

Bamboo based composites – A material of the future

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In terms of diversity, India has the second largest bamboo resource in the world, with 136 species and 8.96 million hectares of bamboo forests representing approximately 12.8 per cent of the total forest cover. Total growing stock is 80.42 million tons at the rate of 10 tons per hectare and annual harvest of 4.5 million tons. In addition, 1.75 million hectares of land, outside the forest is being cultivated for bamboo. Bamboo has been the source of livelihood for hundreds of thousands of people, particularly in socially and economically weaker regions. Research and development efforts at Indian Plywood Industries Research and Training Institute (IPIRTI) have given birth to several bamboo based structural products such as Bamboo Mat Board (BMB) and Bamboo Mat Veneer Composite (BMVC) as an alternate to plywood, Bamboo Mat Corrugated Sheet (BMCS) as an alternate to metal corrugated roofing sheets, Bamboo Mat Compreg, Bamboo Wood (BW), Bamboo Flooring Tiles, High Density Shuttering grade panels, Bamboo Mat Ridge Cap (BMRC), Bamboo Mat Moulded Skin Board (BMMSB) for doors and Bamboo particleboard. Process parameters for these bamboo products have been standardized and made ready for commercialization. The physical and mechanical properties of each product have been studied and national standards for most have been formulated. Many of these products are now commercially available and utilized as wood substitutes.