

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

Paludiculture foam boards

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://lmy.de/KGYpR>



cultivation of reed and
cattails for products
<https://lmy.de/DpB01>



example of application
<https://lmy.de/Kr6AR>