Correlation of

***Modern Cabinetmaking,* Molzahn, DeWerd, Umstattd**

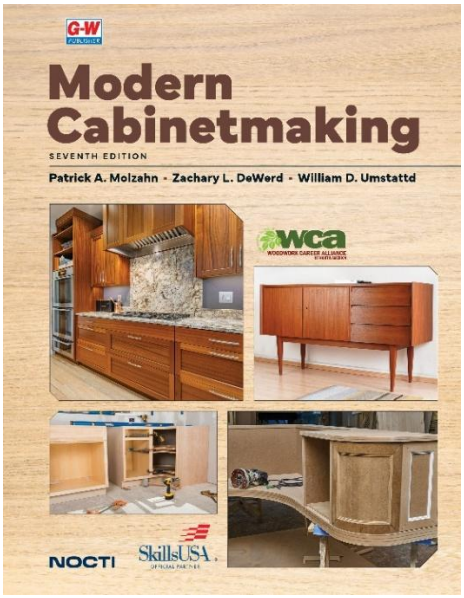
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to

Woodwork Career Alliance: 7. Sanding

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.



Sanding Considerations

- Pre-Operation Checklist is a prerequisite for ANY operation.
- Tool/machine manufacturer's safety rules and guidelines are followed.
- Stock is supported and secured from movement.
- Hands remain firmly on sander throughout entire operation.
- Sander is moved in smooth, continuous motion.
- Appropriate stance and hand position are utilized for optimum balance and part control.
- Clears machine and cleans work area after operation.
- Required OSHA-approved personal protective equipment is worn.
- Lock-out/tag-out procedure is in place and followed.
- Process is completed in a timely manner.
- Idler and driven drum bearings are functioning properly.
- Auxiliary tables are available and adjusted to correct height/angle.
- Guides material into contact with moving belt smoothly and gradually using stop block/fence.

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- Stock is held securely against the fence, miter gauge, or fixture as appropriate.
- Part is fed against belt rotation when not using a support block.
- Machine is properly balanced and excess dust is removed from drums, table, and cabinet.
- A sharp belt of the appropriate coarseness is installed.
- Dust collection is connected and functioning properly.
- Adequate lighting is available to inspect finished edge quality.
- Part table is flat and free of debris and defects.
- Applies appropriate pressure to optimize motion of oscillating belt.
- Withdraws workpiece from moving belt while maintaining parallelism.
- Inspects edge for acceptable surface quality.
- All mill/saw marks are removed.
- All scratches, nicks, and machining defects are removed.
- Available dust control methods are used.
- Equipment is cleaned with compressed air, when available, or bench brush prior to beginning.
- Particle filtration (dust) mask is worn.
- Parts are cleaned of grit and dust prior to sanding with the next finer grit.
- Operator cleans tools and work area after use.
- Electrical cords and clothing are well away from rotating parts.
- Steel mandrel is correctly installed in the spindle collet or socket.
- Rubber cylinder, if used, has no defects before installing sandpaper sleeve.
- Abrasive sleeve is correctly installed on the mandrel.
- Abrasive sleeve has no defects such as tears, holes, or foreign material buildup.
- Table insert is correct size for the mandrel being used.
- Operator uses proper pressure and speed to sand part.
- Verifies tool is properly guarded.
- Demonstrates knowledge of and proper use of all machine specific controls.
- Inspect for evidence of defective finish conditions such as, but not limited to, chatter marks, streaking, or part hesitation.
- Spot check sanded dimensions following the operation.
- Abrasive belt conditions are monitored, analyzed and changed as required.
- If required, select proper program from controller or programmable logic controller (PLC).
- Operator clears machine and cleans work area after use.
- Auxiliary tables are available and adjusted to correct height.

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- Lock-out/tag-out procedure is in place and followed by everyone.
- Operator uses proper pressure and speed to sand part.
- Proper stance and hand position are demonstrated.

Portable Belt Sander

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	**Performance Standard 1.** Demonstrates knowledge of and proper use of all machine specific controls.	Chapter 30	—
1	—	**Performance Standard 2.** Ensures operational path has no obstructions to material and operator.	Chapter 30	—
1	—	**Performance Standard 3.** Verifies belt is tracking correctly.	Chapter 30	—
1	—	**Performance Standard 4.** Verifies switch is off before plugging in tool.	Chapter 30	—
2	—	**Performance Standard 1.** Installs belt properly.	Chapter 30	—
2	—	**Performance Standard 2.** Verifies belt is clean and free of defects.	Chapter 30	—
2	—	**Performance Standard 3.** Verifies platen is free of defects and in proper working order.	Chapter 30	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Sand Solid Wood Panels				
1	Given material and machine set up and ready to operate.	**Performance Standard 1.** Dimensional tolerance ±0.4 mm (1/64″) [0.0156″] from flat.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 2.** No apparent round over of edges.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 3.** All scratches, nicks, and defects are removed.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 4.** Sanding marks are consistent and directional with the wood grain.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given material and machine set up and ready to operate.	**Performance Standard 5.** No evidence of edge/end-dubbing or marks caused by not moving the platen past the edge/end.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 1.** Inspect part for minimum defects suitable for the finish desired.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 2.** Select appropriate grit and composition of sanding belt to complete operation.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 3.** Ensure sanding belt is installed on the device to maximize paper life.	Chapter 30	—
2	Select material and set up equipment.	Meets Level 1 performance standard.	—	—
Operation—Sand Solid Veneered Panels				
1	Given material and machine set up and ready to operate.	**Performance Standard 1.** Dimensional tolerance ±0.4 mm (1/64”) [0.0156”] from flat.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 2.** No apparent sand through (ghosting) of veneer.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 3.** All scratches, nicks, and defects removed.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 4.** Sanding marks shall be consistent and directional with the wood grain.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 5.** No evidence of edge/end-dubbing or marks caused by not moving the platen past the edge/end.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 1.** Inspect part for minimum defects suitable for the finish desired.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 2.** Select appropriate grit and composition of sanding belt to complete operation.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Select material and set up equipment.	**Performance Standard 3.** Ensure sanding belt is installed on the device to maximize paper life.	Chapter 30	—
2	Select material and set up equipment.	Meets Level 1 performance standard.	—	—

Edge Sander

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	**Performance Standard 1.** Verifies belt is properly tensioned, sharp, and tracking correctly.	Chapter 30	—
1	—	**Performance Standard 2.** Demonstrates knowledge of and proper use of all machine specific controls.	Chapter 30	—
1	—	**Performance Standard 3.** Verifies table is at correct height and locked.	Chapter 30	—
1	—	**Performance Standard 4.** Cleans belt if needed.	Chapter 30	—
1	—	**Performance Standard 5.** Verifies that 90° stop block/fence is square and securely clamped.	Chapter 30	—
1	—	**Performance Standard 6.** Verifies work area is clean, organized, and free from tripping hazards.	Chapter 30	—
2	—	**Performance Standard 1.** Installs new belt.	Chapter 30	—
2	—	**Performance Standard 2.** Adjusts tension and tracking.	Chapter 30	—
2	—	**Performance Standard 3.** Adjusts table height to utilize fresh belt surface.	Chapter 30	—
2	—	Meets Level 1 performance standard.	—	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Operation—Sand 90° Edge of Banded Panel				
1	Given machine set up and ready to work, sand the long, straight, 90° edge of a 19 mm × 400 mm × 1066 mm (3/4″ × 16″ × 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 1.** A dimensional tolerance of ±1.5 mm (1/16″) [0.0625″] from flat is maintained across entire length.	Chapter 30	Section Project 4-13
1	Given machine set up and ready to work, sand the long, straight, 90° edge of a 19 mm × 400 mm × 1066 mm (3/4″ × 16″ × 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 2.** A tolerance of ±1.5 mm (1/16″) [0.0625″] from parallel is maintained from opposing edge.	Chapter 30	Section Project 4-13
1	Given machine set up and ready to work, sand the long, straight, 90° edge of a 19 mm × 400 mm × 1066 mm (3/4″ × 16″ × 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 3.** Edges are crisp, no apparent round over.	Chapter 30	Section Project 4-13
1	Given machine set up and ready to work, sand the long, straight, 90° edge of a 19 mm × 400 mm × 1066 mm (3/4″ × 16″ × 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 4.** Edge has no skips, burns, or washboarding or snipes.	Chapter 30	Section Project 4-13

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given machine set up and ready to work, sand the long, straight, 90° edge of a 19 mm × 400 mm × 1066 mm (3/4″ × 16″ × 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 5.** All mill/saw marks are removed.	Chapter 30	Section Project 4-13
2	Given a board with a long, straight, 90° edge of 19 mm 400 mm 1066 mm (3/4″ × 16″ × 42″) that has been banded with a 0.7 mm (1/36″) [0.027″] hardwood veneer edge, set up edge sander with a sharp belt of the appropriate coarseness and properly adjust table and stop block, and sand the material.	**Performance Standard 1.** None of the veneer edge is sanded through.	Chapter 30	—
2	Objective	Meets Level 1 performance standard.	—	—
Operation—Sand 45° Edge of Board				
1	Given an edge sander with a sharp belt of the proper grit and properly adjusted table, stop block, and a special jig or fixture equipped with toggle clamps or other positive clamping device, sand the straight, 45° edge of a 19 mm 400 mm 1066 mm (3/4″ × 16″× 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 1.** A dimensional tolerance of ±1.5 mm (1/16″) [0.0625″] from flat is maintained across entire length.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given an edge sander with a sharp belt of the proper grit and properly adjusted table, stop block, and a special jig or fixture equipped with toggle clamps or other positive clamping device, sand the straight, 45° edge of a 19 mm 400 mm 1066 mm (3/4″ × 16″× 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 2.** A tolerance of ±1.5 mm (1/16″) [0.0625″] from parallel is maintained from opposing edge.	Chapter 30	—
1	Given an edge sander with a sharp belt of the proper grit and properly adjusted table, stop block, and a special jig or fixture equipped with toggle clamps or other positive clamping device, sand the straight, 45° edge of a 19 mm 400 mm 1066 mm (3/4″ × 16″× 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 3.** Edges are crisp, no apparent round over.	Chapter 30	—
1	Given an edge sander with a sharp belt of the proper grit and properly adjusted table, stop block, and a special jig or fixture equipped with toggle clamps or other positive clamping device, sand the straight, 45° edge of a 19 mm 400 mm 1066 mm (3/4″ × 16″× 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 4.** All mill/saw marks are removed.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given an edge sander with a sharp belt of the proper grit and properly adjusted table, stop block, and a special jig or fixture equipped with toggle clamps or other positive clamping device, sand the straight, 45° edge of a 19 mm 400 mm 1066 mm (3/4″ × 16″× 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	**Performance Standard 5.** Edge has no skips, burns or washboarding or snipes.	Chapter 30	—
2	Given an edge sander install an appropriate sharp belt, properly adjust table and stop block, and using a special jig or fixture equipped as in Level 1, sand the straight, 45° edge of a 19 mm 400 mm 1066 mm (3/4″ × 16″× 42″) board that has been banded with a 3 mm (1/8″) [0.125″] solid hardwood edge.	Meets Level 1 performance standard.	—	—
Operation—Sand 90° End of Solid Board				
1	Given machine set up and ready to work, sand the straight, 90° end of a 1066 mm × 400 mm 19 mm (42″ × 16″ × 3/4″) solid hardwood board.	**Performance Standard 1.** A tolerance of ±1.5 mm (1/16″) [0.0625″] from parallel is maintained from opposing edge.	Chapter 30	Section Project 4-13
1	Given machine set up and ready to work, sand the straight, 90° end of a 1066 mm × 400 mm 19 mm (42″ × 16″ × 3/4″) solid hardwood board.	**Performance Standard 2.** End is crisp and straight, no apparent round over.	Chapter 30	Section Project 4-13

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given machine set up and ready to work, sand the straight, 90° end of a 1066 mm × 400 mm × 19 mm (42″ × 16″ × 3/4″) solid hardwood board.	**Performance Standard 3.** End has no skips, burns, washboarding, or snipes.	Chapter 30	Section Project 4-13
2	Given a solid hardwood board of 1066 mm × 400 mm × 19 mm (42″ × 16″ × 3/4″), set up the edge sander with a sharp belt of the appropriate coarseness and properly adjust table and stop block, and sand the material.	Meets Level 1 performance standard.	—	—

Oscillating Spindle Sander

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	**Performance Standard 1.** Demonstrates knowledge of and proper use of all machine specific controls.	Chapter 30	—
1	—	**Performance Standard 2.** Verifies table is at correct height/angle and locked.	Chapter 30	—
1	—	**Performance Standard 3.** Verifies that correct size table insert is installed.	Chapter 30	—
1	—	**Performance Standard 4.** Verifies work area is clean, organized, and free from hazards.	Chapter 30	—
2	—	**Performance Standard 1.** Cleans abrasives and installs new abrasives when necessary.	Chapter 30	—
2	—	**Performance Standard 2.** Adjusts table height (if equipped) to utilize fresh belt surface.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	—	**Performance Standard 3.** Adjusts table angle.	Chapter 30	—
2	—	**Performance Standard 4.** Selects and installs proper size mandrel and table insert.	Chapter 30	—
2	—	**Performance Standard 5.** Selects and installs proper abrasive type and grit.	Chapter 30	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Sand Straight Edge with Fence Aid				
1	Given an oscillating spindle sander set up with proper abrasive sleeve, with the table set to proper angle, and equipped with a straightedge fence set up in relation to abrasive drum surface, sand a straight edge on rough cut material.	**Performance Standard 1.** Selects proper part to be sanded.	Chapter 30	—
1	Given an oscillating spindle sander set up with proper abrasive sleeve, with the table set to proper angle, and equipped with a straightedge fence set up in relation to abrasive drum surface, sand a straight edge on rough cut material.	**Performance Standard 2.** Surface of edge has all defects removed.	Chapter 30	—
1	Given an oscillating spindle sander set up with proper abrasive sleeve, with the table set to proper angle, and equipped with a straightedge fence set up in relation to abrasive drum surface, sand a straight edge on rough cut material.	**Performance Standard 3.** Edge is straight and within +.015”/–0” of layout.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given an oscillating spindle sander set up with proper abrasive sleeve, with the table set to proper angle, and equipped with a straightedge fence set up in relation to abrasive drum surface, sand a straight edge on rough cut material.	**Performance Standard 4.** Surface of edge free of burn marks.	Chapter 30	—
1	Given an oscillating spindle sander set up with proper abrasive sleeve, with the table set to proper angle, and equipped with a straightedge fence set up in relation to abrasive drum surface, sand a straight edge on rough cut material.	**Performance Standard 5.** Surface of edge free of “dips” or “divots.”	Chapter 30	—
1	Given an oscillating spindle sander set up with proper abrasive sleeve, with the table set to proper angle, and equipped with a straightedge fence set up in relation to abrasive drum surface, sand a straight edge on rough cut material.	**Performance Standard 6.** Material is sanded at proper angle.	Chapter 30	—
2	Given an oscillating spindle sander and material for sanding, set up sander with a fence, and sand a straight edge on workpiece, with the spindle at 90°.	**Performance Standard 1.** Install fence for straight sanding.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given an oscillating spindle sander and material for sanding, set up sander with a fence, and sand a straight edge on workpiece, with the spindle at 90°.	Meets Level 1 performance standard.	—	—
Operation—Sand Curved Contour				
1	Given an oscillating spindle sander set up with the proper abrasive sleeve and with the table surface set to the proper angle, sand a curved contour traced from a template.	**Performance Standard 1.** Selects proper part/edge to be sanded.	Chapter 30	—
1	Given an oscillating spindle sander set up with the proper abrasive sleeve and with the table surface set to the proper angle, sand a curved contour traced from a template.	**Performance Standard 2.** Surface of edge follows shape of contour within +.015”/–0” of layout.	Chapter 30	—
1	Given an oscillating spindle sander set up with the proper abrasive sleeve and with the table surface set to the proper angle, sand a curved contour traced from a template.	**Performance Standard 3.** Surface of edge free of burn marks.	Chapter 30	—
1	Given an oscillating spindle sander set up with the proper abrasive sleeve and with the table surface set to the proper angle, sand a curved contour traced from a template.	**Performance Standard 4.** Surface of edge free of “dips” or “divots.”	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given an oscillating spindle sander, install the proper abrasive sleeve and set the table surface to the proper angle. Sand a curved contour traced from a template.	Meets Level 1 performance standard.	—	—

Portable Belt Sander

Pre-Operation Checklist				
1	—	**Performance Standard 1.** Demonstrates knowledge of and proper use of all machine specific controls.	Chapter 30	—
1	—	**Performance Standard 2.** Ensures operational path has no obstructions to material and operator.	Chapter 30	—
1	—	**Performance Standard 3.** Verifies belt is tracking correctly.	Chapter 30	—
1	—	**Performance Standard 4.** Verifies switch is off before plugging in tool.	Chapter 30	—
2	—	**Performance Standard 1.** Installs belt properly.	Chapter 30	—
2	—	**Performance Standard 2.** Verifies belt is clean and free of defects.	Chapter 30	—
2	—	**Performance Standard 3.** Verifies platen is free of defects and in proper working order.	Chapter 30	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Sand Solid Wood Panels				
1	Given material and machine set up and ready to operate.	**Performance Standard 1.** Dimensional tolerance ±0.4 mm (1/64″) [0.0156″] from flat.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 2.** No apparent round over of edges.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 3.** All scratches, nicks, and defects are removed.	Chapter 30	—

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1	Given material and machine set up and ready to operate.	**Performance Standard 4.** Sanding marks are consistent and directional with the wood grain.	Chapter 30	—
1	Given material and machine set up and ready to operate.	**Performance Standard 5.** No evidence of edge/end-dubbing or marks caused by not moving the platen past the edge/end.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 1.** Inspect part for minimum defects suitable for the finish desired.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 2.** Select appropriate grit and composition of sanding belt to complete operation.	Chapter 30	—
2	Select material and set up equipment.	**Performance Standard 3.** Ensure sanding belt is installed on the device to maximize paper life.	Chapter 30	—
2	Select material and set up equipment.	Meets Level 1 performance standard.	—	—

Random Orbital Sander

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	**Performance Standard 1.** Verifies tool is cleaned of excess sanding dust.	Chapter 30	—
1	—	**Performance Standard 2.** Inspects condition of sanding pad.	Chapter 30	—
1	—	**Performance Standard 3.** Confirms integrity of electrical or pneumatic connection.	Chapter 30	—
Operation—Sand Flat Pieces of Solid Lumber				
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 1.** A dimensional tolerance of ±0.4 mm (1/64”) [0.0156”] from flat is maintained.	Chapter 30	—
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 2.** Edges are crisp, no apparent round over.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 3.** All scratches, nicks, and machining defects are removed.	Chapter 30	—
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 4.** Pronounced orbital sanding marks are not present.	Chapter 30	—
2	Given material and selection of abrasives, machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	**Performance Standard 1.** Inspects part for minimum defects suitable for the finish desired.	Chapter 30	—
2	Given material and selection of abrasives, machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	**Performance Standard 2.** Uses appropriate grits and compositions of sandpaper for given operation.	Chapter 30	—
2	Given material and selection of abrasives, machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	**Performance Standard 3.** Installs sandpaper on the device to maximize paper life.	Chapter 30	—
2	Given material and selection of abrasives, machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	Meets Level 1 performance standard.	—	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Operation—Sand Flat Pieces of Veneered Panel				
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 1.** A dimensional tolerance of ±0.4 mm (1/64") [0.0156"] from flat is maintained.	Chapter 30	—
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 2.** Edges are crisp, no apparent round over.	Chapter 30	—
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 3.** All scratches, nicks, and machining defects are removed.	Chapter 30	—
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 4.** Pronounced orbital sanding marks are not present.	Chapter 30	—
1	Given material and machine set up to operate, sand part(s) through specified sequence of progressively finer grits.	**Performance Standard 5.** Veneer body remains sound, without telegraphing as a result of sanding.	Chapter 30	—
2	Given material and selection of abrasives, set up machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	**Performance Standard 1.** Inspects part for minimum defects suitable for the finish desired.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given material and selection of abrasives, set up machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	**Performance Standard 2.** Uses appropriate grits and compositions of sandpaper for given operation.	Chapter 30	—
2	Given material and selection of abrasives, set up machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	**Performance Standard 3.** Installs sandpaper on the device to maximize paper life.	Chapter 30	—
2	Given material and selection of abrasives, set up machine to sand part(s) through the appropriate sequence of progressively finer grits to a specified final grit.	Meets Level 1 performance standard.	—	—

Wide Belt Sander

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	**Performance Standard 1.** Verifies dust collection operable/operating.	Chapter 30	—
1	—	**Performance Standard 2.** Ensures paths of in-feed and out-feed have no obstructions to material and operator.	Chapter 30	—
1	—	**Performance Standard 3.** Minimum part length is observed.	Chapter 30	—
1	—	**Performance Standard 4.** Material is properly supported at in-feed and out-feed.	Chapter 30	—
2	—	**Performance Standard 1.** Correct sanding head(s) are selected and engaged.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	—	**Performance Standard 2.** Sets optimum initial thickness prior to first pass based on maximum thickness or species of material.	Chapter 30	—
2	—	**Performance Standard 3.** Installs appropriate grit/type of belt for given operation.	Chapter 30	—
2	—	**Performance Standard 4.** Checks and adjusts (when required) abrasive belt tracking.	Chapter 30	—
2	—	**Performance Standard 5.** Verifies proper adjustment of platen(s).	Chapter 30	—
2	—	**Performance Standard 6.** Inspects and clears moisture traps and drains.	Chapter 30	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Sanding Solid Wood				
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 1.** Correct surface is sanded.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 2.** Proper incremental adjustment made on each pass to reach specified thickness.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 3.** Staggers loading to ensure entire width of belt and bed is used.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 4.** Demonstrates ability to monitor load meter.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 5.** Pieces fed in correct direction with regard to grain.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given specifications, set up machine to sand to the specified feed speed, grit, and thickness.	**Performance Standard 1.** Feed speed set correctly.	Chapter 30	—
2	Given specifications, set up machine to sand to the specified feed speed, grit, and thickness.	**Performance Standard 2.** Proper grit installed.	Chapter 30	—
2	Given specifications, set up machine to sand to the specified feed speed, grit, and thickness.	**Performance Standard 3.** Multiple head machine started in proper sequence and time delay.	Chapter 30	—
2	Given specifications, set up machine to sand to the specified feed speed, grit, and thickness.	Meets Level 1 performance standard.	—	—
Operation—Sanding Veneered Panels				
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 1.** Correct surface is sanded.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 2.** Proper incremental adjustment made on each pass to reach specified thickness.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 3.** Staggers loading to ensure entire width of belt and bed is used.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 4.** Demonstrates ability to monitor load meter.	Chapter 30	—
1	Given machine already set up, adjusted, with material ready, sand to the specified grit and thickness.	**Performance Standard 5.** Pieces fed in correct direction with regard to grain.	Chapter 30	—

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Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given a target finish condition, set up machine, and sand the correct surfaces of veneered panels to the specified grit.	**Performance Standard 1.** Measure panel thickness and set machine.	Chapter 30	—
2	Given a target finish condition, set up machine, and sand the correct surfaces of veneered panels to the specified grit.	**Performance Standard 2.** Height of pad adjusted to prevent sanding through.	Chapter 30	—
2	Given a target finish condition, set up machine, and sand the correct surfaces of veneered panels to the specified grit.	**Performance Standard 3.** Uses proper feed speed.	Chapter 30	—
2	Given a target finish condition, set up machine, and sand the correct surfaces of veneered panels to the specified grit.	**Performance Standard 4.** Processes and inspects trial panel and makes adjustments as necessary.	Chapter 30	—
2	Given a target finish condition, set up machine, and sand the correct surfaces of veneered panels to the specified grit.	**Performance Standard 5.** Sets each sanding head for correct stock removal when utilizing multiple heads.	Chapter 30	—
2	Given a target finish condition, set up machine, and sand the correct surfaces of veneered panels to the specified grit.	**Performance Standard 6.** Appropriate changes to program made as required.	Chapter 30	—

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