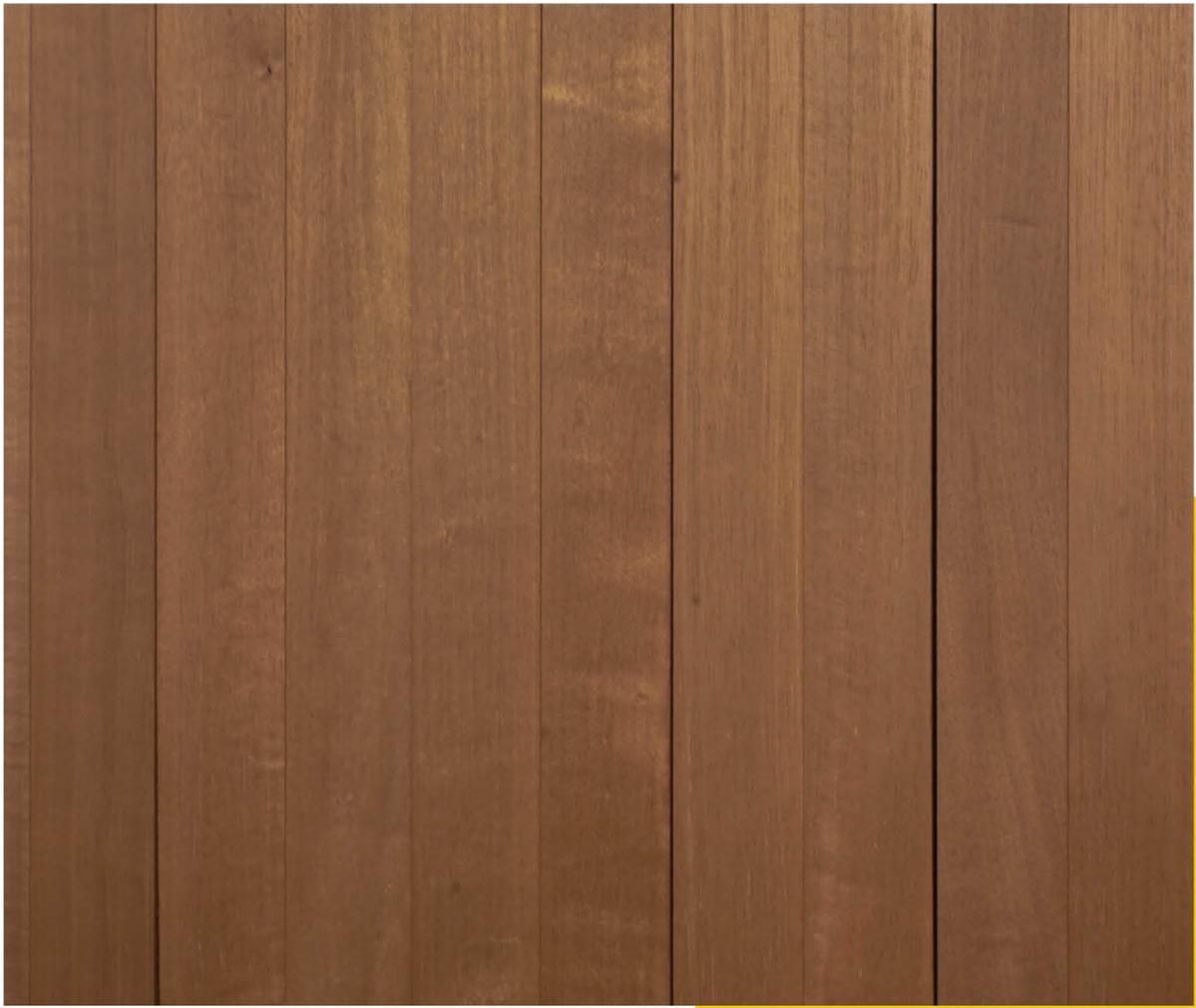


# Product Grading Rules Performance



## Grade Selection

The purpose of this document is to provide a simplified but thorough explanation of the grading rules of TIMBRA Tech® hardwood Thermally modified products.

TIMBRA Tech® Benchmark products undergo intense thermal modification. It makes the PERFORMANCE selection exceptionally durable (Class 2) and stable while emphasizing its warm dark-brown colour.

Grade selection and specification will have a significant impact on both the appearance and performance of wood products in any given application. When thermally modified 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 thermally modified hardwood, cladding, decking and lumber TIMBRA Tech® has developed and published grading standards and product specification language which we apply to our production.

TIMBRA Tech® 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, Thermally Modified hardwoods possess natural “Appearance Characteristics” that add to their unique beauty.

Those that are appreciated include colour 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 is processed by **TIMBRA Tech®** 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.

## Characteristics

### ■ Appearance

1. Color Variation
2. Mixed Grain
3. Drying Checks
4. Reverse Grain
5. Birdseye
6. Pin Knots
7. Water Stain

### ■ Physical

8. Discoloration
9. Sticker Marks
10. Molder Knife Marks
1. Bow
2. Crook
3. Cup
4. Twist

## Defects

### ■ Milling

1. Hit or Miss/Skip
2. Torn grain
3. Non-compliant profiling

### ■ Sound

1. Pin holes
2. Sound knots

### ■ Unsound

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

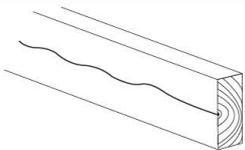
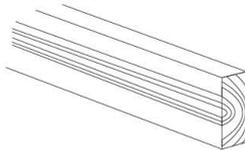
**GRADED BY**

|                    |   | BETTER FACE                    | BACK FACE  |
|--------------------|---|--------------------------------|--|
| HIT & MISS         |    | Not allowed                    | ≤30% area  |
| FEED-ROLLER MARKS  |    | Not allowed                    | ≤40% area  |
| WANE               |    | Not allowed                    | Max 1/5 of width and 1/3 of the thickness of the board |
| MECHANICAL DEFECTS |   | Not allowed                    | Unlimited  |
| SURFACE CHECKS     |  | Up to 2 mm wide and 50 mm long | Unlimited  |
| SHAKES             |  | Not allowed                    |  |
| RING SHAKES        |  | Not allowed                    |  |
| END SPLITS         |  | Up to 40 mm                    | Unlimited  |
| KNOT HOLE          |  | Not allowed                    |  |
| BARK KNOTS         |  | Not allowed                    | Unlimited  |

**GRADED BY**

|   |   | BETTER FACE               | BACK FACE |
|---|---|---------------------------|-----------|
| DEAD KNOTS/<br>BLACK KNOTS                    |    | Not allowed               | Unlimited |
| UN SOUND/<br>BROKEN KNOTS                     |    | Not allowed               | Unlimited |
| KNOT SHAKE                                    |    | Not allowed               | Unlimited |
| PIN KNOTS                                     |   | Up to Ø 10 mm             | Unlimited |
| ARRIS KNOTS                                   |  | Not allowed               | Unlimited |
| EDGE KNOTS                                    |  | Not allowed               | Unlimited |
| KNOT CLUSTER                                  |  | Not allowed               | Unlimited |
| PARTIALLY<br>INTERGROWN<br>KNOTS              |  | Not allowed               | Unlimited |
| SCAR  |  | Up to 200 mm <sup>2</sup> | Unlimited |
| MINERAL DEPOSITS<br>ABSORBED FROM<br>THE SOIL |  | Unlimited                 | Unlimited |

**GRADED BY**

|                     |   | BETTER FACE   | BACK FACE |
|---------------------|---|---|-----------|
| PITH                |    | Not allowed   | Unlimited |
| BARK/ROT/<br>MOULD  |    | Not allowed   |           |
| INSECT<br>HOLES     |    | Not allowed   | Unlimited |
| GLASS WORN<br>MARKS |   | Unlimited   |           |
| STICK MARKS         |  | Not allowed   | ≤20% area |
| CUP                 |  | Allowed up to 1% of the width of the board  |           |
| TWIST               |  | Allowed up to 5% of board width per meter in length, has to be reversible during installation |           |
| BOW                 |  | Allowed up to 3 mm per meter in length  |           |
| SPRING<br>CROOK     |  | Allowed up to 8,5 mm per meter in length  |           |
| <b>TOLERANCES</b>   |   | Thickness: +/- 0,5 mm<br>Width: +/- 1 mm<br>Length: +/- 1 mm per meter in length              |           |

All defects that are allowed on the back face and not limited by size, are tolerated to the extent that they will not jeopardize the integrity, usability, and visual wholeness of the installed product.

Innovating  
**Nature**  
Building  
**Futures**



**Together**  
**we change wood**  
to change the world



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