

TECHNICAL BULLETIN

Grading Rules for Naturally Durable Hardwood

Grade Selection

The selection of the appropriate grade and specifications significantly impacts the appearance and performance of wood products in any given application.

Selecting the appropriate grade and specifications is crucial for the appearance and performance of wood products in any application.

The grading rules set by the National Hardwood Lumber Association (NHLA) allow more defects in their highest grades than what we permit in our production. Therefore, Black Label™ has established and published its own grading standards and product specification language for decking, cladding, lumber, and timber products.

When specifying or purchasing tropical hardwoods without clearly defining grade expectations, there is no guarantee of the quality and consistency of the delivered product, nor is there an accountability standard for the supplier. Since grade affects price, an apparent good deal on paper might not look as favorable on your project. The grade directly influences mechanical properties and load performance in structural applications like decking.

Based on our published grading rules and ASTM D143 physical properties testing, Black Label™ has developed and certified ASTM D245 Allowable Design Values for hardwoods based on grade.

It is noteworthy that Black Label™ Premium Select Architectural Grade hardwood decking boasts nearly double the strength of generic FAS grade hardwood decking. Due to the establishment of definitive grading rules, Black Label™ can offer hardwood decking, stringer, and beam products with structural engineer certified and stamped span charts and code-compliant submittal documents.

We strongly recommend that specifiers, consumers, and contractors utilize these standards in their decisions and reference them in purchase orders.

Grading Rule Definitions

Like most natural wood products, tropical hardwoods possess natural “Appearance Characteristics” that contribute to their unique beauty, including color variation and distinctive grain patterns. Other characteristics, either natural or resulting from manufacturing, are termed “Physical Characteristics,” “Sound Defects,” “Unsound Defects,” and “Milling Defects.” Below is a summary of typical characteristics in a wood grade specification.

It is important to note that the industry standard allows for a 5% subgrade in all production to account for human error in the grading process.

Appearance Characteristics

1. Color Variation
2. Mixed Grain
3. Drying Checks
4. Reverse Grain
5. Birdseye
6. Pin Knots
7. Water Stain
8. Discoloration
9. Sticker Marks
10. Molder Knife Marks

Physical Characteristics

1. Bow
2. Crook
3. Cup
4. Twist

Milling Defects

1. Skip
2. Torn Grain
3. Non-compliant porfiling
4. Hit or Miss

Sound Defects

1. Pin Holes
2. Sound knots
3. Torn Grain

Unsound Defects

1. Large borer holes
2. Splits
3. Unsound knots
4. Shake
5. Sapwood

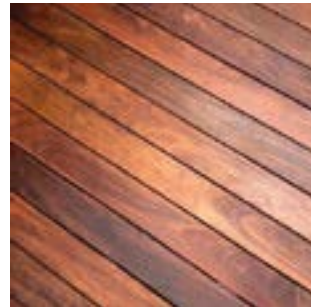
Characteristics and Defects



Pin Knot (Tight)



Tight Reverse Grain



Grain/Color Variation



Loose Knot



Knife Marks



Torn Grain



Sapwood (light color)



Split/Crack



Grub Hole



Shake



Planar Marks



Sticker Mark



Worm Hole



Hit or Miss / Skip



Birdseye / Makula



Surface Checking

BLACK LABEL™ Premium Select Architectural Grade Clear Mixed Grain



BLACK LABEL™ PREMIUM SELECT- Architectural Grade

Carefully Selected for Superior Appearance on All 4 Sides and Edges

Grading Criteria for Faces and Edges: 100% Heartwood, Excluding Heart Center and Sapwood:

- **Include:** Visual features with up to 5% tight reverse grain.
- **Include:** Physical features that can be removed with standard installation methods, tools, or sanding.
- **Exclude:** Sound defects.
- **Exclude:** Unsound defects.
- **Exclude:** Milling defects.

Structural Application Guidelines:

- Prohibited: Pin knots larger than $\frac{1}{2}$ " on any face or edge.
- Maximum Allowed Grain Slope: 1" in 10".
- End Split and Surface Split Length: Must comply with ASTM D245 (5.43).

BLACK LABEL™ FEQ Commercial Grade



Black Label™ wood FEQ (First Export Quality/) - Commercial Grad

Hand Selected for Serviceable Appearance on 1 Face and 2 Edges.

- Include - Appearance Characteristics. Unlimited Tight Reverse Grain.
- Include - Physical Characteristics that can be removed using normal installation methods, tools, or sanding.
- Include - Sound Defects.
- Grading Face – Clear All Heart: Free of Heart Center, Free of Sapwood.
- Exclude - Unsound Defects.
- Exclude - Milling Defects.
- Back Face and Edges:
 - Include – Unsound Defects.
 - Include – Milling Defects.

For Structural Application – Not Allowed...knots bigger than $\frac{1}{2}$ " at narrow face or edges, centerline knots bigger than 1-3/4" at the wide face, edge knots bigger than $\frac{1}{2}$ " at the wide face, the maximum permitted slope of grain 1" in 8", length of end split and surface split shall be as per ASTM D245 (5.4.3).



FAS B Grade Represents the standard market export grade, typically uninspected. FAS qualities are often described as Mill Run, Prime, #1, Select and Better, and First Quality.

It is crucial to understand that grade representation alone does not assure quality or consistency without clearly defined grading rules. Thus, Black Label™ has set rules for FAS quality. Note that, except for sapwood, the FAS grade is just as rot-resistant as other grades but is lower in strength and less attractive in appearance than higher grades.

- First and Seconds ratios - Undefined.
- Include - Appearance Characteristics.
- Include - Physical Characteristics which can be removed using normal installation methods, tools, or sanding.
- Include - Sound Defects.
- Include - Unsound Defects.
- Include - Milling Defects.

For Structural Application – Not Allowed... knots bigger than 1/2" at narrow face or edges, centerline knots bigger than 1-3/4" at the wide face, edge knots bigger than 1/2" at the wide face, the maximum permitted slope of grain 1" in 6", length of end split and surface split shall be as per ASTM D245 (5.4.3).

Character Grade



Character Grade is 100% Reverse Grain

- Include - Appearance Characteristics.
- Include - Physical Characteristics that can be removed using normal installation methods, tools, or sanding.
- Include - Sound Defects.

Character Grade is an aesthetic grade with 100% of boards containing the characteristic of Tight Reverse Grain.

Grade Notes – Under Black Label™ wood Grading Rules

- **AD** – Lumber is air dried with a moisture content of 18% or higher after milling.
- **KD** – Lumber will be kiln dried to have a moisture content of 12-14% before milling.

Subgrade Allowances – Industry standards allow any grade to include up to 5% of the next lower grade in any volume supplied to account for human error in the grading process

Color and Grain Variation

Color and grain differences are inherent in natural materials and contribute to the unique beauty that distinguishes them from manufactured products. This is especially relevant for wood products, although some species exhibit more color variation than others. When examining wood samples, it's important to keep this in mind, as Black Label™ Decking features mixed grain and is not color-sorted. To achieve some level of color uniformity, you can either stain the wood or let it weather and naturally grey over time.

