

THE INFLUENCE OF CLASSIC AND MODERN TYPES OF JOINT CONSTRUCTION ON THE STRENGTH OF WOOD-BASED PRODUCT

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Abstract	<p>In furniture products, joints represented susceptible areas where damage or structural issues might arise. Consequently, selecting the appropriate joint technique was crucial to reduce the likelihood of failures in furniture joint connections. The objective of this study was to furnish insights into the failure patterns under diagonal compression loads for various wood joints (both traditional and contemporary) constructed with a Medium-Density Fiberboard (MDF). The chosen joint techniques included Dowel (D), tongue and groove (T), Minifix (M), and Insert nut (N). Two compression test scenarios were implemented to evaluate the performance of each joint under external loads. The findings revealed that the Insert nut (N) joint emerged as the most preferable method, demonstrating resilience against the highest external loads and ease of installation, particularly suitable for knock-down furniture items. Conversely, the minifix joint (M) is not recommended due to its intricate construction process, and the compression test results indicated that it exhibited the lowest resistance to external loads. Keywords: Furniture, knock-down, properties, compression test. Abstrak Dalam produk furnitur, sambungan merupakan area yang rentan terhadap kerusakan atau masalah struktural yang mungkin timbul. Oleh karena itu, pemilihan teknik sambungan yang tepat sangat penting untuk mengurangi kemungkinan kegagalan dalam sambungan furnitur. Tujuan dari penelitian ini adalah untuk memberikan wawasan tentang pola kegagalan di bawah beban kompresi diagonal untuk berbagai jenis sambungan kayu (baik yang tradisional maupun kontemporer) yang dibuat dengan Medium-Density Fiberboard (MDF). Teknik sambungan yang dipilih meliputi Dowel (D), tongue and groove (T), Minifix (M), dan Insert nut (N). Dua skenario uji kompresi diterapkan untuk mengevaluasi kinerja setiap sambungan di bawah beban eksternal. Temuan menunjukkan bahwa sambungan Insert nut (N) muncul sebagai metode yang paling disukai, menunjukkan ketahanan terhadap beban eksternal tertinggi dan kemudahan pemasangan, khususnya cocok untuk furnitur yang dapat dirakit. Sebaliknya, sambungan minifix (M) tidak disarankan karena proses konstruksi yang rumit, dan hasil uji kompresi menunjukkan bahwa sambungan ini menunjukkan resistensi terendah terhadap beban eksternal. Kata kunci: Furnitur, knock-down, properti, uji tekan.</p>
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