

JOURNAL OF THE WOODWORK INSTITUTE

SPRING/SUMMER 2012

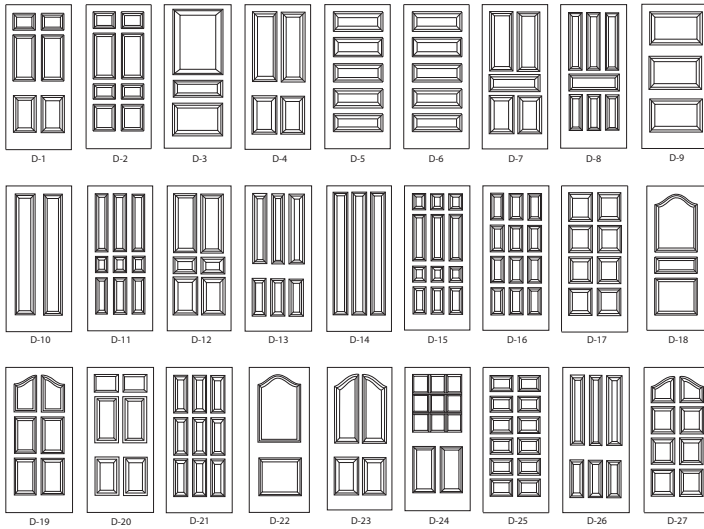
# ARCHETYPE



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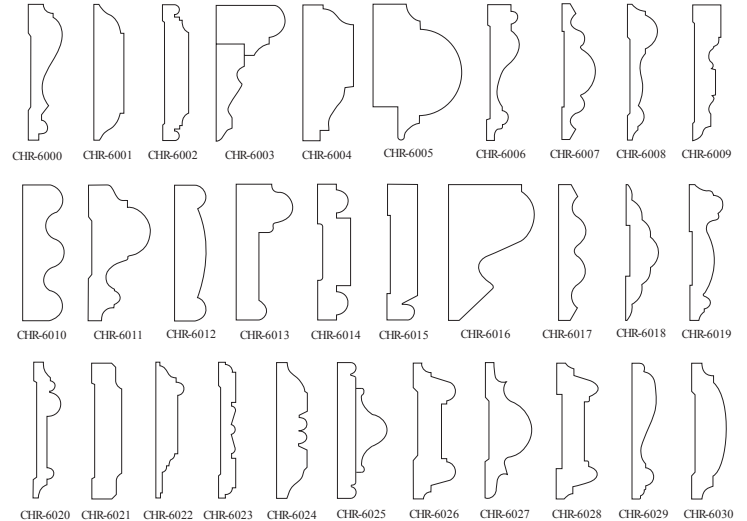
- Door Designs
- Molding Designs

AWS Stile & Rail Door Drawings



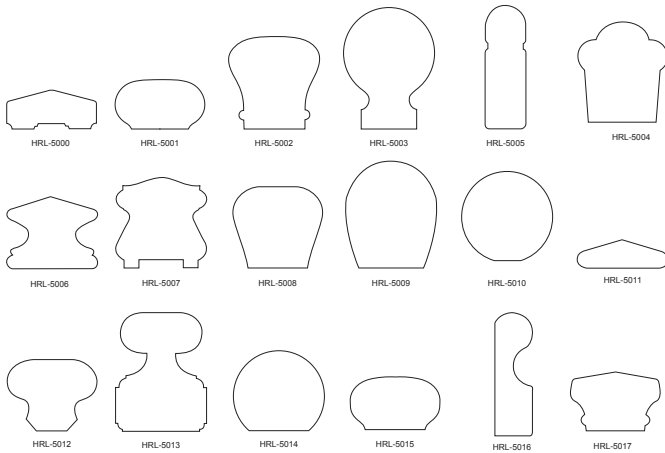
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AWS Chair Rail Drawings



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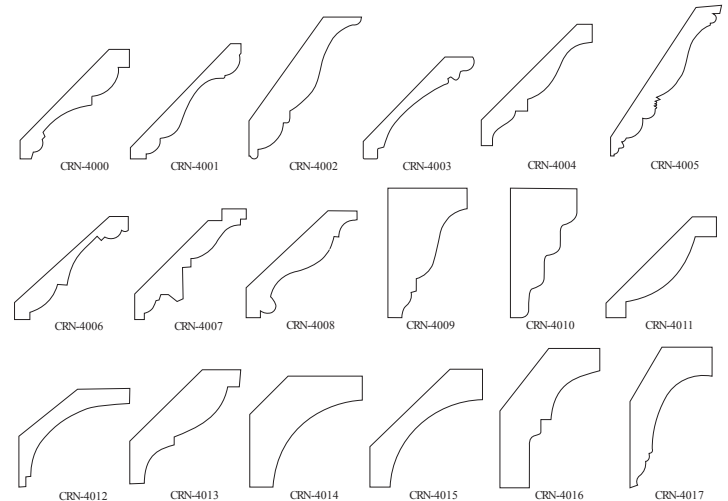
AWS Guard/Handrail Drawings



NOTE: Handrails may not be compliant with current building codes. Check with your local AHJ.

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AWS Crown Mold Drawings



Page 1 of 3

\*Examples of some of the Door and Molding drawings (\*.dxf) above.  
For full set of drawings go to [www.woodworkinstitute.com](http://www.woodworkinstitute.com).

\*\*Handrails may not be compliant with current building codes.  
Check with your local AHJ.





# WOODWORK INSTITUTE'S VISION & MISSION

## VISION

Assurance through  
Certification

## MISSION

- To promote to the architectural design community, its suppliers and contractors, the development and dissemination of information relative to uses, advantages, and utility of millwork products. To provide the leading standards and quality assurance programs for the architectural millwork industry through the *Architectural Woodwork Standards*, *The WI Approach*, and our Certified and Monitored Compliance Programs.
- To be the premier, industry-driven, equal opportunity, non-profit trade association resource provider for our membership.



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## ON THE COVER\*

Winner of the 2011  
Bernard B. Barber Award for  
Excellence

### **USC Tutor Student Center**

Millwork Fabrication:  
Day Star Industries  
Architect: AC Martin  
General Contractor: Tutor Saliba  
Read story on page 11



## Have your products been Acknowledged?

The Woodwork Institute's Acknowledged Product Program is a great way to promote your products. Acknowledgment verifies the product meets the minimum requirements of the Architectural Woodwork Standards.

Once acknowledged, your product is listed in DETAILS Newsletter and WI's Website.

The best part is this is a **FREE** service to Woodwork Institute members. Visit [www.woodworkinstitute.com/products](http://www.woodworkinstitute.com/products) for more

## THE WI APPROACH version 2 (Supplement to the AWS)

is now available on  
[www.woodworkinstitute.com](http://www.woodworkinstitute.com)

## The Woodwork Institute wants to hear about your company.

Tell us about your products, new & promoted employees, and upcoming events. You could be featured in the Member News section of the *Details* Newsletter and our website. Photos to accompany your stories are always welcome. If you have news pertaining to the architectural community, submit it for publication in *Archetype* magazine. We also encourage guest writers for both *Details* and *Archetype*. To submit materials, or for more information, call 916-372-9943 or email [leanne@woodinst.com](mailto:leanne@woodinst.com).



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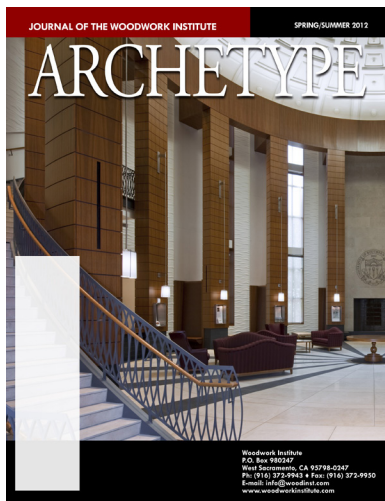
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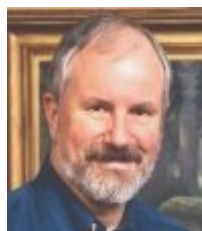
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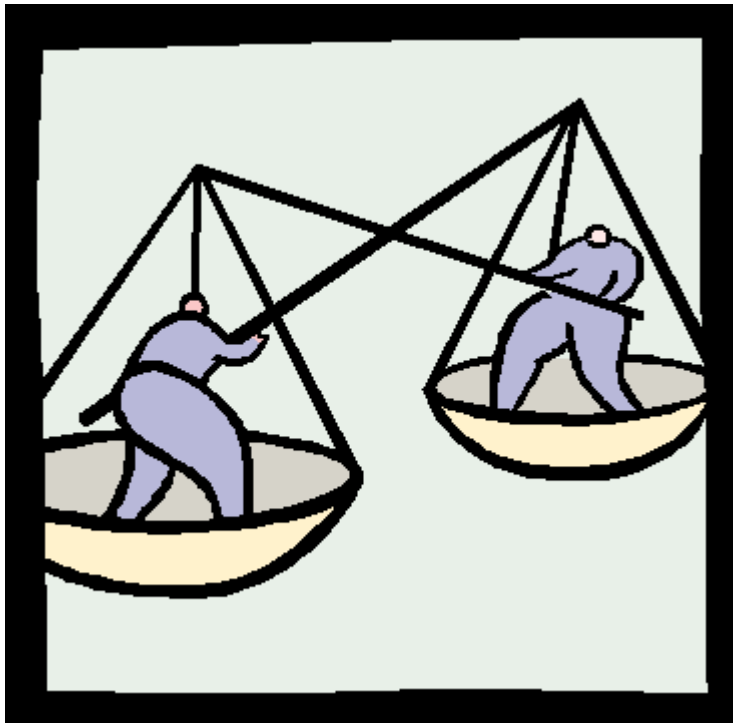
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## Don't Get Caught In The "Or Equal" Public Contract Trap: An Overview of "Or Equal" Clauses

By William C. Last, Jr., Attorney at Law

**P**roject specifications commonly require that a specific product be supplied to the project. Such "proprietary" specifications usually require the contractor to only use a product manufactured by one company or describes a performance requirement that can only be satisfied by one manufacturer. In addition to the listed product, such specifications will occasionally allow an "or equal" product to be used.

"Proprietary specifications" are typically used because the designer does not want a substituted to be used since it can incur liability if the substituted product fails or does not work as well as the intended product. Design professionals also specify products because they are familiar with and have previously used. If you have submitted a bid on a California public works project using a product that was not specified as being acceptable in the project specifications you will be required to

comply with the specification "or equal." It is not uncommon for a contractor to submit a bid that is based on using an alternative product that is not listed in the specifications.

If the alternative product is not accepted, the bidding contractor may be subjected to paying for the increased cost of the specified product. On occasion, the specification may list a product that requires certified installers to apply, and if an uncertified subcontractor lists an alternative product that is not accepted, that subcontractor will be forced to retain a certified applicator. **Clearly, failing to comply with the specification "or equal" provisions can result in increased project costs and overruns.**

The language in an "or equal" clause varies from one set of specifications to another. However, California legislature has codified what must be included in such clauses. In enacting the code section that concerns "or equal" clauses the Legislature wanted to ensure that projects were competitively bid. This article will address the requirements and the variations found in



such substitution clauses.

### **Typical “Or Equal” Requirements**

A typical substitution clause will include the following: (1) a requirement that any proposed substitution be submitted within a fixed period of time (as few as 7 days); (2) notification by the contractor as how the substituted product will impact the completion; (3) notification by the contractor as to the difference in cost between the substituted product and the listed product; (4) a requirement that the contractor provide a detailed analysis of the difference between the listed product and the proposed product; (5) a requirement that the contractor provide (a) product identification, manufacturer literature, samples, names and addresses of similar projects where the substituted product has been used; (b) and the name and address of the manufacturer’s representative; and (7) that the contractor pay the cost of the design team to review the proposed substitution.

### **California Public Contract Code**

#### **Section 3400 Requirements**

The California Public Contract Code, at section 3400, addresses the right to include an “or equal” clause and substitutions. That code provision starts by stating: “No agency of the state nor any political subdivision, municipal corporation, or district, nor any public officer or person charged with the letting of contracts for the construction, alteration, or repair of public works shall draft or cause to be drafted specifications for bids, in connection with the construction, alteration, or repair of public works, (1) in a manner that limits the bidding, directly or indirectly, to any one specific concern, or (2) calling for a designated material, product, thing, or service by specific brand or trade name unless the specification lists at least two brands or trade names of comparable quality or utility and is followed by the words “or equal” so that bidders may furnish any equal material, product, thing, or service.” This provision is in keeping with the general public policy, which is also codified, that construction projects are to subject to competitive public bidding whereby the contract is to be let to the lowest responsive and responsible bidder. It should be noted that the Legislature has created certain exception to that policy. The statute also requires the public entity, if

aware of an equal product manufactured in this state, to name that product in the specification.

### **Unique or Novel Exception**

The public entity is not required to designate at least two brands if the product application is unique or novel and that product is required to be used in the public interest, or where only one brand or trade name is known to the specifying agency, it may list only one. The issue of uniqueness is the area where the greatest debate arises.

An example of a novel or unique product could be a patented product used for a specific purpose for which no other manufacturer offers a product.

### **Time Limit To Seek Substitution**

Public Contract Code section 3400 sets forth a timely limit for seeking a substitution of a product. The section states: “Specifications shall provide a period of time prior to or after, or prior to and after, the award of the contract for submission of data substantiating a request for a substitution of “an equal” item. If no time period is specified, data may be submitted any time within 35 days after the award of the contract.” It is not uncommon for the specifications to provide as few as seven days to submit the request for substitution. Thus, if you want to seek a substitution you should do so in timely manner.

### **Other Exceptions**

Finally, Public Contract Code section 3400 states that the restriction on specifying a single product “is not applicable if the awarding authority, or its designee, makes a finding that is described in the invitation for bids or request for proposals that a particular material, product, thing, or service is designated by specific brand or trade name for either of the following purposes: (1) In order that a field test or experiment may be made to determine the product’s suitability for future use, (2) In order to match other products in use on a particular public improvement either completed or in the course of completion.”

For example, a product can be specified for a remodeling project when the owner wants the existing HVAC control system to be compatible with the new system. As a result, the designer will specify a single control system.

## Other Issues

While there are no reported cases concerning wrongfully denied substitution requests, it is the author's belief that if the substitution is denied in bad faith, the public entity could be liable for the additional cost associated with being forced to use the listed product. Generally, public entities have a certain degree of discretion in exercising their procurement policies. However, Public Contract Code section 3400 does place limitations on that discretion. As stated, some substitution clauses require: (1) notification by the contractor as how the substituted product will impact the completion and the difference in cost between the substituted product and the listed product; (2) require any savings resulting from the substituted product to inure to the benefit of the owner; and (3) require that the contractor pay the cost of the design team to review the proposed substitution. Most contractors will dispute the contention that the savings associated with a substituted product go to the owner for the simple fact that the savings are reflected in the lower bid price. Under state and federal antitrust laws, if a designer and supplier collude to draft specifications that are intended to restrain competition or fix prices they maybe subject to liability. That liability can include treble damages.

If a design professional specifies a single product and that product is not available in a timely manner although the contractor timely ordered it, the contractor should be entitled to an extension of time to complete the project and maybe entitled to delay damages. By specifying a single product, the design professional impliedly warrants that the specified product is commercially available. Similarly, if the product fails and the failure is not due to contractors error, the design professional maybe liable for any damages result from that failure.

## Recommendations

If you are bidding on a California public works project review the specification product requirements to ensure that the product you intend to use complies with the specification. Once you are awarded the contract, comply with the substitution general condition or specification requirements. In essence, submit a timely and complete substitution request.

This article, copyright 2003, was written by William C. Last, Jr. Mr. Last is an attorney who has been specializing in Construction Law for over eighteen years. Mr. Last also holds a California A&B contractors license. If you have any questions Mr. Last can be contacted at 415-764-1990 or 650-425-7679 or by e-mail at [wclast@lastlawfirm.com](mailto:wclast@lastlawfirm.com). He has other articles on his web site: [lhconstructlaw.com](http://lhconstructlaw.com).

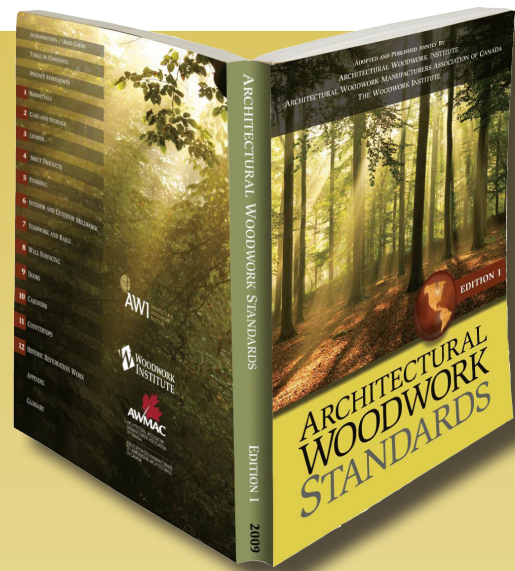
*This bulletin is published periodically to provide general information about current legal issues. If you have a specific legal question or need legal advice, you should contact an attorney*





Assurance Through Certification

## Specification Clarification Info.



### *Owner and the Architectural Community*

Addressing owner and architectural community concerns about qualifying bidders for the manufacture and installation of their architectural millwork on Public Works projects the Woodwork Institute recommends that project specifications require:

“All bidders shall be a current “Licensee” of the Woodwork Institute (which can be verified at: [http://membership.woodworkinstitute.com/cgi-shl/TWServer.exe?Run:MEMSEARCH\\_1](http://membership.woodworkinstitute.com/cgi-shl/TWServer.exe?Run:MEMSEARCH_1) ) “

WI Licensee's are required to:

- Agree and adhere to the Institute's Code of Ethics
- Have an acceptable credit history and current standing.
- Have been in the architectural millwork business for a minimum of three years
- Provide at least six letters of reference
- Have an employee pass examination on the Architectural Woodwork Standards (AWS)
- Provide a valid certificate of Workers' Compensation Insurance coverage for Installation if applicable
- Have adequate equipment and facilities to manufacture architectural as verified by WI staff
- Pass three consecutive WI Certified Compliance project inspections based on the projects specifications and minimum AWS Custom Grade.

WI recommends against requiring bidders to be members of the Woodwork Institute because on Public Works Projects it would be considered restraint of trade and in violation of the Federal Antitrust laws.

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# PER-SPEC-TIVES

OTHER PERSPECTIVES, OPINIONS, EXPRESSIONS, IMPRESSIONS, THOUGHTS AND IDEAS ABOUT THE NOBLE PROFESSION OF SPECIFICATIONS WRITING-- OPEN FOR, AND SEEKING DISCUSSION

## FACT

BY Ralph Liebing, RA, CSI, CDT, Cincinnati, OH

Take the computer out of the equation, for a moment. Did [or can] architecture and building construction exist without the computer?]...... But if there is no computer, et. al., what is left? And then, take knowledge of construction methods and materials, and suitable depiction/documentation of required project work away, and what have you got? Well, what?

To follow the traditional AIA list of project phases [chart below], it is easily seen that several distinct block of time, and effort are required; and within each is the knowledge skill, and talent of creating a design concept, documenting it and executing it.

<b>1</b> <b>Project</b> <b>Programming</b>	<b>2</b> <b>Schematic</b> <b>[Preliminary]</b> <b>Design;</b> <b>Presentation</b> <b>Level Dwgs</b>	<b>3</b> <b>Design</b> <b>Development</b>	<b>4</b> <b>Production</b> <b>of Contract</b> <b>Documents;</b> <b>Working Dwgs</b> <b>Specifications</b>	<b>5</b> <b>Bidding and</b> <b>Contract</b> <b>Award</b>	<b>6</b> <b>Construction</b> <b>of Project</b> <b>Work</b>
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Phases 1 and 2 are the areas of instruction in most architecture school curricula. These, of course, terminate in a design concept and the traditional rendering [in college work] and may appear in any of numerous formats [electronic, manual, varied media, etc.] The design itself is highly generalized, incomplete and exists at a stage where detailed work, depth of construction knowledge [methods and materials] are required. But the instruction stops and no further development of the concept is required. [There is little if any instruction in Phases 3, 4 and 5; no participation in Phase 6].

At this point, it is necessary to “dissect” [develop a series of mental pictures of how the building parts to be built and interconnected] the project by developing documentation of various parts and constructions. Here the construction knowledge and adaptive application come in to play. Detailing is required to piece the construction together on the working drawings [again in any of many formats despite current appearances and high use of computerization]. The student/graduate/intern then is required to draw upon their knowledge of methods and materials and apply and incorporate them [in revised form] to the project at hand. With no instruction in these areas, there are scant resources to draw upon and hence the young professional comes to frustrating impasse.

FACT: This is the state of affairs right now [as you well know].

As attrition eats away at office staffs, the current graduate/interns [and the students] will be in position to run the office and attempt to do the necessary work-- and there is a good chance they will be inadequate to the need. Then what? With no meaningful background, knowledge, instruction, explanation and experience to call upon, the deliverables will be toxic and highly risky to the continued existence of the office. With the resulting questionable documentation, and more and more architects and owners opting out of on-site activity by the architects, the situation is of the life of the profession and the state of construction becomes an issue of grave concern-- to both professionals, their younger staffers, students as the future professionals and, yes, the Owners [the value they receive for money-spent].

Remedies? Yes, there are some if the numerous “interested” parties will come to grips with reality by giving more attention to the practical and less to presentations and dreamy drawings.

Is CSI included n all this? Absolutely!! The background and experience of every member [including product representatives and their construction information] is invaluable and should be made available. The knowledge and expertise, to say nothing of the programs and documents available [on drawings in addition to the trove of specifications information] are immeasurable, AND there is a vital need for an expanded role for CSI, early-on, in the fundamentals of all documentation.

FACTS: Indisputable!





# USC Ronald Tutor Student Center

## Day Star Industries, Inc. **Builds Heartbeat** of Life on Campus

by Leanne Stern

Each year the Woodwork Institute presents the Bernie B. Barber Award in recognition of Excellence in the fabrication and/or installation of millwork. In 2011, top honors went to Day Star Industries for their work on the USC Ronald Tutor Student Center in Los Angeles, CA.





**D**ay Star Industries has been involved with Architectural Millwork in the Southern California area since it was established in 1980. Originally, “Day Star” was primarily a service organization providing labor and administrative functions for on-site installation of millwork and cabinetry. Since 1985 to the present, Day Star has been a full service Millwork and Cabinet company, with their own fabrication facility and field staff to provide a complete product from bid to installation. Day Star has a unique combination of experience and technology to provide some of the highest quality millwork and cabinetry in the industry.

The Ronald Tutor Campus Center provides a dramatic and elegant space consistent with USC’s reputation as a world-class university of the 21st century. The campus Center is 193,000 square feet and is a mixed-use complex that brings together a series of disparate facilities

and programs previously scattered through the campus, enhancing the campus community by creating a central place for meeting and collaboration. At the heart of the complex is a grand outdoor plaza, a gathering and dining area that has become the heartbeat of life on campus. The programming goal was to incorporate facilities for Student Life, Student Government, Alumni Center, Admission Center, meeting rooms, ballroom, campus radio station, and a variety of food venues, creating a synergy by locating them together at the center of campus. The Center also houses the Trojan Family Room, a rotunda in the main entry, a warm and inviting space with a fireplace and soaring beamed ceilings that serves as a greeting area and dramatic introduction to the facility and campus. The Campus Center has transformed USC by uniting the Trojan Family and giving the Trojan Spirit a place to thrive.





Wood panels provide a sense of warmth and elegance to the public spaces in the Campus Center. They are implemented in the design of walls in the public corridors, theaters, and meeting rooms. The woodwork consists of 2' X 8' panels arranged in a running bond pattern. The panels are composed of quarter-sawn walnut with end grain matching from panel to panel. Complete with veneered edge banding in a tinted wood stain finish, the warmth in the panels is highlighted as the reveals are recessed by black painted joint closures.

The grand scale of the Trojan Family Room is highlighted by an architectural ring of wood columns. The flitches for this element were carefully selected from two trees and thoughtfully coordinated to create a matched set of wood elements in the room.

## *A Central Place for Meeting and Collaboration*



# COMMON SPECIFICATION ISSUES

By Steve Taylor

**W**oodwork Institute is committed to the idea that architectural millwork manufacturers and installers should deliver the product called for by the plans and specifications. Our quality assurance program is based on the idea that the contractor is required to provide the specified product. Frequently, however, the specifications are difficult to interpret. There are three common reasons specifications might be problematic: Outdated information, conflicts within the specifications, conflicts between the specifications and the plans.

## CSI Format

There are still some specifications being issued that are not in CSI format. There is no law that requires CSI Format, and in theory you can write your specifications in any form you want that is clear, correct, concise, and complete. In practice specifications that are not in CSI Format are almost never clear, correct, or complete. CSI Format indicates a minimum level of professionalism on the part of the specifier. It also makes life easier for the rest of the construction team, including millwork subcontractors, who know how to find the information they need in the standard documents.

If your office isn't using MasterFormat, SectionFormat, and PageFormat put the magazine down and start the change over right now.

## Out of Date

When you edit your office master for a particular project, it is important that you verify that the products that are specified are still manufactured. It is true that manufacturers discontinue products every day, and there is a lag between the time the construction documents are completed and the bid date. It is also important that every product you specify be available when your documents are developed. In the last few weeks we at Woodwork Institute have seen specification for hinges made by a company which has been out of business for more than ten years and another that hasn't made hinges in at least twenty. Unfortunately such examples abound.

When a specified product doesn't exist the successful bidder should submit a Request for Information explaining the problem, and suggesting a substitute product. While the suggested product may be entirely satisfactory, you can assume that its selection was based more on the manufacturer's criteria than yours or the owner's. In many cases shops will make a substitution without submitting an RFI, which may create a problem after products are delivered or installed, when corrections will cause delays and expense.

A typical spec section includes references to technical standards for various products. An architectural millwork specification section might include references to NEMA LD-3, ANSI/HPVA HP-1, ANSI 208.1, ANSI/BHMA A156-28





and others. Any good architectural millwork or finish carpentry specifications should require conformance to Architectural Woodwork Standards, latest edition, published by Woodwork Institute, the Architectural Woodwork Manufacturer's Association of Canada, and the Architectural Woodwork Institute. I have emphasized "latest edition" because I believe that is the way almost all referenced standards should be specified.

I have recently seen specification requiring conformance to the Woodwork Institute Manual of Millwork 1982 edition, NEMA LD-3 1995, and ANSI 208.1-1999

It is true that some future edition of Architectural Standards may have provisions you disagree with. If you want to insist on conformance to an outdated standard, your specification needs to be clear that is your intent, and the outdated reference isn't just an oversight. In the case of the Architectural Woodwork Standards, it would be better to reference the latest edition, then specify in Part 2 the materials and methods you prefer. Your specifications always trump the AWS if there is a conflict.

## **Conflicts within the spec**

If your office uses a commercial specification program like MasterSpec or SpecLink the program gives you a lot of choices (perhaps too many choices.) Some programs have functions that should prevent you from specifying two contradictory things, others expect you to read the notes and make your choices. None of them are fool proof. The specifier needs a basic understanding of the materials and methods of millwork construction to make choices that are appropriate and agree with each other.

The most common product conflicts I see is the requirement of BHMA Grade 1 hinges, followed by the catalog number for a semi concealed European style hinge. There are no euro style hinges that meet the requirements for a BHMA Grade 1. All semi concealed hinges are Grade 2.

Another common conflict is the specification of metal shelf ladder with a bored hole type shelf support.

Some conflicts are less obvious. Sliding cabinet doors that are more than 1 1/2 times as tall as they are wide should be mounted on top hung sliding door hardware. If bottom supported systems are used tall sliding doors will tip and bind.

## **Conflicts with plans**

Conflicts within the specifications are not as common as conflicts between the specifications and the drawings. It is easy to understand how conflicts occur between the specifications and the plans. The people responsible for the two documents may work in the same office, but they don't have time to look over each other's shoulders. Just as specification sections may be recycled, millwork sections and details are frequently standard drawings which are re-used over and over. Conflicts between drawings and specifications are very common, as are conflicts between drawings.

Last week I reviewed a set of shop drawings that called out melamine as the semi exposed material. I rejected them on the basis that the specifications clearly require those surfaces to be cabinet liner. The shop showed me that all the cabinet details said "white melamine" with arrows indicating those surfaces. I believe that in this case the shop should have asked for clarification before proceeding. I also believe that they bid the job based on melamine, and won't provide cabinet liner without a fight.

Just as it is common to see both metal shelf standard and bored hole shelf supports in the same specification, both products may be shown in the detail drawings for a job. I have been on a job where the shop actually used both products depending on the type of cabinet because it was shown that way. I salute that shop for compliance with the construction documents, but I would have asked for clarification.

## **Nobody's Perfect**

Producing construction documents that are error free is probably impossible. It is unreasonable to expect that the average specification section won't have some flaw. But if you send out a casework section that calls out a quality standard that is ten years out of date, a manufacturer who went out of business in 2003, two different materials for semi exposed surfaces, and three hardware items that are discontinued you should understand that you will be made fun of in more than one shop. The good shops will send you RFIs and give you a chance to straighten it all out. Other shops will throw away your specifications and give you whatever they want.

Producing specifications that are clear, correct, concise, and complete is a daunting task. I try to maintain the Woodwork Institute guide specs for the CSI Master Format Sections that cover architectural millwork and I can't keep up. I have the greatest respect for the professional specification writer who has to try to stay on top of eight or ten divisions. Given the complexity of the task most full time spec writers do a remarkably good job. If your office has a full time specifier your specifications probably don't have any of the problems I have discussed. You should stop reading this do something nice for the specifier: take him to lunch or buy her flowers. If you are a full time specifier you should take the rest of the day off and do something nice for yourself; but I know you won't, you're too busy trying to keep up.

For those who are still with me, consider using an independent specifier. SCIP [www.scip.com/](http://www.scip.com/) is an organization of independent specification writers. It is worth your while to pay a professional to do a competent job. Whether or not you have a full time specifier, and especially if you are a full time specifier, Woodwork Institute will review your architectural millwork specifications or office masters and make suggestions at no cost. This service is provided as time allows and is first come first served.

*The opinions in this article are those of the author and do not necessarily reflect the opinions of the Woodwork Institute, its officers or directors.*



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## *Awards*

### *Bernard B. Barber Award of Excellence*

This award is presented for excellence in architectural millwork. Design professionals or WI members who are contractually tied to the project may apply.

Specifications must require certified or monitored compliance to be eligible.

### *Ralph B. McClure Craftsmanship Award*

This award is given in recognition of WI member firms that have fabricated and/or installed quality millwork conforming to the Institute's standards.

### *Wilbur L. Johnston Award of Excellence*

This award honors specification writers for their use of our *Architectural Woodwork Standards*, and Certified or Monitored Compliance programs, within their specifications.

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Go to <http://www.woodworkinstitute.org/awards/index.asp>

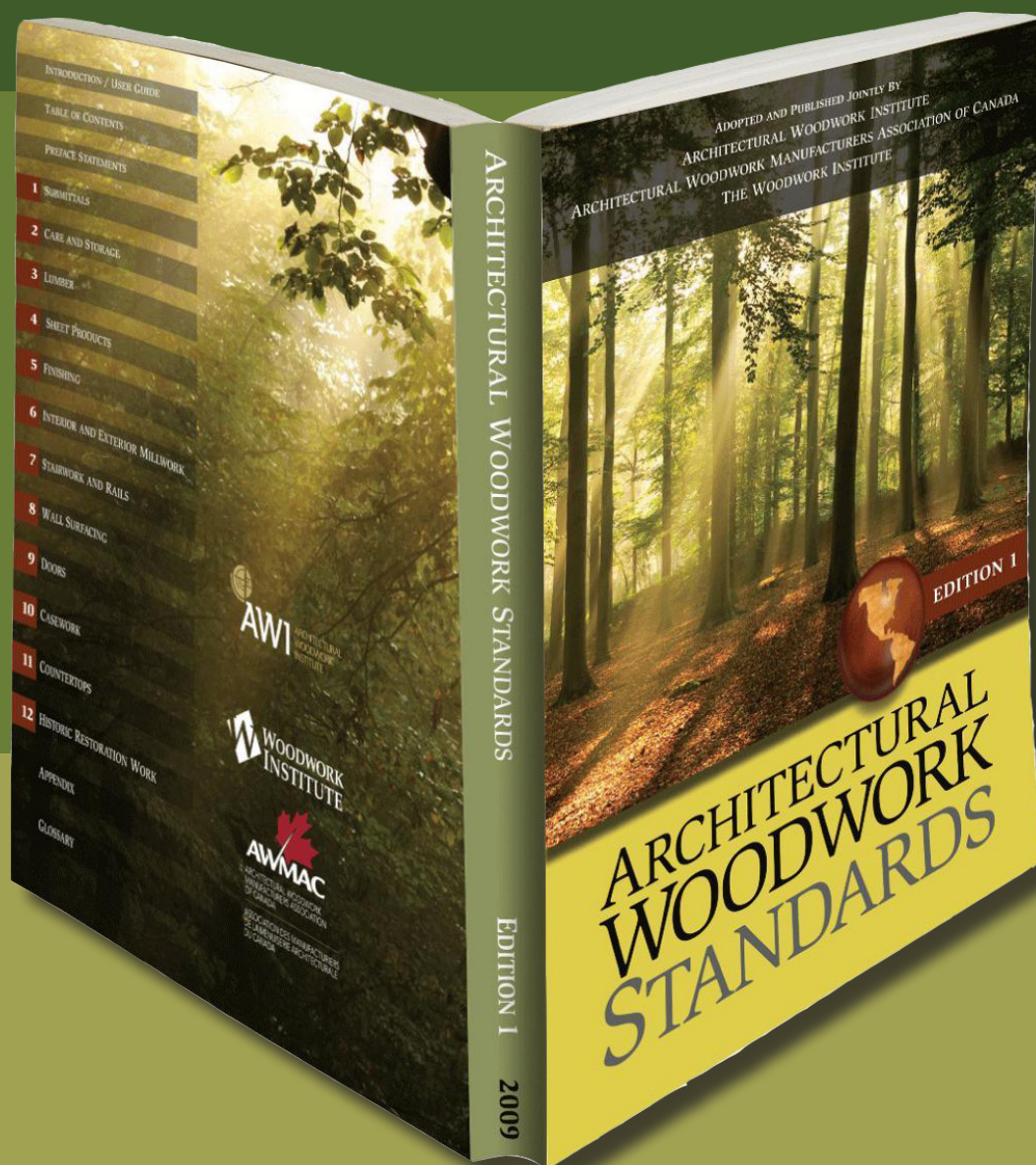


# ARCHITECTURAL WOODWORK STANDARDS

## Edition 2 is Coming!

Published by the JSC (Woodwork Institute (WI), Architectural Woodwork Institute (AWI), and The Architectural Woodwork Manufacturers of Canada in 2009 (AWMAC)), the AWS (*Architectural Woodwork Standards*) is being updated from the First Edition. The JSC has begun development of its second edition AWS expected to be published in mid 2013.

**If you have any suggested additions or changes to the current AWS, please send them by email to [rob@woodinst.com](mailto:rob@woodinst.com) for JSC consideration.**





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**1 ARCHITECTURAL WOODWORK STANDARDS**  
Presented by Woodwork Institute



On October 1, 2009, *Architectural Woodwork Standards* officially replaced Woodwork Institute's *Manual of Millwork*.

Due to its joint publication, there are changes that you should be aware of, and are included within this seminar.

**The seminar will include:**

- A brief history of architectural woodwork quality standards
  - The *Manual of Millwork*
  - Quality Standards Illustrated
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  - A collaboration of AWI, AWMAC, and WI
- What's in the AWS?**
  - Objective, measurable standards for all types of architectural millwork
    - How the AWS is organized
    - Sections
    - Organizations within sections
- Comparison of AWS and *Manual of Millwork***
  - Because of the Associations collaboration, the new AWS has some distinct enhancements not necessarily fully addressed in the *Manual of Millwork*.
- How to use the AWS in your specifications
- Quality Assurance programs based on the AWS
  - Woodwork Institute:
    - Certified Compliance
    - Monitored Compliance
  - AWI: Quality Assurance Program
- Other services provided by Woodwork Institute**
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- Wood: A Renewable Material**
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**Architectural Millwork Quality Control - Assurance through Certification**

**Goals of Seminar**

1. Be able to name the two required items most likely to be missing from Architectural Millwork Shop Drawings.
2. Be able to identify two common millwork fabrication deficiencies.
3. Be able to identify two common installation deficiencies.

**3 WOODWORK INSTITUTE Presents:**

Submittal Requirements for the Fabricator and Site Conditions for Delivery used within Architectural Woodwork Standards

**This Seminar will include:**

- ✓ What 3 or more submittal documents are required by fabricators.
- ✓ Explanation of the purpose and relationship of the submittals to the contract documents.
- ✓ Explanation of how wall blocking is to be identified on submittals.
- ✓ How to list three conditions for the delivery of architectural millwork.

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**4 WOODWORK INSTITUTE presents**

**Specifying Architectural Woodwork-**

At the end of this seminar attendees will be able to:

1. Identify CSI specification sections that can be specified using Architectural Woodwork Standards
2. Use the AWS Grades in architectural woodwork specifications.
3. Identify plain sliced, quarter sawn, and rotary cut veneers.
4. Identify book matched and slip matched panels.
5. Specify the Woodwork Institute quality assurance programs.

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**5**

**Stair Design and Construction**

**Goals of Seminar**

- ▶ Learn the constraints on Rise and Run for a well designed stair.
- ▶ Learn the structural and physical requirements for handrail on public and private stairs.
- ▶ Understand the requirements for guardrails at stairs and balconies.

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**6 WOODWORK INSTITUTE presents**

**Green Wood**

Using WI as your green partner and using wood as a renewable resource

**Goals of Green Wood Seminar**

1. Discover how to select wood products in an ethical way
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3. Know history of forest management
4. Find out about the SAW (Sustainable Architectural Woodwork) certification program launched by WI and AWMAC.
5. Identify what natural material has the greatest carbon offset.

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