

1200-T-4 Machining and Joinery

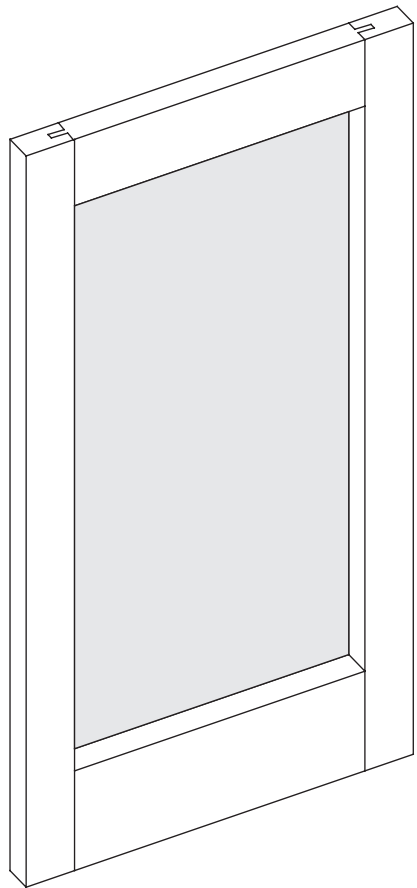
In the absence of specifications, the following standards will apply. Where more than one method or material is listed for a Grade, woodworkers will supply their choice from the alternatives.

Machining	Premium	Custom	Economy			
Plant Machining Considerations						
Shutter and Blind Sizing	Unless otherwise specified, units will be shipped full-width and full-height for field fitting. Prefitting and premachining available from most AWI/AWMAC member manufacturers.					
Panel Retention Note: Regardless of method of retention, panels must have freedom and room to expand and contract in reaction to ambient humidity changes.						
Joinery and Assembly Considerations						
Stiles, rails, & mullions	Mortise and tenon, dowel or spline joinery, glued under pressure. Moulded profiles (sticking) shall be at the option of the woodworker, unless full size details are shown in bid documents. Involve your woodwork manufacturer in the design.					
Solid lumber panels	Not permitted	Edge glued and planed/sanded to thickness (up to 356 mm [14"])	Edge glued and planed/sanded to thickness (up to 711 mm [28"])			
Raised panel rims	Mitered; splined or doweled to panel body and glued under pressure	Mitered; and glued to panel body under pressure	Mitered; and glued to panel body under pressure			
Panel product centers	Panel edge must be covered by veneer or concealed by moulding	Panel edge must be covered by veneer or concealed by moulding	No edge treatment required			
Applied mouldings	Plant fastened; spot glued, fine finish nailed, set, filled, and sanded	Plant fastened; spot glued, fine finish nailed	Plant fastened; spot glued, fine finish nailed			
Fixed Slat Detail Considerations						
Rounded edge slats	Set in routed slot	Set in routed slot	Set in through dado slot			
Flat edge slats	Set in through dado slot, moulding applied to rail faces to cover dado	Set in through dado slot, moulding applied to rail faces to cover dado	Set in through dado slot			
Movable Slat Considerations (interior only)						
Round or Flat edge slats	Pivot pins either metal or wood dowels*. Vertical control bar for interior slat blinds connected to slats with curved staples to allow movement.	Pivot pins either metal or wood dowels*. Vertical control bar for interior slat blinds connected to slats with curved staples to allow movement.	Pivot pins either metal or wood dowels.* Vertical control bar for interior slat blinds connected to slats with curved staples to allow movement.			
Edge Treatments of Stiles and Rails						
Outside Square Edge: solid lumber (top and bottom not considered exposed edges)	All exposed edges same species as face	Mill option	All exposed edges same species as face	Mill option	Mill option	Mill option
Inside Moulded Edge	Permitted only in solid lumber. Profile must be capable of being coped without a feather edge.					
NOTE: Site-applied mouldings are governed by Section 300 and Section 1700. The following applies to mouldings contained wholly within an individual panel or used as rim or panel retention members. Integral Applied Moulding: Acceptable with solid or veneered stiles and rails. Mouldings must be mitered. Mouldings must be fastened to stile or rail (not to panel), utilizing not more than two positioning nails (galvanized, zinc, or stainless).						
Hardware Considerations						
* Pivot pins for use in damp coastal areas shall be nylon, stainless steel or brass. Operating hardware must be specified, as it dictates the details of the construction. Unless specified, woodworking professional does not supply, machine for, or install operating hardware.						

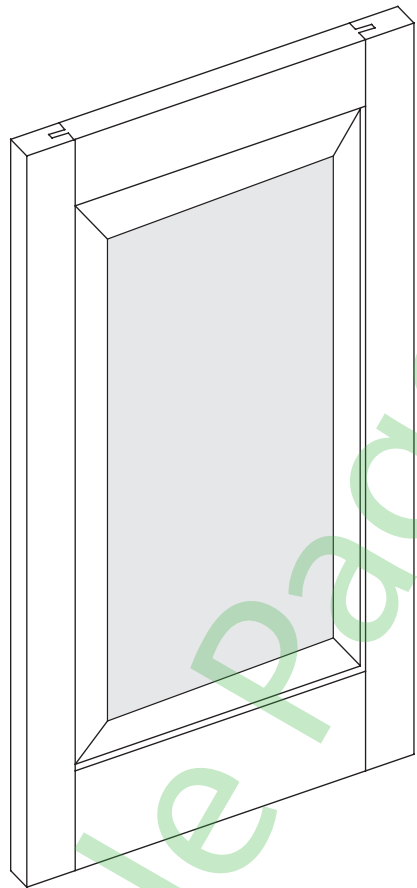
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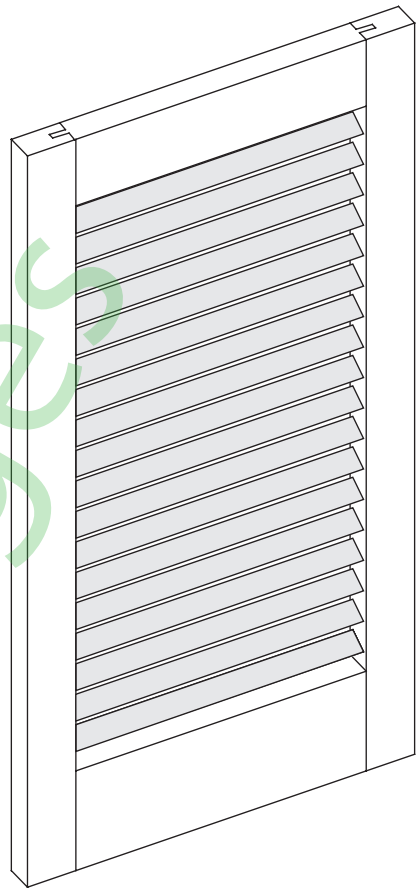
Flat Panel



Raised Panel

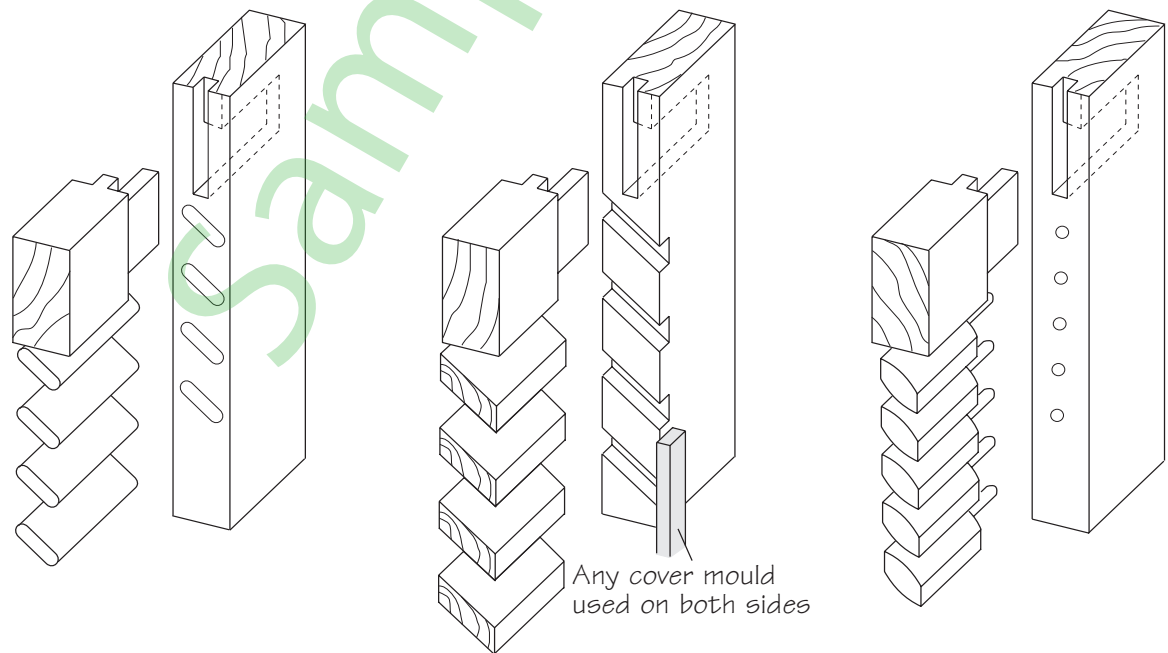


Louvered



Shutter styles - Figure 1200-01

Haunched mortise-and-tenon stile and rail joinery illustrated; doweled joinery allowed as well



Routed Slats

Dadoed Slats

Pivot Pin Movable Slats

Louver styles - Figure 1200-02



1200-T-5

Smoothness of Exposed Surfaces

Smoothness Table	Premium		Custom		Economy	
	Transparent	Opaque	Transparent	Opaque	Transparent	Opaque
Sharp edges (Arris)	Eased with fine abrasive		Eased with fine abrasive		Mill option	
Top flat surfaces	150 grit		120 grit		100 grit or 15 KCPI	
Moulded surfaces	120 grit		minimum 20 KCPI			
Shaped surfaces	120 grit		minimum 20 KCPI			
Turned surfaces	120 grit		100 grit			
Sanding cross scratches	None allowed	Not to exceed 6.4 mm [.25"]	None allowed	Not to exceed 6.4 mm [.25"]		

NOTE: No tearouts, knife nicks, or hit-or-miss finish allowed. No knife marks allowed where sanding is required. Surface variations as a result of multiple tool passes treated as turned surfaces above. Glue and filler, if used, must be inconspicuous and sanded as smoothly as the surrounding surface. Sanding before final stain and/or finish should be a consistent grit and scratch pattern, as it influences blend of color and sheen between components. Top Flat Surfaces are those which which can be sanded with a drum or wide belt sander. Turnings are customarily sanded on the lathe, and will exhibit cross scratches.

Before finishing, all exposed portions of architectural woodwork shall have handling marks or effects of exposure to humidity or moisture removed by a thorough uniform final sanding. The sanded surface shall then be cleaned and dust free, prior to proceeding with the first step in the finishing process. Veneer sand-through, with veneer sanded to the point where cross banding or core is visible, and/or core telegraphing (variation from a true plane in excess of 0.25 mm [0.010"] in any 76 mm [3"] span) is not allowed in any Grade.

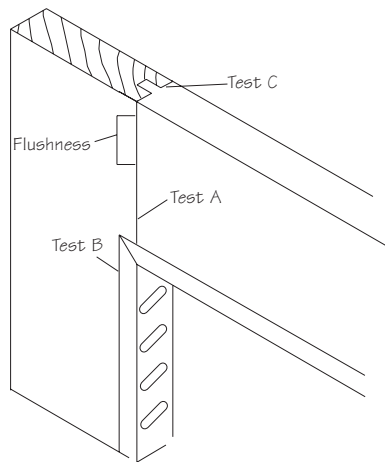
1200-T-6

Tightness and Flushness of Plant Assembled Joints

(NOTE: See illustration following table for test locations.)

Plant Assembled Joint Table	Premium		Custom		Economy	
	Interior	Exterior	Interior	Exterior	Interior	Exterior
Maximum gap: Test A	0.4 mm [.015"] wide by 20% of joint length	0.6 mm [.025"] wide by 30% of joint length	0.6 mm [.025"] wide by 20% of joint length	1.3 mm [.050"] wide by 30% of joint length	1.3 mm [.050"] wide by 20% of joint length	1.9 mm [.075"] wide by 30% of joint length
Maximum gap: Test B	0.4 mm [.015"] x 76 mm [3"], and no gap may occur within 1829 mm [72"] of a similar gap	0.6 mm [.025"] x 152 mm [6"], and no gap may occur within 762 mm [30"] of a similar gap	0.6 mm [.025"] x 152 mm [6"], and no gap may occur within 1524 mm [60"] of a similar gap	1.3 mm [.050"] x 203 mm [8"], and no gap may occur within 660 mm [26"] of a similar gap	1.3 mm [.050"] x 203 mm [8"], and no gap may occur within 1219 mm [48"] of a similar gap	1.9 mm [.075"] x 254 mm [10"], and no gap may occur within 610 mm [24"] of a similar gap
Maximum gap: Test C	0.4 mm [.015"]	0.6 mm [.025"]	0.6 mm [.025"]	1.3 mm [.050"]	1.3 mm [.050"]	1.9 mm [.075"]
Maximum gap between fixed components shall be tested at points designed to join; where members connect or touch.						
Flushness Variation	0.03 mm [.001"]	0.4 mm [.015"]	0.1 mm [.005"]	0.6 mm [.025"]	0.6 mm [.025"]	1.3 mm [.050"]

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Test Locations - Figure 1200-03

1200-T-7

Selection for Grain and Color

Plant Assemblies

For Transparent finish, adjacent members shall ...

- Premium Grade: ... be well matched for grain and color.
- Custom Grade: ... be compatible for color.
- Economy Grade: ... not be selected.

Visible finger joints not permitted in Premium and Custom Grades. No selection for grain or color is required for Opaque finish in any grade.

Field Assemblies

Selection of adjacent members for compatibility is the responsibility of the installation contractor.



Compliance Criteria

1200-C-1

Tests for Smoothness of Exposed Surfaces

KCPI (Knife Cuts Per Inch) can be determined by holding the surfaced board at an angle to a strong light source and counting the visible ridges per inch, usually perpendicular to the profile.

SANDING can best be checked by sanding a sample piece of the same species with the required grit of abrasive. Observation with a hand lens of the prepared sample and the material in question will offer a comparison of the scratch marks of the abrasive grit. Reasonable assessment of the performance of the finished product will be weighed against absolute compliance with the standard.

1200-C-2

Tightness and Flushness of Plant Assembled Joints

Joint tightness and/or flushness will meet the standard when tested with a feeler gauge at the points indicated in the illustration. Joint length will be measured with a ruler with a minimum division of 1 mm [$1/16$ "] and calculations made accordingly. Reasonable assessment of the performance of the finished product will be weighed against absolute compliance with the standard.



Design Ideas

1200-D

Freedom of Expression

This section is a sample of design ideas. It makes no pretense of being complete. It's here for the reader to use as a starting place. The exercise of personal creativity is the essence of fine architectural woodworking.

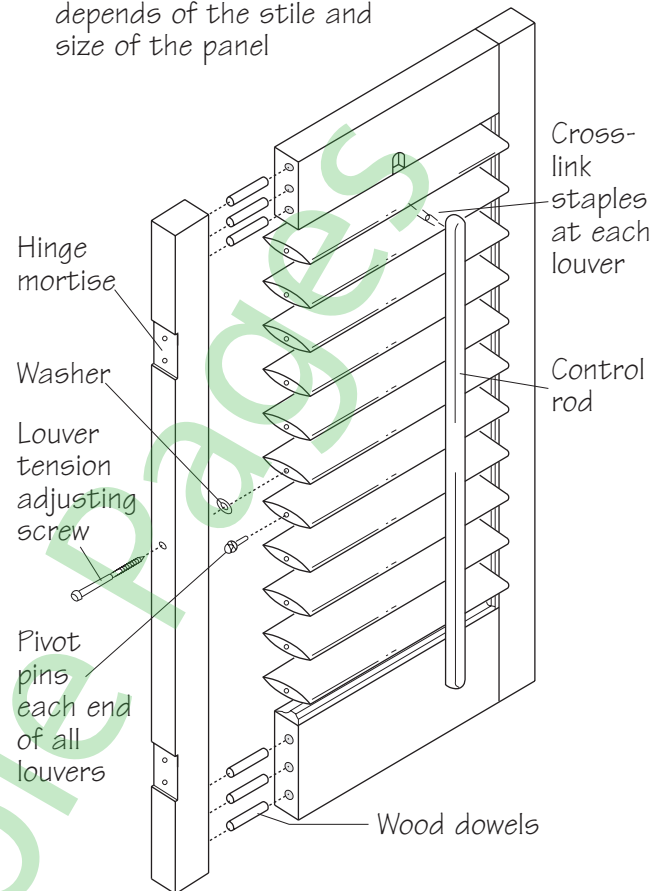
Custom-designed woodwork gives you complete freedom of expression.

- **Design flexibility:** The use of custom-designed woodwork in a building allows the design professional freedom of expression while meeting the functional needs of the client. A custom-designed building is enhanced by the use of custom-designed woodwork.
- **Cost effective:** Custom woodwork does compete favorably with mass-produced millwork, and offers practically limitless variations of design and material. Most woodwork lasts the life of the building - quality counts.
- **Complete adaptability:** By using custom woodwork, the architect or designer can readily conceal plumbing, electrical and other mechanical equipment without compromising the design criteria.
- **No restrictions:** Custom architectural woodwork permits complete freedom of selection of any 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 owner and design professional have the best of both worlds - high quality and freedom of choice.
- **Dimensional flexibility:** 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 handicapped can readily be accommodated by the custom architectural woodwork manufacturer.
- **Quality assurance:** Adherence to the QSI and specifications will provide the design professional a quality product at a competitive price. Use of a qualified AWI/AWMAC member firm will help ensure the woodworker's understanding of the quality level required.

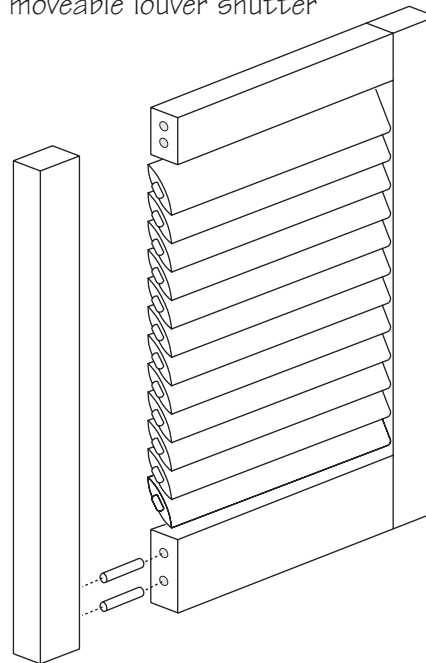
1200-D-1

Dowel Construction Details

Number of dowels (2 or 3)
depends of the stile and
size of the panel



Exploded construction of one type
of moveable louver shutter



Exploded construction of one type
of fixed louver shutter



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With over forty years of evolutionary history behind our new *8th Edition*, it represents the culmination of five years of hard work and thousands of AWI Member volunteer's hours with input and support from our related industry association partners. Our sincere thanks go to those volunteers and organizations that made the *8th Edition* possible; without their dedication it would not be a reality.

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Thanks from your AWI Team,

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