Kiri Lumber Properties

The Kiri Tree possesses many exceptional properties that allow it to be used in many ways. ECO2 is developing Kiri Tree plantations through its Forestry Plan program designed to provide quick growing timber that helps remove greenhouse gases through carbon sequestration. Kiri Tree lumber is the main product if their forests and its characteristics are:

1. Weight - Kiri is a very light timber. At a dry density of around 280 kg/m3, Kiri is lighter than most common timbers. Density comparisons are Western Red Cedar (340), Meranti (580), Pine (500), Teak (750).

2. Strength - With a modulus of elasticity (stiffness) of 5.6 GPa and a modulus of rupture (bending strength) of 28 MPa, Kiri is not classified as a structural timber in its natural state. However, because of its light weight, Kiri has a high strength to weight ratio, an important feature in the various uses of timber.

3. Deformation & Warping – The shrinkage co-efficient of Kiri is very low compared to most timbers being 0.094 radially, 0.268 tangentially and 0.362 in volume giving the dried timber a high level of dimensional stability.

4. Hardness - The Janka hardness rating for Kiri is low at 1.3 kN. Western Red Cedar is rated at 1.5 and Meranti 2.6. While modern treatments can substantially harden up a finished surface, Kiri is not suitable for flooring or areas where physical damage is likely.

5. Durability - The in-ground durability rating for Kiri is 4 and the timber should not be used for that purpose. Kiri used for other external uses out of ground has a similar durability to western red cedar and should be treated with at least two coats of a water repellent sealant.

6. Resistance to Decay - Kiri is highly resistant to insect attacks and rot. Research carried out by Queensland Forestry Research Institute in Australia indicates the timber to be unattractive to termites. Rot showing neglected timber tends to be surfaced deep only.

7. Thermal Insulation - With one of the lowest thermal conductivities for wood of just 0.07 Kcal/m/hr/Cdeg, Kiri has an excellent heat insulation capability being one of the best heats insulating timbers and far superior to brick, concrete or steel.

8. Fire Resistance – With an auto ignition temperature of around 400 deg C (most hardwoods around 220 deg C) Kiri is reported to have a flame spreading rate considerably below most building codes.

9. Finishing - The sap of Kiri is not gum or resinous based, thus the application of finishing products with various solvents as carriers does not risk any interaction with the timber, contributing to the very good finishing properties of Kiri products. The timber readily takes stains, estapols and paints with excellent finished surfaces.

10. Workability - A major feature of Kiri timber is its ease of working. All aspects of carpentry such as machining, nailing, screwing, gluing, sanding, sawing and handling are very user friendly with no splinters, cracking or splitting and excellent take-up of glues and finishes.