

Annexure- B1

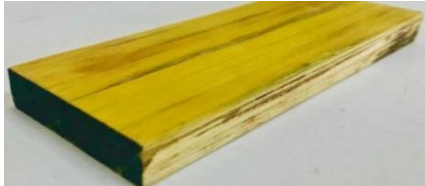
Multifunctional Bamboo Composite Material for Modern Housing and Structures

India is second largest cultivator of bamboo but it has only 4% share of world trade. The bamboo wood technology has potential of increasing this trade share.

CSIR-AMPRI has developed a knowhow of manufacturing environmentally friendly multifunctional bamboo composite material for modern housing and structures using abundantly available bamboo as a raw material. The newly developed bamboo composite material can serve as a competitive, sustainable and environment friendly alternative material, useful in the construction of smart green buildings as it has very attractive features like, aesthetic appearance, acoustic & thermal insulation. It also possesses excellent

stiffness and strength properties essentially required for any structural application in the construction industry. This bamboo composite material has been developed as a multifunctional construction material using a renewable resource material. The property of bamboo composite material is superior to natural products such as teak wood in terms of stiffness, strength, moisture contents, uniformity and consistency. A finished product of bamboo composite has economical advantages over the finished teak wood as well as bamboo-wood-composites of similar specifications available in the market. The developed bamboo composites material can be converted to panels of different thicknesses with different widths and lengths. These panels have applications as wall-panels, partitions, coverings, decoration laminates, floorings, thermal/ electrical insulations, doors, windows, table tops, false ceilings, roofs etc. The thicker sections can be used

as structural elements such as beams, columns, trusses, benches, floor support, decks, frames for doors, windows etc. This will also be advantageous to the bamboo cultivators located in various parts of India and also help in the generation of employment at different levels. Patents have also been filed on this know-how and it is also transferred to M/s Permali Wallace private limited established at Bhopal, in Feb., 2020, in the presence of Dr. Shekhar C. Mande, Director General, CSIR.



Images of AMPRIWOOD

Attractive Features of AMPRIWOOD

- Light weight
- High Strength
- Weather resistant
- Durable & Dimensionally Stable
- Termite & Fungal Resistant
- Natural & Aesthetic
- Eco-friendly

Properties of AMPRIWOOD

- Density: **0.9-1.1 g/cc**
- Flexural Modulus: **18 - 22 GPa**
- Flexural Strength: **160 - 180 MPa**
- Compressive Strength: **90 – 170 MPa**
(Parallel to Panel)
- Tensile Strength: **110 – 140 MPa**
(Along the Grain)
- Water Absorption: **4 – 6 %**
- Impact Strength: **70 – 120 kg-cm**

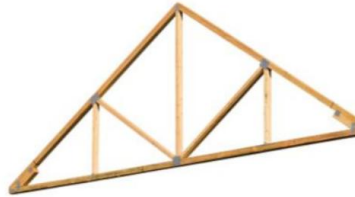
Applications



Window



Door



Truss



Flooring



Bamboo Log



Housing



Demonstrative Structure