

Paludiculture foam boards

What is paludiculture?

(*palus* – lat.: marsh) Is the productive use of wet peatland sites - In particular, agricultural and forestry production on rewetted organic soils while preserving the peat deposits. Under ideal conditions, formation of peat can regenerate. The above-ground biomass of common reed, sedges, black alder, reed canary grass and other paludiculture plants is harvested as a renewable resource and used materially, energetically or as animal fodder.

Foam boards made of paludiculture products

- Cattail, Sedges, wet meadow hay as raw material
- Possible applications as lightweight panels, insulation panels or for packaging
- attractive building material, as it is especially sustainable and completely natural
- more positive ecological balance than comparable wood foam panels
- through cultivation on rewetted peatlands - high area potential with very low CO₂ emissions

Paludiculture raw materials – an overview

Cattail – *Typha spec.*



Picture: typhatechnik



Picture: GMC

Sedges – *Carex spec.*



Picture: T.Dahms



Picture: GMC

Sedges/Reed Canary Grass Mix



Picture: T.Dahms



Picture: GMC

Properties of Paludi-foam boards

- very good thermal insulation – comparable to wood- or polystyrene-based insulating materials
- higher mechanical strength and lower water absorption than wood foam boards
- product properties dependent on paludiculture raw material and harvesting time of the biomass

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Product properties

Material/Compound material:	Fibrillated wet meadow biomass + Hydrogen peroxide + Proteins
Area of application:	insulation
Product research cooperation	Univeristy of Greifswald & Fraunhofer Institute for Wood Research - Wilhelm-Klauditz-Institut (WKI)
Thermal conductivity (DIN EN 12667) dependent on raw material and harvesting time in W/mK:	0,039 (Sedges early & late harvest) 0,039 (Sedges/Reed Canary Grass Mix 30/70, late harvest) 0,037 (Cattail early harvest) 0,040 (Cattail late harvest)
Flame test (DIN EN 13501 – 1)	all successfully passed
Density in kg/m ³ :	74 (Sedges early harvest) 94 (Sedges late harvest) 87 (Sedges/Reed Canary Grass Mix late harvest) 65-80 (Cattail early harvest) 80-97 (Cattail late harvest)
Recyclability:	fully recyclable & compostable
Carbon Footprint:	environmental advantages of cultivation compared to wood potentially CO ₂ -binding sites

Status: 1/2022

Comment on the product

The paludiculture foam boards presented are current product research prototypes and are not in serially production.

Further information



paludiculture

<https://kurzelinks.de/0jnc>



cultivation of reed and cattails for products

<https://kurzelinks.de/i84x>



example of application

<https://kurzelinks.de/2tka>