

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

Sedges – *Carex spec.*



Picture: T.Dahms

Sedges/Reed Canary Grass Mix



Picture: T.Dahms



Picture: GMC



Picture: GMC



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://lmy.de/KGYpR>



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



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