MUSHROOM® MATERIALS

Cradle to Cradle Certified Product

http://c2ccertified.org/
http://www.ecovativedesign.com/

About Materials

It can replace materials ranging from petroleum based expanded plastics (like Styrofoam) to particle board made using carcinogenic formaldehyde(甲醛).

The materials are 100% renewable, and primarily made from agricultural byproducts.

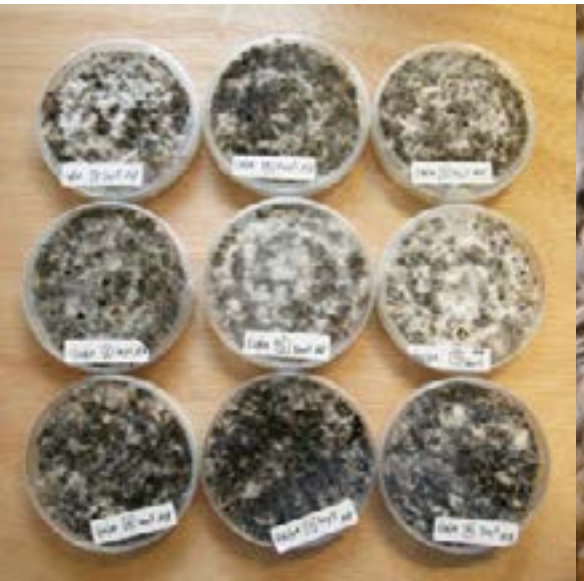
These low-embodied energy materials can be home composted when they're no longer needed.

CERTIFIED CM
cradle to cradle
GOLD

About Materials

These materials are grown from agricultural byproducts and mycelium, a fungal network of threadlike cells. It's like the "roots" of mushrooms.

This technology is a radical departure from traditional bioplastics. While feedstocks for bioplastics are typically food crops, it is able to upcycle very low value waste products. A broad range of feedstocks can be used to create diverse material properties, and tune the specifications for the application.



About Manufacturing

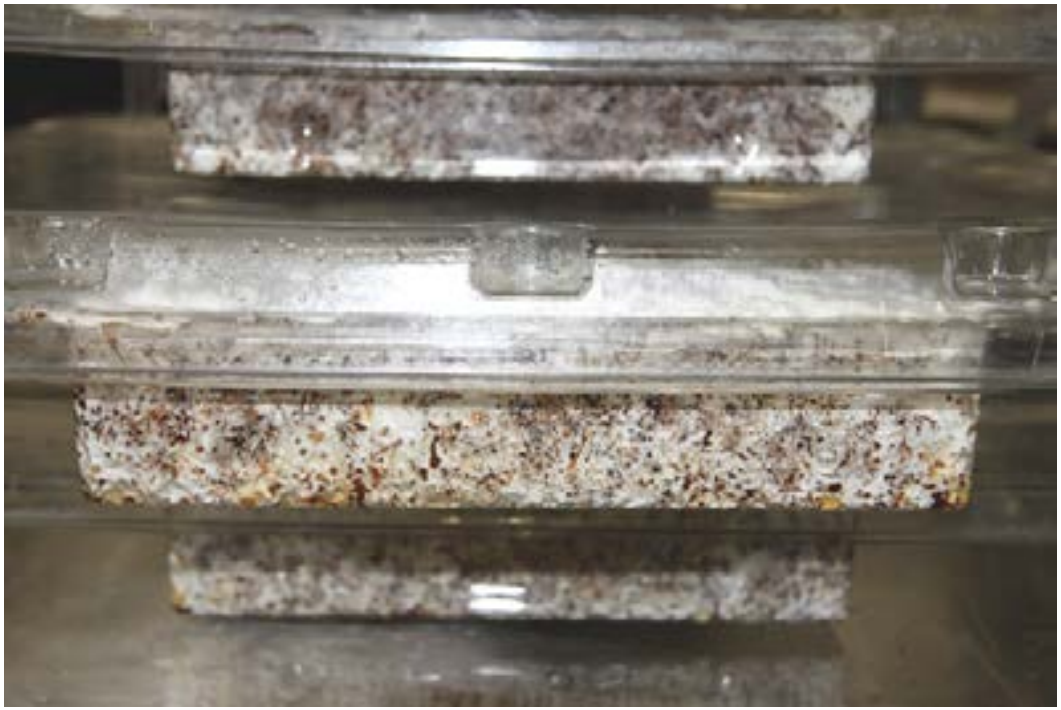
STEP1:
These materials start on a farm, with the parts of plants that cannot be used for food or feed and therefore have limited or no economic value.

About Manufacturing

STEP2
A process cleans and prepares a blend of agricultural byproducts, and inoculates it with mycelium(菌丝体). You can think of this process as planting the mushroom tissue. There are never any spores(孢子) involved. This inoculated mixture is filled evenly into forms in an automated process.

About Manufacturing

STEP3
The mycelium grows indoors in about a week without any need for light, watering or petrochemical inputs. It's like a vertical farm for mushroom materials. The mycelium digests the agricultural byproducts, binding them into a beautiful structural material. The mycelium acts like a natural, self assembling glue.



About Manufacturing

STEP4

Every cubic inch of material contains a matrix of 8 miles of tiny mycelia fibers. At the end of the process, the materials are put through a dehydration(脱水) and heat treating process to stop the growth. This final process ensures that there will never be any spores or allergen(过敏原) concerns.

About Sustainability

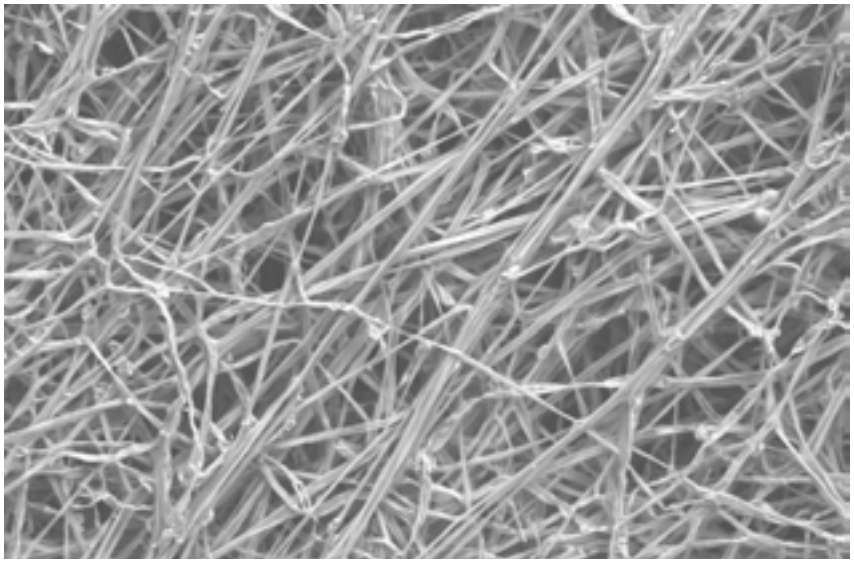
Natural, Renewable, Biodegradable

By using mycelium and agricultural by-products, unlike other bio-plastics, this technology isn't based on turning food or fuel crops into materials; only inedible crop waste is used to grow the products. The final biodegradable materials have a variety of end-of-life options, including home composting. From the materials chosen to the way it is produced, these materials are part of a truly sustainable future.

About Sustainability

Life Cycle Assessment

Life Cycle Assessment (LCA) tools are used while designing the manufacturing system, to optimize every step. The way that the mushroom materials are produced uses significantly less energy than the manufacturing of synthetic foams(塑料泡沫). This is because the mycelium's ability is harnessed to self assemble from lignin(木素质) and cellulose(纤维素) into strong bio-composites. The material . Actually can be grown at room temperature and atmospheric pressure. The manufacturing facility is powered by carbon neutral hydroelectric power.



About Sustainability

Eco-Friendly Disposal

From beginning to end, the materials fit into nature's recycling system. Composting, mulching, or throwing away mushroom packaging are all environmentally sound options of disposal because the product is made of natural materials that belong in a healthy ecosystem.

Even when plastic packaging is recycled (and it seldom is), the polymers degrade and are "down-cycled" into lower grade materials. Many bio-plastics have come under criticism because they require high temperature conditions found only in industrial composting facilities to break down. There is limited industrial composting capacity, and many of these facilities do not accept bio-plastics.