

AWI Standards

Finish Carpentry/Installation

ANSI/AWI 0620-2018



AWI ARCHITECTURAL
WOODWORK
INSTITUTE

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American National Standard

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Foreword

(This foreword is not a part of American National Standard AWI 0620-2018 - Finish Carpentry/Installation)

The ANSI/AWI 0620 - Finish Carpentry/Installation Standard is intended to provide guidelines for the installation of architectural woodwork and related interior products.

This standard encompasses a variety of architectural woodwork applications, including wall and ceiling surfaces, architectural casework, standing and running trim, and passage doors. This standard establishes structural and aesthetic tolerances for each of the aforementioned applications, ensuring that the final product is of the utmost quality with regards to visual appeal and structural integrity.

This standard is intended for use by individuals and organizations from all aspects of the architectural woodwork industry, including architects, design professionals, manufacturer/suppliers, contractors, installers, and end users. Individuals within the architectural woodwork industry will use this standard to maintain a high degree of control over the aesthetic quality and the structural integrity of their work, ensuring that potential differentiations in the workmanship and implementation of architectural woodwork projects are made uniform.

The requirements contained within this standard are derived from AWI's Architectural Woodwork Standards that the organization has been publishing in various formats since its inception in 1953. Each requirement has been thoroughly vetted by a committee of leading volunteer professionals in the architectural woodwork industry to ensure that the content is up-to-date and relevant to the current industry requirements.

Effective March 15, 2019, this standard succeeds, replaces, and supplants the Installation Sections of the Architectural Woodwork Standards, Ed. 2 (2014) as the most current version of the AWI Standard for Finish Carpentry/Installation.

Suggestions for the improvement of this standard will be welcome. Suggestions should be sent to:

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This standard was processed and approved for submittal to ANSI by Accredited Standards Committee on AWI 0620 Finish Carpentry/Installation. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the AWI 0620 Finish Carpentry/Installation Committee had the following members:

Organization Represented	Name of Representative
Architectural Woodwork Institute (AWI)	Ashley Goodin
AWI Quality Certification Corporation (QCC)	Greg Parham
Leonard Peterson & Company, Inc.	Randy Jensen, Committee Chair
Madison Area Technical College	Patrick Molzahn
R&M Group Architects	William Munyan
TMI Systems Corporation	Cory Bittner

The following organizations, recognized as having an interest in the standardization of Finish Carpentry/Installation, were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

Madison Area Technical College	LG Hausys America, Inc.
Kitchen Cabinet Manufacturers Association	Elkwood Installation Services
Stairbuilders and Manufacturers Association	ISEC
AWI QCP	GT Architecture
Woodwork Institute	AECOM
CPA - Composite Panel Association	J. Peter Jordan
Hardwood Plywood & Veneer Association	Diversified Educational Systems Inc. (DES)
TMI Systems Corporation	WDG Architecture
Holden & Flynn Universal Contractor, Inc.	R&M Group Architects
Pacific Cabinets Inc.	Avitru, LLC
Leonard Peterson & Company, Inc.	HOK
Crown Custom Millwork	

1.0 Purpose

- a) Provide standards and tolerances for the quality and fit of the field installation of Architectural Woodwork and related interior finishes (henceforth referred to as “Product”).

2.0 Scope

- a) This standard addresses the installation of wood trim, paneling, casework, integrated door systems, countertops, and other related interior finishes.

2.1 Included:

- a) Installation of Product as outlined throughout this standard, including labor, tools, equipment, adhesives, fasteners, common external blocking, furring, and hanging devices for the support and attachment of that Product.

2.2 Not Included:

- a) Installation of Product items not specifically identified in itemized scope of work within the contract documents.
- b) Providing and installing electrical related items, light fixtures, network cables, grommets and wire management systems, computer equipment, or mechanical equipment.
- c) Correction of existing jobsite conditions that are required for the installation of the Product.
- d) Structural components, grounds, blocking, strapping, support brackets, or any other element within wall partitions, above finished ceilings, or below finished floors.
- e) All site-applied primers, stains, or other finish coatings for non-factory finished Product.
- f) Filling nail or screw holes in unfinished or primed Product.
- g) Caulking to fill voids between Product and pre-existing surfaces.

3.0 Requirements

3.1 General

- a) The following requirements shall govern unless a project's contract documents require otherwise.
- b) Installer shall obtain, review, and comply with manufacturer/supplier's documented instructions for installation. Product shall be securely attached. Contract documents regarding installation method(s) shall supersede manufacturer/supplier's directive unless design professional's approval to deviate is provided in writing.
- c) Installer shall confirm the presence of wood blocking or metal strapping as indicated in contract documents. If not provided, installer shall seek written directives.
- d) It is not the responsibility of the installer to scribe or fit to walls, ceilings, floors, or openings whose plumb, level, flat, straight, or square values exceed tolerances specified in contract documents.
- e) The types of joinery used shall be consistent throughout the project.
- f) Drywall and bugle head screws are not permitted for the installation of Product.
- g) Installation shall comply with the Product's aesthetic grade as specified in the contract documents.
- h) Product shall be installed plumb and level within 3.2 mm [.125"] in 2438 mm [96"].
- i) When factory-finished Product is cut or modified to facilitate installation, the resulting unfinished core shall be sealed prior to installation.
- j) Tolerances listed for gaps and flushness apply to Product as installed.
- k) Unless otherwise indicated within this standard, Product shall be installed free of open joints, visible machine marks, cross sanding, tear-outs, nicks, chips, scratches, and/or natural defects exceeding the quantity and/or size limits defined in the AWI 300 - Materials Standard.
- l) Residual marks, including adhesive and filler residue on exposed or semi-exposed faces, shall be removed.
- m) Areas of installation shall be left broom clean. Debris shall be removed and disposed of in containers provided by the contractor or construction manager.

3.1.1 Measurements

- a) This standard is written with the metric system of measurement followed by the U.S. Customary System of measurement in brackets.
- b) The system of measurement used in the project's original contract documents and architectural drawings will dictate which system of measurement within these standards is used for verification of compliance.
- c) The U.S. Customary measurement is typically a "soft" conversion of the metric measurement. In order to make the metric number more conceptually coherent and consistent, most conversions for less than 152.4 mm [6"] in dimension are "soft" converted to the nearest 0.1 mm. For measurements above 152.4 mm [6"], the "soft" value is converted to the nearest 1 mm.

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- d) Should a conflict be discovered within this standard, the least restrictive requirement shall prevail.
- e) "Inconspicuous," when used in this standard, means not readily visible without careful inspection at a distance of:

Premium	Custom	Economy
610 mm [24"]	1219 mm [48"]	1829 mm [72"]

- f) Gaps and flushness between exposed components shall be tested with a feeler gauge at points where components are required to contact as indicated within this standard.

3.1.2 Special Requirements

- a) When seismic installation is required, such requirements and details shall be clearly stated in the contract documents.

3.1.3 Environmental Conditions

- a) Requirements of this standard are contingent upon maintaining proper interior environmental controls prior to, during, and after installation. See the AWI 200 - Care & Storage Standard.

3.2 Material

- a) Installer shall confirm that all material required for installation is available and properly conditioned to the jobsite per the AWI 200 - Care & Storage Standard.

3.3 Structural

- a) Structural performance, in relation to this standard, refers to properties that provide and maintain the integrity of the Product as installed.

3.3.1 Casework

- a) When installing a manufacturer/supplier's casework, installer shall obtain, review, and comply with all of the applicable manufacturer/supplier's documented instructions for installation. If the manufacturer/supplier does not provide such documented instructions for installation or if such instructions are not applicable to a particular job, installer shall refer to the AWI Casework Installation Guidelines (available for download at <http://www.awinet.org/standards>) and follow the installation method set forth in those guidelines. Installer shall not install a manufacturer/supplier's casework in any manner prohibited by the manufacturer in its instructions.

3.3.2 Wall and Ceiling Surfaces

- a) Fastening shall be concealed wherever possible and should permit movement of panels resulting from changes in relative humidity.
- b) Sufficient fastening is required to prevent panels from becoming dislodged.
- c) For wall panels installed at 2743 mm [108"] or more above finished floor, and at all ceiling panels regardless of height, mechanical fasteners are required. Exposed fasteners shall be kept to a minimum.
- d) Reveal strips set into panel grooves shall be permitted to float without adhesive or fasteners to accommodate expansion and contraction resulting from changes in relative humidity.

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- e) In expansion joints, the minimum reveal gap between panels shall be calculated as length of panel times 0.004 for all cores.
- f) Unless otherwise indicated, joints designed to be caulked shall be approximately 3.2 mm [.125"] in width to permit satisfactory caulk penetration.
- g) Sealants and adhesives shall be applied per manufacturer/supplier's documented instructions.
- h) Product shall be installed over suitable substrates based on the manufacturer/supplier's documented instructions.
- i) Expansion joints shall be provided per manufacturer/supplier's documented instructions.
- j) Inside corners of cut-outs shall be radiused to prevent splitting.

3.3.3 Standing and Running Trim

- a) Outside miters shall be reinforced with mechanical fasteners.
- b) Large, one-piece, or multi-component mouldings shall be installed with back blocking as needed to maintain aesthetic tolerances.
- c) Running joints shall be either mitered or butted. If butted, joint shall be reinforced.

3.3.4 Passage Doors (Within Integrated Door Systems)

- a) Doors shall operate without binding after installation.
- b) Utility or structural strength of doors shall not be impaired in fitting them to the opening, installing hardware, and preparing for glazing, louvers, trim, or other detailing.

3.3.4.1 Passage Doors, Fire Assembly

- a) Fire door assemblies shall be prepared for locks, latches, hinges, remotely operated or monitored hardware, concealed closers, glass lights, vision panels, louvers, astragals, and laminated overlays in conformance to the manufacturer/supplier's label service requirements. Removal of labels is prohibited.
- b) On fire rated doors, in order to preserve the label, doors shall be trimmed per manufacturer/supplier's documented instructions in accordance with NFPA 80. Fire rated doors shall be trimmed on the bottom rail only.
- c) Clearance at the bottom of fire rated doors shall conform to NFPA 80.

3.3.4.2 Passage Doors, Fitting

- a) Fitting for width requires door to be trimmed equally on both sides.
- b) When fitting for height, trimming top or bottom rails shall not exceed 19.1 mm [.750"].

3.3.4.3 Passage Doors, Clearance

- a) For field-fitted doors, clearance between the door and frame components shall be a maximum of 3.2 mm [.125"] on the hinge and lock sides, the top of the door, and between the meeting edges of doors in pairs.

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- b) For non-rated doors, bottom clearance shall be a minimum of 6.4 mm [.250"] and a maximum of 15.9 mm [.625"] measured from the bottom of the door to the highest point of the finished floor or threshold that the door swings over.

3.3.4.4 Passage Doors, Leaf Hinges

- a) Hinges shall be installed per manufacturer/supplier's documented instructions for location and weight of door.

3.3.4.5 Passage Doors, Cut-Outs

- a) Cut-outs shall be sealed and protected from moisture entering the door core.

3.3.5 Countertops

- a) Installer shall confirm that support for countertops meets the requirements shown in shop drawings. If not, the installer shall request direction from manufacturer/supplier.
- b) Product shall be installed per manufacturer/supplier's documented instructions.
- c) Front and leading edges of top shall withstand a 34 kg [75 lb.] lifting force at any point.
- d) Water-resistant caulk shall be used at square butt joints of splashes and return ends, leaving a uniform bead not to exceed 3.2 mm [.125"] in width.

3.3.5.1 Countertops, Decorative Laminate

- a) Sink cut-outs shall not fall within 457 mm [18"] of discretionary installer joints.
- b) Cut-outs shall have a minimum radius of 6.4 mm [.250"] at inside corners.
- c) Cut-outs for sinks in wood-based substrates shall be sealed with at least one coat of color-tinted (for verification) water-resistant sealer or caulk.

3.3.5.2 Countertops, Decorative Laminate, Splashes

- a) Assembly Type 1 - Wall Mount Splash (See [Figure 11](#)): Splash components shall be adhered to the wall, butt joined to the countertop, and sealed with water-resistant caulk between the countertop and splash edge so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint.
- b) Assembly Type 2 - Countertop Mount Splash (See [Figure 12](#)): Splash components shall be butt joined, securely attached with mechanical fasteners to the countertop, and sealed with water-resistant caulk between the countertop and splash edge so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint. Exposed top and ends shall be scribed to the wall. Unsupported scribe span shall not exceed 12.7 mm [.500"] at ends and back walls.

3.3.5.3 Countertops, Solid Surface

- a) Sealants and adhesives shall conform to the manufacturer/supplier's documented instructions.
- b) Expansion joints shall be provided per manufacturer/supplier's documented instructions.
- c) Cut-outs shall have a minimum radius of 6.4 mm [.250"] at inside corners.

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- d) At “L” and “U” configured corners, inside corners shall be smooth and rounded with seams offset a minimum of three times the inside corner radius, unless manufacturer/supplier’s documented instructions indicate otherwise.
- e) Hard seams shall be watertight, gap free, and inconspicuous.
- f) Separate back splashes shall be securely attached to the wall and butt joined to the countertop with water-resistant clear (or color-compatible) caulk or adhesive so as to leave a uniform bead not to exceed 3.2 mm [.125”] in width along the joint.

3.3.5.4 Countertops, Epoxy Resin, Natural / Engineered Stone

- a) Hard seams shall be watertight and gap free.
- b) Separate back splashes shall be securely attached to the wall and butt joined to the countertop with water-resistant clear (or color-compatible) caulk or adhesive so as to leave a uniform bead not to exceed 3.2 mm [.125”] in width along the joint.
- c) Sinks shall be installed per manufacturer/supplier’s documented instructions to produce a secure and sealed joint.

3.3.5.5 Countertops, Solid and Veneered Wood

- a) Separate back splashes shall be securely attached to the wall and butt joined to the countertop.
- b) Sink cut-outs shall not fall within 457 mm [18”] of discretionary installer joints.
- c) Cut-outs for sinks in wood-based substrates shall be sealed with at least one coat of color-tinted (for verification) water-resistant sealer or caulk.

3.3.5.6 Countertops, Solid Phenolic

- a) Separate back splashes shall be securely attached to the wall and butt joined to the countertop with water-resistant clear (or color-compatible) caulk or adhesive so as to leave a uniform bead not to exceed 3.2 mm [.125”] in width along the joint.
- b) Sinks shall be installed per manufacturer/supplier’s documented instructions to produce a secure and sealed joint.

3.4 Aesthetic

- a) Aesthetic performance, in relation to this standard, refers to and is an evaluation of exposed and semi-exposed surfaces following installation.
- b) The three levels of aesthetic grades are Premium, Custom, and Economy:

Premium Grade	Custom Grade	Economy Grade
The aesthetic grade defining the highest degree of control over materials, workmanship, and installation.	The aesthetic grade defining a high degree of control over materials, workmanship, and installation.	The aesthetic grade defining the minimum degree of control over materials, workmanship, and installation.

- c) If this standard is referenced within the contract documents, and no aesthetic grade is specified, installation shall be executed per custom grade requirements.

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- d) Hardware shall be installed per manufacturer/supplier's documented instructions and without tear-out of surrounding material. All hardware shall be installed using the furnished fasteners and fastener provisions. When fastener provision is countersunk, fasteners shall be countersunk.
- e) All hardware shall be adjusted for smooth operation within the manufacturer/supplier's documented instructions.
- f) Fastener holes in pre-finished Product shall be filled by the installer with matching filler furnished by the manufacturer/supplier, except at semi-exposed surfaces.
- g) Repairs shall be inconspicuous.

3.4.1 General Tolerances

3.4.1.1 Gaps at Field Joints

- a) See [Figure 6-I](#), [Figure 30-I](#), [Figure 51-I](#), [Figure 52-I](#), [Figure 53-I](#).
- b) Gaps not exceeding the widths indicated 3.4.1.1 Gaps at Field Joints shall be permitted if filled with color compatible material.
- c) Wood to wood at flat and shaped surfaces shall not exceed:

Premium	Custom	Economy
.4 mm [.016"] in width	.8 mm [.031"]	1.2 mm [.047"]

- d) Wood to non-wood at flat and shaped surfaces shall not exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.6 mm [.063"]	2.4 mm [.094"]

- e) Non-wood to non-wood at flat surfaces shall not exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.6 mm [.063"]	2.4 mm [.094"]

- f) Non-wood to non-wood at shaped surfaces shall not exceed:

Premium	Custom	Economy
1.6 mm [.063"]	2.4 mm [.094"]	3.2 mm [.125"]

3.4.1.2 Flushness Variations at Field Joints

- a) See [Figure 7-J](#), [Figure 30-J](#), [Figure 51-J](#), [Figure 52-J](#), [Figure 53-J](#).
- b) Wood to wood at flat surfaces shall not exceed:

Premium	Custom	Economy
.4 mm [.016"]	.8 mm [.031"]	1.2 mm [.047"]

- c) Wood to wood at shaped surfaces shall not exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

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- d) Wood to non-wood at flat and shaped surfaces shall not exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

- e) Non-wood to non-wood at flat surfaces shall not exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

- f) Non-wood to non-wood at shaped surfaces shall not exceed:

Premium	Custom	Economy
1.2 mm [.047"]	1.6 mm [.063"]	3.2 mm [.125"]

3.4.1.3 Transparent Finished Product

- a) Wood veneer to wood veneer shall be installed:

Premium	Custom	Economy
Well-matched for color and grain	Compatible for color and grain	Without consideration of color and grain

- b) Wood veneer to solid stock shall be installed:

Premium	Custom	Economy
Well-matched for grain and compatible for color	Compatible for color and grain	Without consideration of color and grain

- c) Solid stock to solid stock shall be installed:

Premium	Custom	Economy
Well-matched for color and grain	Compatible for color and grain	Without consideration of color and grain

3.4.2 Casework

- a) Adjacent cabinets shall be installed so that the gaps between cabinets do not exceed the gap tolerances listed in **3.4.1.1 Gaps at Field Joints**.
- b) Adjacent cabinet units shall be installed to maintain the flush alignment of the cabinet box edges within the tolerance for flushness listed in **3.4.1.2 Flushness of Field Joints**.
- c) Reveals between the edges of doors and drawer fronts and finished ends (See [Figure 43](#), [Figure 44](#), [Figure 45](#), [Figure 46](#)) shall be uniform conforming to manufacturer/supplier's documented instructions. In the absence of manufacturer/supplier's documented instructions, installer shall follow the clearances and tolerances set forth within **3.4.2 Casework**.
- d) For fasteners through exposed interior surfaces, cover caps of compatible color to cabinet interior finish are:

Premium	Custom	Economy
Required	Required	Not required

- e) Exposed fasteners at exposed exterior surfaces, except at access panels, are not permitted.

3.4.2.1 Edge and Face Alignment

- a) Edge alignment of doors, drawer fronts, and false fronts (See [Figure 30-N](#)) in both the vertical and horizontal plane, not to exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

- b) Doors, drawer fronts, and false fronts shall be on the same plane as one another (See [Figure 54-J](#)), not to exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.6 mm [.063"]	3.2 mm [.125"]

3.4.2.2 Maximum Uniform Gap Variance, Reveal Overlay Frameless

- a) In reveal overlay frameless construction, the maximum uniform reveal (See [Figure 43](#)) within a cabinet elevation, between any edge of a door and/or drawer and another door and/or drawer or finished end, and between doors hung in pairs, shall be as specified in contract documents. If not specified, the following conditions shall apply:

- "X" shall be 3.2 mm [.125"], subject to a maximum uniform variance of:

Premium	Custom	Economy
+/- .8 mm [.031"]	+/- 1.6 mm [.063"]	+/- 2.4 mm [.094"]

- "Y" shall be determined by the hinge overlay.
- "Z" varies 3.2 mm [.125"] to 6.4 mm [.250"] and shall be consistent across elevations. However, for laboratory countertops, reveal at "Z" may be as much as 25.4 mm [1"] to permit attachment of laboratory equipment.

3.4.2.3 Maximum Uniform Gap Variance, Flush Overlay Frameless

- a) In flush overlay frameless construction, the maximum uniform reveal (See [Figure 44](#)) within a cabinet elevation, between any edge of a door and/or drawer and another door and/or drawer or finished end, and between doors hung in pairs, shall be as specified in contract documents. If not specified, the following conditions shall apply:

- "X" shall not exceed 3.2 mm [.125"].
- "Y" shall not exceed 1.6 mm [.063"].
- "X" and "Y" are subject to a maximum uniform variance of:

Premium	Custom	Economy
+/- .8 mm [.031"]	+/- 1.6 mm [.063"]	+/- 2.4 mm [.094"]

- "Z" varies from 3.2 mm [.125"] to 6.4 mm [.250"] and shall be consistent across elevations. However, for laboratory countertops, reveal at "Z" may be as much as 25.4 mm [1"] to permit attachment of laboratory equipment.

3.4.2.4 Maximum Uniform Gap Variance, Reveal Overlay Face Frame

- a) In reveal overlay face frame construction, the maximum uniform reveal (See [Figure 45](#)) within a cabinet elevation, between any edge of a door and/or drawer and another door and/or drawer or cabinet component, and between doors hung in pairs, shall be as specified in contract documents. If not specified, the following conditions shall apply:

- “X” shall not exceed 3.2 mm [.125”], subject to a maximum uniform variance of:

Premium	Custom	Economy
+/- .8 mm [.031”]	+/- 1.6 mm [.063”]	+/- 2.4 mm [.094”]

- “Y” shall be as specified, indicated, or agreed.
- “Z” varies from 6.4 mm [.250”] to 25.4 mm [1”] and shall be consistent across elevations.

3.4.2.5 Maximum Uniform Gap Variance, Inset Face Frame

- a) For inset face frame construction, the maximum uniform reveal (See [Figure 46](#)) within a cabinet elevation, between any edge of a door and/or drawer and another door and/or drawer or cabinet component, and between doors hung in pairs, the following conditions shall apply:

- “X” shall not exceed 3.2 mm [.125”], subject to a maximum uniform variance of:

Premium	Custom	Economy
+/- .8 mm [.031”]	+/- 1.6 mm [.063”]	+/- 2.4 mm [.094”]

- “Y” and “Z” shall be as specified, indicated or agreed.

3.4.2.6 Flatness and Warp

- a) Flatness and warp of cabinet doors (See [Figure 5-E](#)) shall not exceed the grade tolerances indicated below in the diagonal or width and/or length as a lineal ratio.
- b) Tolerance shall not exceed the following per lineal 305 mm [12”]:

Premium	Custom	Economy
.8 mm [.031”]	1.2 mm [.047”]	1.6 mm [.063”]

- c) Flatness and warp tolerances of cabinet doors shall not exceed a maximum of 6.4 mm [.250”] in any single door.

3.4.2.7 Scribes, Fillers, and Closures

- a) Casework shall be scribed to finished walls and/or ceiling using integral scribes, scribe fillers, or scribe moulding at voids between cabinets and adjacent walls or ceiling.
- b) Fillers at inside corners where two elevations of casework meet shall be equal in width and not wider than 76.2 mm [3”], unless required for hardware clearance during operation. For transparent finished material, the selection of material at

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exposed surfaces shall meet requirements for color and grain as outlined in **3.4.1.3 Transparent Finished Product.**

- c) Scribe fillers (See [Figure 8](#)), scribe moulding, (See [Figure 9](#)) and scribe allowance (See [Figure 10](#)) shall be:

Premium	Custom	Economy
Scribe moulding not permitted	Scribe fillers or moulding permitted	Not required
	Scribe moulding ends at flat surfaces shall be butt joined	
	Scribe moulding at corners shall be mitered or coped	
	Open ends of scribe moulding shall be beveled	
Maximum installed width of scribe fillers shall be 50.8 mm [2"]	Maximum installed width of scribe fillers or moulding shall be 76.2 mm [3"]	
Exposed ends shall be banded	Exposed ends shall be banded	
Color compatible caulk permitted (not to exceed 3.2 mm [.125"])	Color compatible caulk permitted (not to exceed 3.2 mm [.125"])	

- d) Scribes may be set flush with abutting surface or set back a maximum of 3.2 mm [.125"] subject to a maximum variance of +/- .8 mm [.031"]. Scribe joinery shall be consistent across elevations.
- e) Joints are not permitted in material less than 2438 mm [96"].
- f) Fillers and exposed surfaces of closure panels shall match exposed surfaces in color, texture, and pattern.
- g) Permissible gap width between wall and cabinet at back bottom edge of wall-hung cabinet:

Premium	Custom	Economy
Less than 6.4 mm [.250"] (Scribe moulding permitted)	Less than 6.4 mm [.250"] (Scribe moulding permitted)	Less than 12.7 mm [.500"]

- h) Closure panels shall be provided to cover concealed, semi-exposed, and exposed voids on tall and wall cabinets, including angle turns at the tops of tall and wall cabinets and the bottoms of wall cabinets. Closure panels shall not create a visible edge and shall be securely attached (See [Figure 41](#) and [Figure 42](#)).

3.4.3 Wall and Ceiling Surfaces

- a) Flatness and warp tolerances of installed and removable sheet products (See [Figure 5-E](#)) shall not exceed grade tolerances listed below in the diagonal or width and/or length as a lineal ratio:

Premium	Custom	Economy
.7 mm [.028"] per 305 mm [12"] or portion thereof	1 mm [.039"] per 305 mm [12"] or portion thereof	1.3 mm [.051"] per 305 mm [12"] or portion thereof

- b) Example: A panel with dimensions of 813 mm [32"] x 1219 mm [48"], as illustrated (See [Figure 5-E](#)) will have a diagonal measurement of 1465 mm [57.689"]. The maximum distance between the string and the face of the panel will be 4.8 mm [.188"] in custom grade (1465 mm [57.689"] divided by 305 mm [12"] equals 4.8. 4.8 times 1 mm [.039"] equals 4.8 mm [.188"]).

- c) Joints between panels shall be:

Premium	Custom	Economy
Mitered at outside corners as prepared by manufacturer	Mitered at outside corners as prepared by manufacturer	Outside corners at the option of the installer
Overlapped at inside corners for flat surfaces and scribed	Overlapped at inside corners for flat surfaces and scribed	Inside corners at the option of the installer
Coped at inside corners for shaped surfaces	Coped at inside corners for shaped surfaces	Inside corners at the option of the installer

- d) Panels shall be installed so that gaps do not exceed the gap tolerances listed in **3.4.1.1 Gaps at Field Joints.**

- Fasteners shall be concealed whenever possible. When exposed fastening is necessary and permitted, fasteners and fastening shall include the use of finish nails, trim screws, staples, or pins. Fasteners with a diameter/width exceeding 4.8 mm [.188"] are not permitted.
- Exposed fasteners shall be inconspicuous.
- Screws are permitted as exposed fasteners at removable panels.

- e) Exposed fasteners shall be countersunk through the exposed material surface, kept to a minimum, and shall be:

Premium	Custom	Economy
Set in quirks and reliefs where possible	Set in quirks and reliefs where possible	Set in quirks and reliefs at the option of the installer

- f) Wall and ceiling surfacing shall be scribed:

Premium	Custom	Economy
At abutting surfaces	At flat abutting surfaces	At the option of the installer

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- g) Reveals at adjoining panels (See [Figure 13-K](#)) shall not exceed a maximum variance of:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

- h) Flushness at adjoining panels (See [Figure 14-L](#)) shall not exceed a maximum variance of:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

3.4.3.1 Wall and Ceiling Surfaces, Veneer

- a) When installed, the end match alignment of veneer between sequenced adjacent panels shall not exceed:

Premium	Custom	Economy
5 mm [.197"]	10 mm [.393"]	No match required

3.4.3.2 Wall and Ceiling Surfaces, Decorative Laminate

- a) Scratches and chip-out shall be inconspicuous.
- b) When provided as sequenced panels by the manufacturer/supplier, end match of patterned/grained panels shall be aligned within:

Premium	Custom	Economy
5 mm [.197"]	10 mm [.393"]	No match required

3.4.3.3 Wall and Ceiling Surfaces, Solid Surface

- a) Scratches and chip-out shall be inconspicuous.
- b) Sealants and adhesives shall be used per manufacturer/supplier's documented instructions.
- c) Field seams shall be:

Premium	Custom	Economy
Seamed with color compatible hard seam adhesive	Caulked with color compatible sealant	Caulked or filled

3.4.3.4 Wall and Ceiling Surfaces, Solid Phenolic

- a) Scratches and chip-out shall be inconspicuous.
- b) Sealants and adhesives shall be used per manufacturer/supplier's documented instructions.

3.4.4 Standing and Running Trim

- a) Outside corners shall be mitered.

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- b) Inside corners shall be:

Premium	Custom	Economy
Coped	Coped	Mitered or butted
Mitered for S4S	Mitered or butted for S4S	

- c) Running joints on multi-component trim shall be staggered a minimum of 610 mm [24"] from joints in adjacent components.

- d) Joinery of standing and running trim requires:

Premium	Custom	Economy
Exposed trimmed ends shall be miter returned	Exposed trimmed ends shall be profiled or miter returned	Exposed trimmed ends at the option of the installer
Multiple joints in running trim shall not be within 1219 mm [48"] of another joint in the run, including corners	Multiple joints in running trim shall not be within 914 mm [36"] of another joint in the run, including corners	Multiple joints in running trim shall not be within 610 mm [24"] of another joint in the run, including corners

- e) Fasteners and fastening include the use of finish nails, trim screws, staples, pins, and/or construction adhesive for inconspicuous fastening. Staples with a crown exceeding 4.8 mm [.188"] are not permitted.

- f) Exposed fasteners shall be inconspicuous.

- g) Exposed fasteners shall be countersunk through the exposed material surface, kept to a minimum, and shall be:

Premium	Custom	Economy
Set in quirks and reliefs where possible	Set in quirks and reliefs where possible	Fastener placement at the option of the installer

- h) Unless otherwise specified by the contract documents, scribing of baseboard to floor is not required.

3.4.5 Passage Doors (Within Integrated Door Systems)

- a) Products with matching requirements shall be installed per manufacturer/supplier's documented instructions.
- b) Doors and their accessories shall be hung plumb and level within 1.6 mm [.063"] of the height and width of the door assembly.
- c) Pairs of doors, when closed, shall be within 1.6 mm [.063"] of flush at the meeting edge.
- d) Trim applied to passage doors in the field shall be installed within the tolerances listed in **3.4.4 Standing and Running Trim**.

3.4.6 Countertops

- a) Countertops shall be installed within +/- 6.4 mm [.250"] of the height specified.

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- b) Horizontal reveal between the lower edge of countertop and the upper edge of the cabinet door or drawer front shall be determined from manufacturer/supplier's documented instructions and be maintained throughout the project.
- c) If detail is not provided, installer shall default to the following: a consistent reveal 6.4 mm [.250"] +/- 3.2 mm [.125"], with the exception of laboratory casework, which shall be 6.4 mm [.250"] to 25.4 mm [1"] and shall be consistent across elevations, except at sink locations.
- d) Countertops shall be scribed to the wall within:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

- e) Field joints shall be tight and flush within the tolerances listed in **3.4.1.1 Gaps at Field Joints** and **3.4.1.2 Flushness of Field Joints**.
- f) Overhang shall be determined by manufacturer/supplier's documented instructions and be consistent. If overhang detail is not provided, installer shall default to the following:
 - Overhang shall be consistent within a minimum of 12.7 mm [.500"] and a maximum of 31.8 mm [1.250"] over the outermost cabinet face and finished end, except at appliance ends.
 - Overhang shall be uniform and parallel with the cabinet within 4.8 mm [.188"] along the entire elevation.
 - At appliance ends, overhang shall be a maximum of 6.4 mm [.250"].
- g) Cut-outs and holes shall be provided for as indicated in the manufacturer/supplier's documented instructions.

3.4.6.1 Countertops, Decorative Laminate

- a) Scratches and chip-out shall be inconspicuous.
- b) Cut-outs for sinks and other locations subject to excessive moisture shall have the edges sealed with tinted, water-resistant sealer or caulk before trim or sink rims are installed.
- c) Assembly Type 1 - Wall Mount Splash (See [Figure 11](#)): In wall mount back and end splash construction, the back and end splash(es) shall be caulked with clear (or color-compatible) caulk to the top countertop so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint, including the vertical joint at the end splash to the back splash.
- d) Assembly Type 2 - Countertop Mount Splash (See [Figure 12](#)): In countertop mount back and end splash construction, exposed top and ends shall be scribed to the adjacent wall surface. Unbacked scribe spans shall not exceed 12.7 mm [.500"]. Splash components shall be caulked with clear (or color-compatible) caulk between the countertop and splash edge so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint.

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- e) Gaps at walls (See [Figure 6-I](#)) for Assembly Type 2 shall not exceed:

Premium	Custom	Economy
.8 mm [.031"]	1.2 mm [.047"]	1.6 mm [.063"]

- f) Overlap at field-applied laminate (See [Figure 23-F](#)) shall not exceed:

Premium	Custom	Economy
.1 mm [.004"] for a maximum length of 25.4 mm [1"] in any 1219 mm [48"] run	.1 mm [.004"] for a maximum length of 25.4 mm [1"] in any 610 mm [24"] run	.2 mm [.008"] for a maximum length of 50.8 mm [2"] in any 305 mm [12"] run

- g) Over-filing of field-applied laminate resulting in removal of color or pattern of face material (See [Figure 25-H](#)) shall be limited to:

Premium	Custom	Economy
.8 mm x 38.1 mm [.031" x 1.5"] and may not occur within 1829 mm [72"] of a similar occurrence	.8 mm x 76.2 mm [.031" x 3"] and may not occur within 1524 mm [60"] of a similar occurrence	2.4 mm x 152.4 mm [.094" x 6"] and may not occur within 1219 mm [48"] of a similar occurrence

3.4.6.2 Countertops, Solid Surface

- a) When not hard-seamed, back and end splash joints shall be filled with water-resistant clear (or color-compatible) caulk so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint, including the vertical joint at the end splash to the back splash.

3.4.6.3 Countertops, Epoxy Resin, Natural / Engineered Stone

- a) For under-mount sinks, the maximum gap between the countertop edge of the sink and the underside of the countertop shall not exceed 4.8 mm [.188"].
- b) Joints shall be butt joined and filled with a color matched adhesive recommended by the manufacturer/supplier.
- c) Back and end splashes shall be wall mounted and butt joined to the countertop with water-resistant clear (or color-compatible) caulk so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint, including the vertical joint at the end splash to the back splash.

3.4.6.4 Countertops, Solid and Veneered Wood

- a) At miter and butt joints, including back and end splashes, clear water-resistant caulk is required so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint, including the vertical joint at the end splash to the back splash.

3.4.6.5 Countertops, Solid Phenolic

- a) Back and end splashes shall be wall mounted and butt joined to the countertop with water-resistant clear (or color-compatible) caulk so as to leave a uniform bead not to exceed 3.2 mm [.125"] in width along the joint, including the vertical joint at the end splash to the back splash.

4.0 Figures / Illustrations

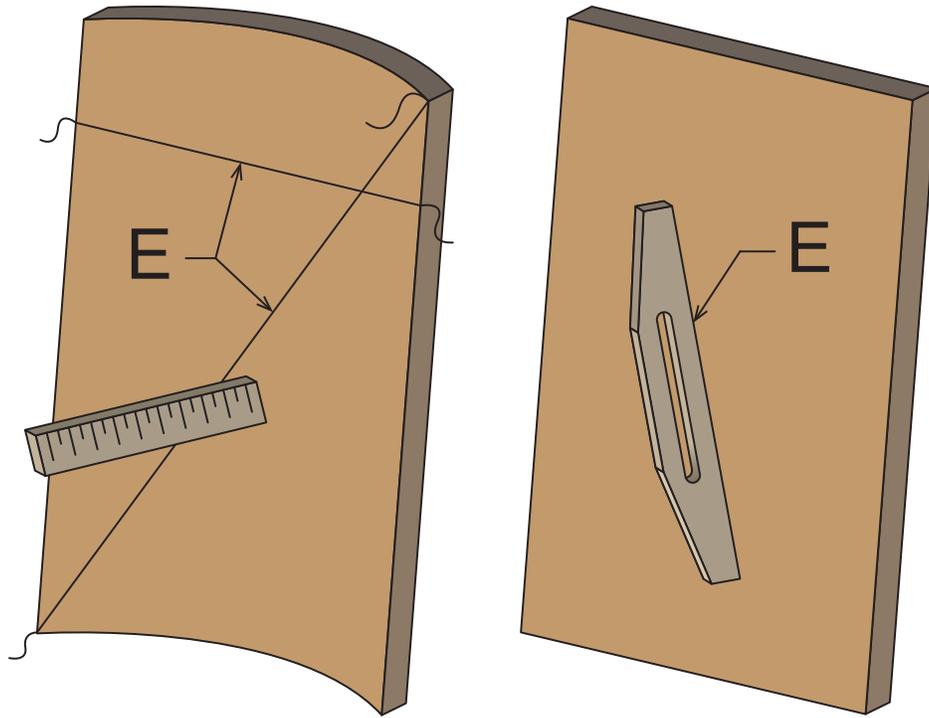


Figure 5 - Compliance Testing Measurement

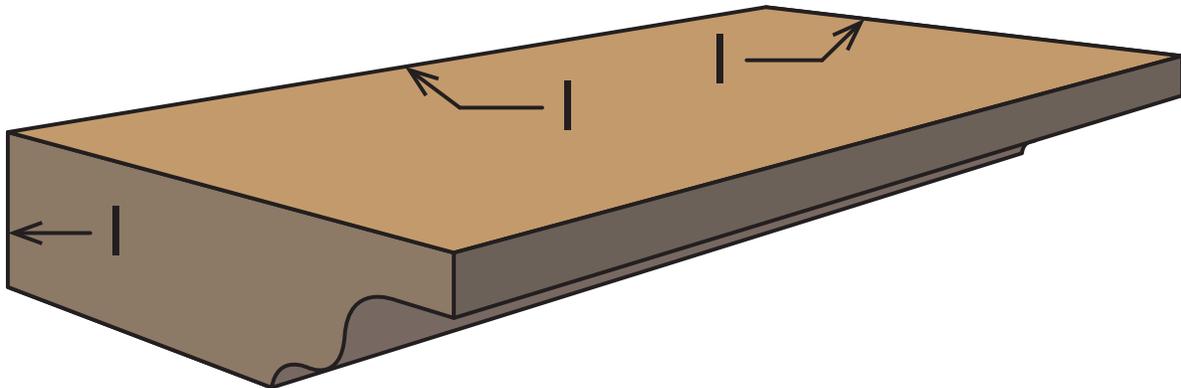


Figure 6 - Gaps at Field Joints

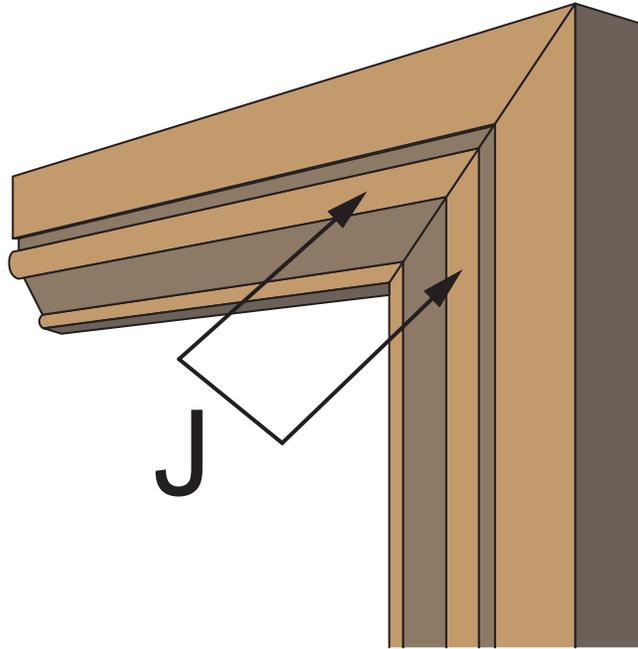


Figure 7 - Flushness of Field Joints

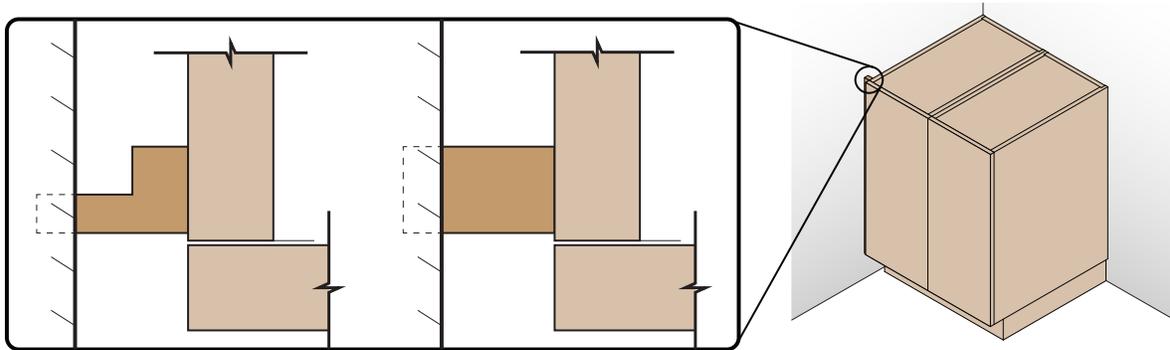


Figure 8 - Scribe Filler

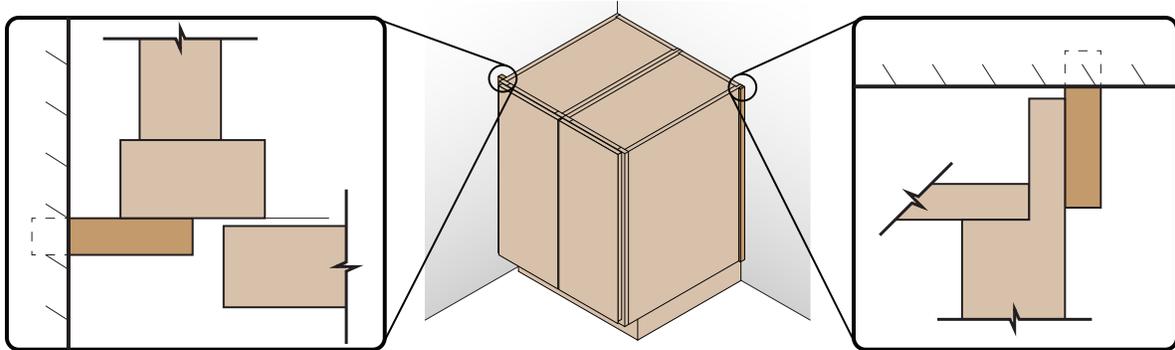


Figure 9 - Scribe Moulding

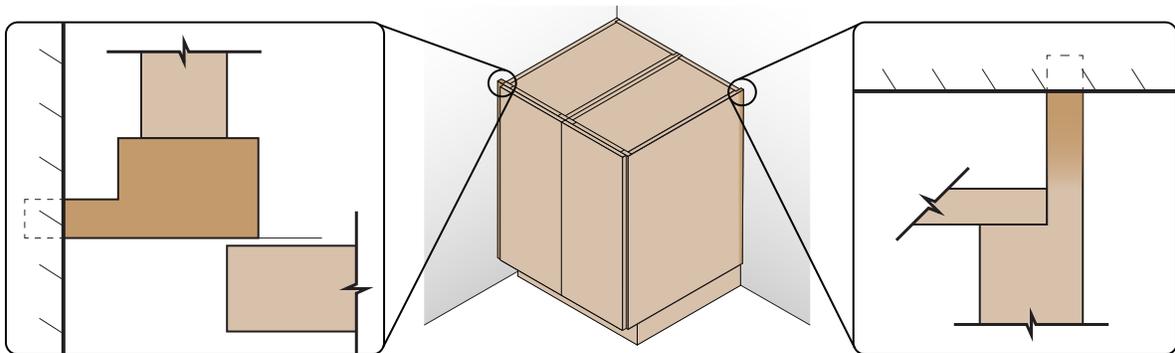


Figure 10 - Scribe Allowance

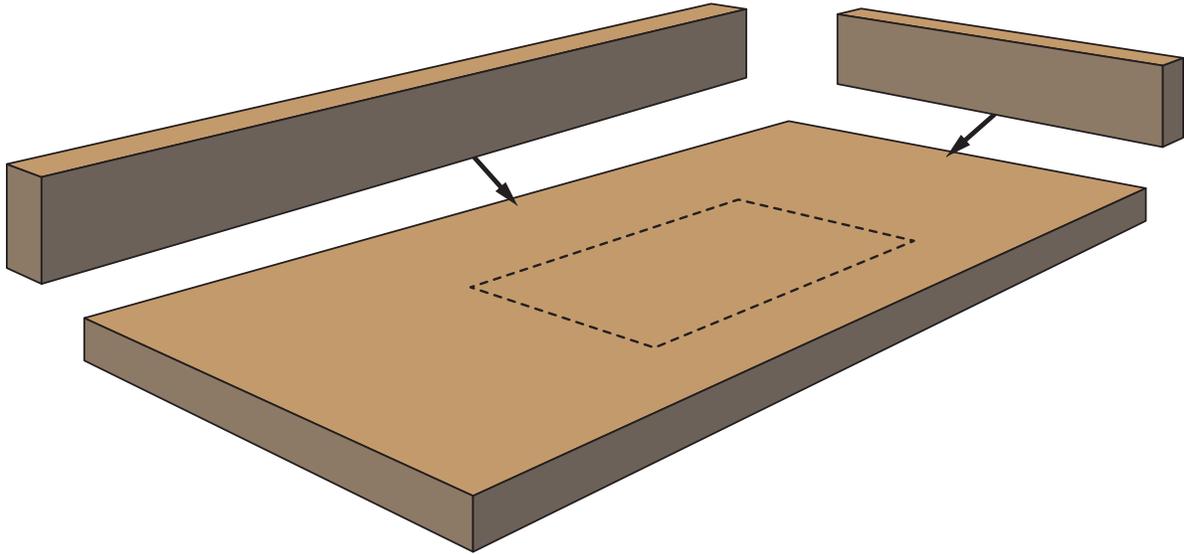


Figure 11 - Wall Mount Splash

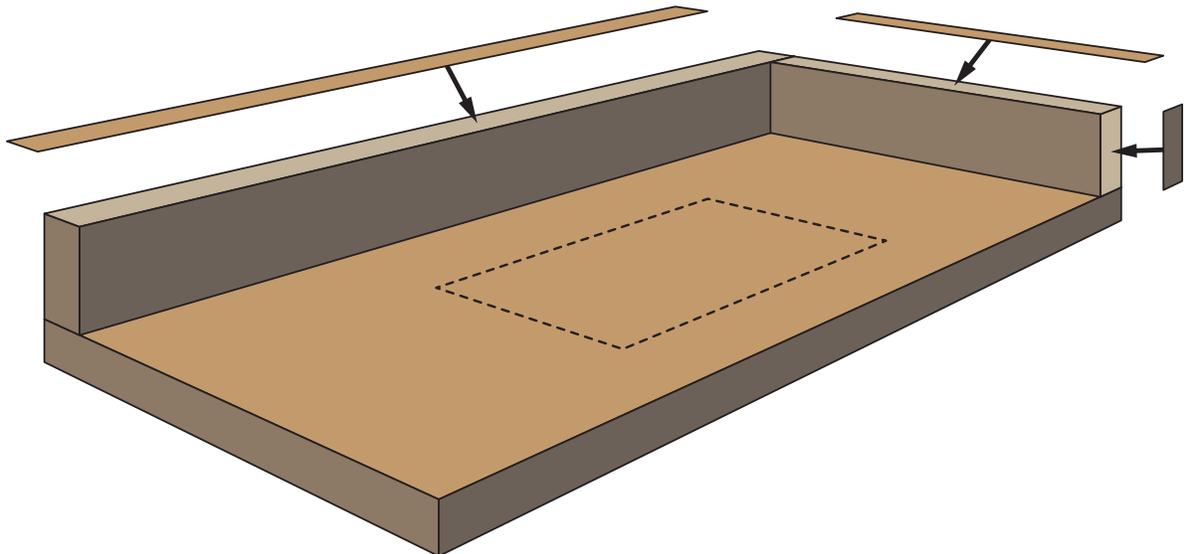


Figure 12 - Countertop Mount Splash

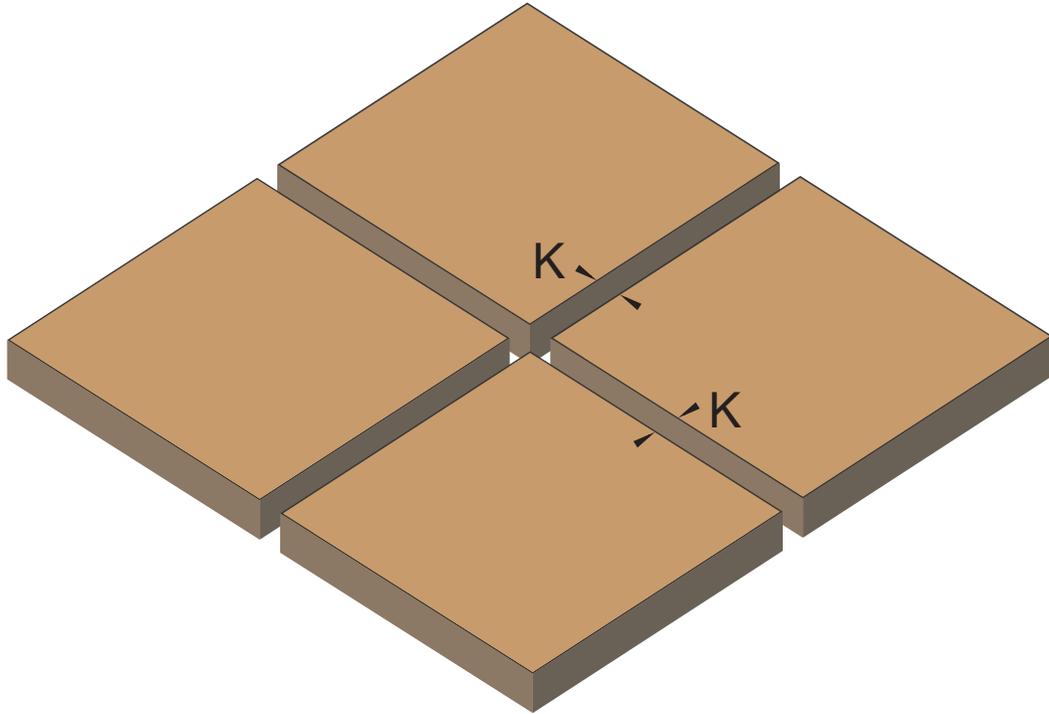


Figure 13 - Panel Reveal

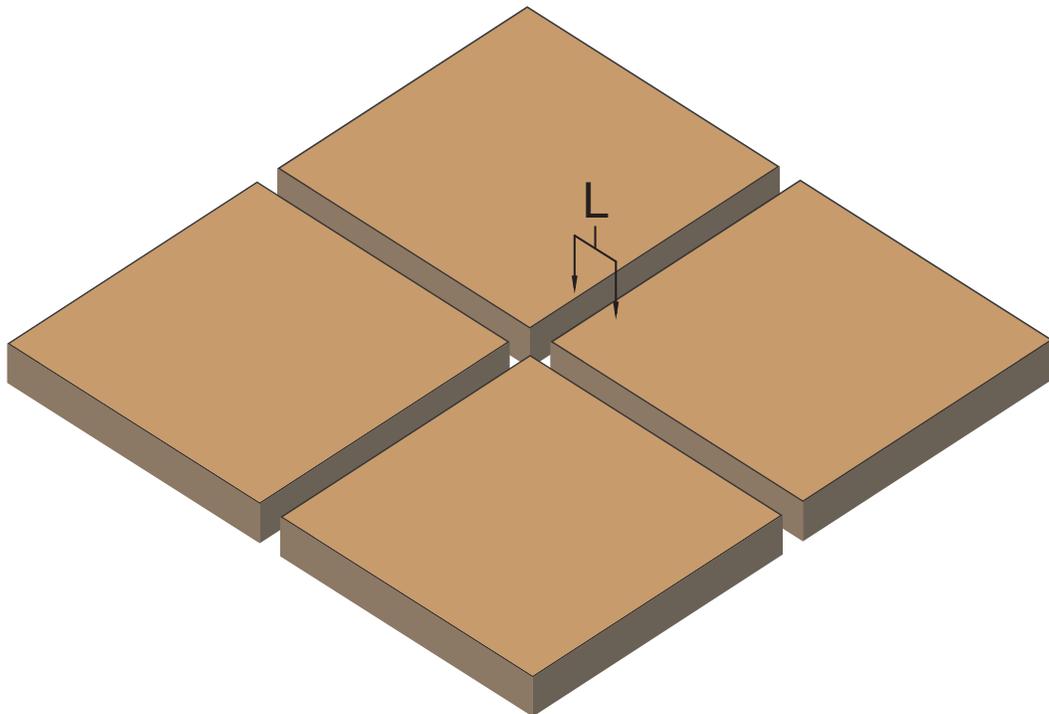


Figure 14 - Panel Flushness

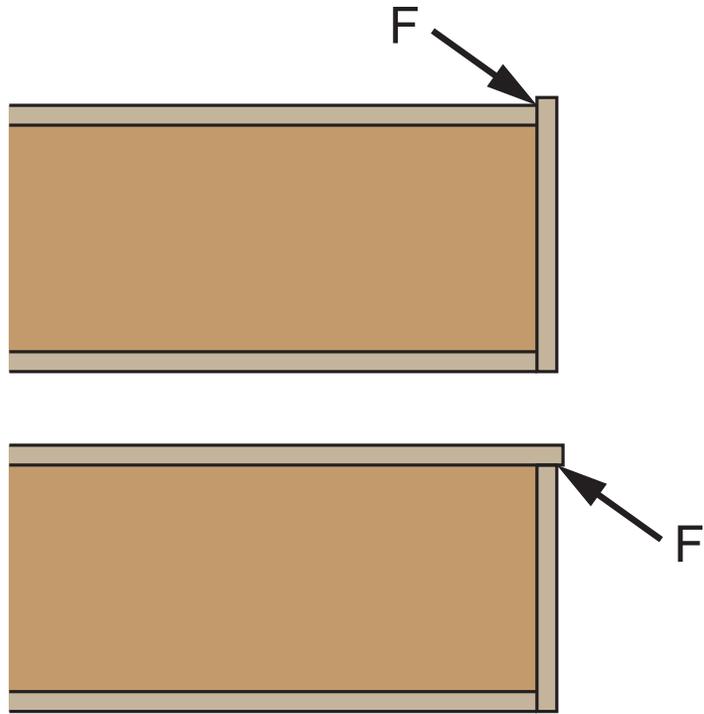


Figure 23 - Overlap

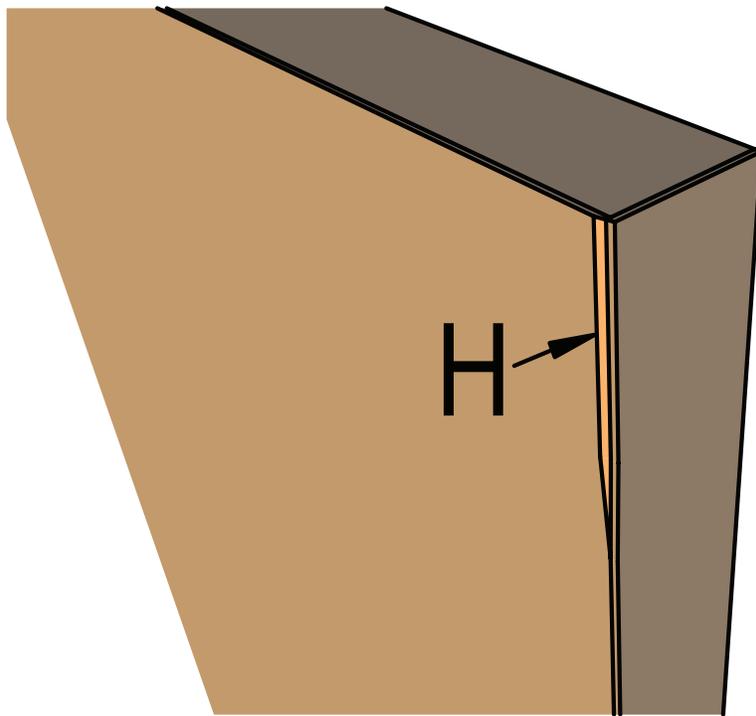


Figure 25 - Over-Filing / Over-Machining

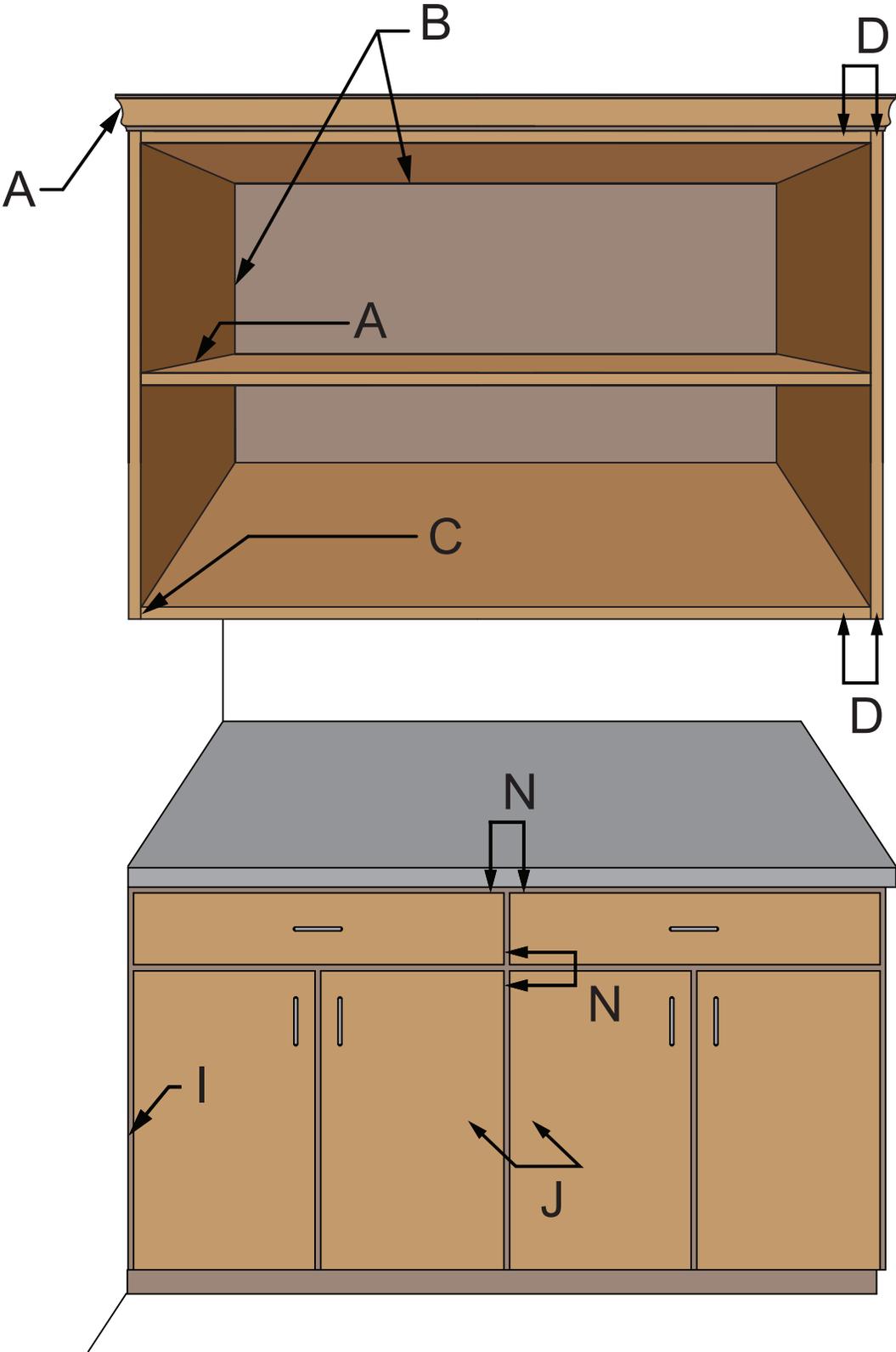


Figure 30 - Gaps and Flushness, Casework

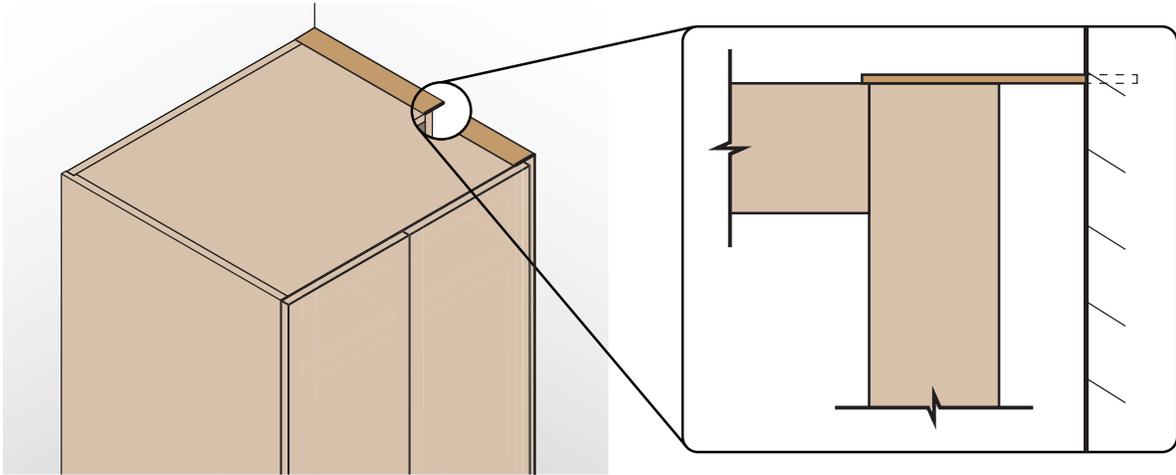


Figure 41 - Closure, Laminate

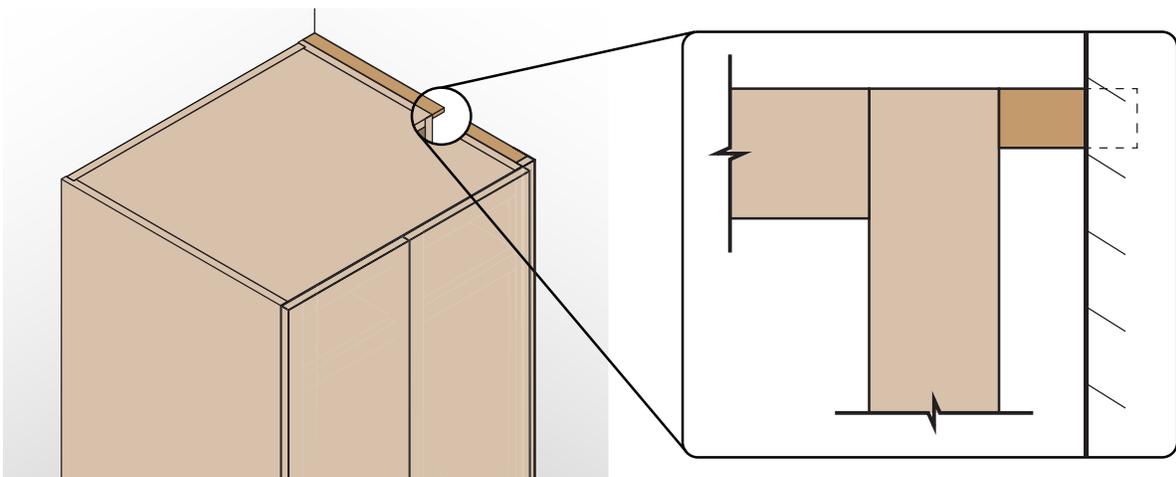


Figure 42 - Closure, Filler

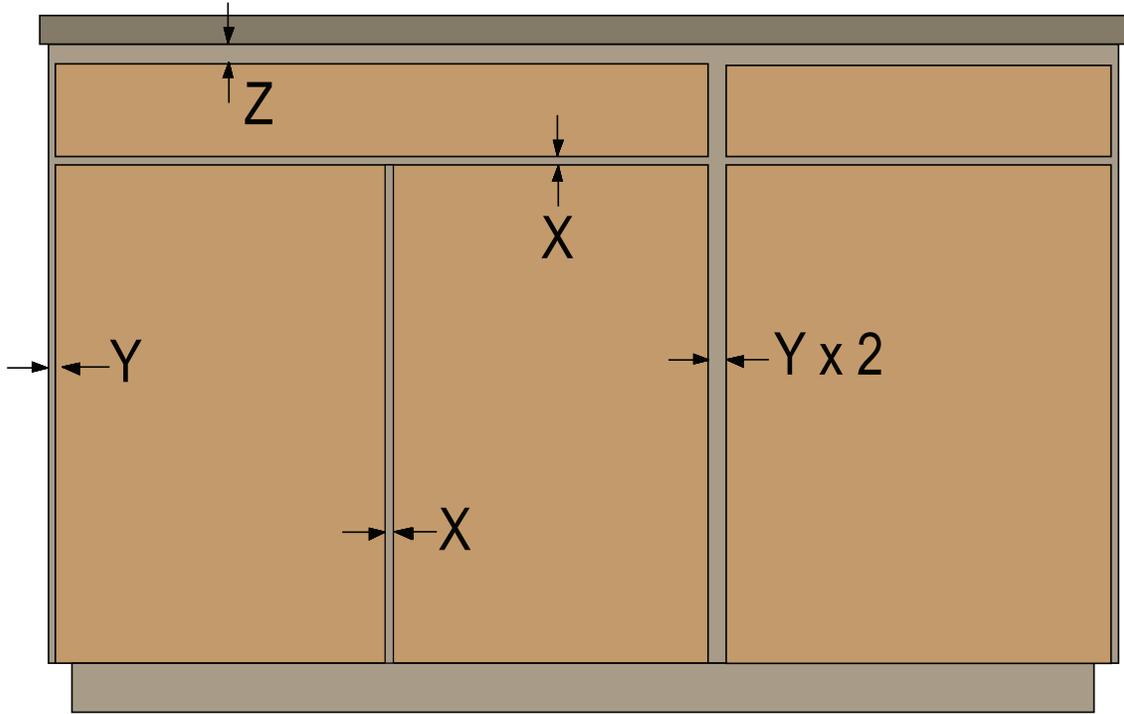


Figure 43 - Gaps, Reveal Overlay Frameless

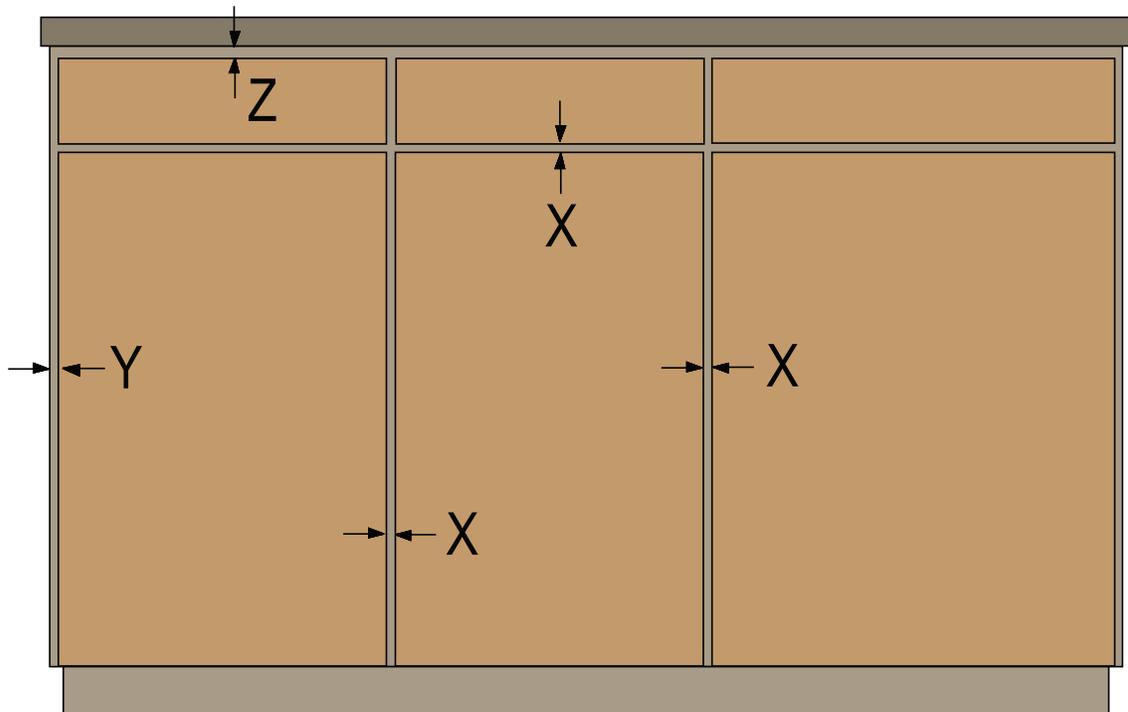


Figure 44 - Gaps, Flush Overlay Frameless

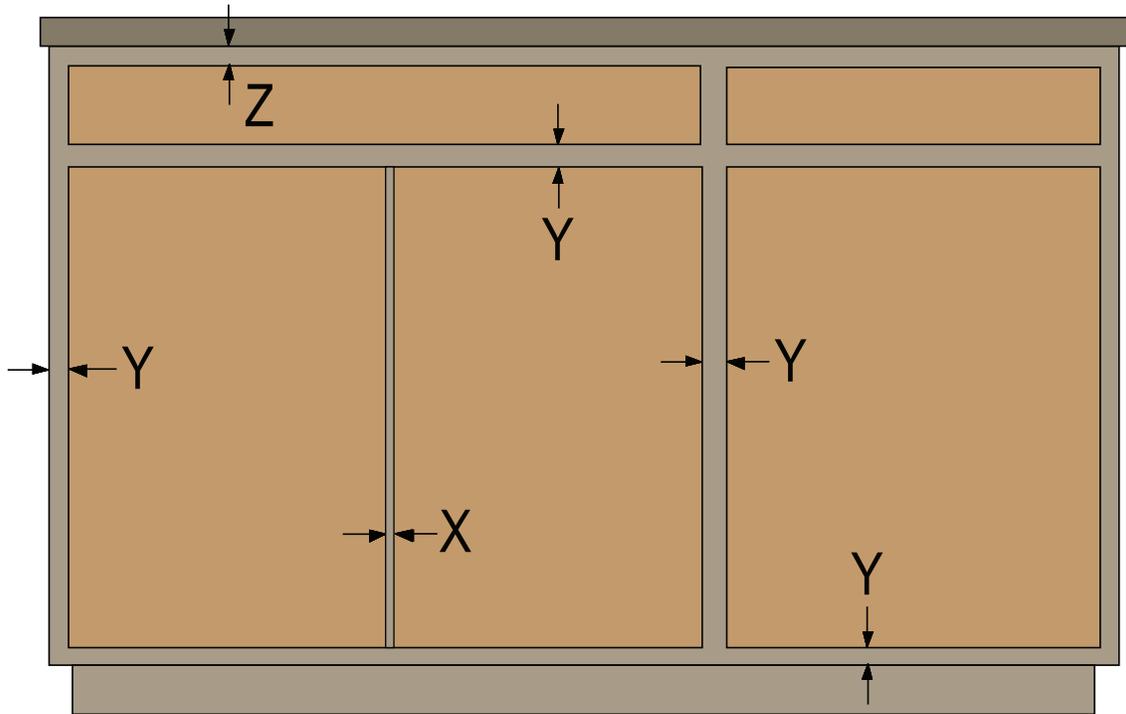


Figure 45 - Gaps, Reveal Overlay Face Frame

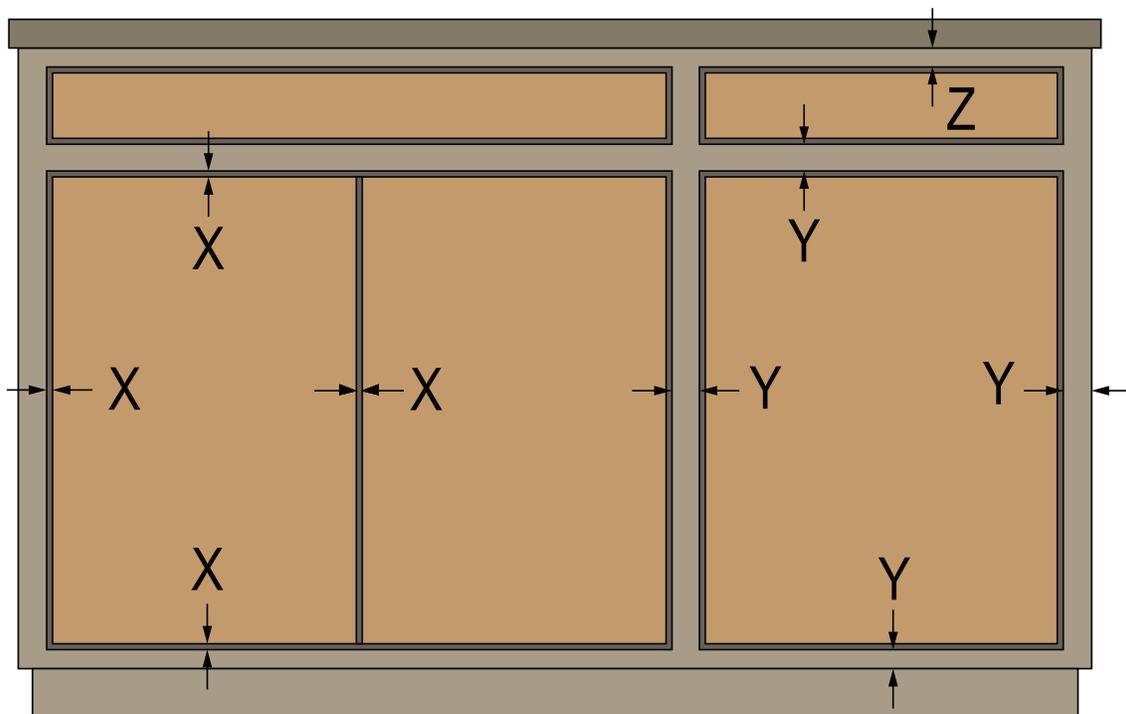


Figure 46 - Gaps, Inset Face Frame

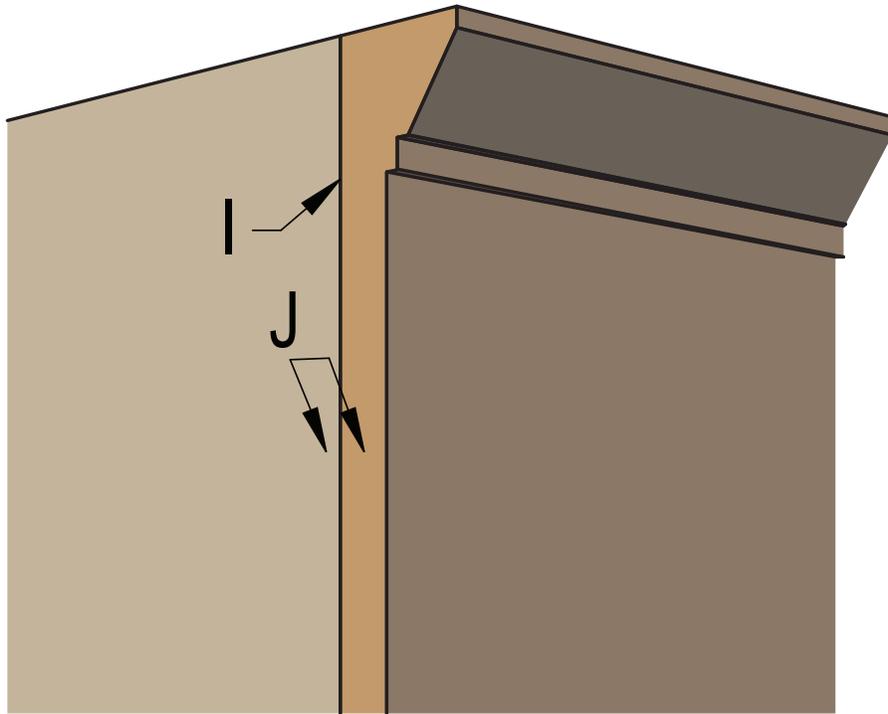


Figure 51 - Gaps and Flushness, Wall and Ceiling Surfaces

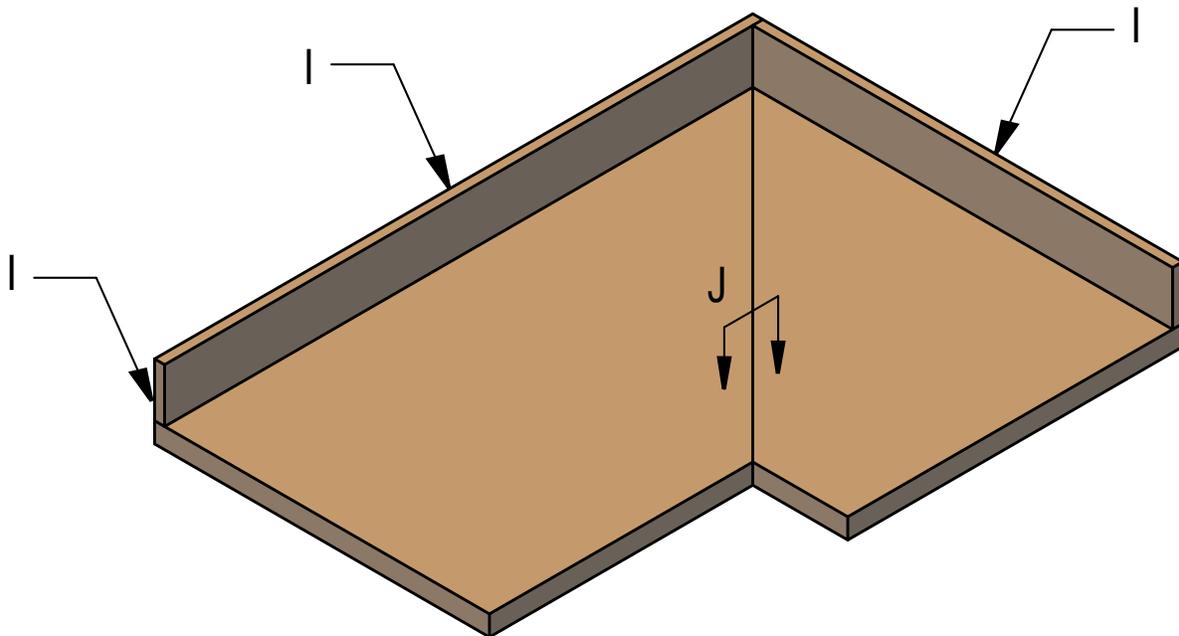


Figure 52 - Gaps and Flushness, Countertops

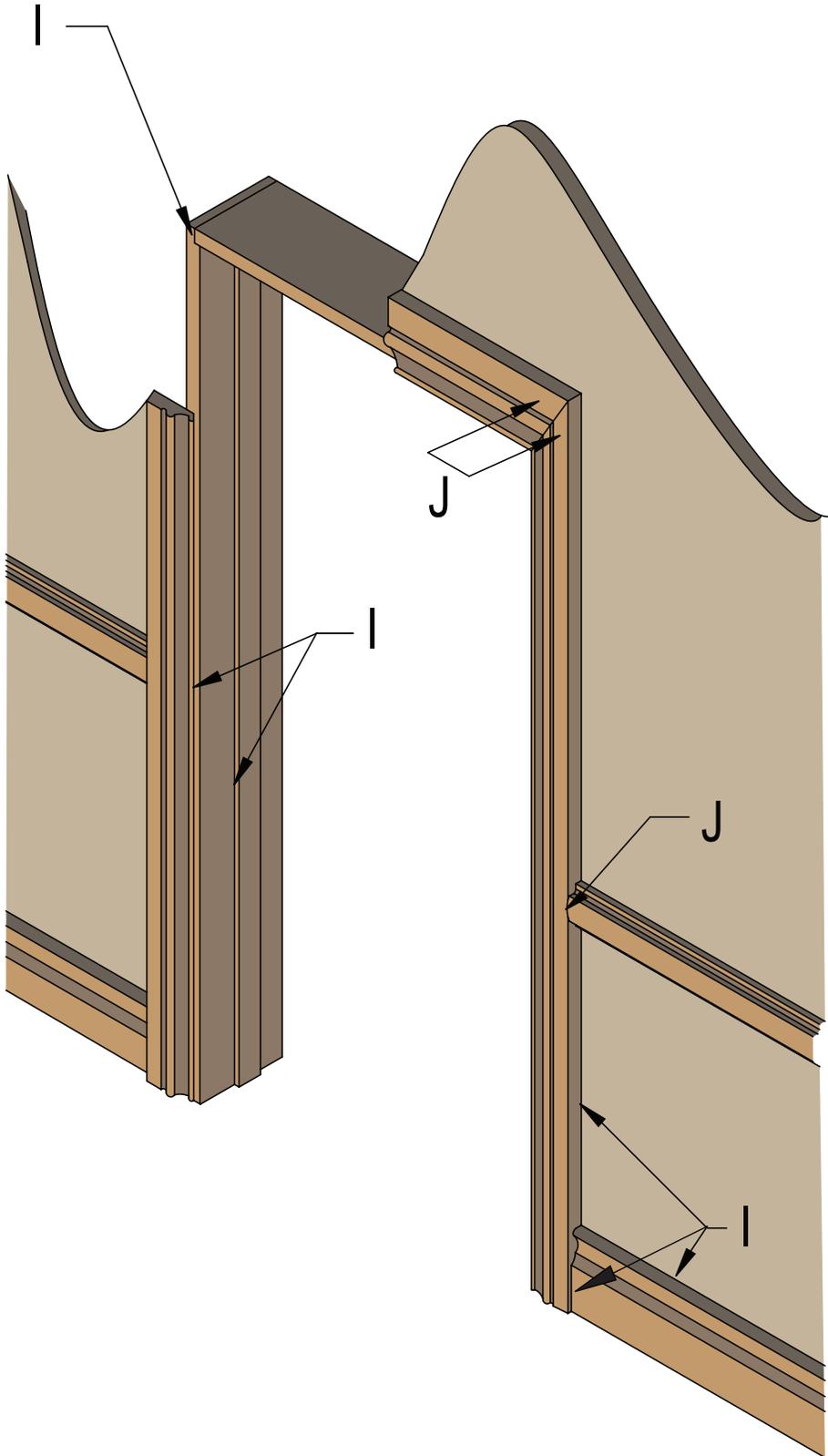


Figure 53 - Gaps and Flushness, Standing and Running Trim

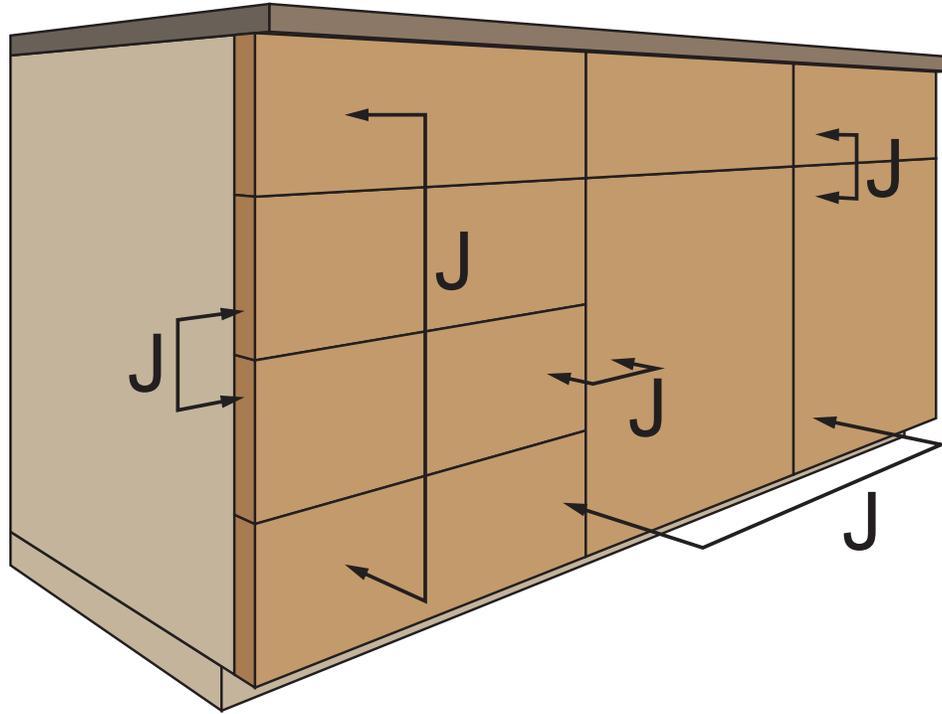


Figure 54 - Flushness, Door and Drawer Front Faces

5.0 Supplemental Information

5.1 Glossary

- a) The Architectural Woodwork Institute Glossary can be found at:
<http://www.awinet.org/standards/glossary>

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