

Variations in Natural Wood Products

Wood is a natural material, with variations in color, texture, and figure. These variations are influenced by the natural growing process and are uncontrollable by the manufacturer. The color of wood within a tree varies between the “sapwood” (the outer layers of the tree that continue to transport sap) which is usually lighter in color, and the “heartwood” (the inner layers in which the cells have become filled with natural deposits). Various species produce different grain patterns (figures), which influence the selection process. There will be variations of grain patterns within any selected species. The manufacturer cannot select solid lumber cuttings within a species by grain and color in the same manner in which veneers may be selected. Therefore, color, texture, and grain variations will occur in the finest architectural woodworking.

Grades

Architectural woodwork, by its very nature, is used primarily in fine quality projects. The three Standard Grades are *Premium*, *Custom*, and *Economy*.

Limitless design possibilities are part of all three Grades. A wide variety of lumber and veneer species, along with overlays, high pressure decorative laminates, factory finishes, and profiles are available in all three Grades.

Premium Grade

The Grade specified when the highest degree of control over quality in the execution of the design intent, and providing the highest level of quality in materials, workmanship, and installation. Usually reserved for special projects, or feature areas within a project.

Custom Grade

The Grade specified for most high quality architectural woodwork. This Grade provides a well defined degree of control over the quality of materials, workmanship, and installation of a project.

Economy Grade

The Grade defining the minimum expectation of quality, workmanship, materials, and installation.



When Grade Not Specified

When the Quality Standards are referenced as a part of the contract documents and no Grade is specified, Custom Grade standards shall prevail. In the absence of specifications, material shall be mill option lumber or veneers suitable for opaque finish.

Exceptions to Grade

These standards are a *guide* from which the design professional is free to deviate, often with the advice of an AWI/AWMAC manufacturer. The resulting products often *exceed* parts of this standard in design, engineering, workmanship, beauty,

and function or, less often, *fall below* the minimum standards set forth herein.

When the design and/or specification team, as part of the contract document, calls for materials or workmanship which vary from the Standards, the contract document takes precedence over the Standards. Such variations can not be adjudicated using the Standards as a basis.

How To Use These Quality Standards — An Introduction for Design Professionals

The product of hundreds of ideas from design professionals and woodworkers and thousands of hours, the Quality Standards is a comprehensive guidebook. It has been around since its first printing in 1961. Over time, many practices have endured, but in recent years new materials and concepts have changed the way we do woodwork. How is a designer to keep up with all this information? To help you specify and receive quality woodwork, we offer this standard.

It's full of good information. Here is how you put it to work.

Seventeen Sections

The Quality Standards are divided into 17 sections. They are separated by the raw materials and the manufactured items being specified. Do you want to know about paneling? Turn to Section 500. Do you need cabinet information? Read Section 400. How about questions on stile and rail doors? These are covered in Section 1400. There are “flip-tabs” on the page edges that correspond to the “quick-finder” on the back. Turn the book over, find the section required, trace it to the side, and you're there.

Section 100 deals with lumber. Section 200 addresses panel products. Both of these are the material building blocks for a successful woodwork project. These sections outline the characteristics of the raw materials. A key note to remember is that only finished products can be specified according to the Grade names Premium, Custom, or Economy. It is incorrect to try to buy “premium grade” plywood, or “custom grade” lumber.



Only grades of workmanship and finished products are defined by the QSI Grade designations Premium, Custom or Economy. Hardwoods, softwoods and wood veneers are raw materials. Raw material grades, or properties, are defined by independently formulated Grading Rules. The grades of material defined and utilized in the QSI are Grade I, II and III, for hardwood and softwood lumber and Grades A-A, A and B, for veneer face products. For the most part, the QSI requires that the grade of material correspond to the QSI Grade of workmanship/product specified; i.e. Premium Grade must utilize Grade I and Grade A-A. However, you may wish to define a higher, or lower, grade of material for aesthetic, or structural reasons. Opaque finishes usually use a lower material grade.

After the first two Sections come the manufacturing sections. Look through the general information. Get an overview. What's the scope? Does it cover the items you need?



Icons and Side Lines

In this eighth edition, the light line to the left indicates a change from the seventh edition, last published in early 1999. There are also some small icons to help you navigate the subsections.

Information Guides and Subsections

Each Section has subsections labeled G, T, C & D. The “G” stands for general criteria of the Standards. “T” refers to the technical criteria of the Standards. Most items will have specifics which are defined in this area. “C” is for compliance testing which can be applied to verify compliance with the standards.

“D” is the design section. It is a sampling of design ideas that may help you create beautiful woodwork, and is *not part of the criteria of the Standards*. Use these ideas to enhance your creativity. Take a few idea pieces; combine them with others. Let your imagination go. Please do not assume that these are your only choices. You are the design professional. Woodworkers build what you design.

Use of the Grades

The Quality Standards Illustrated addresses the prevailing practices of the woodwork industry. These practices are characterized as “Premium” Grade, “Custom” Grade, or “Economy” Grade.

Economy Grade may be reserved for those areas that are not in public view. Mechanical rooms and utility-type projects suit this Grade well. Custom Grade will adequately cover most situations and is most often used. Premium, by contrast, may be used in the most visible projects. High-profile projects such as reception counters, board rooms, and executive areas are good candidates for Premium Grade. You may mix Grades within a single project.

There is also the concept of the “Prevailing Practice.” This implies that if only a Grade is selected and no further information supplied, the client will be protected, and manufacturers will have a clear direction regarding what will be furnished for that specific Grade. Options in materials and workmanship are explained. Custom Grade will be used when there is no reference to Grade. The prevailing practice concept is not restrictive. It merely sets the rules for what will happen under normal conditions. Any issue not set forth in the Contract Documents or in this Standard, when this Standard is referenced in the specifications, shall be resolved by selection, fabrication, finishing, and/or installation at the option of the woodwork manufacturer.

Glossary and Appendix

Terminology? There’s a glossary near the end of the book, in the Appendix. Do shop drawings have you confused? Look at the article in the Appendix. This section continues to grow into a valuable source of information for woodworkers and design professionals.

Suggestions for Improvement?

The Quality Standards Board of Review encourages professionals in our industry to make suggestions for changes and revisions. Do you think that the Standards need amending or updating? There is a suggestion form on page 10. Fill it out and send it in. You may submit to either the AWI headquarters or the AWMAC headquarters. The Quality Standards Review Board will carefully consider all your ideas.

The Quality Standards cannot address every contingency. However, with this information, you now have the most comprehensive woodworking standard available.

Shop Drawings

Shop drawings are the means by which the design intent is turned into reality. They serve a valuable coordinating function as the primary visual communication from the manufacturer to the general contractor and design professional. They are the primary instructions for woodwork engineering and fabrication. They serve as a guide for other trades.

The level of detail required on shop drawings is established by the quality Grade and complexity of the project. The specifier is at liberty to specify any level of details as a requirement of the project and of the contract documents. The manufacturer is encouraged to make technical suggestions and raise questions based upon working experience.

It should be noted that requirements for compliance with local codes, disability legislation, and the utilization of fire-retardant wood products are to be researched and directed by the architect or designer and are not the responsibility of the manufacturer.

It is generally the role of the general contractor to coordinate the manufacturer’s shop drawings with work of all other trades and to ensure that “hold” dimensions are actually held. In the best interests of the owner, it is the responsibility of the architect and contractor, depending on contract relationships, to communicate design and field changes to all parties so that if dimensions are changed each subcontractor can be held responsible for its work.

Prompt, thorough review of shop drawings and accurate coordination of multiple trades saves time and eliminates problems before construction begins. Shop drawings are the property of the manufacturer and the manufacturer is not responsible for errors caused by their unauthorized use by others.

Qualification Programs

The Architectural Woodwork Institute in the USA, and the Architectural Woodwork Manufacturers Association in Canada, maintain programs for the qualification of firms which have demonstrated the capability of manufacturing in compliance with these Standards. Each of these programs (AWI’s Quality Certification Program [QCP] and AWMAC’s Guarantee and Inspection Service [GIS]) is available in both countries. Contact the organizations to obtain descriptions and provisions of the programs.

AWI Quality Certification Program (QCP)

The Quality Certification Program (QCP), established in 1995, was designed to provide the owner and his/her representative with the peace of mind that comes from knowing that the architectural woodwork produced by a certified firm will comply with the *AWI/AWMAC Quality Standards Illustrated* when incorporated in construction documents. This publication is the authoritative reference for determination of compliance, which is evidenced by the issuance of labels and/or a certificate of compliance.

The Inspection Process — Participants in the QCP program are required to successfully complete testing and sample inspection for each section and grade of work they wish to become certified for as identified in the *AWI/AWMAC Quality Standards Illustrated*. This process combined with the requirement that participants obtain references from construction team members provides an in-depth review of a woodworking firm's capability to provide compliant work.

The inspection procedure for QCP is rigorous. QCP program representatives who inspect projects are committed to determining whether the work is in compliance with the current edition of the *AWI/AWMAC Quality Standards Illustrated*. If deficiencies are found on the project, an advisory with written recommendations to make corrections is provided for the participant to address prior to re-inspection of the work. Verification of compliance will result in QCP certification by the manufacturer of the architectural woodwork. This process allows architects, designers and contractors to feel confident about the quality of the architectural woodwork through the fabrication, finishing and installation phases of the project.

GSA endorsement of QCP — In January of 2001, QCP received new acclaim when the General Services Administration (GSA) officially adopted the AWI Quality Certification Program. By adopting QCP as part of its woodwork specifications, the GSA is, in effect, requiring that all new federal buildings and remodeling projects under GSA administration and management be completed under the auspices of the QCP program. With numerous "high profile" projects in the pipeline, this has been a milestone in QCP's growth, and presents enormous business opportunities for QCP participating firms.

QCP benefits — to architects, designers, contractors and owners:

- Assists in preventing non-compliant work being delivered and installed.
- Helps in verifying that the Quality Standards Illustrated will be followed throughout the architectural woodwork fabrication, finishing and installation process, if so specified by the design professional.
- Helps contractors pre-qualify prospective woodwork subcontractors.
- Helps assure that woodworkers bidding on a project have a clear understanding of project requirements, thereby reducing problems due to bidding errors.

- Will help reduce project delays caused by replacement of non-compliant work.
- Affords the owners' representative/ design professional access to a third party expert at any point during the project.

ASA endorsement of QCP — A consistent standard of quality...that's what the *AWI/AWMAC Quality Standards Illustrated* and the AWI Quality Certification Program (QCP) strive for. Now, with the recent endorsement by the American Subcontractors Association (ASA), the QCP has taken another leap forward as "The premier certification program of the architectural woodwork industry."

AWI/QCP suggested specification language ¹ — Quality Standard: Unless otherwise indicated, comply with AWI's "*AWI/AWMAC Quality Standards Illustrated*" for grades of interior architectural woodwork, construction, finishes, and other requirements.

Provide AWI Quality Certification Program [labels] [certificate] indicating that woodwork complies with requirements of grades specified.

This project has been registered as AWI/QCP Number _____ OR, the contractor, upon award of the work, shall register the work under this section with the AWI Quality Certification Program. (800-449-8811)

For more details or to apply for participation in the Quality Certification Program or to report a project requiring QCP certification and labeling, contact the AWI QCP Department at (800) 449-8811 or visit the AWI web site www.awinet.org. The program is open to all architectural woodworkers.

AWMAC Guarantee and Inspection Service (GIS)

The AWMAC G.I.S. program offers, through its members in good standing, a two year AWMAC Guarantee Certificate on projects which have the recommended G.I.S. wording specified in the tender documents

GIS MANDATE

In order to ensure that the quality of materials and workmanship of the architectural woodwork specified are in compliance with the current AWMAC Quality Standards, the AWMAC Guarantee and Inspection Service program (GIS) must be specified and be considered an integral component of the scope of work.

GIS OBJECTIVE

The objectives of the Guarantee and Inspection Service are:

1. To assist the design authority in achieving "Good Architectural Woodwork".
2. To offer the owner, customer, design authority, and woodwork contractor an assurance that strict monitoring of the architectural woodwork requirements on a given project will meet the specified AWMAC Standards

GIS WORDING FOR SPECIFICATIONS

Architectural woodwork shall be manufactured and/or installed to the specified AWMAC Quality Standards and shall be subject to an inspection at the plant and/or site by an appointed inspector, approved by the local AWMAC Chapter. Inspection costs shall be included in the tender price for this project. (Contact your local AWMAC Chapter for details of inspection costs). Shop drawings shall be submitted to the AWMAC Chapter office for review before work commences. Work that does not meet AWMAC Quality Standards, as specified, shall be replaced, reworked and/or refinished by the architectural woodworker, at no additional cost to the owner, and to the approval of AWMAC.

The architectural woodworker shall furnish the owner with a two (2) year maintenance bond, to the full value of the architectural woodwork sub-contract, certifying that the architectural woodwork has been manufactured and / or installed in accordance with the standards incorporated in the Architectural Woodwork Quality Standards Illustrated, (edition in effect at time of tender). If the woodwork contractor is an AWMAC member in good standing, a two (2) year AWMAC Guarantee Certificate will be issued instead of the maintenance bond. The maintenance bond / Guarantee shall cover replacing, reworking and / or refinishing to make good defects in architectural woodwork due to faulty workmanship or defective materials supplied by the architectural woodworker, which appear during a two (2) year period following the date of substantial completion of the architectural woodwork contract.

For more information about AWMAC and its GIS Program, see our website at www.awmac.com, phone (1-866-447-7732) or contact your local AWMAC Chapter office.

QSI Compliance Inspection AWI Program

In the mid-1970s, AWI teamed with the American Arbitration Association (AAA) to provide an inspection service for woodworkers, contractors, design professionals and owners. This program has been maintained by AWI for the benefit of the construction industry.

For after-the-fact inspections and verification, the existing AAA Compliance Inspection Program remains in place to serve the needs of the construction industry. This program is not related to the Quality Certification Program or Guarantee and Inspection Service outlined above. Call or fax AWI National Headquarters for up-to-date information on Compliance Inspections and procedures. An application form and escrow deposit are required. The inspections are administered by the American Arbitration Association, but are not “arbitrations” in the strict sense of the word. Reference to these Quality Standards in the project documents is a requirement to proceed with the Program. The inspectors cannot be asked to adjudicate woodwork without the accepted industry standards as a starting point.

Program Details

Additional details and application forms can be found in the Appendix of this 8th Edition Quality Standards Illustrated. Questions about the program should be submitted via electronic mail to: qcpinfo@awinet.org.

Associations

The assistance of staff and members of the following associations is gratefully acknowledged.

- American Institute of Architects (AIA)
- American Institute of Architectural Students (AIAS)
- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- American Society of Interior Designers (ASID)
- American Subcontractors Association (ASA)
- APA-The Engineered Wood Association
- Architectural Woodwork Institute (AWI)
- Architectural Woodwork Manufacturers Association of Canada (AWMAC)
- Builders Hardware Manufacturers Association (BHMA)
- Canadian Window and Door Manufacturers Association (CWDMA)
- Composite Panel Association (CPA)
- Construction Specifications Institute (CSI)
- Forest Products Laboratory
- Hardwood Plywood & Veneer Association (HPVA)
- International Wood Products Association (IWPA)
- International Interior Design Association (IIDA)
- Kitchen Cabinet Manufacturers Association (KCMA)
- Laminating Materials Association (LMA)
- National Assoc. of Store Fixture Manufacturers (NASFM)
- National Electrical Manufacturers Association (NEMA)
- National Fire Protection Association (NFPA)
- National Hardwood Lumber Association (NHLA)
- National Institute of Building Sciences (NIBS)
- National Research Council Canada (NRC-CNRC)
- Scientific Equipment & Furniture Association (SEFA)
- SkillsUSA
- Temperate Forest Foundation (TeFF)
- Tropical Forest Foundation (TFF)
- Western Wood Products Association (WWPA)
- Window and Door Manufacturers Association (WDMA)
- Wood Moulding and Millwork Producers (WMMPA)
- Woodwork Institute [in California] (WI)



Introduction

Suggestions for Improvement
8th Edition Quality Standards Illustrated
Page 10 Submittal Form

The following suggestion will improve the 8th ed. Quality Standards.

Please turn to Section: _____ [write in Section no. from 8th edition]

Look at Page: _____ Look at Section Heading: _____

_____ Add, after this heading, a new heading and the following words:

_____ Revise the wording of this heading as follows:

_____ Delete this heading, because . . .

_____ Revise the illustration as follows:

_____ Add a new illustration as follows:

Explanation and Justification for suggested change (required for consideration) [use extra sheets]

For clarification, you can contact me at:

Company name: _____

Your name: _____

Address information: _____

Telephone with area code first: _____ email: _____

Combine with your suggested language and illustrations. Mail or Fax to AWI Headquarters at the address and numbers on the back cover, or to AWMAC Headquarters in Canada.

