

WVU DESIGN GUIDELINES & CONSTRUCTION STANDARDS

DIVISION 12 – FURNISHINGS

SECTION 126100 – FIXED CLASSROOM FURNITURE

PART 1: GENERAL

- 1.1. Any deviation from the following instructions must be approved during design by WVU Facilities Management Personnel.
- 1.2. This standard provides general guidance concerning the specific preferences for fixed classroom furniture.
- 1.3. KI is the basis of design and preferred manufacturer. Substitution or equivalent products will be considered and evaluated on a case by case basis and require approval by WVU.
- 1.4. Code Requirements - Compliance with the local and national building and safety codes is required. Shop drawings shall be based on code requirements for assembly seating as found in BOCA and the Life Safety Code.
- 1.5. Field Verification - Shop drawings incorporate building information compiled from various sources associated with the project and deemed as reliable. Conditions directly affecting the product or its installation must be field verified.
- 1.6. Drawings must be reviewed by the Owner/Architect/Contractor, or other appropriate owner's representative. Any deviations from the contract included in the shop drawing must be approved in writing from the Owner/Architect/ Contractor. Drawing must be signed by authorized personnel including title, company or affiliation, and date. Manufacturer of product shown is not scheduled until drawing review is complete and owner's authorized signature is received.
- 1.7. Submittals:
 - A. Product Data including manufacturer's assembly instructions.
 - B. Shop Drawings with layouts by manufacturer.
 - C. Field verified dimensions and conditions directly affecting the product or installation.
 - D. Letter of Certification from Manufacturer stating on-site installer's successful completion of manufacturer's assembly training on specified furniture.
 - E. Samples:
 1. Minimum 5" x 5" Fabric samples
 2. Finish color selection
 3. Other samples as requested
- 1.8. Delivery, Storage, and Handling:
 - A. Store delivered in clean, safe, and dry area.

1.9.Scheduling:

- A. Schedule installation of items to occur after application of exposed finishes wherever installation will not damage exposed finish surfaces and completion of finishes will not impede installation.

1.10. Finishes

- A. All finishes and colors to be selected by Architect and approved by WVU Interior Design Manager and WVU Project Manager.

1.11. Preparation:

- A. Coordination details with other work supporting, adjoining, or otherwise contracting items as required to insure proper installation.
- B. Examine construction to verify that the dimensions are correct to manufacturer's specifications.
- C. Do not install items until unsatisfactory conditions have been corrected.

1.12. Installation:

- A. Install items in strict accordance to manufacturer's Assembly Instructions and approved Shop Drawings.

1.13. Floor Mounting/Fastener Requirements

- A. Floor Mounting/Fastener shall be in accordance with manufacturer's requirements for all floor types.

PART 2: PRODUCTS

2.1.Rail Mounted Seating

- A. Work included in this section: Provision of floor mounted fixed tablet arm seating, beam mounted, including attachment, or other work required for installation unless otherwise noted.
- B. Seating shall be beam mounted with fixed floor or riser mount bases. Seat shells attach to beam. Tablet arms are welded to seat spider. Sloped floors shall be accommodated.
- C. Description: Beam mounted fixed seats with tablet arms, floor or riser mounted, including but not limited to:
 - 1. Continuous, segmented custom size beams

2. Floor or riser mounted bases
3. Square (Basic) or Oval (Select) Base designs
4. Six chair options
5. Four tablet arm options
6. Optional power & data module and distribution system
7. Powder-coated steel frames

D. Materials:

1. Frames – Rail Mounted Seating frames with tablet arms, floor mounted only. Base plates shall be 6" x 8" 11-gauge stamped steel flange with 1/2" diameter anchoring holes pierced at each corner. Pedestal column shall be 1.95" x 3.12" x 2mm seamless oval tubular steel upright welded to the base plate. The vertical column on the floor-mounted base shall extend down through the base plate and shall be welded around the vertical column at the pierced opening in the base. For added strength, a steel collar shall be welded around the bottom of the vertical column and welded to the bottom of the floor flange. The vertical column shall be capped with a stamped steel yoke cover to support the beam. A stamped steel yoke shall be welded to the seat spider. Four nuts shall be welded inside the steel yoke to accept screws from the base assembly to lock the seat and support beam firmly into place. The bases shall be positioned directly under the center of the seat. The seats shall be joined in sequence along an 11-gauge, 1-1/2" x 2" seamless steel tubular beam cradled in the yokes on top of the bases. No holes are required to be drilled in the horizontal sequence beam to enable the seats to be positioned at any point along the beam. Seating rail shall be furnished in any length with beam segments joined inside a yoke with beam ganging plates that lock the two segments of the beam together. Seats shall be mounted on stamped steel, 11-gauge spiders, secured to the beam with four bolts in the channel nuts welded in the yoke below. Seats not located directly above a base shall be fastened with a yoke only. Plastic flange covers shall be furnished on the floor mounted bases. Beams can be concave or convex radiused to match the room requirements. Floor flanges can be furnished at specific angles to adapt to sloped floor requirements.

E. Tablet Arms

1. Oversized Tablet Arm - The tablet arm support shall be two 1-1/8" x 16-gauge steel tubes. The lower end of the tubes shall be welded to the steel seat spider. The 1" x 2" x 14-gauge support bracket shall be welded between the two vertical tubes and under the 11-gauge steel top plate. Two injection molded pivot cams mount to the support bracket and encompass a 5/8" diameter shaft containing a 3/16" x 7/8" hardened key stop. This assembly provides the total travel motion of the tablet from 0 degrees (use position) to 175 degrees (stored position). Welded to the shaft shall be a 7-gauge pivot plate having two steel hinge barrels, one which is keyed to restrict the tablet travel from 0 degrees stored to 90 degrees use position. This pivot bracket is assembled with a pin and spring to a hinged 7-gauge steel support plate measuring 2-1/4" x 9" x 7-gauge which in turn fastens to the tablet board with six #12 x 3/4" wood

screws. The writing surface shall be 9-1/8" x 18-1/8" x 13-3/4", constructed of 15mm, 11-ply Baltic Birch plywood core, top faced with .050" high-pressure laminate and backed with a .040" backer sheet. Edges shall be clear lacquer sealed. Right-hand and left-hand models shall be available. Laminate colors shall be approved by WVU Interior Design Manager and WVU Project Manager.

F. Shells

1. Seats and backrests shall be molded compound curved polypropylene with a textured finish. Seat is two piece construction. Optional upholstered chairs have partially exposed polypropylene surfaces. Fabric is upholstered over 9/16" foam on the backrest and 15/16" foam on the seat. Two die cast aluminum backrest supports attach the backrest to the mechanism. A steel tube is cast into each backrest support for added strength. It consists of two flat torsion springs captured at both ends by brass bushings which in turn engage with the backrest supports. The mechanism creates gradually increasing resistance over the full 12 degrees of back flex.
2. Optional Upholstery on seats and backs.
Seat cushion or fixed seat and back cushions are mechanically fastened to front of shell. Foam padded with upholstery cover.

G. Colors

1. Frame Finishes - Powder-coated finish is standard on all frames in a choice of black, sand, warm grey, and blue grey. Plastic trim components match the four standard powder-coated colors.

2.2.Auditorium Seating

A. This section includes provision of cushioned floor mounted fixed seating with tablet arms including attachment or other work required for installation unless otherwise noted.

B. Fixed Auditorium Seating

1. Floor mounted seating with cushioned seats, automatic seat return, and optional tablet arm with power and data module distribution system and including but not limited to the following:
 - a. Gravity Lift Seat with spring assist return maintains constant seat return.
 - b. Six seat spacings (19"-24") for comfort and sight lines or as indicated on drawings.
 - c. 33.5" back height to provide upper back support in addition to lumbar support.
 - d. Polypropylene seat and back shrouds to provide maximum strength and durability. Optional wood back panel enhances aesthetics.
 - e. 138 sq. in. large style tablet arms for laptop use with power/data system per owner's request. Tablet arms include one motion gravity return to provide safety and ease in exiting.

- f. Optional power and data module and distribution system to provide convenient power/data access directly underneath the arm cap for laptop users. All wiring is enclosed in tamper-resistant shrouds. Power and data system to be retrofittable at a later date if needed.
- g. Optional CA 133 fire retardant (CA 117 is standard).
- h. Powder-coated frames to provide maximum durability.
- i. Ten year warranty.

C. Sizes

- 1. Seating will be manufactured in a minimum of 23" and 24" seat-centers. View lines will be accommodated as indicated on the seating plans. Seating with left or right-hand tablet arms will be manufactured to accommodate 23" and 24" seat center spacings. (Refer to drawings for specific sizing).

D. Materials

- 1. Back Cushion Assembly
 - a. Structural back shall be a 7-ply, 7/16" molded plywood inner structure within 2" urethane foam. Foam density shall be 1.8 lbs. Per Cubic Foot (PCF) and 36 lbs. Indentation Load Deflection (I.L.D). The upholstery fabric shall be bonded to the foam and attached through upholstery methods. An injection-molded polypropylene back shroud wraps around the edge of the inner structure board and the foam. The fixed back assembly with integral shroud is mounted to the uprights by four screws bolted through the structural 14-gauge steel inner back brackets. Three pitch options shall be available, 16, 20, and 24 degrees, to be set during installation. Overall back height shall be 33.5".
- 2. Seat Cushion Assembly
 - a. The seat assembly shall be constructed of an inner structure consisting of a 14 - gauge steel ring spanned with UltraFlex elastic webbing and covered with 3" molded urethane foam cushion of 3.0 lbs. density PCF and 46 lbs. I.L.D. The upholstery fabric shall be placed around the seat foam and stapled to an upholstery board. The bottom shall be covered by an injection molded polypropylene seat shroud. All pivoting and positioning shall be accomplished within the seat cushion assembly, thereby eliminating all pinch points.
- 3. Seat Pivot Assembly (Future Optional Products)
 - a. Seat pivot shall be an integral part of the seat assembly. The seat shall pivot on self-aligning oil-impregnated bronze bushing, joined to the seat ring by die-formed 11-gauge steel housings. Brackets made of 11-gauge formed steel and welded to the upright tubes and shall support the seat assembly. Seat assembly shall be fastened to upright brackets by 3/8" bolts. The seat return shall be a gravity-lift which automatically returns the seat to a ¾ fold position cushioned by the use of springs. Upon slight pressure, the seat shall achieve a full-fold position allowing additional passing room in the aisle.

4. Uprights
 - a. Floor mounted uprights shall be stamped 14-gauge 1" x 3" steel, continuously welded rectangular column welded to an 11-gauge back plate with a 14-gauge steel top cap. The floor plate shall be 14-gauge, 2.5" x 7.5" floor plate attached to the upright by a concealed weldment. Finish to be powder coated according to standard color offerings.
5. Arm Cap
 - a. Shall be supported by a 14-gauge steel support, 1" wide x 10" long, welded to the upright by a concealed weldment. Arm cap shall be injection molded engineering grade thermoplastic, 2-5/16" wide x 11-1/2" long and attached to the arm cap support with four concealed screws. A flatter arm cap with 17" length dimensions as above shall be specified with the large tablet arm. All plastic arm caps shall include a routed oval inset at the back of the armrest for optional row markers.
6. Tablet Arm – Large
 - a. Large tablet shall be a self-storing, gravity-activated one-motion tablet arm, consisting of a storable writing surface constructed of 5/8" thick Baltic Birch plywood core, 0.050 high-pressure laminate on face and 0.020 backer sheet, measuring 10" x 16" (138 sq. in.) capable of supporting a laptop computer. The tablet arm mechanism shall consist of a pivot arm, pivot mount bracket and support bracket constructed of 11-gauge steel with controlled 90° side-to-side rotation and 84° up-and-down rotation. Tablet arm will store between the seats, without interfering with the seat.
7. Aisle Light (Optional)
 - a. Shall be 24 volt. 0.9 watts per lamp, 2 lamps per light, mounted inside a rectangular steel housing approximately 1" H x 3-3/8" W and approximately 12-1/2" off the floor on flat floors. The light and housing shall be attached to the outside of an end panel. Wiring for light shall feed down through the upright tube and out the inside of the upright. Aisle light wiring shall be hard-wired to the building power source by a certified electrician. Cord is 12 AWG UL listed appliance wire, 2 conductor multi-strand copper, black color jacketing. Transformers are not provided.
8. Decorative End Panels (Recommended for all aisle ends) (Future Option)
 - a. Laminate End Panel shall be 5/8" thick MDF particleboard core with 0.050 high-pressure laminate on both sides, attached to uprights with one 14-gauge bracket and four screws. Edges shall be painted to match the trim color.
9. Row Markers and Seat Numbers
 - a. Adhesive backed plastic or aluminum markers for plastic seat shrouds and plastic arm caps. Aluminum markers shall be secured with brads for wood arm caps.

2.3. Fixed Seminar Tables

A. Fixed Seminar Tables

1. Floor mounted steel bases which support solid core continuous table tops with optional surface mounted power and data outlets including but not limited to:
 - a. Table tops shall be 18 deep, 1-1/4" thick, warp-resistant construction with a center core of 1-1/8" thick Novaply particleboard, minimum of 45 pounds PCF density to prevent warping. Top surface to be a minimum of .040" thick high-pressure laminate meeting NEMA standards with a .040" thick phenolic backer.
 - b. Tite joint fasteners, hardwood spline, and steel splice plates shall be used to provide a virtual "seamless top". Knape & Vogt is the preferred manufacturer.
 - c. Optional power and data distribution systems provide surface mounted power and data access for laptop users. The 8-wire harness of flexible conduit shall distribute power between the power/data modules and the power infeed. The harness shall be enclosed in a plastic trough with a metal divider to separate power and communication or data cables.
 - d. **Optional** Under-surface power and data provides a duplex receptacle and two data ports concealed in a plastic protective shroud and mounted underneath the surface between seats, opposite the base location. It shall utilize the same 8-wire distribution system.
 - e. Modesty Panels shall be available in laminate with vinyl edge.
 - f. Base style to be the Oval option.
 - g. Powder-coated steel frames provide maximum durability.
 - h. The entire table is UL Listed.

B. Sizes

1. Tables shall be standard at 18" deep, custom length according to room layout. Various depths of 20", 22", 24", 30" or other sizes shall be available. (See drawings for specifics)

C. Materials

1. Fixed Bases
 - a. Oval Fixed Pedestal Bases for Seminar tables are furnished in a standard 27-3/4" height to be used with 1-1/4" thick tabletops for a 29" overall table height. Bases shall be cantilever-type pedestal, oval fabricated steel column, 1.95" x 3.12" x 2mm tubular steel, welded to a 6" x 8" x 11-gauge stamped steel floor flange. Bases are topped with a support arm measuring 13-3/4" x 1-1/2" x 11-gauge to support the top. Each arm shall have four tabs pierced with holes to secure the top to the base with four screws (furnished) and shall have a notched section on both sides to allow for electrical components and data/communication wires to pass through. Bases requiring power or data access other than up from beneath the floor directly centered under the support. Shall be specified with a 1-7/16" diameter cutout at the bottom on the backside of the vertical tube, to allow for power or communication/data cable access. Clear opening space within the base is 1-5/16" x 1.50" to allow for power or data/communication wires. Cutout shall

have a stamped metal cover painted to match the base. Four 1/2" diameter holes are provided in the floor plate for anchoring to the floor. Molded ABS covers to trim out the floor flanges complete the assembly.

- b. Escutcheon covers are furnished on all table pedestal bases. Non-standard table base heights are available (contact factory). Sloped floors from 0-8 degrees can be accommodated.

2. Table Tops and Modesty Panels

- a. Seminar table tops shall be nominal 1-1/4" thick, warp-resistant construction. To have a center core of 1-1/8" thick Novaply particleboard, minimum of 45 lbs. PCF density. The top surface shall be a minimum of .040" thick high-pressure laminate meeting NEMA standards and the bottom surface, a balanced .040" thick phenolic backer. Laminate and backing sheet shall be permanently bonded to particleboard core using a cross-linking Polyvinyl Acetate (PVA) adhesive under continuous pressure in a hot press. Edges shall be slotted to receive extruded-vinyl bullnose molding 1-1/4" wide with barbed "T" inserted into a routed groove in the solid Novaply core and held in place with nails spaced approximately 12" apart, driven into the "T" from the underside. The table top ends shall have corners with minimum 2-1/4" radius. Continuous table top joints shall be secured with a minimum of two mechanical fasteners equal to Knappe & Vogt #516, hardwood spline and heavy-gauge steel plate under joint. Standard depth of 18"; other depths available. Available in choice of straight, radiused, or truncated configurations to match the room layout. Tops shall have cutouts to accept modules when specified.
- b. Laminate Modesty Panels shall be nominal .810" thick warp-resistant construction in straight or curved configurations. Center core shall be .75" thick Novaply particleboard, minimum of 45 lbs. PCF density. The front surface shall be minimum of .040" thick high-pressure laminate meeting the National Electrical Manufacturers Association (NEMA) standards and the back surface, .020" thick backing sheet. Edges shall be slotted to receive extruded vinyl bullnose molding 7/8" wide with barbed "T" inserted into a routed groove in the solid Novaply core and held in place with nails spaced approximately 8" apart, driven into the "T" from the back. The modesty panel ends shall have corners with minimum 1-1/2" radius. Modesty panels are segmented with 1/2" space between panels. Standard height of 14"; other heights available (minimum 9"; maximum full height with additional bracketry). Length to be determined on CAD drawings. Modesty panels shall be secured to the table top with modesty panel brackets and screws (furnished). Optional continuous modesty panels are available.

3. Electrical Components (Optional)

- a. Module shall be 7" long x 3-1/2" wide x 2-1/2" high and fit securely into a 6-1/4" x 3" cutout. The module shall be constructed of polycarbonate with a textured finish, meeting UL-VO minimum requirements. The module shall have one duplex receptacle (rated at 15 amps/125 volts) and two locations for data connectors. Snap-in data plates hold data connectors and will accommodate most

data manufacturers. The data connectors shall be purchased by the customer. The module shall have a dampened spring-loaded mechanism to allow the unit to smoothly open for use and shall be able to close when not in use. The power receptacles shall be located on a vertical plane and above the worksurface when in use to avoid accidental spills into the receptacle. The data jacks shall remain stationary to avoid excess wear and tear on the data wire connections. A cord with a three-prong plug, 22" long, shall plug into the 8-wire harness.

- b. Optional Under-surface power and data provides a duplex receptacle and two data ports concealed in a plastic protective shroud and mounted underneath the table top between seats, opposite the base location. The shroud cover shall be made of PVC meeting UL 94-HB, 14" wide x 16-1/8" deep x 2-1/4" high, vacuum-formed to house the connection of the 8-wire harnesses. It shall utilize the same 8-wire distribution system. Data jacks and wires are not provided.
- c. The 8-wire, 4 circuit harness of flexible conduit shall distribute power between the power/data modules and the power infeed. The harness will be enclosed in a plastic trough with a metal divider to separate power and communication or data cables. The trough shall be constructed of rigid PVC approximately .06" thick. The trough shall be attached to the underside of the worksurface (by the installer) with wood screws provided. The trough shall measure 1.34" deep x 6.2" wide overall with an interior dimension of 5.5 cubic inches. The trough shall include a 24-gauge, L-shaped metal divider measuring 1-1/4" x 1-1/4" and shall be attached to a groove in the trough. The trough shall be available in black only.
- d. The receptacle shroud cover shall be made of PVC meeting UL 94-HB, 12" x 14" x 2" vacuum-formed to house the connection of the 8-wire harnesses and the cord from the module. A 1-13/16" x 3" opening in the shroud shall allow access to the duplex receptacle. A 1-1/4" radiused slot shall allow access for removal of the module.
- e. All electrical components shall be installed on site with hardware provided. A licensed electrician is required to connect the power infeed to the building power source. Wiring diagrams are available in the printed Specifications booklet or in the Seminar Table Assembly Instructions.
- f. All undersurface power components are UL listed for use on Seminar Tables. The listing covers table tops, bases, modesty panels, and electrical components. Curved modesty panels are not UL Listed.

END OF SECTION 126100

