

## EQUIPMENT/MACHINERY

The major equipment/machinery used in the manufacture of CFB are all fabricated locally except the lifter and include the following:

1. Decorticating machine
2. Hydraulic press
3. Blending machine
4. Trimming machine
5. Lifter

## USES OF CFB

Production of CFB is expected to contribute to the government's low-cost housing program. CFB can replace traditional construction materials such as tiles, bricks, plywood, asbestos and cement hollow blocks. It can be used for internal and exterior walls, partitions and ceiling or as a component in the fabrication of furniture (tables, chairs, desks, etc.), cabinets, boxes and vases.



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## COCONUT FIBERBOARD



## PRODUCT DESCRIPTION

Coconut fiberboard (CFB) is a new product manufactured from fibrous materials like coconut coir, fronds, spathes and shredded wood that are mixed with Portland cement at a predetermined ratio of 70% cement to 30% fiber byweight. CFB is made by forming the cement-fiber mixture into mats and pressing them to the desired thickness ranging from 8 mm to 25 mm. The board is 244 cm long by 61 cm wide.

CFB can provide panels of good strength properties. It is considered cheap, durable and requires low maintenance cost. The production technology is simple and the manufacturing process requires equipment that do not need highly skilled labor. It can be fabricated into modular structures to accelerate building construction. It is a good insulating material and has fire retardant characteristics. It is water-resistant. It is also nailable, plasterable, sawable and resistant against attack of wood-boring insects and decay fungi,

## TECHNICAL DATA

### A. Dimension

Length	= 244 cm
Width	= 61 cm
Thickness	= 12.5 mm, 25 mm, 50 mm and 100 mm Board
Density	= 700 kg/cu. m.
Cement: Fiber Mixing Proportion	= 70: 30

### B. Basic Properties of CFB

Board Density	= 550 -650 kg/cu.m.
Water Absorption	= 32%
Thickness Swelling	= 4.2%
Bending Strength (MOR)	= 8.30kg/cm <sup>2</sup>
Thermal Conductivity	= 0.090W/m.K

### Raw Materials

Cement	= Portland cement, type I
Coir	= 25% by weight
Fronds/Spathe	= 50%
Shredded wood	= 25%

## MANUFACTURING PROCESS

The production of CFB involves the following steps:

1. Soaking of dried husk/spathe in tap water for 24 to 48 hours
2. Decorticating of husk/spathe to produce fibers
3. Cutting and shredding of wood billets/coconut fronds
4. Soaking of fibers in separate dipping tank for 2 days to remove the extractives
5. Draining of the fibers
6. Mixing the required amount of fiber, cement and water in the blending machine
7. Mat-forming using wooden form box and plywood cauls lined with plastic sheets
8. Pressing the mat to the desired thickness for 24 hours using the hydraulic press machine
9. Fillet-stacking for air drying/conditioning
10. Drying and conditioning of the boards
11. Trimming/sizing of the boards



Roof Sheathing



Base Support for upper-level flooring



Internal & exterior walls, partitions and ceilings



Component of furniture (tables, chairs, etc.), cabinets, boxes and vases

