

Correlation of
Modern Cabinetmaking, Molzahn, Umstatt, Davis
(Goodheart-Willcox Publisher ©2023)
to
Woodwork Career Alliance: 12. Finishing

The content of the text and Lab Workbook correlates to Woodwork Career Alliance (WCA) skill standards. The WCA establishes a benchmark to measure and recognize an individual's skills and knowledge. The WCA skill standards help ensure that students are prepared for rigorous industry standards, and provide a pathway for advancement for professional woodworkers.

The WCA skill standards define the minimum requirements for specific woodworking machine operations. Using the WCA skill standards in a wood training program can help you, your students, and your program obtain industry recognition. The Modern Cabinetmaking textbook and Lab Workbook are correlated to the performance standards, helping prepare your students for certification.



Finishing Considerations

- Pre-Operation Checklist is a prerequisite for ANY operation.
- These standards are written as generic to spraying technique with a handheld spray gun. Specific variances may exist for conventional, HVLP, gravity, and air-assisted airless equipment.
- Spray gun, spraying environment, and related accessories are optimal.
- Spray material is properly thinned with consideration for temperature and humidity. (Refer to viscosity cup standards.)
- Safe practices are followed for handling finishes in accordance with Material Safety Data Sheets (MSDS).
- Required OSHA-approved personal protective equipment is worn.
- Required OSHA-engineering controls (example, spray booth) are in place and operating.
- Lock-out/tag-out procedure is in place and followed.
- Process is completed in a timely manner.

Spray Guns

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies proper viscosity and temperature of coating.	Chapter 52	—
1	—	Performance Standard 2. Verifies atomization and pattern balance with flood test on vertical paper panel.	Chapter 52	—
1	—	Performance Standard 3. Verifies that trigger is functional and nozzle tip and ports are clean.	Chapter 52	—
1	—	Performance Standard 4. Verifies operator has free movement through the spraying motions required and that hoses and pots are unobstructed.	Chapter 52	—
2	—	Performance Standard 1. Interprets Product Data Sheet and adjusts fluid viscosity as required.	Chapter 52	—
2	—	Performance Standard 2. Selects and installs appropriate air cap and fluid needle and nozzle.	Chapter 52	—
2	—	Performance Standard 3. Adjusts air and fluid knobs to achieve optimal spray rate and fan pattern.	Chapter 52	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Spray Clear and Opaque Coatings				
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 1. Wet film is uniform and of acceptable (specified) thickness.	Chapter 52	Section Project 6-2

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 2. Laps fan pattern 50% to achieve even surface coating.	Chapter 52	Section Project 6-2
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 3. Holds spray gun at correct distance 6"–8" [150 mm–200 mm] and perpendicular to work surface.	Chapter 52	Section Project 6-2
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 4. Applies fluid to work surface with smooth, parallel, continuous strokes.	Chapter 52	Section Project 6-2

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 5. Seal coat properly sanded and prepared for topcoat.	Chapter 52	Section Project 6-2
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 6. Surface is free from orange peel, pebbling, streaking, sagging, or other overspray defects.	Chapter 52	Section Project 6-2
1	Given a properly prepared product and properly adjusted spray equipment, apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Performance Standard 7. Topcoat exhibits a consistent sheen.	Chapter 52	Section Project 6-2

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given a properly prepared product, set up the spray equipment and apply one seal coat and one topcoat at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close grained, hardwood plywood panels—one panel laying flat, one panel vertical.	Meets Level 1 performance standard.	—	—

Spray Guns

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies proper viscosity and temperature of coating.	Chapter 52	—
1	—	Performance Standard 2. Verifies atomization and pattern balance with flood test on vertical paper panel.	Chapter 52	—
1	—	Performance Standard 3. Verifies that trigger is functional and nozzle tip and ports are clean.	Chapter 52	—
1	—	Performance Standard 4. Verifies operator has free movement through the spraying motions required and that hoses and pots are unobstructed.	Chapter 52	—
2	—	Performance Standard 1. Interprets Product Data Sheet and adjusts fluid viscosity as required.	Chapter 52	—
2	—	Performance Standard 2. Selects and installs appropriate air cap and fluid needle and nozzle.	Chapter 52	—
2	—	Performance Standard 3. Adjusts air and fluid knobs to achieve optimal spray rate and fan pattern.	Chapter 52	—
2	—	Meets Level 1 performance standard.	—	—

Operation—Spray Toners (Dye or Pigmented)				
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 1. Wet film is uniform and of acceptable (specified) thickness.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 2. Laps fan pattern 50% to achieve even surface coating.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 3. Holds spray gun at correct distance 6"–8" [150 mm–200 mm] and perpendicular to work surface.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 4. Applies fluid to work surface with smooth, parallel, continuous strokes.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 5. Starts and stops stroke at the beginning and end of each pass so as to properly coat panel without wasting material.	Chapter 52	—

2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 6. Seal coat properly sanded and prepared for topcoat.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 7. Surface is free from orange peel, pebbling, streaking, sagging, or overspray defects.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 8. Consistent sheen and surface reflective quality is achieved.	Chapter 52	—
2	Given a properly prepared product, set up the spray equipment and apply toner at a target wet mil thickness on two 36" × 24" (915 mm × 610 mm) finish sanded, close-grained, hardwood plywood panels.	Performance Standard 9. Leaves gun in a clean condition.	Chapter 52	—
2	Objective	Meets Level 1 performance standard.	—	—

Spray Guns

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Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies proper viscosity and temperature of coating.	Chapter 52	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	—	Performance Standard 2. Verifies atomization and pattern balance with flood test on vertical paper panel.	Chapter 52	—
1	—	Performance Standard 3. Verifies that trigger is functional and nozzle tip and ports are clean.	Chapter 52	—
1	—	Performance Standard 4. Verifies operator has free movement through the spraying motions required and that hoses and pots are unobstructed.	Chapter 52	—
2	—	Performance Standard 1. Interprets Product Data Sheet and adjusts fluid viscosity as required.	Chapter 52	—
2	—	Performance Standard 2. Selects and installs appropriate air cap and fluid needle and nozzle.	Chapter 52	—
2	—	Performance Standard 3. Adjusts air and fluid knobs to achieve optimal spray rate and fan pattern.	Chapter 52	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Spray Complex Surfaces				
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24”h × 24”w × 16”d), with one seal coat and one topcoat.	Performance Standard 1. Wet film is uniform and of acceptable (specified) thickness.	Chapter 52	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24" h × 24" w × 16" d), with one seal coat and one topcoat.	Performance Standard 2. Laps fan pattern 50% to achieve even surface coating.	Chapter 52	—
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24" h × 24" w × 16" d), with one seal coat and one topcoat.	Performance Standard 3. Holds spray gun at correct distance 6"–8" [150 mm–200 mm] and perpendicular to work surface.	Chapter 52	—
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24" h × 24" w × 16" d), with one seal coat and one topcoat.	Performance Standard 4. Applies fluid to work surface with smooth, parallel, continuous strokes.	Chapter 52	—
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24" h × 24" w × 16" d), with one seal coat and one topcoat.	Performance Standard 5. Surface is free from orange peel, pebbling, streaking, sagging, or overspray defects.	Chapter 52	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24" h × 24" w × 16" d), with one seal coat and one topcoat.	Performance Standard 6. Consistent sheen and surface reflective quality is achieved.	Chapter 52	—
2	Given a properly prepared product and spraying facility, set up gun and accessories for and apply a clear spray finish to the inside and outside of a five-sided MDF box, or equivalently complex assembly, (approx 24" h × 24" w × 16" d), with one seal coat and one topcoat.	Performance Standard 7. Leaves gun in a clean condition.	Chapter 52	—