

MERANTI PROPERTIES



WHITE MERANTI



YELLOW MERANTI



RED MERANTI

BOTANICAL NAME:

Shorea spp., family Dipterocarpaceae

LOCAL & TRADE NAMES:

- Commonly referred to as **Meranti** (White, Yellow, and Red).
- Other regional names include **Seraya, Lauan, and Philippine Mahogany** in international markets.

GEOGRAPHICAL

Native to Southeast Asia, particularly in Malaysia, Indonesia (Sumatra, Kalimantan), the Philippines, and Thailand.

DISTRIBUTION:

HABITUS

Meranti trees are large, reaching up to 65 meters in height with diameters of 100–175 cm. They have well-developed buttresses up to 1.5 meters high. The bark varies from light gray to reddish-brown, often smooth when young but becoming fissured with age. The canopy is wide-spreading with an umbrella shape, and the first branch may appear as high as 30–40 meters.

GENERAL CHARACTERISTICS

- **Color:**
 - **White Meranti:** Pale yellow to light brown.
 - **Yellow Meranti:** Yellowish-brown to golden.
 - **Red Meranti:** Light pinkish-red to dark red-brown.

- **Texture:** Fine to medium.
- **Grain:** Generally straight, sometimes interlocked.
- **Touch:** Smooth to moderately rough.
- **Gloss:** Moderate luster.
- **Figures:** Radial sections may show light-colored streaks.

PHYSICAL PROPERTIES

- **Specific Gravity:** 0.425 – 0.685 (depends on variety)
- **Density:** 450 – 750 kg/m³ at 12% moisture content
- **Shrinkage:**
 - **Radial:** 4.0 – 5.5%
 - **Tangential:** 7.5 – 9.0%

MECHANICAL PROPERTIES

Property	Value (kg/cm ²)
Bending Strength	Moderate to high (varies by type)
Modulus of Elasticity	80,000 – 120,000
Crushing Strength	550 – 800
Shear Strength	80 – 130

- **White Meranti:** Lower strength, more flexible.
- **Yellow Meranti:** Medium strength and stiffness.
- **Red Meranti:** Strongest and most durable.

CHEMICAL PROPERTIES

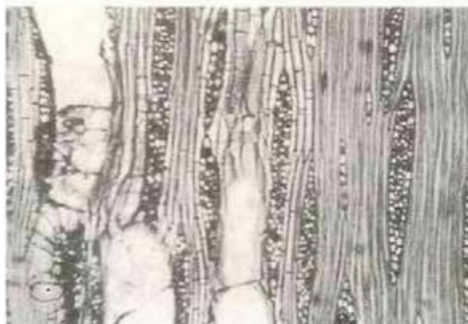
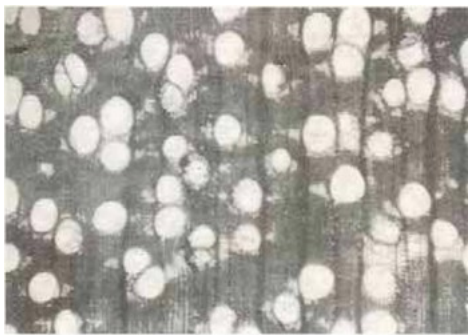
- **Cellulose:** 60–65%
- **Lignin:** 22–25%
- **Pentosan:** 15–18%
- **Ash Content:** 0.8 – 1.5%

- **Silica Content:** 0.2 – 0.5%

STRUCTURE

- **Vessels:** Mostly solitary, with some in radial groups of 2–4, round to oval, containing tyloses.
- **Parenchyma:** Paratracheal (bordering vessels) and apotracheal (scattered or in bands).
- **Rays:** Fine and short, with a frequency of 6–8 per mm. Some contain brown deposits.
- **Intercellular Canals:** Contain white resin, smaller than vessels.
- **Fibers:** Long fibers with thick cell walls, contributing to moderate strength.

White Meranti

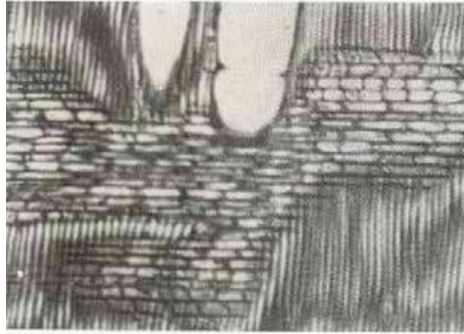
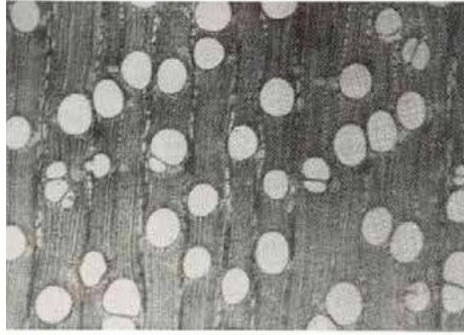


Transversal view (x26)

Radial view (x75)

Tangential view (x75)

Yellow Meranti

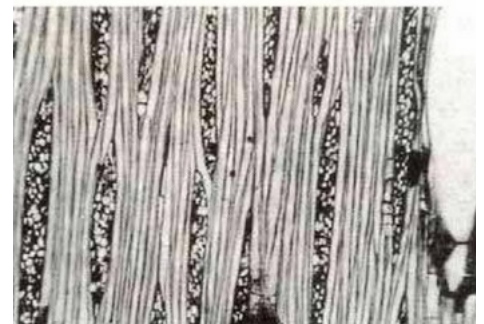
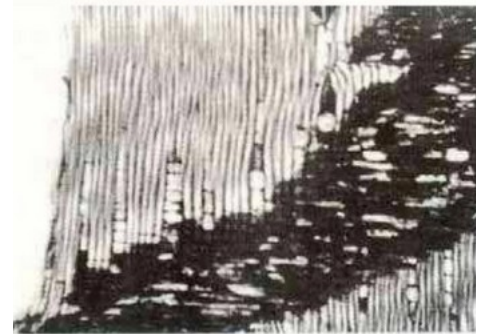
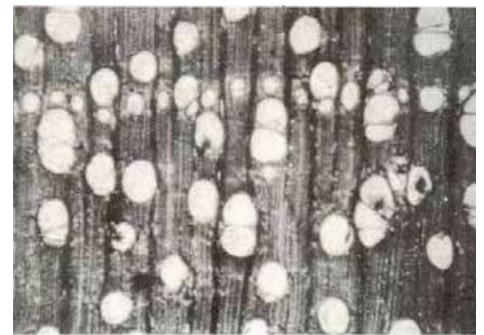


Transversal view (x26)

Radial view (x75)

Tangential view (x75)

Red Meranti



Transversal view (x26)

Radial view (x75)

Tangential view (x75)

DURABILITY AND TREATABILITY

Email:
Website:
Phone:
Mobile:

info@kitaru-lumberyard-bali.com
www.kitaru-lumberyard-bali.com

Showroom/Office/Warehouse/Workshop
Jl. Pantai Saba No.47509, Saba, Kec.
Blahbatuh, Kabupaten Gianyar, Bali 80581

- **Natural Durability:**
 - **White & Yellow Meranti:** Moderately durable, susceptible to termites and fungi.
 - **Red Meranti:** More resistant to decay and insects, rated Class II–III in durability.
- **Treatability:** Generally difficult, but Red Meranti absorbs preservatives better than White and Yellow varieties.

DRYING PROPERTIES

- **Drying Behavior:** Moderate to difficult; prone to checking and distortion.
- **Kiln Drying Time:**
 - 25 mm boards: 8–12 days
 - 50 mm boards: 12–18 days
- **Precautions:** Avoid rapid drying to reduce splitting and surface checking.

WORKING PROPERTIES

- **Machining:** Works well with sharp tools, though Red Meranti can cause moderate tool blunting due to silica content.
- **Nailing & Screwing:** Good holding properties; pre-drilling recommended for Red Meranti.
- **Finishing:** Accepts stains, varnishes, and paints well.

USES

- **Construction:** Beams, posts, flooring, and structural elements.
- **Furniture & Joinery:** Cabinetry, doors, moldings, and frames.
- **Plywood & Veneer:** Frequently used in paneling and laminated products.
- **Boatbuilding:** Red Meranti is sometimes used for marine applications.
- **Miscellaneous:** Interior fittings, decorative applications, and general carpentry.

SILVICULTURE

- **Habitat:** Found in lowland dipterocarp forests, thriving on well-drained clay or sandy soils.
- **Regeneration:** Moderate, with high seedling mortality. Prefers partial shade but grows well in open conditions.

- **Fruiting:** Heavy synchronous fruiting every 3–5 years, with wind or gravity dispersal.
- **Pests & Diseases:** Susceptible to fungal decay and insect attack in humid conditions.

Meranti, in its mixed form (White, Yellow, and Red), provides a balance of workability, strength, and aesthetic appeal. While White and Yellow Meranti offer lighter density and easier machining, Red Meranti contributes to durability and strength. This combination makes it a versatile timber choice for various construction and manufacturing needs.