

# MOULDING OF OIL PALM PARTICLE :

## Effective Oil Palm Trunk and Frond Utilization

by: **KAMARUDIN HASSAN, JALANI SUKAIMI and ARIFFIN DARUS**



**PORIM TT NO. 6**

PORIM INFORMATION SERIES

ISSN 0128-5726

## INTRODUCTION

**M**ore than 44,000 hectares of oil palm are due for replanting in 1993/94. This would involve the felling of approximately 6 million palms. In addition to the palm fronds available at replanting, fronds are also obtained from pruning during the harvesting of fresh fruit bunches.

In line with its mission, PORIM's R&D efforts are geared towards converting these renewable raw materials into high value-added items. Besides reducing pollution, this exploitation also provides additional income to the industry by encouraging the development of secondary industries dependent on oil palm ligno-cellulosic materials. Consequently, PORIM and Muar Hardboards Sendirian Berhad initiated a commercial venture to convert oil palm fronds and trunks into desk tops and chair seats for schools.



## MANUFACTURING PROCESS

The basic ingredients for the manufacture of oil palm desk tops and chair seats are oil palm particles and resin binder. The oil palm frond or trunk, regardless of its form, is processed through a reduction mill. The resulting ground particles are sieved for the required particle size and finally dried to a low moisture content.

When the particles have been properly dried, the desired amount of resin binder is added. Additives such as catalysts, fungicides and insecticides are added during the blending process to meet end use requirements.

After blending, a known weight of resin-coated particle is distributed into moulds and pressed under a specific pressure. The preformed desk tops and chair seats are then transferred to hot dies for curing. During this pressing cycle, the cured desk tops and chair seats



are surfaced with melamine-impregnated paper. *Figure 1* illustrates the process flow of oil palm raw materials into desk tops and chair seats.

## PROPERTIES OF OIL PALM TOPS AND CHAIR SEATS

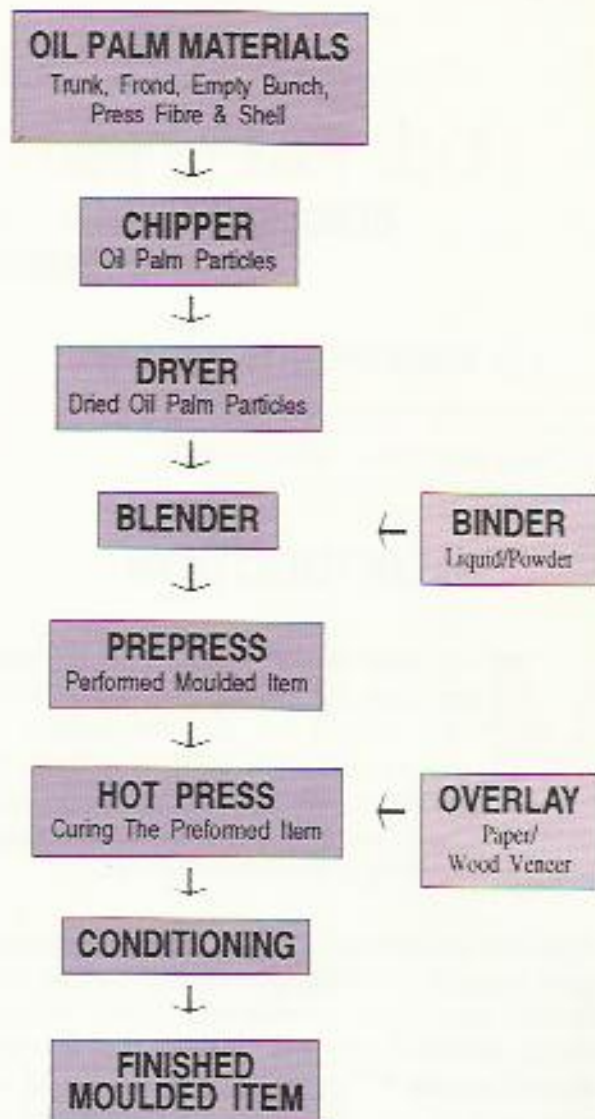
Classroom furniture is always subjected to punishment and rough use. Regardless of models, the oil palm desk tops and chair seats give good resistance against knocks, scratches, ink, termites and fungus.

In addition, oil palm desk tops and chair seat meet the strength requirements of Type I (Standard Board) as stipulated in BS 5669:1979.

Other advantages are that oil palm desk tops and chair seats have rounded corners and edges to minimize furniture damage and injuries to students, increase resistance to delamination and reduce maintenance.

## ECONOMIC FEASIBILITY

The oil palm desk tops and chair seats were produced using the same equipment made for moulding wood particles. Based on material costing, the manufacturing costs of oil palm desk tops and chair seats are comparable to traditional wood materials.



**FIGURE 1.**  
*Process Flow Of Oil Palm  
Desk Tops And Chair Seats*

For more information kindly contact

Director-General  
PORIM  
P.O. Box 10620  
50720 Kuala Lumpur  
Malaysia