

Malaysia's green materials make their mark

Palm core innovation takes centre stage at CAEXPO 2025.

Malaysia's industrial creativity was highlighted at the 22nd China-ASEAN Expo (CAEXPO), held from 17 to 21 Sep 2025 at the Nanning International Convention and Exhibition Centre (NICEC) in Guangxi, China. Among the participating companies, IOI Palm Wood introduced OnCore, a palm-based engineered material.

Derived from oil palm biomass, palm core exemplifies the rising demand for sustainable alternatives in the door and furniture industries. Designed for use in joinery, doors and furniture components, the material combines mechanical strength with ease of fabrication, offering manufacturers a reliable and eco-conscious substitute for tropical timber.

Its formulation leverages the fibrous structure of oil palm trunks, an abundant agricultural by-product in Malaysia, transforming waste into a value-added material. This approach reduces pressure on tropical timber resources and helps lower greenhouse gas emissions associated with deforestation and land degradation.

Palm core's properties, such as dimensional stability, low density and natural resistance to warping, make it particularly suitable for door applications. To validate its performance, palm core has undergone a series of third-party laboratory tests confirming its safety and suitability across multiple uses.

FORMALDEHYDE EMISSION TEST

Conducted using the gas analysis method with laser beam spectroscopy in accordance with ISO 12460-3 for wood-based panels, the test results



confirm that OnCore is processed without added formaldehydes. It meets stringent low-emission standards, ensuring safer indoor air quality for residential and commercial environments.

FIRE RESISTANCE TEST

Assessed under the BS 476-22:1987 standard, which outlines methods for determining the fire resistance of non-load-bearing construction elements, the test demonstrates palm core's ability to maintain structural integrity under heat and flame exposure. This makes it a reliable option for applications where fire safety is essential.

ACOUSTIC PANEL PERFORMANCE TEST

Using the impedance tube method in accordance with ASTM E2611-09, this evaluation measures the material's sound control properties. The test examined two key indicators of acoustic performance.



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- 1 The 22nd China-ASEAN Expo (CAEXPO), one of the country's largest international trade exhibitions
- 2 IOI Palm Wood's booth at the exhibition

The Sound Absorption Coefficient (SAC) measures how effectively the material absorbs sound energy upon impact. A higher SAC indicates greater sound absorption, making palm core ideal for reducing echo and reverberation in enclosed spaces.

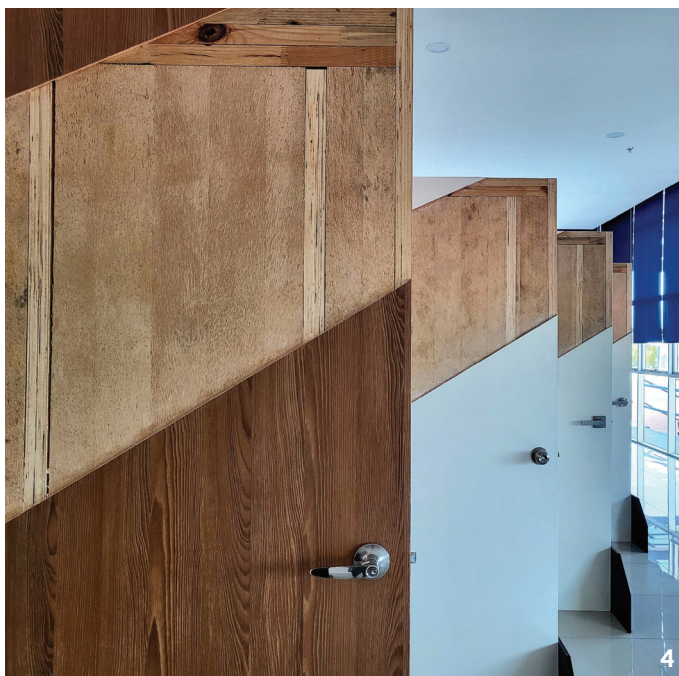
The Sound Transmission Loss (STL) assesses how well the material blocks sound from passing through it. A higher STL reflects stronger sound insulation, which is particularly valuable for partitioning in noise-sensitive environments such as offices, schools and residential buildings.

Together, these certifications underscore palm core's versatility and reliability in architectural and design contexts. Its adoption signals a shift towards greener material choices in ASEAN and global markets, aligning with Malaysia's sustainability goals and circular economy initiatives.

IOI Palm Wood's participation was facilitated by the Fibre and Biocomposite Centre (FIDEC) under the Malaysian Timber Industry Board (MTIB) and led by the Malaysia External Trade Development Corporation (MATRADE). Showcasing palm core at CAEXPO reflects Malaysia's ongoing efforts to promote eco-conscious materials to ASEAN and Chinese markets, attracting significant interest from regional buyers seeking scalable green solutions.

Following CAEXPO 2025, Malaysia's timber industry is gaining further traction through the Timber Exporters' Association of Malaysia (TEAM)'s "Look East" mission to Japan, scheduled for late Sep. IOI Palm Wood is participating in the initiative, which aims to deepen trade relations and promote Malaysia's timber offerings in the Japanese market.

Building on this momentum, IOI Palm Wood will also exhibit at the Malaysia Wood Expo (MWE) in Nov 2025. As one of the region's leading timber and woodworking trade events, MWE 2025 will provide a platform for IOI Palm Wood to showcase its latest innovations, forge new partnerships and reinforce Malaysia's reputation for quality and sustainability in the global timber arena. **P**



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- 3 OnCore, a palm-based engineered material
- 4 Palm core's properties make it particularly suitable for door applications



Inspiring the next "material revolution" by creating sustainable and high-performance materials from oil palm waste, **Peter Fitch**, together with IOI, have set up IOI Palm Wood to commercialise this untapped potential.

All images courtesy of IOI Palm Wood.