

BAMBOO MAT CORRUGATED SHEET



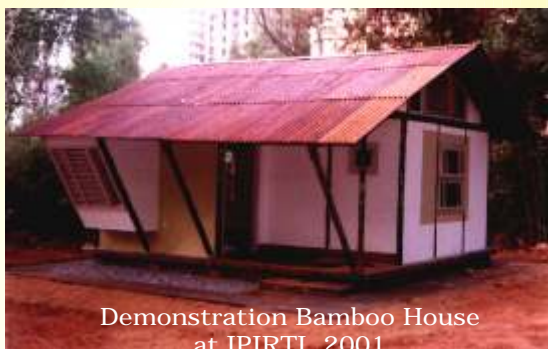
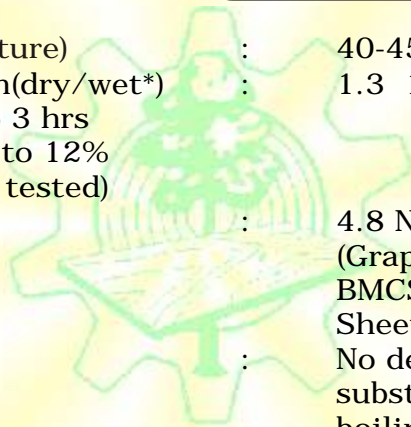
The main raw material for the production of BMCS is bamboo, which is the fastest growing plant and occurs naturally in the forests and is also suitable for plantation even over degraded lands. For manufacturing BMCS, bamboo is to be converted into mats that are hand woven by rural/tribal people, particularly women. Thus, the product is both environment and people friendly

Technology developed at IPIRTI in collaboration with BMTPC

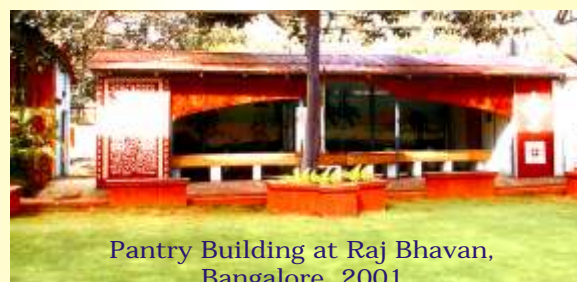
- Size : 1.8 meter X 1.05 meter
- Thickness : 3.5 - 3.7 mm
- Weight : 6.5 - 7 Kilograms per sheet

PROPERTIES

- MOR (Modulus of Rupture) : 40-45 N/mm²
- Internal bond strength(dry/wet*) : 1.3 1.4 N/mm²
 (* sample subjected to 3 hrs boiling in water dried to 12% moisture content and tested)
- Load bearing capacity : 4.8 N/mm of width (span length 1000mm)
 (Graph showing comparative performance of BMCS with other traditional Corrugated Sheets is given in overleaf).
- Water resistance test : No delamination/deformation and retains substantial strength even after immersion in boiling water for 72 hours which is prescribed for BWP grade plywood as per IS-848
- Permeability : No percolation of water observed after storing water for over 24 hours.
 However, considering the biological nature of the material, a protective water-proof / UV coating is recommended on the side exposed to sun/rain.
- Fire resistance : Conforms to flammability test as per IS:5509 Indian Standard Specification for Fire Retardant plywood.
- Thermal conductivity : BMCS has low thermal conductivity compared to other roofing materials (0.1928 k.cal/m-°c for BMCS and 0.3422 k.cal/m-°c for ACCS)
- Applications : Roofing, walling, structural



Demonstration Bamboo House at IPIRTI, 2001

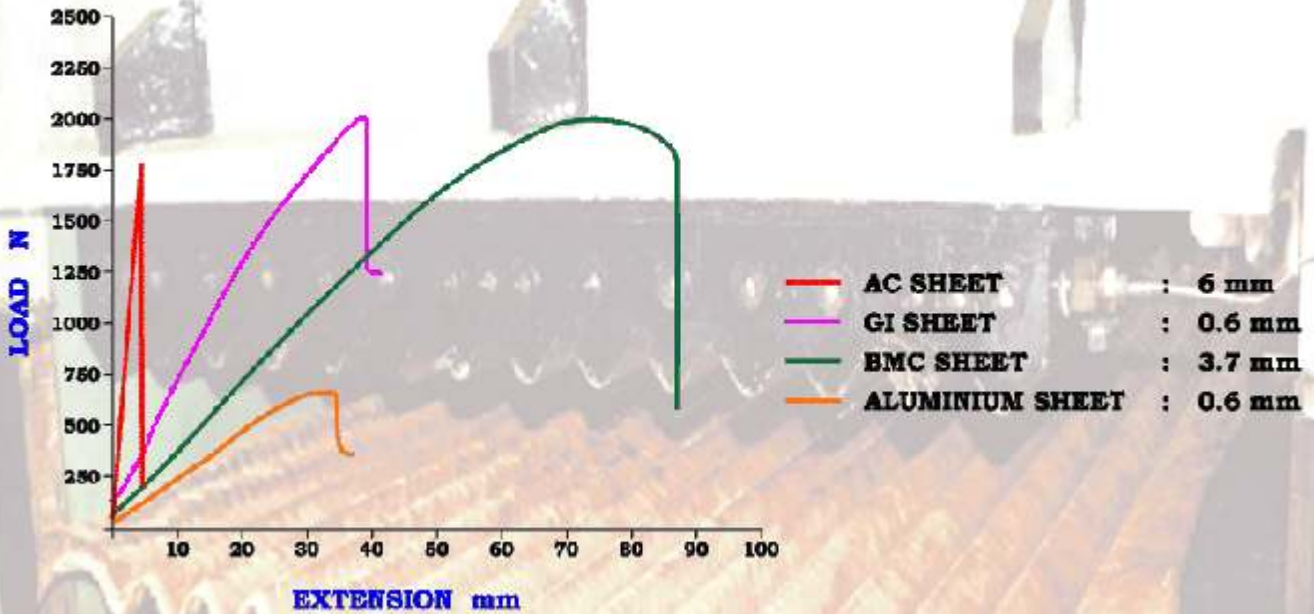


Pantry Building at Raj Bhavan, Bangalore, 2001



Terrace café at DFID, India, New Delhi

LOAD-DEFLECTION CURVES for CORRUGATED SHEETS



PROPERTIES OF CORRUGATED SHEETS

	THICKNESS mm	WIDTH mm	MAX. LOAD N	LOAD BEARING CAPACITY N/mm	WEIGHT OF SHEET (1.05 M x 1.6 m) Kgs
BMCs (4 - LAYERS)	3.7	400	1907	4.77	7.2
G. L. SHEET	0.6	400	1937	4.84	7.7
ALUMINIUM SHEET	0.6	405	669	1.67	2.9
ACCS	6	330	1800	5.45	15.85

For establishing a BMCS unit with a production capacity of 1,80,000 sheets/annum the capital investment will be to the tune of Rs. 2 crore. The length of the BMCS can be increased to 2.5 mts by getting the hot press fabricated accordingly.



IPIRTI



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