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## 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.

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
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.4 mm [.016"]	.8 mm [.031"]	1.2 mm [.047"]
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c) Wood to wood at shaped surfaces shall not exceed:

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

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
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Well-matched for color and grain	Compatible for color and grain	Without consideration of color and grain
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### 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

#### 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 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

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
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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.
- b) Inside corners shall be:

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

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.
- 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.

e) Gaps at walls (See Figure 6-l) 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.

## 3.3 Structural

Casework  
**Introduction** 

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