Vanguard – Conventional Radius Lip
Construction Specification
2019

1.00 MANUFACTURERS

A. The basis of this specification is wood casework manufactured and constructed according to the standards used by Leonard Peterson & Co., Inc., 400 Webster Road, Auburn, Alabama. The specified design is **Vanguard – CONVENTIONAL RADIUS LIP.** All laboratory equipment covered by the specification shall be the product of one manufacturer and be fabricated at one geographic location to assure shipping continuity and single-source responsibility. All quotations from a manufacturer other than Leonard Peterson & Co., Inc. shall contain a review of the following capabilities:

1. List of shop facilities
2. List of engineering and manufacturing personnel
3. Proof of financial ability to fulfill the contract
4. List of a minimum of ten (10) installations over the last five (5) years of comparable scope
5. Proof of project management and installation capabilities
6. AWI Premium Grade Certification Number.

B. The selected manufacturer must warrant for a period of three (3) years, starting on the date of acceptance or occupancy, whichever comes first, that all products sold under the contract referenced above shall be free from defects in material and workmanship. Purchaser shall notify the manufacturer's representative immediately of any defective product. The manufacturer shall have a reasonable opportunity to inspect the goods. The purchaser shall return no product until receipt by purchaser of written shipping instructions from the manufacturer.

C. Samples:
Samples from non-specified manufacturers will be required and reviewed per specification. Samples shall be delivered, at no cost to the architect or owner to a destination set forth by the architect or owner. This must be done seven (7) days before quotation deadline as a condition of approval of each bidder. Samples shall be full size, production type samples. Miniature, or "Show Room" type samples are not acceptable. Furnish the following:

1. One combination drawer and cupboard base unit showing complete construction details, including one shelf.
2. One leg corner sample showing table construction.
3. One sample of all top materials shown or called for, of sufficient size to perform finish requirements test.

4. Sample of mechanical service fittings, locks, door pulls, hinges, and interior hardware and other material deemed necessary for review.

D. The above samples of the successful manufacturer may be impounded by the architect or owner to insure that material delivered to the jobsite conforms in every respect to the samples submitted.

2.00 MATERIALS

A. General:

1. Casework shall be conventional radius lipped design and constructed in accordance with the best woodworking practices. All cabinetry shall be produced in manufacturers own facility and operated under his control and supervision. First class quality of casework shall be established and maintained by use of proper machinery, finishing products, tools, fixtures and skilled workmanship.

2. Casework units to be dowel pin construction with all joints properly glued making each unit rigid and self-supporting.

3. Material shall be selected so that the finished installation shall provide an attractive and harmonious appearance. All exterior casework surfaces exposed to view after installation shall be Northern Red Oak. Solid woods and veneers behind closed doors or drawers shall be of color and graining in conformance with the normally accepted standard required of the scientific laboratory equipment industry.

B. Solid Woods:

All solid woods shall be hardwood carefully and thoroughly air-dried, then kiln dried in humidity-controlled kilns to a moisture content of 4-1/2%. All kiln dried lumber shall then be tempered to a moisture content of 6% before use. This moisture content shall be maintained throughout production.

C. Plywoods:

All plywood shall be hardwood plywood. Soft woods such as Fir or Pine are not permitted.

1. Veneer Core Plywood:

Veneer core plywood shall be either 7-ply (3/4”) or 9-ply (1”) and shall be compliant with ANSI/HPVA HP-1 2009.

2. Composition Core Plywood:

Composition core plywood shall be 3-ply and shall be compliant with ANSI A208.1-2009, and/or ANSI A208.2-2009.

3. Face Veneers:

Plywood face veneers shall be Grade A, plain sliced, book matched, Red Oak on face, and Grade 1, Red Oak on back.

D. Banding:

Plywood panels to shall be edge banded as specified with a multiple ply hardwood edge-banding or 1/8" (3mm) solid lumber to match exposed cabinet veneer.

E. Tempered Hardboard:

Tempered Hardboard shall be a wood fiber/resinous combination formed with heat and pressure into sheets providing a hard, smooth surface and shall be compliant with ANSI A135.4-2004.

F. Dowels:

Assembly dowels, used to joint rails to panels, shall be fluted hardwood 8mm in diameter x 36mm in length. All dowels glued into components.

G. Glass:

Glass for framed sliding and swinging doors shall be 1/8" float glass (tempered glass provided when specified). Glass for unframed sliding doors shall be ¼" float glass.

H. Glues:

All glues used in the manufacture of plywood, assembly of component parts and cabinetry to be water resistant with no added urea formaldehyde.

I. Finishes:

Conversion varnish with no added urea formaldehyde and shall comply with HUD 24 CFR 3280.308.

J. Hardware:

1. Drawer and door pulls: Bar Type made of extruded aluminum 4-1/2" long and ½" wide having dull brushed finish. Pull attached with two (2) No. 10 flat head machine screws countersunk on 4"centers. Pulls provided for all hinged doors and drawers. (Plastic pulls or a design not compatible for use by the handicapped is not acceptable.)

2. Latching Handles: Made of dull chrome plated die cast zinc alloy approximately 4-1/4" in length in streamlined design. Handle operates with one-quarter turn. Paired door cases have latching handle on right door and dummy matching handle on left door. A 3-point latching system provides positive engagement at top and bottom of door with 5/16" diameter tapered epoxy coated steel rods engaging in case top and bottom and latch plate engaging behind left door or into side wall of case depending upon design. Latching handles are provided on all case doors over 48" high.

3. Hinges: Butt style, 5-knuckle, institutional type of dull finished stainless steel, 2-1/2" by 3-1/8", unequal winged, tight pinned and with wing thickness of .081". Each hinge is secured by seven plated No. 7 flat head screws. (Surface mounted hinges shall not be acceptable.)

   Doors hung with paired hinges are capable of supporting 175 pounds at 12" from pivot point of hinges with no distortion of hinges or degradation of casework. Hinged doors up to 48" high furnished with 1 pair of hinges. Hinged doors over 48" high furnished with 1-1/2 pair of hinges.

4. Drawer Slides: 100 lb. rated capacity, full extension, zinc plated, linear ball bearing made of cold rolled steel. Drawers removable without the use of tools.

5. Shelf support clips: double pin type made of vinyl having anti-tipping seismic feature. Each clip capable of supporting 200 pounds. Clips engage into holes drilled into cabinet end panels or partitions.

6. Catches: spring loaded, nylon roller type, designed for quiet operation provided for hinged doors. Cabinets with locked paired doors have elbow catches inside left-hand doors. Cabinet and case doors provided with 2 catches, one at top and one at bottom, where elbow catches are not furnished.

7. Base molding (when call for or specified): pliable black vinyl, 1/8" thick by 4" high with top edge rounded. Molding secured with self-stick or applied waterproof adhesives. Formed stainless steel caps are fastened to exposed corners. Exposed cabinet work provided with base molding unless otherwise specified.

8. Leg shoes: molded black vinyl 2-1/2" high. Legs attached to floor provided with shoes, and furnished with semi-concealed plated metal angle clips for securement.

9. Drawer and hinged door locks (except tall case doors): dead bolt style, heavy-duty, five-tumbler, of non-ferrous metal and master-keyed having 3/8" bolt throw and single bitted style keyway. Barrel and back plate of locks are riveted together; lock bolts are non-removal. Locks with cams held in place with machine screws or nuts are not acceptable. Locks are secured to rear of drawer and door fronts with flat head screws. Each lock furnished with one non-ferrous key when keyed alike and two non-ferrous keys when keyed differently. Locks furnished as indicated on details or as is standard with catalog descriptions unless otherwise specified. Latching handles shall be provided with locks where required. Locks shall be keyed to same master key as locks provided for other drawer and hinged door cabinets.

10. Number plates: oval-shaped and made of non-ferrous metal with black numerals. Plates secured with brads (self-stick number plates are not acceptable). Number plates furnished only when specified.

11. Glides: black nylon, minimum 1-3/4" diameter and adjustable on 3/8" diameter x 1-1/2" plated stem. Glides provide on table legs not attached to floors.

12. Support rods, ¾" diameter aluminum with the upper ends rounded and the lower ends tapered to fit support rod plates. Support rod plates made of aluminum secured into table top with heavy brass nut. Cross bars made of ¾" diameter aluminum with rounded ends, and provide with clamps for attachment to support rods.

13. Label holders: Furnished in brushed stainless steel attached to drawer heads or doors with screws. Label holders have a 1" x 2" label opening.

2.01 CONSTRUTION

A. General:

The prime intent of this specification is to define the essential minimum cabinet case and table requirements of the materials, and construction, finish and workmanship to be supplied. Cabinetry to be of convention lipped style design having drawer and doors provided with radiused edges overlapping openings on all edges. Each cabinet unit shall be completely factory assembled and finished. Cabinets constructed with flush interiors having no offsets maximizing drawer and cupboard space and ease of cleanability. All exposed joints shall be closely

fitted and tight showing no open joints when finished. All exposed corners eased. Individual cabinet, case and table units shall meet or exceed the Recommended Standards and Practices outlined in SEFA 8.

B. Base Cabinets:

1. End panels, partitions, bottoms and shelves:

Exposed end panels, partitions, bottoms and shelves to be ¾" thick red oak veneer core plywood. Unexposed end panels, partitions, bottoms and shelves to be ¾" thick Red Oak veneer core plywood. Unexposed end panels, partitions, bottoms and shelves to be ¾" thick birch or maple veneer core plywood providing light cabinet interiors behind closed doors. Exposed edges of components to be banded in red oak.

Interiors of end panels and partitions to be drilled to receive dowel inserted edges of rails, bottoms and toe boards and bored for shelf clips where required. Bottoms machined for and provided with dowels (on maximum of 96mm centers) for insertion into end panels or partitions and grooved to receive cupboard backs.

Cupboard base cabinet shelves to be ¾" thick veneer core plywood, provided full depth and adjustable on 1-1/4" (32mm) centers.

2. Top Frame:

Cabinet top frame to be comprised of a front rail and a back rail. Front rail to be 4" x 1" hardwood having exposed edge red oak banded and end edges drilled and provided with three (3) dowels for horizontal glued insertion into cabinet end panels at front. Back rail shall be ¾" hardwood varying in height from 9" high for 35" high cabinets to 7-3/4" high for 29" high cabinets and inserted vertically at rear into cabinet end panels. End edges of back rails each drilled and provided with four (4) dowels for glued insertion into ends panels.

3. Intermediate Rails:

Intermediate Rails to be 4" x ¾" hardwood having exposed edge red oak banded and end edges each drilled and provided with 3 dowels for insertion into end panels. Intermediate rails placed horizontally at face of panels between all drawers or drawers and cupboards. Intermediate rails machined to receive engagement of lock bolts and security panels when specified.

4. Backs:

Interior cupboard backs to be ¼" thick tempered hardboard and provided removable. Backs set into grooved cabinet bottom and attached at top to rear vertical rail with minimum of two (2) screws. Exposed interior cupboard backs to be ¼" veneer core red oak plywood provided removable unless specified as fixed.

Exposed exterior finished oak backs for free standing cabinets or mobile units to be of ¾" thick red oak veneer core plywood with exposed edges banded. Free standing units up to 8'0" long shall be provided with one piece back and shipped assembled to cabinets.

5. Drawers:

Drawer fronts to be 13/16" thick one piece solid oak up to 8" high with grain running horizontally. Drawer sides and backs to be 15/32" thick, 11 ply birch plywood and bottoms ¼" tempered hardboard. Drawer front and back attached to sides with interlocking lap or dovetail joinery. Bottom fully grooved into front, sides and back. All joints glued and pinned as required.

Drawers provided with 100 lb. full extension slides and pulls as described under Hardware. Drawers over 26" wide to have two (2) pulls.

6. Security Panels:

Security panels shall be ¼" thick tempered hardboard attached to back of front intermediate rails and fastened into security clips or rails at rear of cabinet. Security panels provided only when locks are keyed differently between drawers or drawers and cupboards.

7. Hinged Paneled Doors:

Doors shall be 13/16" thick of 5-ply construction having solid core with hardwood framing minimum 1-3/4" wide, hardwood crossbands and vertical veneered oak faces. Paired cabinet doors to have matched grain pattern. Doors provided with two (2) hinges, one (1) pull and one (1) catch as described under Hardware.

8. Toe Spaces:

Base Cabinets to have recessed toe space 4" high x 2-1/2" deep. Toe board made of ¾" thick water resistant hardwood. End edges machined for and provided with three (3) dowels for glued insertion into cabinet end panels. Toe boards further secured to underside of bottom with glue block(s) for rigidity.

C. Wall Cases, Counter Mounted Cases, and Tall Storage Cases:

1. End Panels, Partitions, Bottoms and Shelves:

Exposed end panels, partitions bottoms and shelves to be Red Oak Veneer core plywood. Unexposed components to be birch or maple veneer core plywood. All exposed front edges to be edge banded. End panels machined to receive doweled bottoms, tops and toe boards. Dowels to be spaced on maximum 96mm centers. End panels bored to receive adjustable shelf clips on 1-1/4" (36 mm) centers.

End panels, partitions and bottoms of tall cases to be ¾" thick.

Tops, of wall cases, counter mounted cases and tall cases to be 1" thick. Bottoms of wall cases and counter mounted cases to be 1" thick. All exposed front edges to be hardwood edge banded.

Wall and counter mounted cases to be provided with ¾" thick veneer core plywood shelves. Shelves for tall case to be 1" thick veneer core plywood. Exposed front edge of shelves to be red oak banded. All shelves to be full depth and adjustable except for center shelf provided in tall cases which shall be fixed.

2. Backs:

Unexposed interior backs shall be ¼" tempered hardboard grooved into tops, ends and bottoms. Exposed interior backs shall be ¼" veneer core red oak plywood attached to tops, ends and bottoms. Backs are further supplied and secured with ¾" x 4" wide batten strips behind back of backs for reinforcement and through which hardware shall be attached for securement to walls. Exposed exterior back shall be ¾" thick veneer core red oak plywood having red oak edge bands.

3. Toe Boards:

4" high toe boards provided at base of tall storage cases shall be ¾" thick water resistant hardwood. End edges to each machined for and provided with 3 dowels for insertion into case ends. Toe boards set flush with face of ends and further secured to underside of bottom with glue block(s) for rigidity.

4. Hinged Panel Doors:

Doors up to 48" high shall be 13/16" thick. Doors over 48" high shall be a minimum 1" thick. Door shall be of 5-ply construction same as described

for base cabinets and provided with similar hardware except doors over 36" high to have 1-1/2 pair of hinges and 2 catches.

Tall case doors to be provided with latching handles securing doors to cabinet walls or behind left hand doors and to case tops and bottoms.

5. Hinged Glassed Doors:

Doors up to 48" high shall be 13/16" thick and over 48" high shall be a minimum 1" thick. Door shall be made of 2-1/2" wide solid red oak (plywood not acceptable) rails having mitered mortis and tenon corner glued and reinforced with dowels.

Doors provide with hardware same as described for panel doors.

Glass shall be set with wood molding.

6. Sliding Panel and Sliding Glazed Doors:

Similar in construction to hinged door descriptions. Each door face machined to receive recessed plated steel fingertip pull. Door top and bottom edges machined for hardware to allow doors to operate on non-ferrous metal tracks. Doors up to 30" high shall be furnished with and operate on self-lubricating plastic slides. Doors over 30" high shall be furnished with and operate on ball bearing sheaves.

D. Apron and Table Frame Construction:

1. Apron and table frames made of solid hardwood lumber. Exposed rails minimum ¾" thick x 4-3/4" high red oak grooved for acceptance of cross rails and corner blocks.

2. Reinforcing cross rails made of solid hardwood, grooved, glued and screwed into front and back rails.

3. Apron and table rail corner blocks, for attachment of legs shall be 13 gauge formed plated steel grooved and screwed into aprons.

4. Legs, solid oak, minimum 2-1/4" square and furnished with 4-1/2" long uniquely designed bolt which passes through leg having exposed head conforming to leg edge rounding and treaded end furnished with washer and nut for secure attachment behind corner block. Depending upon table requirements, legs are provided with leg shoes or adjustable glides, as described under Hardware.

5. Leg stretchers, where required, to be not less than 1" x 2-3/4" mortised and tenoned into legs and secured with bolts. Cross stretchers shall be of similar construction, tenoned into stretchers and secured with bolts.

6. Book compartment bottoms furnished in 22 gauge black powder coated formed steel, tempered hardboard, birch or maple plywood depending on style of unit in which compartment occurs.

7. Panel legs, for attachment of aprons, to be 1-1/4" thick constructed of hardwood plywood having top and bottom concealed solid hardwood bands. Exposed edges faced with solid oak bands.

E. Cabinet Finish:

1. After assembly of cabinets but prior to the application of wood stain and sealing cabinet and case parts to be sanded smooth and loose fibers and dust removed.

2. Exposed cabinet and case parts and backs of doors then receive an application of stain. Excess stain to be removed by wiping with wood wool and/or cloth, and parts allowed to thoroughly dry. Unexposed interiors behind solid doors and drawers left natural providing light interiors for ease of viewing.

3. After drying, exposed parts, cabinet and case interiors, shelves, drawers and doors to receive a double coat of clear resinous wood sealer. Exposed cabinet parts, drawers, doors, and cupboard and case interiors then receive a double coat of clear, chemical resistant synthetic varnish. Between all applications of sealer and varnish, cabinet parts to be lightly sanded and wiped. The resulting exterior finish shall be semi-gloss and provide an acid, alkali, solvent, water and abrasive-resistant surface.

4. Applied finish to meet Finish Test Requirements of SEFA 8.

2.02 COUNTERTOPS:

1. General:

A. Countertops constructed per specification covering particular type.
B. Tops having sinks provided with drip grooves cut into underside of exposed edges.
C. Adhesives or fasteners to be provided for securing of tops to cabinet work. Such materials to allow for contraction or expansion of tops where necessary.
D. Tops shall be 1" thick unless otherwise specified and provided with 4" high curbs where tops abut walls, columns, case ends, etc.

2. Types:

A. **Phenolic Resin** is fabricated from composite panels comprised of multiple layers of selected papers impregnated with special phenolic resins, manufactured under heat and pressure to form a solid black chemical resistant composite throughout the entire thickness of the panel. Tops shall be furnished black in color having black exposed edges honed smooth and exposed corners and edges chamfered back approximately 1/8". Tops shall have a non-glaring surface.

B. **Epoxy Resin** is fabricated from a molded modified epoxy resin that has been especially compounded and cured to provide optimum physical and chemical resistance. Tops have a uniform mixture throughout, and do not depend on a surface coating that can be readily removed by chemical or physical abuse. Tops are non-glaring and black in color. All exposed edges shall be chamfered back approximately 1/8". All curbs and backsplashes to be 4" high-applied.

2.03 SINKS:

1. Epoxy resin sinks are cast of black modified epoxy resin having high resistance to chemicals, heat and shock as normally encountered in laboratories. Castings are done in permanent molds producing sinks with all inside corners coved and bottoms dished. Sinks to be drop-in style.
Epoxy resin sinks provided with 1-1/2" epoxy resin outlets.
Tail pieces, traps and drain lines to be furnished by Others unless otherwise noted on details or in equipment schedule.

2. Sinks shall be installed by Casework Contractor.
Outlets to be installed by Others.

2.04 PLUMBING FIXTURES:

1. Plumbing fixtures furnished in laboratory grade chrome plated brass as manufactured by Water Saver Faucet Company.
Fixtures provided with brass tank nipples complete with locknuts and washers for attachment to countertops.
Water fixtures provided with inline vacuum breakers unless otherwise indicated.
Fixtures supplied assembled (tank nipples loose).

2. Safety shower and eyewash units shall be furnished in make and model numbers listed on the drawings or outlined in equipment schedule as manufactured by Water Saver Faucet Co.

3. Pedestal electric boxes, cast aluminum finished in black textured coating furnished with tank nipples and locknuts for attachment to countertops.

Electrical boxes mounted in table or cabinet aprons shall be steel.
Electric receptacles, switches, etc., shall be specification grade 20 amp and UL approved. Receptacles located within 6'0" of sinks to be G.F.I. type.
Cover plates for receptacles shall be stainless steel.
Mounting of electric boxes in table aprons or cabinet units to be by Casework Manufacturer.

3.00 EXECUTION

1. For approval by owner or architect, within 30 days after receipt of order submit shop details showing floor plans, rough-ins and elevations of casework and equipment being supplied. Floor plans with rough-in details to be in 3/16" scale. Elevation drawings to be in 3/8" scale.

2. Prior to fabrication of casework field check project site to assure proper fit of materials being provided. Adjust drawings as necessary to insure proper fit of all casework and equipment to building conditions.

3. Deliver casework only after wet operations are complete and building is closed in, dry and has proper climate control for installation of casework.
(Area in which laboratory casework is installed to be maintained between 65 and 75 degrees F. with relative humidity maintained between 45% - 55%.)
If these conditions are not met and maintained, product warranty is void.

4. Install casework in accordance to manufacturers recommended practice by qualified casework installer having a minimum of 3 years' experience in the installation of institutional casework.

5. Adjust casework and hardware so that doors and drawers operate smoothly. Lubricate operating hardware as recommended by manufacturer.

6. Advise owner or contractor on procedures and precautions to be taken to protect casework and other materials installed from damage by work performed by other trades.

7. During installation keep job site clean and remove debris on a daily basis. Floors are to be broom cleaned upon completion.