

Architectural Woodwork Standards

SECTION - 5

Finishing

SECTION 5 ♦ FINISHING

(Including: Shop and Field Finishing)

GENERAL

1 INFORMATION

1.1 GRADES

- 1.1.1 **GRADE CLASSIFICATIONS ECONOMY, CUSTOM, and PREMIUM** are used within these standards only in reference to the acceptable quality of workmanship, material, or installation in a completed architectural woodwork product.
- 1.1.2 **THIS FINISHING SECTION** deals with finish application, which is a component of finished products covered in Sections 6 - 12.
 - 1.1.2.1 **IN THIS SECTION**, the use of these classifications is only for the purpose of identifying finish applications that can be used in finished products meeting those Grades.
 - 1.1.2.2 These classifications are not intended to be used as a Grade or to judge a particular finish system.
- 1.1.3 **FINISHING REQUIREMENTS**
 - 1.1.3.1 Apply to exposed and semi-exposed surfaces visible after manufacture and installation.
 - 1.1.3.2 Establish criteria as to which, if any, application characteristics are acceptable.
 - 1.1.3.3 Address back-priming, when required.
- 1.1.4 **MODIFICATIONS** in the contract documents shall govern if in conflict with these standards.

1.2 BASIC CONSIDERATIONS

- 1.2.1 **PURPOSE** of finishing woodwork is twofold.
 - 1.2.1.1 First, the finish traditionally is used as a means to enhance or alter the natural beauty of the wood.
 - 1.2.1.2 Second, the finish protects the wood from potential damage caused by moisture in the atmosphere, contaminants, handling, and day-to-day usage.
 - 1.2.1.3 It is important to understand that a quality finish must offer acceptable performance and also meet the aesthetic requirements of the project.
 - 1.2.1.3.1 Involve your woodwork manufacturer early in the design process to help evaluate the systems in relation to your project requirements.
 - 1.2.1.3.2 In the interest of value engineering, choose performance characteristics that meet, but do not exceed, the needs of your project.
- 1.2.2 **AIR-QUALITY RESTRICTIONS** can affect the availability and/or use of some finishes, check local jurisdictions, especially in California, which has many different districts regulating VOCs or solvents in coatings.
- 1.2.3 **CHEMICAL RESISTANCE** - These standards have adopted **SEFA's** (Scientific Equipment and Fixture Association) standard list of 49 chemicals/concentrations, their required methods of testing, and their minimum acceptable results as the minimum acceptable chemical-resistance requirement for finishes used at exposed and semi-exposed surfaces, when such is required by specification.
 - 1.2.3.1 **SEFA's** chemical listing, methods of testing, and minimum acceptable results can be found in **APPENDIX A**.
- 1.2.4 **FIRE-RETARDANT or FIRE-RESISTANT FINISHES** - Subject to applicable codes and regulations, the use of fire-rated substrates in lieu of fire-retardant finishes is recommended.
- 1.2.5 **PANEL PRODUCTS** require balanced coats of finishing materials for stability and to remain free of warp.
 - 1.2.5.1 At **BOOK-MATCHED** veneers, every other leaf of veneer is turned over as the leaves are taken in sequence from the flitch. Since one leaf will be loose-side-up and the next tight-side-up, it produces a natural color shading. Alternating leaves might refract light differently and cause a noticeable color variation in some species. Proper finishing techniques can minimize this variation.

GENERAL

1.2 BASIC CONSIDERATIONS (continued)

1.2.6 **APPLICATION** variances make it very difficult to define "how many coats" of each step in a system are needed.

1.2.6.1 The desired end result is to provide a finish that adds beauty to the wood and gives desirable color, tone, smoothness, and depth.

1.2.7 **PROPER SANDING** is imperative to the final appearance of any finished surface. The quality of sanding dramatically affects the staining process through the topcoat appearance. Improper sanding will cause staining to be blotchy and nonuniform in appearance. In addition, improper sealer sanding can result in scratches and telegraphing topcoats.

1.2.8 **TRANSPARENT** finishes are applied in varying operations, typically consisting of some combination of hand sanding to remove job-handling marks, staining, filling, sealing, sanding, and surface coating.

1.2.9 **SOME EXOTIC SPECIES** have a high natural oil content and do not accept finishes similar to other hardwoods; because of this, the most common finish used is penetrating oil without any filling or sealing dyes or pigments in a stain.

1.2.10 **GRAIN** can significantly impact a finish's visual appearance and smoothness. Close-grain hardwoods and most softwoods do not require a filler to achieve a smooth finish; however, open-grain hardwoods do. Fillers, which are usually light-colored, may be toned to match any intended staining.

1.2.10.1 For finishing purposes, the following hardwoods are classified as:

OPEN GRAIN		CLOSE GRAIN	
Ash	Mahogany, Philippine	Alder, Red	Cherry
Butternut	Oak, Red	Beech	Gum
Chestnut	Oak, White	Birch	Maple
Mahogany, African	Walnut		
Mahogany, Honduras			

1.2.11 **BIRCH** and **MAPLE** have pores that are large enough to take wood filler effectively when desired, but are small enough, as a rule, to be finished without filler.

1.2.12 **FACTORY** or **FIELD** finishing are permitted, provided there is no violation of applicable codes or regulations.

1.2.12.1 **FACTORY** finishing is usually specified for high-quality work where superior appearance and performance of the finish is desired.

1.2.12.1.1 Benefits of factory finishing include consistency, control of film thickness, environmental compliance, and curing/drying of the finish in a controlled atmosphere.

1.2.12.1.2 Its use assumes a maximum degree of manufacturer prefabrication so that site installation can be performed with a minimum amount of cutting, fitting, and adjustment to facilitate project completion.

1.2.12.2 **FIELD** finishing is typically specified when there is not a demand or specific need for a superior appearance and is not necessarily part of the woodwork contract.

1.2.12.2.1 The **FINISHER** is responsible for examining and accepting the woodwork as supplied prior to the commencement of finishing.

1.2.12.2.2 The **FINISHER** is responsible for meeting or exceeding the control sample for surface performance characteristics (such as color, texture, and sheen), including proper surface preparation, shading, and blending of color, and other requirements as defined in this standard when so referenced.

1.2.13 FINISHING SYSTEMS

1.2.13.1 **SPECIFICATIONS** calling for finishes based on samples or guide language from a commodity manufacturer might not be realistic from a custom manufacturer.

1.2.13.2 **INTERMIXING SYSTEMS** will likely cause quality and/or performance problems; they are usually not compatible with each other.

1.2 **BASIC CONSIDERATIONS** (continued)1.2.13 **FINISHING SYSTEMS** (continued)

1.2.13.3 **APPLICATION** of any finish material in excess of manufacturer's recommendations can cause the finish to fail.

1.2.13.4 **VARYING COSTS** of finish systems typically relate directly to their performing characteristics.

1.2.13.5 **UV** (ultraviolet light) is a method for curing coatings (transparent and opaque) typically used for high-volume, repetitive applications, and is done by a limited number of finishing operations.

1.2.13.6 **COLOR** and **GRAIN ENHANCEMENT** of a system - from the addition of a single stain, to a multiple-step build of one color on another with wash coats in between for added depth and beauty - is not included in the basic systems and needs to be properly specified.

1.2.13.7 **SPECIFICATION** of a system requires listing both the system number and the name, along with any desired enhancements.

1.2.13.8 These standards recognize and offer guidance for the following finishing systems for both transparent or opaque applications, unless otherwise indicated:

1.2.13.8.1 **SYSTEM - 1, LACQUER, NITROCELLULOSE**

1.2.13.8.2 **SYSTEM - 2, LACQUER, PRECATALYZED**

1.2.13.8.3 **SYSTEM - 3, LACQUER, POSTCATALYZED**

1.2.13.8.4 **SYSTEM - 4, LATEX ACRYLIC, WATER-BASED**

1.2.13.8.5 **SYSTEM - 5, VARNISH, CONVERSION**

1.2.13.8.6 **SYSTEM - 6, OIL, SYNTHETIC PENETRATING** (available in transparent only)

1.2.13.8.7 **SYSTEM - 7, VINYL, CATALYZED**

1.2.13.8.8 **SYSTEM - 8, ACRYLIC CROSS LINKING, WATER-BASED**

1.2.13.8.9 **SYSTEM - 9, UV CURABLE, ACRYLATED EPOXY, POLYESTER or URETHANE**

1.2.13.8.10 **SYSTEM - 10, UV CURABLE, WATER-BASED**

1.2.13.8.11 **SYSTEM - 11, POLYURETHANE, CATALYZED**

1.2.13.8.12 **SYSTEM - 12, POLYURETHANE, WATER-BASED**

1.2.13.8.13 **SYSTEM - 13, POLYESTER, CATALYZED**

1.2.14 The following **SYSTEM OVERVIEW TABLES** are intended to give an overview of and help identify the correct standard or specialty finishing system to meet a project's needs; however, they are only relative to the topcoat, not any prior color or filler coats.

1.2.14.1 **TYPICAL USAGE/PERFORMANCE SCORES**

1.2.14.1.1 Differences between systems of 10 points or fewer are not generally considered significant enough to justify the typical added expense of a higher-rated system.

1.2.14.1.2 This systems listing does not imply an endorsement of the materials or compliance with applicable codes and regulations.

1.2.14.1.3 Due to changing environmental regulations and finish technologies, design professionals need to discuss finish options with a manufacturer located in the area of the project.

GENERAL

1.2 BASIC CONSIDERATIONS (continued)

1.2.14 The SYSTEM OVERVIEW TABLES (continued)

1.2.14.1 TYPICAL USAGE/PERFORMANCE SCORES (continued)

1.2.14.1.4 COMPARISON TABLE of usages and performance scores:

	Typical Usage	Score	Why and Why Not
1	Interior use for trims, furniture, paneling, and ornamental work	77-T 75-O	Why - Repairable; widely available; quick-drying Why not - Lack of durability and resistance to most solvents and water; yellows over time
2	Interior use for furniture, casework, paneling, ornamental work, stair parts (except treads), frames, windows, blinds, shutters, and doors	99-T 97-O	Why - Repairable; stain-, abrasion-, chemical-resistance Why not - Some yellowing; moderate build
3	Interior use for furniture, casework, paneling, ornamental work, stair parts (except treads), frames, windows, blinds, shutters, and doors	124-T 123-O	Why - Repairable; finish clarity; stain-, heat-, abrasion-, chemical-resistance Why not - Some yellowing; moderate build
4	Interior use for furniture, casework, paneling, ornamental work, stair parts (except treads), frames, windows, blinds, shutters, and doors	94-T 94-O	Why - Low VOCs; finish clarity (some formulations); stain resistance; yellowing resistance Why not - Low durability; solvent- and heat-resistance; slow drying time
5	Interior use for furniture, casework, paneling, ornamental work, stair parts, frames, windows, blinds, shutters, and doors	129-T 129-O	Why - Durable; widely available; good build Why not - Occasional lack of finish clarity
6	Interior use on furniture or trims requiring a close-to-the-wood look or very low sheen	57-T	Why - Close-to-wood, antique look; low sheen Why not - Labor-intensive to apply and maintain, refreshing finish required from time-to-time; low resistance properties to most substances
7	Interior use, often on kitchen, bath, office furniture, and laboratory casework	114-T 114-O	Why - Durable; widely available; fast drying Why not - Occasional lack of finish clarity
8	Interior use for furniture, casework, paneling, ornamental work, stair parts, frames, windows, blinds, shutters, and doors	99-T 99-O	Why - Fine durability; excellent abrasion-, solvent-, stain-, and chemical-resistance; moderately fast-drying; resists moisture Why not - Possibility of discoloration over time
9	Interior use, doors, paneling, flooring, stair parts, and casework, where applicable; consult your finisher before specifying	134-T 133-O	Why - Low VOCs; durable; near 100% solids usage; quick-drying (cure), may qualify as Green Guard Why not - Difficult to repair with UV finish, as this requires a handheld UV lamp; availability varies; easy repair with lacquers or conversion varnish
10	Interior use, doors, paneling, flooring, stair parts, and casework where applicable; consult your finisher before specifying	132-T 132-O	Why - Low VOCs; quick-drying (cure), maybe Green Guard Why not - Difficult to repair with UV finish, requires handheld UV lamp; availability varies; easy repair with lacquers or conversion varnish.
11	Interior use; some formulas available for exterior; floors, stairs, high-impact areas; some doors; generally not good for casework, paneling, windows, blinds, and shutters	133-T 132-O	Why - Durable; good build Why not - Slow-drying; very difficult to repair; some formulations hazardous to spray-personnel without air make-up suits
12	Interior use for furniture, casework, paneling, ornamental work, stair parts, frames, windows, blinds, shutters, and doors	112-T 112-O	Why - Improved durability; excellent abrasion-, solvent-, stain-, and chemical-resistance; moderately fast-drying; resists moisture Why not - Tannins in some wood species may cause discoloration over time
13	Interior use for furniture, casework, paneling, ornamental work, windows, blinds, shutters, and some doors	131-T 131-O	Why - Durable; good build; can be polished Why not - Not widely available; slow-curing; requires special facilities and skills; very difficult to repair; brittle finish flexibility

T = Transparent and O = Opaque

1.2 **BASIC CONSIDERATIONS** (continued)

1.2.14 The **SYSTEM OVERVIEW TABLES** (continued)

1.2.14.2 **GENERAL PERFORMANCE CHARACTERISTICS** table:

	SYSTEM NUMBER												
	1	2	3	4	5	6	7	8	9	10	11	12	13
General Durability	2	2	3	2	4	1	4	2	5	5	5	3	5
Repairability	5	4	4	3	3	5	4	4	5	3	2	4	1
Abrasion Resistance	2	4	4	3	4	1	4	4	5	4	5	4	5
Finish Clarity	5	4	5	2	3	5	3	4	5	5	3	4	4
Yellowing in Time	1	2	3	1	4	2	3	4	5	5	4	4	4
Finish Flexibility	1	2	3	3	4	5	4	3	2	3	4	4	1
Moisture Resistance	3	3	4	1	4	1	5	3	5	4	5	4	5
Solvent Resistance	1	2	4	1	5	1	5	3	5	5	5	4	5
Stain Resistance	4	4	5	3	5	1	5	4	5	5	5	4	5
Heat Resistance	1	2	5	1	5	1	5	3	5	5	5	4	5
Household Chemical Resistance	3	4	5	3	5	2	5	4	5	5	5	4	5
Build/Solids	2	3	3	3	4	1	4	3	5	4	4	3	4
Drying Time	5	5	5	2	4	2	5	4	5	5	3	5	2
Affects Wood Flame Spread	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes

NOTE: 5 = Excellent to 1 = Poor. The numerical ratings are subjective judgments based on the general performance of generic products. Special formulations and facilities will influence some of the performance characteristics.

GENERAL

1.2 BASIC CONSIDERATIONS (continued)

1.2.14 The SYSTEM OVERVIEW TABLES (continued)

1.2.14.3 SPECIFIC PERFORMANCE CHARACTERISTICS table for TRANSPARENT FINISHES:

	SYSTEM NUMBER												
	TRANSPARENT FINISHES												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Vinegar	3	4	5	4	5	3	5	4	5	5	5	4	5
Lemon Juice	3	4	5	4	5	3	5	4	5	5	5	4	5
Orange Juice	3	4	5	4	5	3	5	4	5	5	5	4	5
Catsup	3	4	5	4	5	2	5	4	5	5	5	4	5
Coffee	3	4	5	4	5	2	5	4	5	5	5	4	5
Olive Oil	2	3	5	3	5	2	5	4	5	5	5	4	5
Boiling Water	3	4	5	4	5	3	5	4	5	5	5	4	5
Cold Water	5	5	5	5	5	3	5	4	5	5	5	4	5
Nail Polish Remover	1	2	3	2	4	1	2	2	5	5	4	3	4
Household Ammonia	3	4	5	4	5	2	4	2	5	5	5	4	5
VM&P Naphtha	3	4	5	4	5	1	4	4	5	5	5	4	5
Isopropyl Alcohol	1	2	3	1	5	2	4	3	5	5	5	4	5
Wine	3	4	5	4	5	2	4	4	5	5	5	5	5
Windex™	3	3	4	3	5	2	3	2	5	4	5	4	5
409 Cleaner™	3	3	4	4	5	1	4	3	5	5	5	4	5
Lysol™	3	5	5	4	5	2	4	4	5	5	5	4	5
33% Sulfuric Acid	3	4	5	3	5	1	4	4	5	5	5	4	5
77% Sulfuric Acid	1	2	3	1	1	1	2	2	4	3	4	3	4
28% Ammonium Hydroxide	1	2	3	1	5	1	4	2	5	5	5	3	5
Gasoline	1	2	5	2	5	1	4	4	5	5	5	4	4
Murphy's Oil Soap™	5	5	5	5	5	2	4	5	5	5	5	5	5
Vodka 100 Proof	3	4	5	4	5	2	4	4	5	5	5	4	5
1% Detergent	3	4	5	4	5	3	4	4	5	5	5	5	5
10% TSP	3	4	5	4	4	1	5	4	5	5	5	5	5
SUBTOTAL	65	86	110	82	114	46	100	85	119	117	118	97	117
Wear	2	3	4	2	5	1	4	4	5	5	5	5	4
Cold Check	5	5	5	5	5	5	5	5	5	5	5	5	5
Adhesion	5	5	5	5	5	5	5	5	5	5	5	5	5
TOTAL SCORE	77	99	124	94	129	57	114	99	134	132	133	112	131

NOTE - Testing was evaluated in an ISO 9000-certified laboratory using the following ASTM test criteria: Chemical Resistance Testing - ASTM D1308 (latest edition), Wear Index - Abrasion Resistance Testing - ASTM D4060 (latest edition), Cold Check Resistance - ASTM D1211 (latest edition), Cross Hatch Adhesion - ASTM D3359 (latest edition). Baseline data for application prior to testing: A. 45-55% humidity at 70-80 degrees Fahrenheit; B. Water-borne coatings must be cured in a dehumidified atmosphere and can be assisted with infrared light and good air movement.

Performance indicator numbers are used, with the following definitions:

For chemical resistance and wear index - abrasion resistance:

- | | |
|---|--|
| 5 - No effect from the test | 4 - Minimal effect or slight change and little repair required |
| 3 - Some effect; noticeable change, and the coating will recover with minimal repairs | 2 - Moderate effect, performance adversely affected and repairs required |
| 1 - Poor performance and film failure is imminent and repairs difficult | |

For cross-hatch adhesion:

- 5 - Edges of the cuts are completely smooth; none of the squares of the lattice are detached.
- 4 - Small flakes of the coating are detached at intersections; less than 5% of the area is affected.
- 3 - Small flakes of the coating are detached along the edges and at the intersections of cuts; 5 to 15% of the area is affected.
- 2 - Coating has flaked along the edges and on parts of the squares; 15 to 35% of the area is affected.
- 1 - Coating has flaked along the edges of the cuts in large ribbons and whole squares have detached; 35 to 65% of the area is affected.

1.2 BASIC CONSIDERATIONS (continued)

1.2.14 The SYSTEM OVERVIEW TABLES (continued)

1.2.14.4 SPECIFIC PERFORMANCE CHARACTERISTICS table:

	OPAQUE FINISHES											
	1	2	3	4	5	7	8	9	10	11	12	13
Vinegar	3	4	5	4	5	5	4	5	5	5	4	5
Lemon Juice	3	4	5	4	5	5	4	5	5	5	4	5
Orange Juice	3	4	5	4	5	5	4	5	5	5	4	5
Catsup	3	4	5	4	5	5	4	5	5	5	4	5
Coffee	3	4	5	4	5	5	4	5	5	5	4	5
Olive Oil	2	3	5	3	5	5	4	5	5	5	4	5
Boiling Water	3	4	5	4	5	5	4	5	5	5	4	5
Cold Water	5	5	5	5	5	5	4	5	5	5	4	5
Nail Polish Remover	1	2	3	2	4	2	2	5	5	4	3	4
Household Ammonia	2	4	5	4	5	4	2	5	5	5	4	5
VM&P Naphtha	3	4	5	4	5	4	4	5	5	5	4	5
Isopropyl Alcohol	1	2	3	1	5	4	3	5	5	5	4	5
Wine	3	4	5	4	5	4	4	5	5	5	5	5
Windex™	3	3	4	3	5	3	2	5	4	5	4	5
409 Cleaner™	3	3	4	4	5	4	3	5	5	5	4	5
Lysol™	3	5	5	4	5	4	4	5	5	5	4	5
33% Sulfuric Acid	3	4	5	3	5	4	4	5	5	5	4	5
77% Sulfuric Acid	1	2	3	1	1	2	2	4	3	4	3	4
28% Ammonium Hydroxide	1	2	3	1	5	4	2	5	5	5	3	5
Gasoline	1	2	5	2	5	4	4	5	5	5	4	4
Murphy's Oil Soap™	5	5	5	5	5	4	5	5	5	5	5	5
Vodka 100 Proof	3	4	5	4	5	4	4	5	5	5	4	5
1% Detergent	3	4	5	4	5	4	4	5	5	5	5	5
10% TSP	3	4	5	4	4	5	4	5	5	5	5	5
SUBTOTAL	64	86	110	82	114	100	85	119	117	118	97	117
Wear	1	1	3	2	5	4	4	4	5	4	4	4
Cold Check	5	5	5	5	5	5	5	5	5	5	5	5
Adhesion	5	5	5	5	5	5	5	5	5	5	5	5
TOTAL SCORE	75	97	123	94	129	114	99	133	132	132	112	131

NOTE - Testing was evaluated in an ISO 9000-certified laboratory using the following ASTM test criteria: Chemical Resistance Testing - ASTM D1308 (latest edition), Wear Index - Abrasion Resistance Testing - ASTM D4060 (latest edition), Cold Check Resistance - ASTM D1211 (latest edition), Cross Hatch Adhesion - ASTM D3359 (latest edition). Baseline data for application prior to testing: A. 45-55% humidity at 70-80 degrees Fahrenheit; B. Water-borne coatings must be cured in a dehumidified atmosphere and can be assisted with infrared light and good air movement.

Performance indicator numbers are used, with the following definitions:

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- 5 - No effect from the test
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- 3 - Some effect, noticeable change, and the coating will recover with minimal repairs
- 2 - Moderate effect, performance adversely affected and repairs required
- 1 - Poor performance and film failure is imminent and repairs difficult

For cross-hatch adhesion:

- 5 - Edges of the cuts are completely smooth; none of the squares of the lattice are detached.
- 4 - Small flakes of the coating are detached at intersections; less than 5% of the area is affected.
- 3 - Small flakes of the coating are detached along the edges and at the intersections of cuts; 5 to 15% of the area is affected.
- 2 - Coating has flaked along the edges and on parts of the squares; 15 to 35% of the area is affected.
- 1 - Coating has flaked along the edges of the cuts in large ribbons and whole squares have detached; 35 to 65% of the area is affected.

GENERAL

1.3 RECOMMENDATIONS

1.3.1 INCLUDE IN DIVISION 09 OF THE SPECIFICATIONS:

- 1.3.1.1 "Before finishing, all 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, using appropriate grit sandpaper, and shall be cleaned before applying sealer or finish".
- 1.3.1.2 "Concealed surfaces of all architectural woodwork that might be exposed to moisture, such as those adjacent to exterior concrete walls, shall be back-primed".

1.3.2 For **DECORATIVE LAMINATE** cabinets and countertops, **SPECIFY** the responsibility for finishing (if any) of raw wood parts, such as pulls, trim, applied moldings, banded doors, drawer bodies, and/or wood cabinet interiors.

1.3.3 Avoid **BRUSH-APPLIED** finishes for fine architectural woodwork; they are not covered by these standards.

1.3.4 Avoid **BLEACHED VENEERS** because of potential finishing problems.

1.3.5 Avoid **JOBSITE FINISHING** because a factory-controlled finishing environment offers a superior finished product; however, jobsite finishing is permitted, provided there is no violation of applicable codes and regulations.

1.3.6 Avoid **EXTERIOR WOOD DOORS** when exposed to direct sunlight or without adequate overhead soffit protection finished in a dark color that will absorb heat.

1.3.7 **SPECIFY** requirements for:

- 1.3.7.1 **FIRE RESISTANCE**
- 1.3.7.2 **CHEMICAL RESISTANCE**
- 1.3.7.3 Use of **FILLER, WASH COAT, or STAIN**

1.4 ACKNOWLEDGEMENTS

1.4.1 **LISTING** of a finish system in these standards does not imply an endorsement of such or compliance with applicable codes and regulations.

1.4.2 Some **PREFINISHED WOOD PANELS** or **DECORATIVE OVERLAYS** have aesthetic and performance characteristics that meet or exceed these standards without using a listed or recommended finish system.

1.4.2.1 Such products should be evaluated and/or specified by the design professional.

1.5 INDUSTRY PRACTICES

1.5.1 **DOOR MANUFACTURERS** typically offer only their own standard finishes. If one or more acceptable door manufacturers are listed in a project's specifications, it indicates that each manufacturer's standard finish system is acceptable.

1.5.2 **FINISHING** of **RAW WOOD COMPONENTS** on **HPDL** casework (including pulls, trims, moldings, and edgebanding) is typically excluded from the manufacturer's scope of work and is not covered by this finishing section unless required in the project's specifications.

1.5.3 **FINISHING SYSTEMS** are applied per the manufacturer's recommendations.

PRODUCT

2 SCOPE

2.1 All factory or shop finishing of architectural woodwork.

2.2 TYPICAL INCLUSIONS

2.2.1 The application of transparent or opaque finish on all architectural woodwork specified to be factory prefinished and/or jobsite finished within the architectural woodwork contract.

PRODUCT

2 SCOPE (continued)

2.2 TYPICAL INCLUSIONS (continued)

- 2.2.2 The application of primer prior to delivery to the jobsite for final paint finish to be applied later by others.
- 2.2.3 All preparatory work, labor, equipment, materials, and related supplies to produce the specified finish.

2.3 TYPICAL EXCLUSIONS

- 2.3.1 All painting or priming of building surfaces not specified within the architectural woodwork contract.
- 2.3.2 All finishing of architectural woodwork specified within the painting specifications.
- 2.3.3 Jobsite touch-up after delivery or installation.
- 2.3.4 Raw wood parts on HPDL cabinets, except as specified in the contract documents, such as wood finger-pulls or wood drawer bodies incorporated into the assembly.
- 2.3.5 Brush-applied topcoat finishes, except as called out under the scope of work for the custom woodwork manufacturer, such as faux finishes.
- 2.3.6 Items to receive subsequent coats of finish materials by others.
- 2.3.7 Exterior painting or priming.

3 DEFAULT STIPULATION

- 3.1 If not otherwise specified or detailed, all work under this section shall meet the same Grade as the item being finished, and/or the finishing system selected shall be optional with the finishing contractor.

4 RULES - The following RULES shall govern unless a project's contract documents require otherwise.

These rules are not intended to create a finishing grade; they are intended only to establish the acceptable requirements and/or characteristics after the architectural woodwork is completed or installed.

Where E, C, or P is not indicated, the rule applies to all Grades equally.

ERRATA, published on the Associations' websites at www.awinet.org, www.awmac.com, or www.woodworkinstitute.com, shall TAKE PRECEDENCE OVER THESE RULES, subject to their date of posting and a project's bid date.

ARROWS INDICATE TOPIC IS CARRIED FROM ↑ OR ONTO ↓ ANOTHER PAGE.

DESCRIPTION		E	C	P
G E N E R A L	4.1 In GENERAL			
	4.1.1 FINISHER shall determine and report the following in writing before the start of any finishing:			
	4.1.1.1 Material or finish system requirements in violation of any applicable codes or regulations.			
	4.1.1.1.1 It shall NOT be the responsibility of the finisher to comply with a specification requirement or finishing system that is illegal or otherwise disallowed in a particular area by some regulatory agency.			
	4.1.1.2 Any condition that might affect proper finish application.			
	4.1.1.3 Moisture content of product and/or surrounding wall surfaces, such as drywall or plaster, above 12%.			
	4.1.2 SAMPLES shall be submitted and approved before the finishing of any product, and:			
	4.1.2.1 Due to variance in wood color within the same species and even within the same log, a range of color shall be expected on finished wood products.			
	4.1.2.1.1 To establish an acceptable color range, a minimum of three samples shall be submitted.			
	4.1.2.2 Shall be at least 12" x 12" (305 mm x 305 mm) if on a panel product, and as wide as practical if on lumber by a minimum of 12" (304 mm) in length.			