

## **AGILITY<sup>™</sup> ADAPTABLE SYSTEMS**

### **PART 1 – GENERAL**

#### **1.00 SUMMARY**

A. Section Includes: Agility<sup>™</sup> Adaptable Furniture System

1. General requirements for Agility<sup>™</sup> Adaptable Workstations
2. Mobile Cabinets
3. Suspended Cabinets
4. Table Accessories
5. Specialty Finishes
6. Agility<sup>™</sup> Service Hub MEP Distribution

B. Related Sections:

1. Division 9-Resilient base molding at walls and casework.
2. Division 11 Section-11600 Laboratory Fume Hoods
3. Division 12 Section-12345 Steel Laboratory Casework
4. Division 15- Plumbing utilities final connections to casework and fume hoods.
5. Division 15- Mechanical, HVAC ductwork, equipment, final connections to fume hoods.
6. Division 16-Electrical utilities and final connection to casework and fume hoods.

#### **ALTERNATE PROPOSALS**

Proposals are invited from alternate manufacturers only if they comply with the minimum design and performance requirements. A notarized letter stating full compliance must be included in alternate proposals signed by an officer of the manufacturer to ensure compliance.

#### **1.02 SUBMITTALS**

- A. Submit shop drawings for laboratory furniture showing plan views, elevations, cross sections (where necessary), 3-D renderings, pipe spaces, countertops with locations of sinks and service fixtures and all pertinent details to ensure a

complete assembly. Include layout of units with relation to surrounding walls, doors, windows and other building components.

- B. Coordinate shop drawings with other work involved.
- C. Submit manufacturer's product data and installation instruction.
- D. Submit physical samples and/or color cards of available finishes, including top material, for selection by Architect and Owner.
- E. Include independent laboratory certification stating that applied finish complies with specified chemical and physical resistance requirements.

### **1.03 GUARANTEES**

- A. Hanson Lab Solutions guarantees all materials and workmanship of equipment provided for a period of one year (1) from date of final acceptance.
- B. Any defects due to the use of improper materials or workmanship (normal wear and tear, abuse or misuse excepted) occurring within that time frame shall be promptly rectified upon notification by the Owner or Architect.

### **1.04 PRODUCT HANDLING**

- A. Ship all units packaged in protective cartons and labeled for location within the project site.
- B. Store all materials in a dry ventilated place, protected from the weather, until ready for installation.
- C. Protect finished surfaces from soiling and damage during handling and installation. Keep covered with polyethylene film or equivalent protective covering.

### **1.05 QUALITY ASSURANCE**

- A. Single source responsibility: Steel laboratory casework, fume hoods, work surfaces, and other equipment and accessories shall be manufactured or furnished by a single furniture company.

- B. Manufacturer's qualifications: Modern plant with proper tools, dies, fixtures and skilled employees to produce high quality casework and equipment, and shall meet the following minimum requirements:
1. Five years or more experience in manufacture of casework and equipment of type specified.
  2. Ten installations of equal or larger size and requirements.

## **PART 2 – PRODUCTS**

### **2.01 MANUFACTURER**

Design, materials, construction and finish of casework specified are the minimum acceptable standard of quality for inset steel laboratory casework.

Laboratory Furniture Manufacturer:

Hanson Lab Solutions  
747 Calle Plano, Camarillo, CA 93012  
805-498-3121

### **2.02 CASEWORK MATERIALS**

- A. All steel used to be high quality cold rolled mild steel, free of scale, buckles, or other defects. Conforming to ASTM Specification No. A36672
- B. Casework shall be manufactured in accordance with the latest edition of SEFA "Metal Laboratory Furniture" and other applicable standards.

### **2.03 GENERAL CONSTRUCTION**

- A. General requirements for Agility<sup>™</sup> Adaptable Workstation:
1. Nominal Table Frame dimensions:
    - a. Width: 36", 48", 60", 72".
    - b. Depth: 30", 36", 42", 60".
    - c. Work Surface Height range: 30.75"-36.75"; 6-position adjustment
    - d. Overall height 72", 78" and 84"
  2. All steel used to be high quality cold rolled mild steel.
  3. Finish: Electrostatically applied chemical resistant powder coat finish, in  
in manufacturers standard color selections.
  4. Frame and Leg Leveling Glides:
    - a. Heavy duty, ½"-13 thread stem with chrome plating and nylon base, typical for all Agility<sup>™</sup> table frame systems.
    - b. Inserts shall include a minimum of 1.5" of engagement into the frame and be secured to inner table leg in such a manner to increase stability of table system and to minimize table movement

when used with automated laboratory equipment. Mobile table stem leveling legs can be subject to considerable lateral forces when in use, simple weld nuts or inserts are not acceptable.

5. Vertical integration:
  - a. All table and bench systems with above the countertop shelving systems will have a minimum of 1" clearance between back to back shelving for vertical integration of laboratory equipment cables, cords, supply lines and other utility.
  - b. Shelving system to be easily adjusted by users to provide up to 5" of vertical integration.
6. Integrated Cable Management System (CMS):
  - a. Upper cable management tray system which mounts above the shelves and between the upright members to accommodate storage of power cords, data cables and gas hose assemblies etc.
  - b. Must include multi-piece removable covers to prevent the accumulation of contamination within the CMS. Cover configuration must feature center and end exit points, which allow for increased vertical connection locations to mate with varying ceiling service panel locations.
7. Table accessories, suspended cabinets, shelving, to be compatible with other Agility<sup>™</sup> table styles, except utility tables.
8. All table and bench systems are designed to accommodate suspended cabinets, available to be moved to any position between the table legs.
9. Frame end caps: ABS plastic, Color: Black

#### B. Agility<sup>™</sup> Adaptable frame details

1. Construction:
  - a. Main vertical upright posts shall be 2" x 5" 11-gauge cold rolled steel. Posts to contain multiple position thermal-formed threaded mounting holes for countertop frame attachment.
  - b. Rear apron to be 14-gauge x 8" high x .5" thick.
  - c. Side countertop supports to be 14-gauge and shall be welded to the rear apron.
  - d. Front countertop support beam and outer legs to be 2"x2" 14-gauge (min) cold-rolled steel with thermal-formed threaded mounting holes for attachment to countertop frame.
  - e. Countertop support inner legs to be 11-gauge with 6-position height adjustability.
2. All welds to be inside fillet welds. Any outside of frame welds to be blended flush for clean appearance.
3. Agility<sup>™</sup> Adaptable working load to be 4000 lbs. equally distributed.

C. Mobile Cabinets

1. Cabinet Construction: Mobile cabinets to be manufactured according to construction and hardware details outlined in the HLS specification 12345 Steel Laboratory Casework and have the following requirements in addition:
2. Mobile cabinets to be 22" deep manufactured in the following widths: 15", 18-1/8", 24-1/8", 30", 35", 42", and 47" wide. Mobile cabinets to be provided in both low and high heights per customer requirements.
3. Mobile cabinets to have powder-coated steel flat back panels, and a powder-coated steel top welded to the back and top of each cabinet. Optional counter tops in alternate materials are also available.
4. Each mobile cabinet to have 4 each 220 lb. capacity heavy duty casters with grey non-marking wheels. The front two casters to be swivel type with a locking brake.

D. Suspended Underhung Cabinets

1. Cabinet Construction: Suspended cabinets to be manufactured according to construction and hardware details outlined in HLS specification 12345 Steel Laboratory Casework and have the following requirements in addition:
2. Suspended cabinets to be 24-3/4" high x 22" deep with the following widths: 15", 18-1/8", 24-1/8", 30", 35" and 42" wide.
3. Suspended cabinets to have a fully finished flat panel, welded to the back of each cabinet.
4. Each suspended cabinet to include a set of mounting brackets and 3/16" suspension beams used to hang cabinets onto the front and rear table rails so cabinets can be repositioned cabinets left or right as needed.

E. Table Accessories:

1. Shelves
  - a. Shelves shall be constructed of 18-gauge powder coated steel, turned down and back to form a 1" high, 4-sided shelf with a front 1-1/2" tall front lip and a 16-gauge 1/2" tall rear lip. Optional front retaining lip designs and materials to be available.
  - b. Lower shelves and shelving brackets are constructed in such a manner to allow two-inch inward or outward adjustment of shelf by user groups to allow additional space between rear opposing shelves to increase vertical integration space as needed.
  - c. Adjustable shelving may include optional EQ lip materials including plastics or PTGE Resin materials.
2. Shelf Mounting Brackets

- a. Shelf brackets shall attach to Agility™ Tables with Rear Upright Posts and be height adjustable in 1” increments.
- b. Lower brackets to be offset style, 6.5” high, manufactured in 11-gauge steel, powder-coated to match the shelves with integrated safety-type tabs to prevent unintended disengagement from the table frame system.

F. Specialty Finishes

1. Utility Chases, per project finishes schedule, shall be capable of accommodating a wide range of finishes including 3Form, or other composite materials as specified. Chases shall be constructed of formed metal side channels in stainless steel or epoxy powder coated finishes. Side channels shall include integral threads for front and rear closure panels and integral supports for equipment to be mounted to face of chase.
2. Per project finishes schedule, top adjustable shelves and earthquake retention lips shall be capable of accommodating a wide range of finishes including 3Form, or other composite materials.
3. Shelving materials, listed in section 11b, shall be capable of accommodating these materials at front of shelf lip for material retention without visible means of connection. Connections utilizing visible screws and fasteners are not acceptable.

G. Agility™ Service Hub MEP Distribution

1. Standard field installation of utilities, including electrical, data and standard lab gases will be field distributed by appropriate trades and shall terminate at the Agility™ ceiling service panel. Ceiling panels will be supplied in advance of systems furniture installation and are designed to be pre-installed and final connections completed by appropriate trades prior to systems furniture installation.
2. Agility™ upright post shall be factory prewired and pre-plumbed with wiring, gas and data connections clearly identified for ease of connection by appropriate trades. Electrical, data and lab gas utilities shall be separated, shielded and isolated in the upright post to prevent electrical interference with the data signal.
3. All Utility distribution will be provided in a vertical configuration. Systems with the use of fixed horizontal distribution of utilities impedes the front to rear usability of the laboratory work surface and are not acceptable.
4. The Agility™ Service Hub shall be fully prewired and pre-plumbed by the manufacturer at the manufacturer’s facility prior to delivery. Utility

raceways and all the electrical components included will be UL listed and will be constructed in such a manner that the utility box shall have a removable face plate that shall remain readily to accommodate future MEP changes as needed.

5. All power cables shall be ½" diameter heavy wall shielded cable, capable of up to 72" of additional reach. Un-used hose / cord sections may be nested and stored in the CMS, or at just below cable end at ceiling per user specifications. All Power cables shall be equipped with top of post mount stain relief coils of 6" radius or greater to prevent over stressing and premature break down of power cables.
6. Power cables shall be available in standard white and shall accommodate 1 circuit, 2 circuit, 2 circuits-dual neutral, isolated power, emergency power and UPS power.
7. Utility boxes accommodate 1 circuit, 2 circuit, 2 circuits-dual neutral, isolated power, emergency power and UPS power. Data and specialty gases in the same utility box.
8. Utility boxes shall accommodate up to 8 duplex pairs per box utilizing up to 4 circuits as needed. Junction box shall have a removable face plate for ease of access to change, add or delete MEP distribution as needed.
9. Utility boxes shall be capable of supporting up to 3 standard lab gasses. Specialty lab gas supply line shall be by continuous PTFE or corrosive resistance materials, having one point of connection at lab gas fixture and shall run continuously through the system to the point of connection at the ceiling utility panel to eliminate potential for leaks. Systems with more than one point of connection or utilizing Swagelok type compression fittings are not acceptable. All gas tubing in the lab gas distribution system shall be rated at 150 psi. All lab gas systems will be factory pressure tested to 125 psi N2 for 15 minutes and will include 6 a cycle UHP N2 factory pre-cleaning process. Documentation of N2 pressure cycle pre-cleaning to be available upon request.
10. Utility boxes will be capable of accommodating up to six Cat-6 shielded data lines per box. Data lines will be labeled to corresponding data face plates ports for ease of final connections by appropriate trades.
11. Ceiling service panels shall be capable of accommodating additional future specialty electrical and lab gases as needed.
12. MEP plans to be configured according to Agility™ MEP distribution.

## 2.04 STEEL FINISH

- A. Pretreatment: Thoroughly clean surface of grease, dirt and oil in an alkaline solution, rinse, then bathe in a phosphatizing solution. Bake entire unit with

metallic phosphate coating to provide excellent bond for subsequent finish and aid in the prevention of corrosion.

- B. Finish: Finish shall have electrostatically applied, baked on Powder-Coat Epoxy paint finish. This material shall meet the most stringent air quality standards. Solvent based alkyd melamine enamels are not acceptable. The final finish shall meet the following test data with no more than slight discoloration but no change of gloss and no loss of adhesion with exposure to the following chemicals:

- Acetate, Amyl
- Acetate, Ethyl
- Acetic Acid 98%
- Acetone
- Acid Dichromate 5%
- Alcohol, Butyl
- Alcohol, Ethyl
- Alcohol, Methyl
- Ammonium Hydroxide 28%
- Benzene
- Carbon Tetrachloride
- Chloroform
- Chromic Acid 60%
- Cresol
- Dichloroacetic Acid
- Dimethylformamide
- Dioxin
- Ethyl Ether
- Formaldehyde 37%
- Formic Acid 90%
- Furfural
- Gasoline
- Hydrofluoric Acid 37%
- Hydrofluoric Acid 48%
- Hydrogen Peroxide 30%
- Iodine, Tincture of
- Methyl Ethyl Ketone
- Methylene Chloride
- Monochlorobenzene
- Naphthalene
- Nitric Acid 20%
- Nitric Acid 30%

Nitric Acid 70%  
Phenol 90%  
Phosphoric Acid 85%  
Silver Nitrate, Saturated  
Sodium Hydroxide 10%  
Sodium Hydroxide 20%  
Sodium Hydroxide 40%  
Sodium Hydroxide, Flake  
Sodium Sulfide, Saturated  
Sulfuric Acid 33%  
Sulfuric Acid 77%  
Sulfuric Acid 96%  
Sulfuric Acid 77%, and Nitric Acid 70%, equal parts  
Toluene  
Trichloroethylene  
Xylene1  
Zinc Chloride, Saturated

- C. Adhesion and flexibility: No peeling, cracking or exposure of metal when powder-coated surface is bent 180 degrees over ¼" diameter mandrel.
- D. Unless otherwise specified, casework colors are to be selected from manufacturers standard color palette and shall be designed by the Architect/Owner.

## **PART 3 – EXECUTION**

### **3.01 INSTALLATION / ASSEMBLY**

- A. Agility<sup>™</sup> system tables to be assembled and installed plumb, level, true and straight without distortions. Tables are not to be secured to the building structure unless specified.
- B. Accessory installation: Install accessories in accordance with manufacturer's recommendations.

### **3.02 CLEANING AND PROTECTION**

- A. After installation is completed, all casework shall be thoroughly cleaned inside and out. Touch-up as required.

- B. Clean countertops with diluted dishwashing liquid and water leaving tops free of all grease and streaks. Use no wax or oils.
- C. Protect top materials and installed laboratory furniture from damage by other trades. If damaged is incurred on protected areas by other trades, repair and or replacement costs shall be borne by that contractor.
- D. Repair or remove and replace defective work as directed by the Architect/Owner.
- E. Remove all cardboard and packing materials from the jobsite.

— END OF SPECIFICATION —