



## Engineered Flooring Specifications

### Lifetime Structural Integrity Warranty

Heidelberg Wood Flooring warrants its domestically produced, first quality engineered plank to be free of defects, manufactured with sound best grade available materials including wear layer, substrates, and adhesives. Heidelberg Wood Flooring also warrants that these engineered hardwood floors will not delaminate (i.e. separations of layers) when properly installed and maintained.

### Engineered Wood Floor

- Plywood substrate: Exterior/Marine Grade Baltic Birch. No urea-added formaldehyde phenolic adhesive that is CARB 2 (California Air Resource Board) Compliant.
- Adhesive for Wood Veneer to Plywood is not a formaldehyde-based resin product and does not contain urea-formaldehyde or similar formaldehyde resins.
- Wear Layer: Hardwood wear layer is kiln dried, sawn lumber sourced from responsibly managed forests with a positive growth to harvest ratio.
- Moisture Test: Moisture test of lumber in accordance with ASTM-4442 guidelines to ensure that wear layer is within 2% of moisture content of plywood at time of lamination. Flooring is manufactured at 6-9% moisture content with a 3% allowance for pieces outside that range.

### Milling Standards

Heidelberg Wood Flooring manufactures its domestically produced, first quality engineered plank to exceed HVPA EP 2009 Standards as well as NWFA/NOFMA Unfinished Standards 2009.

|                 | Heidelberg Wood Flooring | HVPA and NWFA/NOFMA |
|-----------------|--------------------------|---------------------|
| Face Width      | ± 0.005"                 | ± 0.010"            |
| *Match Position | ≤ 0.004"                 | ≤ 0.008"            |
| Thickness       | ± .005"                  | ± 0.015"            |
|                 |                          |                     |

\*For the most accurate match position, we measure from the bottom, flat surface to bottom of the tongue and bottom of the groove.

### Board Length Guidelines

Heidelberg Wood Flooring produces random length boards and the range of lengths will be included on your order. Increased minimum length orders (i.e 3'-10' or 5'-12') will have an allowance of up to 5% of the total square footage of your order of boards that may be shorter than the minimum specified length. These boards are referred to as cut-backs and are typically used to start a row or to fill a small gap at the end of a row during installation.

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## Grade Guidelines

Heidelberg Wood Flooring's grade guidelines are in accordance with and exceed NWFANOFMA specifications set forth in the *Official Flooring Grading Rules* last updated by NOFMA in 1999. The target is to be 100% on Grade. Heidelberg Wood Flooring has an allowance of not greater than 1.5% of pieces to be mis-graded or off-grade pieces (includes only below grade pieces).

### Wood Cutting Styles

The type of wood cut is determined by the angle at which a board is cut from the log. Each cut produces a board of different appearance and quality. The following table is a summary of appearance for floor grading purposes. For photos/videos and more details please visit: <https://www.heidelbergflooring.com/hardwood-floor-grades-log-cuts>.

|                            |   |
|----------------------------|---|
| Plain Sawn (AKA Flat Sawn) | The grain lines may appear straight or slightly curved and join at the end to form a "cathedral arch." Plain sawn includes the largest variety of grain patterns of any cut.  |
| Live Sawn                  | Similar to Plain Sawn except the boards will contain 15-25% of Rift/Quartered Characteristics. Most European Oak is Live Sawn   |
| Quarter Sawn               | Grain lines are mostly parallel to the length of the plank. The unique trait of quarter sawn boards is the obvious medullary ray flecks. Ray flecks cut across the wood's grain which creates a shimmering flake figure spread over the wood and more than 1/16" wide.  |
| Rift Sawn                  | Grain lines are mostly parallel to the length of the plank and medullary ray flecks are less than 1/16" thick when present in no more than 25% of the floor.  |
| Rift/Quartered             | Rift and Quartered flooring is a combination of quarter sawn and rift sawn boards. The wider boards will yield a larger portion of quarter sawn characteristics. Narrow planks such as 3" and 4" will contain approx 50-60% quartered with the rest being classified as Rift sawn. 5"-7" is approx 70-75% quartered and greater than 8" has 80+% quartered characteristics. |

### American White Oak, Northern/Appalachian

Heidelberg Wood Flooring's White Oak is considered Northern White Oak where the climate allows for slower growth of trees, yielding an optimal beauty of tight, dense grain patterns. This typically includes regions such as Iowa, Illinois, Indiana, Ohio, Pennsylvania and New York, but there are also areas in the Appalachian Mountain range in Kentucky, West Virginia, and Tennessee that also include the same characteristics.

### White Oak Flooring Grades for flooring 2-1/4" – 7" wide (\*Wide plank grading notes on page 3)

|                   |   |
|-------------------|---|
| Clear             | Mostly heartwood with a minimum number of character marks and discoloration, providing a uniform appearance while allowing for all heartwood natural color variations. May contain the following: 3/8" bright sapwood no extending further than 1/3 of length of piece; small burls and fine pin worm holes; and equivalent characters such as small tight checks; small thin mineral streak 3" long max in a 6' piece. |
| Select            | Coloration variations produced by differences of natural heartwood and sapwood. May contain the following and other similar characteristics: 1 small pin knots in 3' piece; small tight checks, pin worm holes; thin brown streaks cannot extend full length of piece.  |
| 1 Common          | Coloration that contains full range of heartwood and light sapwood. My contain the following and other similar characteristics: smaller open/broken knots up to 1/2" diameter; narrow slightly open checks; torn grain (that must sand out); worm holes up to 1/8"; pin worm holes; sticker stain; heavy mineral streaks.   |
| Natural/Character | Character marks and contrasting appearance is desired. Open/Broken knots up to 1-1/4" that can be filled; narrow checks; torn grain (that must sand out); End splits allowed but not extending through piece or wider than 1/16"; one small edge defect per 3' not wider than 1/16"; mineral streaks.. The following is NOT allowed: shattered or rotten ends, shake, advanced rot and similar characteristics.         |



## Special Grades

|   |  |
|---|--|
| Rift Only NY<br>Perfection Grade<br>*White Oak Only | This designates a Rift only Floor that goes above the written specs of Clear Grade and Rift Only. The appearance of the wood cut is 100% rift with no allowance for visual ray flecks. The following is NOT allowed: bright sapwood, small burls, pin worm holes.                      |
| French Cut<br>Plainsawn/Livesawn                    | The French cut is in reference to the appearance of the grain patterns where the wood is sorted to be as symmetrical as possible with the cathedrals of the live sawn cut are in the center of the plank with straight grain on the outside edges. Only effective on plank 8" or wider |
| Clear, No Sap                                       | Clear grade rules apply with the exception that there is absolutely no light sapwood on the boards.  |
| Shrunk Face<br>*White Oak Only                      | This is an appearance available in Natural/Character grade where our unique drying technique results in a sculpted texture on the face of the wood as a result of the density variation within the wood itself.  |

## Wide Plank Grading

The grading rules listed for both White Oak and Walnut are based on NOFMA/NWFA standards of grading that are for 2-1/4"-3-1/4" strip flooring. Heidelberg Wood Flooring extends those guidelines for our products up to 7" wide plank flooring. For wide plank flooring 8" and wider, those guidelines are used as a foundation for our visual grading, however, additional allowances are made on Clear, Select, and 1 Common Grades to maintain the best average lengths the lumber can yield. For example, Select Grades may have knots slightly larger than a pin knot every 3' and/or mineral streaks may be heavier. Such allowances (if applicable) will be clarified in detail by your sales representative.

## American Black Walnut

Heidelberg Wood Flooring's Walnut is sourced in the Midwest Region from states including Missouri, Iowa, Illinois, Indiana, and Kentucky. The Walnut is air dried, steamed and kiln dried. Un-steamed walnut is available for special order. The reference to light sapwood percentages in each grade refers to the overall percentage of the entire assembled floor and not just individual pieces. \*Rift and Quartered Walnut does not contain the obvious medullary ray flecks as described in the wood cuts on previous page. It's a more subtle shimmer found across width of board.

## Walnut Flooring Grades

|                   |   |
|-------------------|---|
| Clear             | Dark Rich coloration that is mostly true heartwood, with darkened sapwood allowed that doesn't create a prominent contrast. Rare occasions of lighter sap on edges, <2%. May contain the following and other similar characters: 1 small tight knot up to 1/4" every 3'; small tight checks; small burls and fine unstained pinworm holes; thin brown streaks 3" in 2'.   |
| Select            | Dark Rich coloration that is mostly true heartwood, with darkened sapwood. Lighter toned sapwood allowance is <10%. May contain the following and other similar characteristics: small knots up to 3/8" with no loose pieces; small tight checks, pin worm holes; thin brown streaks; and unlimited burl.   |
| 1 Common          | Coloration that contains full range of heartwood, darkened sapwood, and light sapwood. Light sapwood will not exceed 15%. May contain the following and other similar characteristics: smaller open/broken knots up to 1/2"; narrow slightly open checks; torn grain (that must sand out); worm holes up to 1/8"; pin worm holes; occasional sound pith; mineral streaks; and unlimited burl.   |
| Natural/Character | Coloration that contains full range of heartwood, darkened sapwood, and light sapwood. Light sapwood will not exceed 30%. Sapwood may be stained, blotchy or speckled. Open/Broken knots up to 1-1/4" that can be filled; narrow checks; torn grain (that must sand out); End splits allowed but not extending through piece or wider than 1/16"; one small edge defect per 3' not wider than 1/16"; sound pith; mineral streaks; and unlimited burl. |