This guide specification is intended to be used with the *North American Architectural Woodwork Standards* (*NAAWS*) the quality standard published by the Woodwork Institute and the Architectural Woodwork Manufacturers Association of Canada.

This is a narrow scope section incorporating wood veneer faced casework.

Where materials or grades need to be selected, possible choices are in brackets and in [**BOLD**]. We may not have provided all the available choices. We have tried to provide ample annotation. Notes and comments are in gray text boxes such as this one.

This section incorporates the Woodwork Institute quality assurance programs. Users are asked to choose between the Certified Compliance and Monitored Compliance programs. The Certified Compliance program allows Woodwork Institute Accredited Millwork Companies (AMC) to inspect and certify its own work. (Woodwork Institute inspectors will re-inspect an AMCs work only if requested). Certification is, however, open to all bidders regardless of Woodwork Institute affiliation. The Monitored Compliance Program requires all work to be inspected at various stages of fabrication and installation by Woodwork Institute inspectors, (no AMC self-certification is allowed) with inspection reports issued to all parties after each inspection. Costs for these programs are borne by the millwork subcontractor. Visit [www.woodworkinstitute.com](http://www.woodworkinstitute.com) for details.

The Woodwork Institute Certified Seismic Installation Program (CSIP) is incorporated into this specification. By specifying CSIP, the architect incorporates the Woodwork Institutes preapproved casework attachment system, eliminating the need to provide attachment details and engineering within the plans and specifications. CSIP provides an inspection of the in-wall blocking before the walls are closed to confirm the proper location of blocking, and an additional inspection of the installed work confirming that all casework is properly fastened. A Woodwork Institute Certificate of Compliance will be issued indicating that the work meets the seismic installation requirements. All inspections are done by Woodwork Institute staff. All costs of the program are borne by the casework installer. CSIP attachments are adequate for installation at any height in the building where the SDS is not greater than 1.93. There are some limitations on cabinet size. More information is available at [www.woodworkinstitute.com](http://www.woodworkinstitute.com).

We have not attempted to create specifications for green certification programs such as LEED. While careful material selection may contribute to several LEED credits, we are not able to keep up with the requirements or the proper specification language. Please consult a qualified LEED authority if LEED certification is a goal.

This guide specification covers the materials and methods you would want to specify for wood casework. It is recommended that you read the Cabinet Section of the *North American Architectural Woodwork Standards* before using this guide specification. Many of the items you would ordinarily specify are governed by your choice of grade.

# GENERAL

## SUMMARY

### Section Includes:

#### Wood veneer faced casework

#### Hardware typically furnished by the casework manufacturer

#### Shelving

#### **[Decorative metalwork incorporated into wood casework]**

#### Structural supports incorporated into wood casework.

#### **[Factory finishing]**

Factory finishing is strongly recommended. It is extremely difficult to get a quality finish under job-site conditions.

#### **[Seismic installation: Installation of casework according to the Woodwork Institute CSIP fastening schedule, including CSIP certification]**

See the information about the Certified Seismic Installation in the introductory notes.

### Excluding:

#### Metal support brackets and fittings that are part of the building structure

#### Plumbing, electrical fixtures, and telephone equipment

### Related sections:

Include those items below that apply.

#### Rough carpentry: Wood blocking or grounds inside finished walls or above finished ceilings.

#### Metal framing: Metal backing inside finished walls or above finished ceilings

#### Countertops: Wood, plastic laminate, solid surface, stone, tile, or lab countertops

#### Plumbing: Fixtures and fittings installed in countertops

#### Wood doors

#### Finish carpentry: Standing and running trim and wall paneling.

## REFERENCES

All the other standards that apply are referenced within *NAAWS.*

### Minimum standards for work in this section shall be in conformity with the *North American Architectural Woodwork Standards.*

## SUBMITTALS

### Product data: Manufacturer’s specifications, data, and installation instructions for each manufactured product specified.

### Shop drawings:

Shop drawings are required for all the WI quality assurance programs: Certified Compliance, Monitored Compliance, and Certified Seismic Installation.

#### Submit shop drawings in conforming to the requirements of the *North American Architectural Woodwork Standards*.

#### **[Furnish a Woodwork Institute Certified Compliance Label on the first page of the shop drawings.]**

#### On the shop drawing elevations, show the locations of backing required to be installed within walls for attachment of casework and countertops.

#### Submit two copies, one of which will be returned with reviewed notations. Make corrections noted (if any) and distribute required copies prior to the start of work.

Casework is generally considered to be furnishings and thus exempt from flame spread and smoke development requirements. There may be some exceptions to this, particularly in medical applications or if the casework is in an exit path. These paragraphs may be necessary in those circumstances. Check with your local authority having jurisdiction.

### **[Fire-test-response characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to HCAI.**

#### **Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.]**

### Samples:

Require finished samples if factory finishing is specified.

#### Submit four **[finished]** samples of each species and cut of wood to be used. Lumber samples to be minimum 6 inches by 12 inches, and plywood samples to be minimum 12 inches by 12 inches. Samples shall represent the range of color and grain expected to be provided.

#### Submit a sample in the specified finish of each hardware item that will be visible at exposed surfaces when the job is complete.

### **[Mockups:**

Mockups should not be necessary for most projects. Include this item if one or more are desired.

#### **Provide mockups of one base cabinet, one wall-hung cabinet, and one countertop. The base cabinet shall have at least one drawer. Mockup shall be of the material and finish to be provided. The approved mockup may be incorporated in the project.]**

## QUALITY ASSURANCE

### Work shall be in accordance with the grade or grades specified of the *North American* *Architectural Woodwork Standards* (*NAAWS*), latest edition, published jointly by Woodwork Institute and the Architectural Woodwork Manufacturers Association of Canada.

Please select either Certified Compliance or Monitored Compliance, not both. The Certified Seismic Installation Program (CSIP) can be combined with either Certified or Monitored Compliance. If CSIP is intended, it must be clearly specified.

### **[Certified Compliance**

The Certified Compliance Program provides an additional level of assurance that the work will comply with the requirements of *NAAWS* and the specifications. It is open to all bidders regardless of Woodwork Institute affiliation. Woodwork Institute Affiliates have been tested, and their work has been inspected by the Institute. Woodwork Institute inspectors will re-inspect Certified Compliance projects at no charge if there are any questions as to compliance.

#### **Before delivery to the job site, provide a Woodwork Institute Certified Compliance Certificate indicating the millwork products being supplied and certifying that these products fully meet the requirements of the *NAAWS* grade, or grades specified and of the plans and specifications.**

#### **At completion of installation, provide a Woodwork Institute Certified Compliance Certificate indicating the products installed, and certifying that the installation of these products fully meets the requirements of the *NAAWS* grade, or grades specified.**

#### **All fees charged by the Woodwork Institute for its Certified Compliance Program are the responsibility of the millwork manufacturer and/or installer and shall be included in their bid.]**

### **[Monitored Compliance**

The Monitored Compliance Program requires that work be inspected by Woodwork Institute inspectors at each phase of manufacturing and installation. Reports are issued after each inspection itemizing any noncompliant findings.

#### **All millwork and the installation thereof for this project shall be monitored for compliance to the contract documents by a Woodwork Institute Architectural Services Representative**

##### **Full particulars of the Woodwork Institute Monitored Compliance Program may be found at the Institute website at** [**www.woodworkinstitute.com**](http://www.woodworkinstitute.com) **or by calling the administrative office at (916) 372-9943.**

#### **Millwork and/or installation found to be noncompliant (and not corrected) will be rejected.**

#### **Issuance of a Monitored Compliance Certificate is a prerequisite of acceptance.**

#### **All fees charged by the Woodwork Institute for its Monitored Compliance Program are the responsibility of the millwork manufacturer and/or installer and shall be included in their bid.]**

###  **[Certified Seismic Installation Program:**

The Certified Seismic Installation Program provides for the use of Woodwork Institute’s preapproved seismic attachment details, relieving the architect of the responsibility for designing and engineering casework attachment for each project. If CSIP is to be used, be sure to include paragraph 3.01 A. If you delete this item, also delete 3.01 A.

#### **Before walls are closed, provide a written Woodwork Institute Certified Seismic Installation Program report confirming that backing is provided in all locations required for casework installation or identifying those locations where backing is missing or improperly located.**

#### **On completion of installation, provide a Woodwork Institute Certified Seismic Installation Program Certificate, identifying the work covered and certifying that installation meets the requirements of the WI CSIP attachment details and schedules.**

#### **All fees charged by the Woodwork Institute for its Certified Seismic Installation Program are the responsibility of the millwork installer and shall be included in their bid.]**

### Qualification:

Include the Certified Compliance Program and/or Certified Seismic Installation Program if you are using those programs. If you are not using either one, you may wish to delete the whole item.

#### **[A Woodwork Institute Accredited Millwork Company]**

#### Firm (woodwork manufacturer) with no less than five years of production experience similar to this project, whose qualifications indicate the ability to comply with the requirements of this Section.

#### The woodwork manufacturer must have at least one project in the past five years where the value of the woodwork was within 20 percent of the cost of woodwork for this project.

### Single source responsibility: A single manufacturer shall provide and install the work of described in this Section.

## PRE-INSTALLATION MEETING

### Before framing is completed, hold a meeting of the contractor, the casework manufacturer, casework installer, and the framing contractor.

#### Review the locations of backing required for casework installation as shown on the casework shop drawings.

#### Review the method of attachment of the backing to the wall system as shown on the architectural drawings.

## DELIVERY STORAGE AND HANDLING

### Deliver materials only when the project is ready for installation and the general contractor has provided a clean storage area.

#### Delivery of architectural millwork shall be made only when the area of operation is enclosed, all plaster and concrete work is dry and the area broom clean.

#### Maintain indoor temperature and humidity within the range recommended by the *North American* *Architectural Woodwork Standards* for the location of the project.

## SCHEDULING

### Coordinate fabrication, delivery, and installation with the general contractor and other applicable trades.

# PRODUCTS

## GRADE

Custom Grade is typically specified for, and adequately covers, most high-quality architectural woodwork. Premium Grade is typically specified for the most visible and high-profile areas such as reception counters, boardrooms, and executive areas.

### *NAAWS* **[Premium][Custom]** Grade.

#### If there is a conflict between the plans and/or specifications and the requirements of the *NAAWS* for the grade specified, plans and specifications shall govern.

## COMPONENTS

### Lumber: In accordance with the *North American* *Architectural Woodwork Standards* Grade specified for the product being fabricated

#### Moisture Content: 6% to 12% for boards up to 2 inches nominal thickness and not to exceed 19% for thicker pieces.

### Veneers: As required by *North American* *Architectural Woodwork Standards* requirements for its use and the grade specified

### Core: **[MDF] [particleboard]** meeting the requirements of *North American* *Architectural Woodwork Standards*.

#### **[Made with no added urea formaldehyde] [CARB compliant]**

#### Water-resistant core: MDF, ANSI 208.2 Grade MR-50.

Water-resistant core is required for plastic laminate sink tops. It is a good idea for sink cabinets too.

### Veneer core plywood: Hardwood with a non-telegraphing grain manufactured with exterior glue

###  **[Cabinet liner: Type CLS.]**

Include this item if you intend to use cabinet liner for semi-exposed surfaces.

### Edgeband

#### **[Veneer of the same species and cut as the exposed surfaces.] [One-eighth inch thick solid hardwood of the same species and cut as the exposed surfaces]**

#### **[Adjustable shelves: PVC of the same color as the semi-exposed surfaces.]**

Use Item 2 if the semi-exposed material is cabinet liner or melamine. You can put wood edge band on panels with melamine or cabinet liner faces but finishing the edge band may be problematic.

### Adhesives used shall be **[type I] [type II].**

Type II adhesive will retain its bond strength if subjected to occasional wetting; type I retains its strength even if occasionally soaked. Type II is generally adequate except for sink tops, and possibly sink cabinets.

### Hardware:

#### Unless otherwise specified: Meeting the requirements of the *NAAWS* for the grade specified

##### Products meeting *NAAWS* requirements can be found [here](http://imis20.wi-sps.com/iMIS/Directory/Search_Acknowledged_Products/WI_Member/Searches/Search_Acknowledged_Poducts.aspx?hkey=2dfd6f40-edfd-49af-ae3a-48b7f33d98c9).

#### Finish:

##### Exposed hardware: **[\_\_\_\_\_\_\_\_]**

##### Semi-exposed hardware: Manufacturer’s standard finish.

#### Pulls: **[\_\_\_\_\_\_\_\_\_]**.

#### Drawer guides: [full extension] [¾ extension] meeting the requirements of the *NAAWS* for the type and size of drawer.

##### File drawers: full extension. Minimum 100-pound capacity, except for 150-pound capacity for lateral files.

If you specify the manufacturer and model of the drawer guides, specify for pencil drawers, box drawers, file drawers, and lateral file drawers, as applicable.

#### Hinges: **[Five-knuckle Grade 1 hinges] [Concealed European-style Grade II hinges minimum [120 degree][170 degree] opening] [Brand, model]**.

*NAAWS* requires Grade 1 hinges for schools, hospitals, and public safety facilities. If you elect Euro-style hinges (which are Grade 2 or Grade 3) you need to choose the maximum opening angle. 120-degree hinges are more robust than 170-degree hinges. All Euro-style hinges tend to slip out of adjustment over time.

#### Door catches: **[\_\_\_\_\_\_\_\_\_]**

If self-closing hinges are selected, catches are not required. Self-closing Grade 1 hinges are not available.

#### Shelf supports: **[Brand, catalog #] [Bored-hole system] [Recessed metal shelf standard and compatible supports]**

Select a shelf support system. Bored-hole systems and metal shelf ladders have both been determined to provide satisfactory support.

#### **[Locks**

#####  **[Provide locks at all cabinet doors and drawers.] [Provide locks as shown on elevations.]**

##### **Door locks: [\_\_\_\_\_\_\_\_\_\_].**

##### **Drawer locks: [\_\_\_\_\_\_\_\_\_\_].**

##### **Glass door locks: [\_\_\_\_\_\_\_\_\_].**

##### **[All locks keyed alike] [Each room keyed alike] [Keyed per schedule]**

###### **Provide [\_\_\_] keys per lock.**

###### **Provide [\_\_\_] master keys.**

Locks will not be provided unless they are specified for all locations, or they are shown on the elevations.

##### **Elbow Catches: [\_\_\_\_\_\_\_\_\_\_\_].]**

Elbow catches and stop blocks are only necessary on the inactive leaf of locking pairs of doors. If no door locks are required, elbow catches will not be necessary.

#### Sliding glass door hardware: **[\_\_\_\_\_\_\_]**

Sliding glass doors that are more than 1½ times as tall as they are wide should be installed using top hung hardware. Tall, thin glass doors on bottom roller systems will tip and bind.

#### Etc.

Other hardware items may include wire grommets, keyboard trays, and other specialty items.

## FABRICATION

### Construction Type: *NAAWS* construction type **[A, frameless] [B, face frame]**

Frameless is the most common. Use face frames with flush reveal, lipped, or flush inset door interface.

### Cabinet and door interface: **[Flush overlay] [Reveal overlay] [Lipped] [Flush inset]**

Flush overlay doors cover the face of the cabinet completely, with 1/8-inch gaps between doors, drawer fronts, and false fronts. Reveal overlay and lipped doors leave a margin around each door that exposes the cabinet front. Depending on the size of the reveal desired, face frames may be necessary. Flush inset doors are set into the opening and are only used with face frame casework. See section 10 of *NAAWS* for more information.

Note that flush overlay and reveal overlay door interfaces do not require flush doors. Frame and panel doors can be used with any interface style.

### Exposed exterior surfaces: **[[Species], [cut], [[book] [slip] matched.]] [Material suitable for opaque finish]** meeting the requirements of *NAAWS* for the grade specified.

Exposed surfaces are those that are visible when cabinet doors and drawers are closed, but do not include the interiors of open cabinets or cabinets with glass doors.

The species is the species of wood: Oak, birch, etc. The cut is the angle of the face of the board to the growth rings. Plain sliced is the most common cut. Quartered and rift cut veneer is cut with the face at right angles to the growth rings, giving a vertical grain appearance. The match is the way the veneer leaves are arranged on the core. For more information, see Section 4 of *NAAWS*.

####  **[Blueprint match: Veneers at room(s) [\_\_\_\_\_\_\_\_\_\_] shall be blueprint matched.**

Blueprint matching is very uncommon and is only necessary if there is an area where veneers need to be sequence matched on doors, paneling, and cabinets. Similar language must be inserted in the sections specifying wood paneling, wood trim, and wood doors.

##### **All work in this (these) area(s) shall be *NAAWS* Premium Grade.**

##### **Casework, paneling, doors, and wood trim shall be provided by the same manufacturer.**

##### **Veneers shall be taken from the same flitch, to be selected by the architect.**

##### **Faces at cabinet doors, drawer fronts, and false fronts shall be sequence matched, shall run and match vertically, and shall be sequence matched with adjacent wall paneling and/or doors.**

##### **Faces at exposed ends of cabinets shall be selected from the same flitch and shall be well matched to the adjacent paneling and to the cabinet fronts.**

##### **All components including casework, paneling, doors, and trim shall be factory finished at the same time in the same facility.]**

Blueprint matching is very uncommon and is only necessary if there is an area where veneers on doors, paneling, and casework need to match. Similar language must be inserted in the specification sections for wood paneling, wood trim, and doors.

### Exposed interior surfaces: **[Per the requirements of *NAAWS*] [Veneer of the same species and cut as the exposed faces] [Low-pressure melamine overlay]**.

Exposed interior surfaces are the interiors of open cabinets and cabinets with glass doors.

*NAAWS* Custom Grade allows veneer of the same species, but not the same cut as the exposed veneer for these surfaces. Requiring the same cut will provide a better match.

### Semi-exposed surfaces: **[Per *NAAWS*] [veneer of the same species as the exposed faces] [low-pressure melamine overlay]**.

Semi-exposed surfaces are the surfaces that only show when doors or drawers are open.

*NAAWS* allows melamine of veneer of the manufacturer’s choice for Custom Grade.

### Edgeband: **[Veneer matching exposed surfaces] [One-eighth-inch thick solid hardwood or the same species and cut as the exposed surfaces]**

### Drawers:

#### Sides: **[Solid hardwood] [Seven- or nine-ply plywood with no interior voids] [Particle board with melamine surfacing]**

#### Bottoms: **[Hardwood plywood of the same species as the drawer sides] [MDF with melamine surfacing]** Bottoms shall be fully housed into drawer sides, backs and subfronts, and securely glued.

#### Joinery: **[Multiple dovetails] [Doweled] [Secured with dowel screws] [Biscuit joints][Nailed and glued lock joints]**

These are generally in order of quality (and cost). Premium Grade requires dovetails or dowels. Custom grade allows any of these.

#### Drawer bottoms are to be fully housed into sides, back and subfront.

### Factory finishing

#### Grade: *NAAWS* **[Premium Grade] [Custom Grade] [Match the grade of the product to be finished.]**

#### North American Architectural Woodwork Standards finish system: **[\_\_\_\_\_]**.

#### Finish all casework to the greatest extent possible before delivery to the project site. Protect the finish during shipping and storage.

Factory finishing is strongly recommended. It is extremely difficult to get a quality finish under job-site conditions. Also, even low VOC finishes are probably unhealthy to breathe.

Commonly used *NAAWS* finishing systems are: 2. Pre-catalyzed lacquer. 3. Post-catalyzed lacquer. 5. Conversion varnish. 11. Catalyzed polyurethane. 12. Water-based polyurethane. See Section 5 of *NAAWS* for the advantages and disadvantages of each system.

# EXECUTION

## EXAMINATION

### Verification of conditions: Verify that mechanical, electrical, plumbing and other building components affecting work in this section are in place and ready.

## **[FIELD QUALITY CONTROL**

Include this article if you are using the Woodwork Institute CSIP Program.

### **Provide Woodwork Institute Certified Seismic Installation Program inspection reports and certification as required in Part 1 of this Section.]**

## INSTALLATION

### Install all work in conformance with the *North American Architectural Woodwork Standards*, latest edition.

#### Installation shall conform to the *NAAWS* grade of the items being installed.

### Secure all work in place, square, plumb, and level.

### Fit and scribe all work abutting other building components.

### Mechanical fasteners used at exposed and semi-exposed surfaces, excluding installation attachment screws and those securing cabinets end to end, shall be countersunk.

### Cut equipment cutouts shown on plans using templates provided by the general contractor.

## ADJUSTING AND TOUCH UP

### Adjust all moving and operating parts to function smoothly and correctly.

### Fill and retouch all nicks, chips, and scratches. Replace damaged items that cannot be repaired.

## CLEANUP

### Upon completion of installation, clean all installed items of pencil and ink marks and broom clean the area of operation, depositing debris in containers provided by the general contractor.

END OF SECTION