



COMPOSITES: WOOD-BASED

WHAT IS IT?

A composite or Engineered Wood Product (EWP) is composed of two or more components combined in a way that allows for new uses that would otherwise not be possible if the materials were applied individually. Particleboard (PB), medium density fiberboard (MDF), oriented strand board (OSB), plywood, and laminated flooring use the long fibers from wood waste and combine them with a synthetic resin to create a relatively less expensive building material for wood construction. They are useful because they use smaller wood chips and/or thin veneers in place of solid wood sawn from trees and clean recycled fibers.



MOST COMMON USES?

Wood composites are often used instead of solid wood in building construction as well as for furniture, cabinets or flooring.

HOW IS IT MADE?

- Wood-based materials are ground or chopped into consistent sized pieces.
- These chips are then misted with resins and formed into flat sheets that are compressed and heated to bind the materials together.
- For plywood, thin veneers are peeled from higher quality logs and then dried, compressed together in alternating direction layers using resins, pressure and heat.

OPPORTUNITIES FOR INTEGRATION

- Recycle fibers and residues for wood processing. Non-wood fibers can also be used.

DESTINATION/FATE

- Composite materials can last many years if used in dry locations.
- Once exposed to water, however, some wood-based composites can swell or disaggregate causing failure if they have not been pre-treated for water exposure. Water resistant resins are now common.
- Failed composite materials are typically land-filled, or if dry enough, used for combustion.

CONCERNS

Off-gassing of formaldehyde from resins and glues has made composite materials a concern for indoor air quality. Special low-emissions materials are now commonly required.