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Assessment of Timber Seasoning Practices and Challenges in Furniture and Joinery Manufacturing Industries: A Survey-Based Study in Western Province, Sri Lanka

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Abstract

Timber seasoning is a vital process that influences the quality, durability, and performance of timber-based end products in furniture and joinery manufacturing that produces end products such as dining furniture, bedroom sets, and living room products. This study examined existing timber seasoning practices, monitoring methods, and operational challenges faced by furniture and joinery manufacturers in the Western Province of Sri Lanka. A structured questionnaire survey was conducted among timber-based manufacturing companies located in the Colombo, Gampaha, and Kalutara districts, covering company profiles, commonly used timber species, seasoning methods, kiln types, monitoring techniques, drying schedules, challenges, and seasoning defects. Data were analysed using graphical methods to identify trends and prevalence rates. The results showed that medium-scale enterprises dominated the sector, representing 43.3% of respondents, while 33.3% had operated for 11-20 years. Traditional boiler-type kilns were the most used seasoning method (70.0%), followed by air seasoning, with limited adoption of modern dehumidifying or electric kilns. Monitoring relied mainly on manual methods, with moisture meters used by 86.7%, while 76.7% followed specific drying schedules. Major challenges included lack of skilled operators, high energy costs, poor schedules, inadequate monitoring, equipment shortages, and rushed drying, resulting in common defects such as bow warping (56.7%), cup warping, and end checks. The study concludes that inadequate seasoning practices, absence of national standards, and limited technical capacity contribute to quality issues, highlighting the need for operator training, standardized schedules, energy-efficient technologies, waste wood utilization, and national timber drying standards to improve product quality and export competitiveness.

Keywords: *Timber seasoning, Kiln drying, Drying defects, Furniture industry, Joinery manufacturing, Western province, Sri Lanka*