

144080
8/10-97

**Quality of Imported Wood and
Wood Based Panels in Sri Lanka**

By

P.G.D.M.PRIYANTHI

THESIS SUBMITTED IN THE PARTIAL FULFILMENT OF
THE REQUIREMENTS OF THE DEGREE OF
MASTER OF SCIENCE
IN FORESTRY

UNIVERSITY OF SRI JAYAWARDENAPURA
NUGEGODA
SRI LANKA
DECEMBER 1995

144080

ABSTRACT

Imported sawnwood and panel products have become popular in Sri Lanka recently, especially around Colombo due to scarcity of local good quality timber. Their availability in varying sizes and quantity, the comparatively low price and the ease of transport with relatively free movement has resulted in its widespread use both in construction and furniture. Various technical and anatomical properties of imported wood evaluated in the study revealed that they were of an acceptable quality.

Sawn timbers are imported mainly from Malaysia and lesser quantity from Hongkong, South africa, New Zealand, Australia and Indonesia. Major species imported are Kempas, Tualang, Balau, Resak, Keledang, Kulim, Keruing, Bitis etc. Most timber merchants sell these species as Kempas, but some species are better than Kempas and some have properties inferior than Kempas. Density of these species ranges from 1.18 to 0.61 g/cm³.

Major panel products imported to Sri Lanka are plywood, medium density fibreboards, particle boards, and cement bonded boards. They are mainly imported from Malaysia, South africa, and India. According to the survey there are inferior quality MDF but these are low in prices. Users also use them only in suitable places.

However almost all the imports of MDF are acceptable in quality in terms of density. Density ranges from 0.71 to 0.80 g/cm³. According to the quality analysis, it is clear that MDF with lower density and higher thickness are the best in quality.

1.1 Background

Timber is

available

purposes

demand in

forest prod.

and the econ.

for various

between pote.

1995).

Scarcity is

wood based

A logging

continuous

had to depend

plantations,

for their tim

also not suff

especially for

CONTENTS	PAGE
CHAPTER I -- Introduction	
1.1 Background	1
1.2 Objectives	2
CHAPTER 2 -- Literature Review	
2.1 Introduction	3
2.2 Properties of timber	4
2.3 Marketting of tropical timbers	5
2.4 Imported timbers of Sri Lanka	7
2.5 Classification of Malaysian timbers	9
2.5.1 Heavy hardwood	10
2.5.2 Medium hardwood	10
2.5.3 Light hardwood	11
2.5.4 Softwood	13
2.5.5 Nomenclature of timbers in Malaysia- Vernacular names	13
2.5.6 Scientific Name	14
2.5.7 Trade Name	14
2.6 Forest management of natural forests in Malaysia	15
2.7 Wood based panels	18
2.7.1 MDF	18
2.7.2 Partical boards	18
2.7.3 Oriented strand boards	20
2.7.4 Wood cement panels	20
2.7.5 Plywood	21

CHAPTER 3 - Materials and methods

3.1	Categorization	22
3.2	Questionnaire survey	23
3.3	Measurement of wood properties	23
3.3.1	Density	24
3.3.2	Moisture content	25
3.3.3	Shrinkage	25
3.3.4	Swelling	25
3.4	Quality of MDF	26
3.4.1	Determination of Density	26
3.4.2	Determination of moisture content	29
3.4.3	Determination of water absorption and thickness swelling after immersion in water	29
3.5	Preparation of microscopic slides on collected imported timber samples	30
3.5.1	Species selection	30
3.5.2	Section cutting	30
3.5.3	Staining and permanent slide Preparation	33

CHAPTER 4 - Results

4.1	Qualities of different imported sawn timber species	35
4.1.1	Density	36
4.1.2	Moisture content	41
4.1.3	Swelling	45
4.1.4	Shrinkage	49

4.1.5	Comparison of experimental density values with recorded values	53
4.2	Quality of MDF	54
4.2.1	Density	55
4.2.2	Percentage moisture content	57
4.2.3	Percentage water absorption	59
4.2.4	Percentage swelling	61
4.3	Questionnaire survey on sawn timber	63
4.4	Questionnaire survey on wood based panels	65
4.5	Anatomical study	68
4.5.1	Qualitative features observed and microphotograph of imported timber	68
4.5.2	List of features used in identification of imported timber	91

CHAPTER 5 - Discussion

	Discussion	97
5.1	Imported sawn timber	98
5.2	Imported wood based panels	102
5.2.1	Quality of MDF	102

CHAPTER 6 - Conclusion and recommendation

6.1	Conclusion	104
6.2	Recommendations	105
	References	107
	Appendices	110