

# Product Grading Rules

## Grade Selection

**The purpose of this document is to provide a simplified but thorough explanation of the grading rules of thePRIMEWOOD hardwood decking products.**

Grade selection and specification will have a significant impact on both the appearance and performance of wood products in any given application. When tropical hardwoods are specified or purchased without clearly defining grade expectations, there is no assurance of the quality and consistency of the product delivered, and no accountability standard set for the supplier. And since grade affects price, what looks like a good deal on paper might not look nearly as good on your project. If the product is being used in structural applications like decking, grade has a direct impact on mechanical properties and load performance.

In the absence of industry established and defined quality control standards for tropical hardwood decking and lumber thePRIMEWOOD has developed and published grading standards and product specification language which we apply to our own decking production and timber products.

thePRIMEWOOD has created this guide to assist clients and end users in determining grade expectations and value requirements as well as to understand some of the common grades that might be encountered in the market. We strongly encourage clients and consumers to utilize these standards in their decision making process and to specifically reference these standards in their purchase orders.

## Grading Rule Definitions

As with most natural wood products, tropical hardwoods possess natural "Appearance Characteristics" that add to their unique beauty.

Those that are appreciated include color variation and distinctive grain patterns. Other characteristics in all types of lumber that develop naturally or through manufacturing are known as "Physical Characteristics", "Sound Defects", "Unsound Defects" and "Milling Defects".

The grading of Decking into categories as it processed by thePRIMEWOOD to determine to a large extent the value and potential use possible for each board. The following is a summary of the typical characteristics one might find in a wood grade specification.

**It is important to note that industry standard allows for 5% sub grade in all production to allow 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. Hit or Miss/Skip
2. Torn Grain
3. Non-Compliant Profiling

### Sound Defects

1. Pin Holes
2. Sound Knots

### Unsound Defects

1. Large Borer Holes
2. Splits
3. Unsound Knots
4. Shake
5. Sapwood

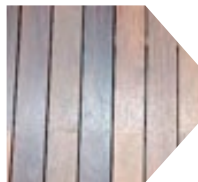
## Characteristics and Defects



Pin Knot (Tight)



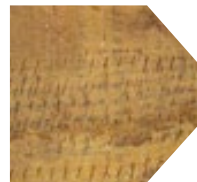
Tight Reverse Grain



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

## thePRIMEWOOD Select



### Selected for Premium Appearance on 4 Sides and 4 Edges

thePRIMEWOOD will provide the user with long and clear boards for high quality Decking, Grading Face, Back Face, and Edges – 100% KD, All Heart, Free of Heart Center, Free of Sapwood:

**Include** – Appearance Characteristics with maximum 5% tight reverse grain.

**Include** – Physical Characteristics which can be removed using normal installation methods, tools, or sanding.

**Exclude** – Sound Defects

**Exclude** – Unsound Defects Exclude – Milling Defects.

For Structural Application – Pin knots bigger than ½" are NOT ALLOWED on any face and/or edge; Maximum permitted slope of grain 1 in 15 as per ASTM D245 (5.2.1) ; Length of end split and/or surface checks as per ASTM D245 (5.4.3)

## FEQ Commercial Grade

### Products FEQ (First Export Quality/) AD and/or KD - Commercial Grade...Hand Selected.

**Include** – Appearance Characteristics. Unlimited Tight Reverse Grain.

**Include** – Physical Characteristics that can be removed using normal installation methods, tools, or sanding.

### Grading Face – Clear All Heart:

#### Free of Heart Center, Free of Sapwood

**Exclude** – Unsound Defects Include – Sound Defects. Max.5% Exclude – Milling Defects.

### Back Face and Edges:

**Include** – Unsound Defects Max.5% Exclude – Milling Defects. Max 5%.

For Structural Application – the following are NOT ALLOWED: Knots bigger than  $\frac{3}{4}$ " on narrow face or edges; Centerline knots bigger than 1-3/4" on wide face; Maximum permitted slope of grain 1 in 8 as per ASTM D245 (5.2.1); Length of end split and /or surface checks as per ASTM D245 (5.4.3).

## C Grade

**C Grade** is often referred to as the "economic grade" because of its price and suitability for a wide range of Decking. Available in AD and KD.

### Grading Face:

**Include** – Appearance Characteristics.

**Include** – Physical Characteristics which can be removed using normal installation methods, tools, or sanding. Include – Sound Defects. Max 5%.

**Include** – Unsound Defects, no limits for discoloration.

**Exclude** – Milling Defects.

### Back Face and Edges:

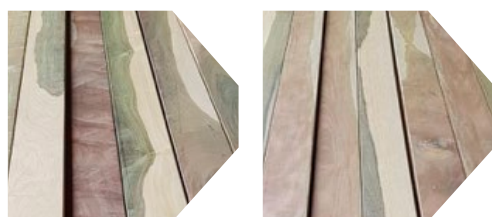
**Include** – Appearance Characteristics.

**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  $\frac{3}{4}$ " at narrow face or edges, centerline knots bigger than 1-3/4" at wide face, edge knots bigger than  $\frac{3}{4}$ " at wide face, Maximum permitted slope of grain 1" in 6", length of end split and surface split.



## B Grade (First and Seconds) – 1F product

**B Grade** represents one face product and is economical option because of its adaptability to standard Deck Grades.

It is important to understand that grade representations, if not backed up by clearly defined grading rules provide no assurance of quality or consistency. As such the PRIMEWOOD has established rules for FAS B quality.

It is important to note that FAS B grade with the exception of sapwood is just as resistant to rot as other grades. It is simply lower in strength and less attractive in appearance than higher grades.

One AD and/or KD face product, allowing max. 25% light discoloration in the good face (A). Back face (B) defects allowed:

### Grading Face (A):

**Include** – Appearance Characteristics.

**Include** – Physical Characteristics which can be removed using normal installation methods, tools, or sanding.

**Include** – Sound Defects. Max 5%.

**Exclude** – Unsound Defects, except max. 15% discoloration.

**Exclude** – Milling Defects.

### Back Face and Edges (B):

**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  $\frac{3}{4}$ " at narrow face or edges, centerline knots bigger than 1-3/4" at wide face, edge knots bigger than  $\frac{3}{4}$ " at wide face, Maximum permitted slope of grain 1" in 6", length of end split and surface split.



Grading Face A



Grading Face B

## Cross Grain Grade

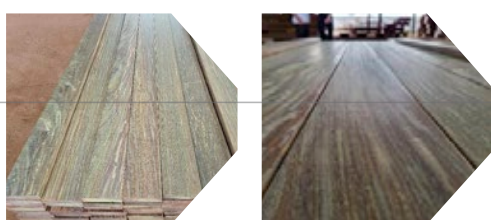
Cross Grain Grade is based in 100% of the boards with Cross/Reverse Grain. Available in AD and KD.

**Include**– Appearance Characteristics.

**Include**– Physical Characteristics which 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.



## Notes - Products Grading Rules

**AD** – Lumber is air dried to have moisture content of 18% and higher after milling.

**KD** – Lumber will be kiln dried to have moisture content of 12-16% before milling.

**Very Important: Subgrade Allowances** – Industry standards allow for any grade to include up to 5 percent of the next lower grade irrespective of volume supplied to account for human error in the grading process.

## Color and Grain Variation

**It is the variation in character that gives wood a natural beauty!**

Color and grain variation is typical of materials created by nature and recognized as part of the beauty that sets natural products apart from manufactured products. This is particularly true where wood products are concerned, though some species have more or less color variation than others. This should be always taken into consideration.

Decking is supplied mixed grain and are not sorted for color. Some consistency in color can be achieved through either staining wood or allowing wood to weather or grey out naturally.

When used outdoors wood products will not retain the appearance associated with their use in interior applications like furniture or flooring. Wood will not hold its original color over time without cleaning and reapplication of finishes.

Wood by its nature will be subject to some limited amount of natural reaction as it cannot be predicted how a natural product like wood will behave in any given environment or conditions. It is woods natural characteristics that define its beauty.

