

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

## CONCLUSIONS

- The **least** anti-mouse resistance
  - all bio-based insulations
  
- A **partly better** A-M resistance
  - expanded polystyrene
  - inorganic insulations
  
- The **highest** A-M resistance
  - polyurethane foam
  - extruded polystyrene