Architectural Woodwork Standards

STAIRWORK & RAILS

SECTION 7
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Guide Specifications

Are available through the Sponsor Associations in interactive digital format including unique and individual quality control options.

The Guide Specifications are located at:

Architectural Woodwork Institute (AWI)
www.awinet.org

Architectural Woodwork Manufacturers Association of Canada (AWMAC)
http://awmac.com/aws-guide-specifications

Woodwork Institute (WI)
www.woodworkinstitute.com/publications/aws_guide_specs.asp
SECTION 7
Stairwork & Rails

INTRODUCTION
Section 7 includes information on wood stairs, integral trim, handrails, and guardrails and their related parts.

Quality assurance can be achieved by adherence to the AWS and will provide the owner a quality product at competitive pricing. Use of a qualified Sponsor Member firm to provide your woodwork will help ensure the manufacturer’s understanding of the quality level required. Illustrations in this Section are not intended to be all inclusive. Other engineered solutions are acceptable. In the absence of specifications, methods of fabrication shall be the option of the manufacturer. The design professional, by specifying compliance to the AWS increases the probability of receiving the product quality expected.

DESIGN SUMMARY
This short summary is a collection of options and illustrations about the challenges of designing and building safe stairs. The AWS cannot and does not offer this data as advice on code compliance. Safe stairs and design and engineering to meet local codes remains the responsibility of the design professional.

Critical steps in stair design:
• Check local code.
• Consult with an experienced stair builder to double check your geometry.
• Pre clear your stair design with the local building officials.

Custom designed stairs offer:
• Design flexibility: The use of custom designed stairs in a building allows the design professional freedom of expression while meeting the functional needs of the client.

Since custom woodwork is normally produced by a specialty architectural woodwork firm, dimensions can easily be changed prior to actual fabrication, if required by job conditions. Special situations such as designing for the disabled can readily be accommodated by the custom architectural woodwork manufacturer.

• Cost effective: Custom woodwork competes favorably with mass produced millwork, and offers practically limitless variations of design and material. Most woodwork lasts the life of the building, quality counts.

• No restrictions: Custom architectural woodwork permits complete freedom of selection of the numerous hardwoods and softwoods available for transparent or opaque finish. Other unique materials available from woodwork manufacturers require no further finishing at all, such as plastic laminates and decorative overlays. These materials can be fashioned into a wide variety of profiles, sizes, and configurations. The design professional has the best of both worlds, high quality and freedom of choice.

ADVISORY
Contract documents, furnished by the design professional, should clearly indicate or delineate material, fabrication, installation, and applicable building code/regulation requirements.

Cross grain in band sawn or laminated members might cause objectionable color variation when finished.

Edges in veneer laminated members or where multiple layers are exposed by shaping might cause objectionable color variation when finished.

Curved members, depending on the Grade, can be band sawn, block laminated, or veneer laminated at the option of the manufacturer.

Run and Rise Dimension Points

### Section 7

#### Stairwork & Rails

**introductory information**

### TYPICAL STAIR RUNS  
(continued)

**WINDING**

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**STAIR and HANDRAIL/GUARDRAIL NOMENCLATURE:**

- Landing Newel
- Landing Rail
- Balusters
- Starting Newel
- Open Stringer
- Return Nosing
- Cove Molding
- Butt base moldings to stringer at top and bottom
- Closed Stringer
- Routed Housing
- Wedges
- Nosing and Cove
- Tread
- Riser
- Miter Riser and Stringer

**Figure: 07-006**
**SECTION 7**
Stairwork & Rails

**HANDRAIL/GUARDRAIL COMPONENT NOMENCLATURE**

- Volute
- Goose Neck
- Quarter Turn, Rake to Level
- Half Turn
- Starting Easement
- Easement Rake to Level
- Turn Out Easement
- Level Quarter Turn
- Half Turn, Double Rake

**HANDRAIL/GUARDRAIL FABRICATION**

Large dimension rail fabrication techniques are typically the option of the manufacturer. Lamination on a radius depends on many factors:

Typical lamination orientations:

- Laminated
- Butcherblock

**HANDRAIL/GUARDRAIL JOINERY**

- Rail Bolt
- Scarf
- Dowel
- Miter

**SPECIFY REQUIREMENTS FOR**

- Flame Spread rating.
- Special code or regulation compliance.

**RECOMMENDATIONS**

- If **FIELD FINISHED**, include in Division 09 of the specifications:
  - **BEFORE FINISHING**, exposed portions of woodwork shall have handling marks or effects of exposure to moisture, removed with a thorough, final sanding over all surfaces of the exposed portions, and shall be cleaned before applying sealer or finish.
  - **At CONCEALED SURFACES**, architectural woodwork that might be exposed to moisture, such as those adjacent to exterior concrete walls, shall be primed.
  - **REVIEW** the GENERAL portion of Sections 3 and 4 for an overview of the characteristics and the minimum acceptable requirements of lumber and/or sheet products that might be used herein.
  - **STRUCTURAL MEMBERS**, grounds, in wall blocking, backing, furring, brackets, or other anchorage which becomes an integral part of the building’s walls, floors, or ceilings, required for the installation of architectural woodwork are not to be furnished or installed by the architectural woodwork manufacturer or installer.
  - **DESIGN CONSIDERATIONS** - Stairs, rails, and handrail/guardrails are subject to building code requirements. Code restrictions apply to rise, run, handrail, and guardrail heights, structural strength and other issues. It is the responsibility of the design professional to comply with applicable building code(s) and regulations, and:
  - **CONSULTATION** with an experienced stair builder is strongly recommended.

Guard/Handrail illustrations may not be compliant with current or applicable codes.
You can now download for **FREE** a copy of the Architectural Woodwork Standard, ED 2 for a complete AWS document including compliance requirements, product information and more.

To Access

**STEP 1**
Create and sign up for an account on the [AWI Publications Store](https://awinet.org).

**STEP 2**
Navigate to “Standards Download” under the Category filter, and select “**ADD TO CART**” on either the:

- Architectural Woodwork Standard, ED 2 Redline (Digital Download)
- OR
- Architectural Woodwork Standard, ED 2, 2014 Redline with Current Standards Watermark As of 6/01/2020 (Digital Download)

The watermarked version of the AWS helps you to navigate the Standards based on the release of the recognized AWI Standards. *OR, See a [Roadmap to the AWI Standards](https://awinet.org) to help you navigate them as well.*

[Get Started]