

DESIGN STANDARDS

1. **GENERAL:** This section contains guidelines and criteria for the design, material selection, manufacture, and installation of items covered under Division 6 including, but not limited to: Rough carpentry, casework, millwork, and wood trim.
2. In the development of the design material selections, and related construction details, the Architect shall use the Architectural Woodwork Institute (AWI) quality standards and requirements. Use “Premium Grade” specification for all transparent finished casework, millwork, paneling, or wood trim. Use “Custom Grade” specification for plastic laminate clad casework or millwork and painted millwork. Except comply with the following requirements:
 - 2.1 For cores and substrates, use low VOC medium density fiberboard (MDF) or Agriboards; except in wet areas, use hardwood veneer core for counter tops and back splashes.
 - 2.2 Except where the design intent requires another selection use the “Flush Overlay” cabinet instructions. Such other selections shall be approved by the University’s Project Manager.
 - 2.3 To the extent possible, all cabinets and millwork items shall be factory assembled with provisions made for concealed field connection and mounting.
 - 2.4 Select and specify type of shelving standards and brackets appropriate for anticipated loading and use. Typical horizontal spacing for vertical standards is between 24” and 30” O.C.
 - 2.5 All requirements for blocking required to mount or secure casework, millwork, shelving, wood trim or other items shall be clearly defined and specified.
 - 2.5.1 Acceptable blocking includes solid wood, plywood and minimum 16ga sheet metal.
 - 2.6 The Architect shall coordinate the work of other disciplines and trades that interfaces or integrates with the millwork, including but not limited to: power outlets, telecom/data outlets and equipment, plumbing, and audio/video equipment and controls. Careful attention shall be paid to wiring raceways including sizing, access for additions, changes, and overall wiring maintenance and management.
 - 2.7 Tops and counters without base cabinets shall be designed to safely resist loads required by applicable codes but not less than 100 lbs./sf uniform load or a concentrated load of 300 lbs. acting in any direction.
 - 2.8 Grommets: In association with electrical and telecom device wiring, provide grommet(s) coordinated with locations of the devices that they support. In general, use plastic grommets.
 - 2.9 All surface-mounted electrical telecom or AV devices in casework or millwork shall be selected to minimize visual impact and for ease and reliability of use.

**DIVISION 6 - WOOD
WOOD, MILLWORK AND CARPENTRY**

06600-2

3. Except as listed below, use a plastic laminate finish for cabinets, countertops, and shelving:
 - 3.1 At the following locations, wood veneer may be used: Reception, staff office, conference rooms, executive offices, and faculty offices.
 - 3.2 Shelving shall be plastic laminate or wood veneer shelving shall be hardwood veneer core with either plastic laminate or wood veneer on both sides and three edges. Minimum thickness is 3/4".
 - 3.2.1 Top, bottom, and exposed edges of shelves shall have the same finish as the exterior finish of the casework or cabinet work they are in.
 - 3.3 Countertops: Solid surface countertops are preferred at wet areas unless budget constraints don't allow.
 - 3.3.1 Acceptable solid surface material includes acrylic resins or granite. All selections are to be approved by the University's Project Manager.
 - 3.3.2 Counter depths shall be 24" to 30" deep with a minimum edge thickness of 1 1/2".
 - 3.3.2.1 Where required to meet accessibility requirements for access and reach, provide a 5" apron designed according to those standards.
 - 3.3.2.2 Provide an eased or soft edge on the exposed edge of all counter tops.
 - 3.4 All glass used in casework/millwork to be either tempered or laminated with a minimum 1/8" thickness. Glass shelving is to be minimum 3/8" thick with all edges with either a flame or polished finish with no sharp edges/corners.

PRODUCT STANDARDS

1. Blocking and Framing:

Use fire-treated wood or plywood for interior blocking or interior framing as required by applicable codes.

 - 1.1 For interior applications use fire-retardant treatment based only on formulations that do not bleed or otherwise adversely affect finishes.
 - 1.2 Use only Type A Low-hygroscopic formulations. Use methods of control to prevent warping and discoloration of the wood. Kiln-dry wood to levels required of untreated wood.
 - 1.3 Mill lumber before treatment
2. Use preservation treated wood or plywood for blocking at roof or exterior locations with potential exposure to moisture.
 - 2.1 Use only chemical treatment as approved by authorities having jurisdiction.

3. Wood and Wood Products:

Wood materials shall comply with requirements of the appropriate AWI quality standards for each type of woodwork or casework and selected quality grade.

3.1 All wood species and veneer selections for transparent finish shall be as approved by the University's Project Manager.

4. Cabinet Hardware: The following outline the generally accepted hardware types, selections and manufacturers. All changes or additions shall be as approved by the University's Project Manager.

4.1 Pulls

4.2 Catches: Stanley #SP41 and 46, Magnetic, Knap & Vogt #916, Self-aligning Magnetic and Hager #1437 and 38 Magnetic.

4.3 Hinges: Pivot – Stanley 327, 1 pr. per door, 1-1/2 doors over 32" high. Butt - Hager #1821. Concealed - Grass America, Inc. #3000 & Mepla SC04

4.4 Drawer Guides: Provide full extension guides by Knap & Vogt #1300 or Accuride 2132 rated for 75 lb. loads.

4.5 Cabinet Drawer/Door Lock: Knap & Vogt #986 and 987.

4.6 Recessed Adjustable Metal Shelf Support: Knap & Vogt #255 Standards and #256 Clips.

4.7 Shelf Standards and Brackets: Knap & Vogt #82 Standards and #182 Brackets.

4.7.1 Shelf standards shall be mounted directly to wall studs or specifically placed blocking.

5. The Architect shall review the scope and quality requirements of architectural millwork with the UPM to determine the need for and criteria to pre-qualify a list of woodwork fabricators for each project.

6. High-pressure Decorative Laminate: NEMA LD3 grades indicated or as required by the AWL Quality Standard.

6.1 Make laminate connections from manufacturer standard color and finish series.

6.2 Selections from the premium series may be made for special projects where approved by the University's Project Manager.

**DIVISION 6 - WOOD
WOOD, MILLWORK AND CARPENTRY**

06600-4

7. Chemical-resistant High Pressure Decorative Laminate: NEMA LD3, Grade HGP may be used for limited use lab counter tops. For all regular laboratory counter tops use resin tops.
8. Solid Surfacing Materials: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
9. Laboratory counter tops: Use molded epoxy resin counter tops rated for the anticipated chemical exposure. Consider the use on integrally molded sinks and liquid marine containment edges.

PERFORMANCE STANDARDS

1. Coordination: The Architect shall require the field measure and verification of all dimensions prior to fabrication. Coordinate work of this section with plumbing and electrical work to insure proper positioning of plumbing stub outs and electrical outlets.
2. Manufacturer/Installer Qualifications: Firms pre-qualified by the project team and approved by the University's Project Manager with demonstrated experience in successfully producing and installing custom cabinetwork of size and type similar to that indicated for this project, with sufficient production capacity to produce required units.

Structural requirements for tops and vanities without base cabinets must be indicated on drawings and specifications; and must be reviewed and approved during shop drawing submittal.

3. Shop Drawings: The Architect shall request shop drawings for review, showing all cabinetwork including details, wood species, grades, finishes, fire-retardant treatment (where required), glues, assembly details, filler panels, fastenings and anchorage methods, hardware locations, and installation procedures. Shop drawings shall show top assemblies without base cabinets and vanities; shop drawings shall demonstrate compliance with structural performance specified herein.
4. Product Data: The Architect shall request properly identified product data, including specifications and catalog cuts for manufactured items, such as cabinet hardware, acrylic resin tops, and plastic laminate.
5. Samples: The Architect shall request either properly identified samples or cut sheets where acceptable to the University's project manager, for each of the following for review and selection:
 - 5.1 Cabinet door pulls, drawer pulls, and hinges.
 - 5.2 Manufacturer's full color and pattern line of countertops finish.
 - 5.3 Each wood specie that is to receive factory applied transparent finishes.
 - 5.4 Each wood specie that is to receive factory applied opaque finish.

- 5.5 Plastic grommet color samples in manufacturer's full color range.
6. Mock-up: The Architect in collaboration with the University's Project Manager shall determine if full size erected assemblies are required for review of construction and include the request in the construction documents. A mock-up also may be used for assessing factory applied finishes.
7. Certificates:
- 7.1 Submit certificates from wood treating plant or material supplier that all lumber, plywood, and resin tops supplied conforms to referenced specifications.
- 7.2 Qualification data from manufacturer and/or installer. Include list of completed projects with project names, addresses, names of Architects, Contractors, and Owners and their phone numbers.
- 7.3 Fire-retardant treatment data for material treated to reduce combustibility. Include certification by treating plant that treated materials comply with requirements.
- 7.4 Structural performance data signed and sealed by the design professional.
8. Pre-installation Conference: The Architect shall require the Contractor to set up a pre-installation coordination conference at an appropriate period in advance of the installation, but no less than two weeks prior to commencing work in this section.
9. Installation:
- Comply with AWI, Section 1700, Standards for grade specified.
- 9.1 Install work plumb, level, true, square, and secure in place with tight joints in accord with drawings, reviewed shop drawings, and as specified.
- 9.2 Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete and dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- 9.3 Uncrating, assembly of cabinetwork components shipped loose, installation and hook-up of sink cabinets and vanities, to be supervised by the manufacturer or manufacturer's authorized representative in accordance with manufacturer's installation directions and reviewed installation drawings.
- 9.4 Installer shall make request to Contractor for temporary openings in walls or windows, which may be required for passing large sections of cabinetwork into building. This applies only to such items that cannot be accommodated through permanent openings.

**DIVISION 6 - WOOD
WOOD, MILLWORK AND CARPENTRY**

06600-6

9.5 If it is necessary for other trades to move this cabinetwork to make final connections, cabinetwork supplier to assist these trades in moving this cabinetwork and be on job to carefully level and adjust cabinetwork as last connections are made.

9.6 Interior Finish Trim Installation:

- 9.6.1 Installation to be in accordance with AWI Premium Grade Quality standards for transparent finish trim and custom grade for opaque finish trim and plastic laminate finish trim. Work to be scribed when abutting other components, with maximum gaps of 1/32 inch.
- 9.6.2 Miter members at external corners.

**DIVISION 6 - WOOD
WOOD, MILLWORK AND CARPENTRY**

06600-7

10. Special Warranty:

- 10.1 Resin Solid Surface Tops – 10 years against fabrication and installation defects.

End of Division 6 – Wood, Millwork and Carpentry