half-Wing version is also available for wall surface mounting where required.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. Comply with Division 1
 - 2. Submit a PDF file of 11x17 shop drawings consisting of:
 - a. Finish, hardware, construction options selection sheet
 - b. Small scale floor plan showing casework in relation to the building.
 - c. Large scale elevations and plan views.
 - d. Cross-sections; service runs; locations of blocking within walls (blocking is done by others); rough-in requirements and, sink centerlines.
 - 3. Drawings should include data and details for construction of the laboratory casework as well as information regarding the name, quantity, type and construction of materials (such as hardware, gauges, etc.), that will be used to complete the project.
- B. The manufacture or purchaser of any equipment prior to approval by the owner's representative will be undertaken at the manufacturer's risk.
- C. Field Measurements: In instances in which casework is indicated to fit to other construction,



1.5 QUALITY ASSURANCE

- A. Qualification of Bidder/Manufacturer: The following list of information should be provided to the Architect at least ten (10) days prior to the bid opening:
 - 1. List of manufacturing facilities
 - 2. A list of five (5) installations of comparable stature completed within the past 3 years
- B. Source Limitations: All table systems, including countertops, service fittings and accessories, should be obtained from a single source to ensure consistency in project delivery.
- C. Area mockups shall be as indicated on the shop drawings. Mockup areas must be priced for disassembly and reassembly and used within the project.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Packaging, Shipping, Handling and Unloading Packaging: Products should have packaging adequate enough to protect finished surfaces from soiling or damage during shipping, delivery and installation.
- B. Handling: Care, such as the use of proper moving equipment, experienced movers, etc., should be used at all times to avoid damaging the tables. Until installation takes place, any wrapping, insulation or other method of protection applied to products from the factory should be left in place to avoid accidental damage.
- C. Acceptance at Site: overhead service carrier systems will not be delivered or installed until the conditions specified under Part 3, Installation section of this document have been met.
- D. Storage: overhead service carrier systems should be stored in the area of installation. If, prior to installation, it is necessary for overhead service carrier systems to be temporarily stored in an area other than the installation area, the environmental conditions shall meet the environmental requirements specified under the Project Site Conditions article of this section.
- E. Waste Management and Disposal: The installer of the overhead service carrier systems is responsible for removing any waste or refuse resulting from the installation of, or work pertaining to the systems; thereby leaving the project site clean and free of debris. Trash container/s to be provided by others.

1.7 PROJECT SITE CONDITIONS

- A. Building must be enclosed (windows and doors sealed and weather-tight).
- B. An operational HVAC system that maintains temperature and humidity at occupancy levels must be in place; Relative humidity must be regulated and stable between 25% and 55% per AWI standards before products are brought on site, throughout project completion and with the site moving forward while the building is in use by the owner.
- C. Ceiling, overhead ductwork and lighting must be installed; prior to the delivery and installation of the table systems.
- D. Site must be free of any further construction such as "wet work."

1.8 WARRANTY

- A. Furnish a written warranty that Work performed under this Section shall remain free from defects as to materials and workmanship for a period of two (2) years from date of acceptance. Defects in materials and workmanship that may develop within this time are to be replaced without cost or expense to the Owner.
 - 1. Defects include, but are not limited to: Discoloration or lack of finish integrity, cracking or peeling finish, weld or structural failure and failure of hardware.



2. The warranty specifically does not cover any product or hardware, which has been incorrectly installed, including poor climate conditions, exposed to excessive loads or abuse.
 3. The warranty is in effect while the product is being used as it was intended and owned by the original purchaser of the products and services covered.
 4. The purchaser shall notify CiF Lab Solutions immediately of any defective products. CiF Lab Solutions shall be given a reasonable opportunity to inspect the product prior to its return. No product shall be returned to CiF Lab Solutions until written shipping instructions are received by purchaser. Repair or replacement of the non-conforming products or their parts, or refund of the purchase price shall be at CiF Lab Solutions sole option. CiF Lab Solutions shall not be liable for any incidental or consequential damages, expenses or losses whether incurred in connection with injury to persons or property.
- B. All non-casework items supplied, but not manufactured at CiF Lab Solutions shall be covered under the original manufacturer's warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: CiF Lab Solutions 53 Courtland Avenue, Vaughan, ON, Canada L4K3T2
- B. Substitution Limitations:
- C. Substitutions will be considered only when other manufacturers submit substitution requests in accordance with procurement substitution and/or substitution procedures, or provide a comparable product with the following support information detailed below:
- D. Written documentation stating specification compliance regarding construction, materials, and standard of quality and manufacturing techniques.
- E. Note all deviations to the drawings and/or specifications in writing.
- F. The owner, or its designated representative, reserves the right to reject any proposal that in his opinion fails to meet the criteria established by this specification. Such a decision shall be final.

NOTE: Manufacturer's that are listed as basis of design or approved are still obligated to hold ALL specification requirements as called out in this document. There will be NO EXCEPTIONS in materials or fabrication permitted that have not been requested in writing and responded to with approval, during an RFI period prior to bid.

2.2 MATERIALS

- A. Steel:
 1. Sheet steel: High quality cold rolled mild steel meeting the requirements of ASTM A1008 CS Type B in 18ga and 14ga U.S. Standard. High quality hot rolled pickled & oiled steel meeting the requirements of ASTM A1011 CS Type B in 11ga and 7ga U.S. Standard.
 2. Universal steel strut in 13/16" x 1 5/8" – 14 gauge and 1 5/8" x 1 5/8" – 12 gauge meets the requirements of ASTM-653. Strut brackets are 1/4" thickness and meet the requirements of ASTM-569 or A-575 and are electro-galvanized per ASTM B-633 requirements.
- B. Hardware:
 1. Electrical boxes are 3" x 2" x 2 1/2" deep metallic type with (7) 1/2" knock-outs available and 12.5 cubic inches of area.



2. Electrical box cover plates are standard size Thermoplastic Nylon type.
3. Plastic end joining supports are custom molded HDPE (high density polyethylene).

2.3 FABRICATION

- A. Wing main body
 1. Each complete Wing is constructed of two outer sections and a center section.
 - a. The outer sections are formed and rolled 18 gauge CR steel with an adhesive and screw attached plastic end joining plate.
 - b. The outer sections radius shape angles the electrical and gas services slightly outward to allow easy access when a table or bench are placed under the Wing.
 - c. The center channel section is formed 18 gauge CR steel and is bolted to the outer sections with 5/16" thread cutting machine screws.
 - d. The end of each complete section contains an end plate formed from 14 gauge CR steel and the formed flange connects the outer sections and the structural strut channel.
 - e. The (2) 1 5/8" square strut channels run the length of the complete Wing assembly on each side and provide structural integrity and is also used for the umbilical mounting channels to connect to.
 2. Flat steel parts are laser cut ensuring a high quality edge, component fit and finish.
 3. Joints are tight fitting and welded or bolted construction with exceptions where noted.
 4. All exterior and exposed surfaces are finished in a powder-coated finish.
- B. Center Lighting
 1. The optional center lighting section channel is constructed of formed 18 gauge CR steel and is bolted to the outer sections with 5/16" thread cutting machine screws.
 2. Light reflector is formed from 18 gauge CR steel and finished with a high-reflective white powder coat.
 3. The lamp holders are a miniature bi-pin type for T5 size fluorescent bulbs.
 4. Bulb size is T5 type in various lengths dependent on the Wing section length.
 5. Light ballast is electronic high efficiency, rapid start 120-277 volt type.
 6. Wiring from the light housing to a building circuit will be required by the local contractor trades.
- C. Umbilical Supports
 1. Umbilical supports are adjustable in height and support the wing structure while attaching it to the building ceiling structure.
 2. The top and bottom plates are laser cut from 7 gauge HRP & O steel and welded to the vertical end enclosure channels.
 3. The vertical end enclosure channels are formed from 14 gauge CR steel. The inner and outer channels slide together allowing vertical height adjustment. Once in the proper position they are bolted together with (4) 3/8"-16 hex head bolts and hex nuts at each channel set.
 4. The side enclosure panels are constructed from 18 gauge CR steel with hem flange vertical edges. Attachment to the vertical end enclosure channels is done using #8 truss head sheet metal screws.
 5. The complete umbilical enclosure structure is bolted to (2) 13/16" x 1 5/8" steel structural channels that then bolt to the 1 5/8" x 1 5/8" main steel channels in the Wing assembly with 1/4" thick connector plates and 3/8"-16 hex bolts and hex nuts.
- D. Snorkel Extraction Arm - Optional
 1. The overall the arm assembly is offered in three sizes of reach being 37", 41" & 55", all containing three articulating joints and an end hood.
 2. The arm assembly protrudes through the Wing housing via a collar assembly and requires building connections at the top side of the Wing assembly.



3. Arm material is 75mm (3") diameter anodized aluminum tube with a clear finish.
 4. The articulating joints feature a polypropylene material construction with stainless steel springs and hardware. Sealing O-rings are a polyethylene material.
 5. The end hood consists of an aluminum powder coated 200mm (8") diameter round shape that is 80mm (3.15") tall.
 6. Range of motion of the main vertical arm exiting the Wing allows a full 360 swing.
- E. Dust Cover
1. The completed cover is made from two halves and end plates and closes in the top portion of the Wing structure and holds the same curved profile as the bottom of the Wing shape.
 2. Each half piece and end plate are constructed from formed 18 gauge CR steel.
 3. Attachment of all the pieces is done with #8 sheet metal screws at pre-determined locations.
- F. Electrical and Gas Services
1. Electrical Services
 - a. Option one is offered with pre-wired electrical outlets with a main circuit(s) whip extending up the umbilical for building connections.
 - b. Option two is with empty electrical boxes to be filled with components and wiring by others.
 2. Gas Services
 - a. Option one is to have all gas fixtures installed and plumbed with main lines extending to the bottom of the umbilical and a stub connection point for connection by local contract trades. Plumbing is performed within the Wing using common commercial plumbing methods.
 - i. Optional plumbing line types include, but are not limited to copper, stainless steel and black pipe and are dependent on the project specification requirements.
 - b. Option two is to order a Wing with no plumbing services and have them installed by local contract trades.

2.4 METAL FINISHES

- A. Powder coating
1. Preparation: Spray parts to clean with a heated cleaner/phosphate solution, rinse with water, spray to pretreat with phosphate solution, rinse with water on two steps to finish. Dry immediately in temperature controlled heated oven.
 2. Application: Electrostatically apply powder coat of selected color and immediately bake in temperature controlled oven to assure a smooth, hard finish. Surfaces to have a chemical resistant, high grade furniture finish.
 3. Exposed finish thickness to be between 2.0 mil & 3.0 mil.

PART 3 - EXECUTION

3.1 INSTALLERS

- A. Installer Qualifications: For installation and maintenance of units, an authorized representative of the manufacturer required for this project.



3.2 EXAMINATION

- A. Site Verification of Conditions: Casework will not be delivered or installed until the following conditions have been met:
 - 1. Building must be enclosed (windows and doors sealed and weather-tight).
 - 2. An operational HVAC system that maintains temperature and humidity at occupancy levels must be in place; Relative humidity must be regulated and stable between 25% and 55% per AWI standards before products are brought on site, throughout project completion and with the site moving forward while the building is in use by the owner.
 - 3. Ceiling, overhead ductwork and lighting must be installed.
 - 4. Site must be free of any further construction such as “wet work.”

NOTE: In the event that any of the specified requirements for installation are not present at the time of requested delivery, the general contractor or owner must provide the casework manufacturer with a letter of deviation that releases the manufacturer from any responsibility or liability from any damage to the products resulting from the unfavorable building conditions.

3.3 INSTALLATION

- A. Overhead Service Carrier
 - 1. Building structure
 - a. The Overhead Service Carrier typically mounts to a strut type frame or other parts of the building. This structure must be rigid and able to support the weight of the carrier at the mounting points on the umbilicals.
 - b. The OSC mounts to the building structure at the vertical umbilical top plates with 3/8-16, grade #5 bolts at all mounting holes present.
 - 2. Electrical and Plumbing Connections
 - a. The Wing, if pre-plumbed and wired, will have pre-terminated connection points where local contractor trades can make the building connections necessary.
- B. Cleaning
 - 1. Wipe all surfaces down with a mild general purpose cleaner. Do not wash down or immerse any part of the overhead service carrier with liquid or water for cleaning purposes, but rather use a damp cloth.

END OF SECTION

Revision Schedule

Date Revised **Items Revised**

1-12-2015 Document released internally & to CiF Solutions