

3D printing with Natural Fibers

Sustainable– material is cheap and comes from **repurposing agricultural by-products**

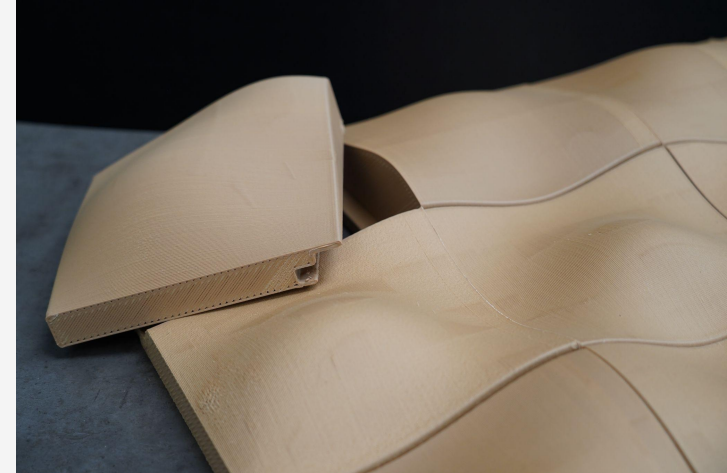
Jute, bamboo, dates, sisal, oil palm, sugar palms, pineapple, banana, rice straw, pineapple, wood, sugarcane, hemp.

Natural fibers are used in **Fused deposition modeling** (FDM, or Material extrusion) manufacturing.

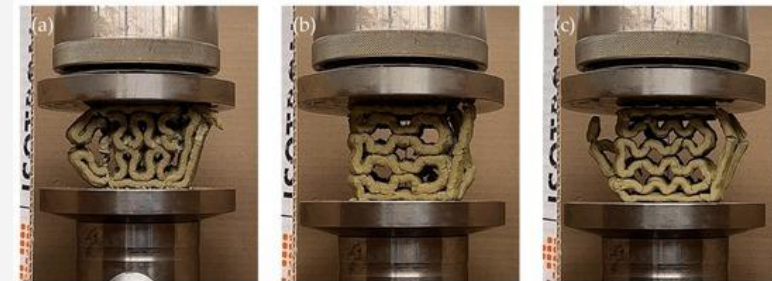
Natural fibers can be **combined with PLA** as a reinforcement (up to 10% organic material by weight)

Natural fiber reinforced filaments are **lightweight** but can have increased strength and flexibility.

Processing fiber into a uniform filament seems to be tricky.



3DNaturDruck architecture project's example of wood short fiber filament



Project 3D printing with bamboo compound and a binder, some of which are also biodegradable.

https://www.researchgate.net/publication/371134339_A_Review_of_Natural_Fiber-Based_Filaments_for_3D_Printing_Filament_Fabrication_and_Characterization

<https://www.mdpi.com/2071-1050/16/11/4619>

<https://www.bioplasticsmagazine.com/en/news/meldungen/20220809-fibres.php>