

303[®] SIDING MANUFACTURING SPECIFICATIONS

1. Scope

The provisions of this specification represent minimum requirements that plywood panels must meet to qualify for classification as APA 303 Series Specialty Siding.

2. Gluebond

Plywood shall meet the gluebond requirements for Exterior type plywood, as defined in the most recent edition of Product Standard PS 1 for Construction and Industrial Plywood.

3. Veneer Grade and Workmanship – General Requirements

3.1 Veneer grade and workmanship provisions of the most recent edition of Product Standard PS 1 for Construction and Industrial Plywood, C-C grade, Exterior type, apply except as modified by this specification.

Special face grade provisions shall be those listed in Table I. Openings in face veneers used for three- and four-ply panels are limited to splits up to 1/16 inch wide and other openings up to 1/4 by 1/2 inch. Pin knots are tight knots 3/8 inch or less in diameter. Limitations on grade characteristics are based on four by eight-foot panel size. Limits on other sizes vary in proportion.

3.2 Veneer Repairs – Wood

All wood veneer patches shall be neatly made, taper to a point and be placed with grain of the patch parallel to the grain of the face.

3.3 Panel Repairs – Wood

Wood repairs shall be subject to “Glueline Quality Control Procedures for Wood Panel Patches for APA 303 Series Specialty Siding Panels.”

Wood panel repairs shall be placed with grain of the patch parallel to the grain of the face.

3.4 Panel Repairs – Synthetic

Panel repairs shall be made with approved synthetic patching materials in a manner that simulates a natural defect shape.

Multiple synthetic patches shall not exceed 2-1/4 inches in maximum width (as measured in narrow dimension) and the patch shall fall fully within the boundaries of a rectangle four inches wide by seven inches long with side parallel to the panel edge.

3.5 Stain

Stain from glue smears or bleed-through or from manufacturing-related sources such as trademarking ink shall not be permitted.

Stain from synthetic repair overfill shall be limited to that which assumes the shape of the defect being repaired and within 1/2 inch of the defect edge.

3.6 Core Gaps and Laps

Core gaps in veneer used adjacent to faces shall not exceed a maximum width of 3/4 inch. Every effort shall be made to produce closely butted core joints. Laps in plies adjacent to faces are prohibited.

3.7 Decorative Treatment

Face plies must have some form of decorative treatment which may be in the form of overlaying, rough texturing, grooving, embossing, striating, brushing, or scratch sanding. Scratch sanding is surfacing in a standard sander without oscillation using a coarse paper. Smooth sanding is not permitted. Decorative treatment skips are not permitted except as may occur in repair of voids at bottom of grooves. Rough texturing shall be perpendicular to the face grain direction. Faces shall be bonded to the panel with tight side out.

Except where purposely arranged for decorative effect, veneer joints in panel faces shall not exceed two per panel in Special Series 303-OC, and joined pieces shall be reasonably matched for color when used as faces in Special Series 303 and 303-6 and joints shall be parallel to panel edges within 1-1/2 inches.

3.8 Overlays

Overlays shall be approved PS 1 Medium Density Overlays or approved PS 1 Special Overlays that meet Medium Density weatherability and durability acceptance criteria.

4. Species

Species covered by this specification are those listed in PS 1, except other species may be used as given below.

4.1 Panels classified for species group through panel property testing in accordance with PS 1 as permitted

for Decorative grade may be used for 303 Series siding subject to the following condition:

4.1.1 Only species listed in PS 1 shall be used for crossbanding when qualifying for Span Ratings by meeting requirements of Section 7.1 or 7.2.

4.2 Species otherwise not provided for in PS 1 may be used in APA 303 Series siding panels subject to the following conditions:

4.2.1 Species group assignment shall be established in accordance with procedures established for PS 1 species grouping when such group assignments will govern use of the species for crossbanding as covered by this specification.

4.2.2 Panels manufactured with unlisted species for faces shall be identified by the common name for that species and there shall be no reference to PS 1 in the panel trademark.

5. Panel Construction

Panel construction shall conform to Table II:

TABLE II

Finished Panel Nominal Thickness Range (inch)	Minimum Number of Plies	Minimum Number of Layers
Through 3/8	3	3
Over 3/8, through 5/8	4	3
Over 5/8, through 7/8	5	5
Over 7/8	6	5

6. Grooves

Except as specifically permitted below for sloping grooves, the bottom of any groove shall occur within the face or within a ply, the grain of which is parallel to the face veneer.

6.1 The bottom of Vee grooves whose sides slope at an angle of 75° or less from

the plane of the face may occur within a core veneer. Any openings 1/16 inch or more in dimension intersected in the core veneer shall be solidly filled with an approved synthetic patching material.

6.2 Where grooves are wider than 3/8 inch, any voids at the base of grooves shall be solidly filled with an approved synthetic patching material or be patched with wood repairs subject to “Glueline Quality Control Procedures for Wood Panel Patches in APA 303 Series Specialty Siding Panels.”

7. Span Rating

Siding panels shall qualify for Span Ratings by meeting the requirements of Section 7.1 or 7.2.

Alternatively, panels may qualify for Span Ratings by performance testing in accordance with the requirements of Manufacturing and Performance Standard for APA Rated Siding Panels. Additionally, such performance tested panels, except for lap siding, must meet wall racking criteria for sheathing as given in Manufacturing and Performance Standard for APA Rated Sheathing Panels. Thickness at the point of nailing shall be that at the base of grooves at panel edge (if grooved) unless otherwise recommended by the manufacturer, and shall determine test load requirements.

7.1 Siding panels intended for direct application to studs spaced 16 inches o.c. shall conform to the following requirements. Panels meeting the requirements of 7.2.5 also qualify for direct application to studs spaced 24 inches o.c.

7.1.1 Panels shall have an average thickness of not less than 5/16 (0.312) inch in any 16-inch width.

7.1.2 When two crossband layers remain intact, the minimum thickness of crossbanding shall not be less than 1/16-inch Group 1, 2, or 3 species.

7.1.3 When only one crossband layer remains intact, the requirements of Table III shall apply.

7.2 Siding panels intended for direct application to studs spaced 24 inches o.c. shall conform to the minimum requirements of 7.2.1 through 7.2.4 or the special conditions of 7.2.5.

7.2.1 Panels shall be minimum four-ply construction. Four-ply panels shall not exceed 5/8 inch in nominal thickness and texturing shall not extend into the inner layer. Panels of five or more plies shall have at least two crossband layers remaining intact.

7.2.2 Minimum net panel thickness at any point shall be 13/32 (0.406) inch (no minus tolerance).

TABLE III

Item No.	Minimum Net Panel Thickness at Any Point After Face Treatment (no minus tolerance)	No. of Plies in Panel	Min. Species Group of Crossband Remaining Intact	Minimum Thickness of Crossband Remaining Intact
1.	9/32" (.281")	3	1	1/6"
2.	9/32" (.281")	3	2 or 3	3/16"
3.	9/32" (.281")	5	1 or 2	1/9"
4.	9/32" (.281")	5	3 or 4	1/8"
5.	11/32" (.344")	3	1, 2 or 3	1/8"
6.	11/32" (.344")	3	4	1/7"
7.	11/32" (.344")	5	1, 2 or 3	1/10"
8.	11/32" (.344")	5	4	1/9"

TABLE I

APA 303 SIDING GRADES

Siding Series	Special Series 303				Series 303-6		
	Synthetic				Wood	Synthetic	Synthetic/Wood
Patch Type					Wood	Synthetic	Synthetic/Wood
Siding Designation	303-OC	303-OL	303-NR	303-SR	303-6-W	303-6-S	303-6-S/W
Characteristics	Clear	Overlaid ⁽¹⁾	Natural Rustic	Synthetic Rustic			
Knots							
Tight Knots	NP ⁽²⁾	"B" grade substrate as provided per PS 1	1-1/2" max. ⁽³⁾ NL ⁽⁴⁾	1-1/2" max. NL	NP	NP	NP
Pin Knots	NP		Same as Tight Knots	Same as Tight Knots	3/8" max. NL	3/8" max. NL	3/8" max. NL
Knotholes	NP		1" NL Occasional 1-1/2" ⁽⁵⁾	3/8" NL Occasional 1/2" ⁽⁵⁾	NP	NP	NP
Patches	NP		NP	NL except as noted	Limit 6 Any number combination	Limit 6 Any number combination	Limit 6 Any number combination synthetic or wood
Synthetic Natural Shape	NP		NP	1-1/2" x 3-1/2" max.	NP	1-1/2" x 3-1/2" max.	1-1/2" x 3-1/2" max.
Routed Natural Shape	NP		NP	1-3/4" x 3-3/4" max.	NP	1-3/4" x 3-3/4" max. except 2 at panel edge or end may be 1" x 18"	1-3/4" x 3-3/4" max. except 2 at panel edge or end may be 1" x 18"
Wood Veneer	NP		NP	2-1/4" x 4-1/4" max. Must be color matched. Limit 2	2-1/4" x 4-1/4" max. Must be color matched.	NP	2-1/4" x 4-1/4" max.
Panel (Router or Sled)	NP		NP	NP	1" x 3-1/2" max. except 2 at panel edge or end may be 1" x 18". Must be color matched.	NP	1" x 3-1/2" max. except 2 at panel edge or end may be 1" x 18"
Multiple Synthetic Wood	NP NP		NP NP	NP NP	NP NP	NP NP	NP NP
Splits							
Open	1/16" x 24" max. Limit 6		1/8" to point NL Limit 4 over 1/8" to 1/4" max. x 24" ⁽⁶⁾	1/8" max. to point – NL ⁽⁶⁾	1/16" x 24" max. NL	1/16" x 24" max. NL	1/16" x 24" max. NL
Synthetic Repaired	NP		NP	3/8" to point NL 1/2" x one-half panel length to a point NL	NP	See Shims	See Shims
Shims	Limit 3		Limit 3		Limit 6	Limit 6	Limit 6 Any number combination
Synthetic	NP		NP	See Synthetic Repaired Splits	NP	3/16" x 24" max.	3/16" x 24" max.
Wood	Reasonable color match 3/16" x 24"		Reasonable color match 3/16" x 24"	NP	3/16" x 24" max.	NP	3/16" x 24" max.
Voids – Misc.⁽⁷⁾	1/4" x 1/4" max. Glueline not exposed NL		1/4" x 1/2" max. Glueline exposed NL	1/4" x 1/2" max. Glueline exposed – Limit 6 1/4" x 1/4" Glueline not exposed – NL	1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/4" max. Glueline not exposed NL

TABLE I

APA 303 SIDING GRADES (CONTINUED)

Siding Series	Special Series 303-18			Series 303-30		
	Wood	Synthetic	Synthetic/Wood	Wood	Synthetic	Synthetic/Wood
Siding Designation	303-18-W	303-18-S	303-18-S/W	303-30-W	303-30-S	303-30-S/W
Characteristics						
Knots						
Tight Knots	NP	NP	NP	NP	NP	NP
Pin Knots	3/8" max. NL	3/8" max. NL	3/8" max. NL	3/8" max. NL	3/8" max. NL	3/8" max. NL
Knotholes	NP	NP	NP	See Misc. Voids	See Misc. Voids	See Misc. Voids
Patches	Limit 18 Any number combination except as noted	Limit 18 Any number combination except as noted	Limit 18 Any number combination synthetic or wood except as noted	Limit 30 Any number combination except as noted	Limit 30 Any number combination except as noted	Limit 30 Any number combination synthetic or wood except as noted
Synthetic Natural Shape	NP	1-1/2" x 3-1/2" max.	1-1/2" x 3-1/2" max.	NP	1-1/2" x 3-1/2" max.	1-1/2" x 3-1/2" max.
Routed Natural Shape	NP	1-3/4" x 3-3/4" max. except 2 at panel edge or end may be 1" x 18"	1-3/4" x 3-3/4" max. except 2 at panel edge or end may be 1" x 18"	NP	1-3/4" x 3-3/4" max. except 2 at panel edge or end may be 1" x 18"	1-3/4" x 3-3/4" max. except 2 at panel edge or end may be 1" x 18"
Wood Veneer	2-1/4" x 4-1/4" max.	NP	2-1/4" x 4-1/4" max.	2-1/4" x 4-1/4" max.	NP max.	2-1/4" x 4-1/4" max.
Panel (Router or Sled)	1" x 3-1/2" max. except 2 at panel edge or end may be 1" x 18"	NP	1" x 3-1/2" max. except 2 at panel edge or end may be 1" x 18"	1" x 3-1/2" max. except 2 at panel edge or end may be 1" x 18"	NP	1" x 3-1/2" max. except 2 at panel edge or end may be 1" x 18"
Multiple Synthetic	NP	Per Sec. 3.4 Limit 2	Per Sec. 3.4 Limit 2	NP	Per Sec. 3.4 Limit 3	Per Sec. 3.4 Limit 3
Wood	Die cut or router Clusters of 2 Limit 2	NP	Die cut or router Clusters of 2 Limit 2	Die cut or router Clusters of 2 Die cut only 1 Cluster of 3	NP	Die cut or router Clusters of 2 Die cut only 1 Cluster of 3
Splits						
Open	1/8" max. to point NL ⁽⁶⁾	1/8" max. to point NL ⁽⁶⁾	1/8" max. to point NL ⁽⁶⁾	1/8" max. to point NL ⁽⁶⁾	1/8" max. to point NL ⁽⁶⁾	1/8" max. to point NL ⁽⁶⁾
Synthetic Repaired	NP	3/8" max. to point NL	3/8" max. to point NL	NP	3/8" max. to point NL	3/8" max. to point NL
Shims						
Synthetic	NP	3/16" max. x panel length NL	3/16" max. x panel length NL	NP	3/16" max. x panel length NL	3/16" max. x panel length NL
Wood	3/16" max. x panel length NL	NP	3/16" max. x panel length NL	3/16" max. x panel length NL	NP	3/16" max. x panel length NL
Voids – Misc.⁽⁷⁾	1/4" x 1/2" max. Glueline exposed – Limit 3 1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/2" max. Glueline exposed – Limit 3 1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/2" max. Glueline exposed – Limit 3 1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/2" max. Glueline exposed – Limit 3 1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/2" max. Glueline exposed – Limit 3 1/4" x 1/4" max. Glueline not exposed NL	1/4" x 1/2" max. Glueline exposed – Limit 3 1/4" x 1/4" max. Glueline not exposed NL

(1) See paragraph 3.8 for overlay requirements.

(2) NP – Not permitted.

(3) Unless otherwise noted, least grade characteristic dimension is across the grain measurement.

(4) NL – No limit.

(5) 1/4 inch by 1/2 inch maximum in 3- and 4-ply panels as per paragraph 3.1 of Manufacturing Specifications.

(6) 1/16 inch maximum in 3- and 4-ply panels as per paragraph 3.1 of Manufacturing Specifications.

(7) Missing wood other than knotholes (i.e., chip outs, worm or borer holes).

7.2.3 Panels shall have an average thickness of not less than 7/16 (0.437) inch in any 24-inch width.

7.2.4 Thickness of crossbanding shall be not less than 1/10 inch.

7.2.5 Special Conditions. Panels shall have a minimum of five plies and a nominal thickness of 19/32 inch or more (measured in ungrooved areas), with grooves no wider than 1-1/2 inches and spaced no closer than 12 inches o.c. Panels shall meet the requirements of Table III, Item numbers 3, 4, 7, or 8.

8. Texture 1-11®

Texture 1-11 (T1-11®) is a specific grooving detail for 303 Series siding panels and is limited to five-ply panels having a nominal thickness of 19/32 inch or more (measured in ungrooved areas). Texture 1-11 pattern details are as follows:

8.1 Width of groove – 3/8 inch; tolerance – plus or minus 1/32 (0.0312) inch.

8.2 Depth of groove – 1/4 inch; tolerance – plus or minus 1/32 (0.0312) inch.

8.3 Thickness of panels at grooves – refer to 7.1.3 and Table III, Item numbers 3, 4, 7, or 8.

8.4 Groove spacing – four or eight inches center-to-center standard. Other spacing optional.

9. Shiplap Edges

When panel edges are shiplapped, a profile conforming to Figure I is recommended to provide for panel spacing.

Other profiles are available. A tolerance of plus 0, minus 1/8 inch shall be allowed on specified length and/or width.

10. Marking

All APA 303 Series siding production shall be identified with an APA trademark bearing the “303 Series” notation appropriate under these specifications. The manufactured thickness of APA 303 Series siding panels shall be included in the trademark. A tolerance of plus 0, minus 1/8 inch shall be allowed on specified length and/or width.

10.1 16-inch stud spacing reference shall be included in the trademark when panels meet the performance requirements of Section 7 or the prescriptive requirements of Section 7.1, except as otherwise provided in 7.2.5.

10.2 24-inch stud spacing reference may be included in the trademark when panels meet the performance requirements of Section 7 or the prescriptive requirements of Section 7.2.

10.3 Texture 1-11 or T1-11 and 16-inch stud spacing reference may be included in the trademark of those panels meeting the requirements of Sections 7.1 and 8.

Within the system, there are four basic APA plywood siding classifications:

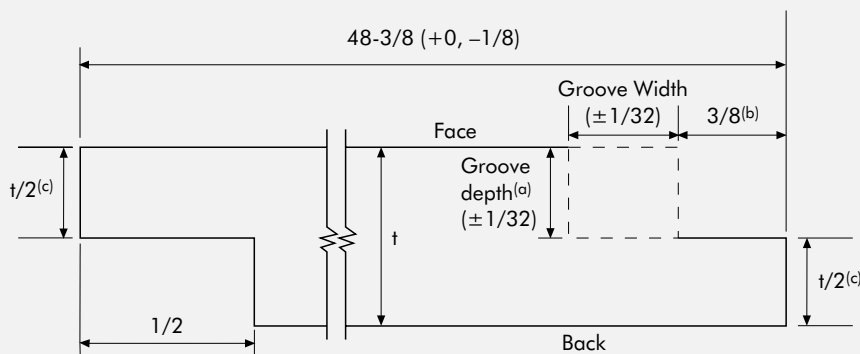
Class	Patches
Special Series 303	permitted in 303-SR only as natural-appearing synthetic repair
303-6	maximum 6
303-18	maximum 18
303-30	maximum 30
<i>Within the Special Series 303 class, four grades are defined:</i>	
303-OC*	clear
303-OL	overlaid (e.g. MDO siding)
303-NR	natural rustic (permits open knotholes, etc.)
303-SR	synthetic rustic (permits natural-defect-shaped synthetic repairs)

Within the other classes, grades are further designated:

-W (e.g. 303-6-W)	wood repairs only
-S (e.g. 303-6-S)	synthetic repairs only
-S/W (e.g. 303-6-S/W)	both wood and synthetic repairs

*Check local availability

FIGURE 1



(a) Groove depth optional within limitations of Section 7. When groove depth of panel edge is less than t/2 (+0, -1/16), note (b) applies.

(b) 1/2 inch when panel does not have deep grooves.

(c) Thickness should be exact or on the plus side of tolerance to insure a tight joint exposed to the weather.

Note: All dimensional tolerances ±1/64 inch unless otherwise noted.

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The Engineered Wood Association

