Resistance of bio-based, synthetic and inorganic thermal insulations against attack by house mouse

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EXPERIMENTAL

> THERMAL INSULATIONS (13)

- Bio-based cellulose, straw, hemp, granulated cork, fleece
- Synthetized organic expanded polystyrene, extruded polystyrene, polyurethane
- Inorganic rock wool, glass wool

ANTI-RODENT TESTS

House mouse (Mus musculus) →
in glass containers wanted to get from
one side of samples (100×175×410 mm)
on their other side to a bait food "mixture of
fruits, chesses, chocolates, sausages and
breeding granulated food"

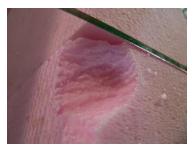
RESULTS













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RESULTS

Type	Name	Density	Thermal conductivity	Resistance to house mouse activity		
				Pang depth in insulation [mm]		Mortality
		[kg·m ⁻³]	[W·m ⁻¹ ·K ⁻¹]	x _{min.} - x _{max}	X _{mean}	[0-10]
Cellulose	Tempelan	65	0.038	40-100	79	1
Straw	Wheat straw	100	0.140	80-100	96	0
Hemp	Q-Flex	35	0.042	70-100	89	0
Cork	Expanded granul. cork	70	0.042	80-100	93	0
Fleece	NaturWool	15	0.038	100	100	0
Expanded	EPS 70 F WhiteFacade	16	0.039	0-100	53	3
polystyrene	Isover EPS GreyWall	15	0.032	10-100	50	1
Extruded	Austrotherm XPS TOP	30	-	0-30	3	1
polystyrene	Styrodur 2800 C	30	0.037	0-5	0.5	0
Polyurethane	Puren MV PUR-PIR	40	0.027	0	0	0
Rock wool	Nobasil FKD	60	0.039	50-100	76	5
	Isover TF	55	0.038	0-100	41	2
Glass wool	Isover Multimax	50	0.030	0-100	43	1

CONCLUSIONS

- > The least anti-mouse resistance
 - → all bio-based insulations
- > A partly better A-M resistance
 - → expanded polystyrene
 - → inorganic insulations
- ➤ The <u>highest</u> A-M resistance
 - → polyurethane foam
 - → extruded polystyrene