

Technical Datasheet

January 2021

THERMO HEMP COMBI JUTE

The insulation matt made from hemp and jute fibres



Nature wins!



| | | | | | | | | | |
|---|---|--|------|------|------|------|------|---------------------------------------|------------------------|
| Designation | THERMO HEMP COMBI JUTE | | | | | | | | |
| Building authority approval | ETA-05/0037 | | | | | | | | |
| DoP- / LE-Number | 130701-041-01 | | | | | | | | |
| Ingredients | 62.5% Hemp fibre 21.75% Jute fibre, 9% polymer binding fibre (PET-based), 4% Soda | | | | | | | | |
| Dimensional deviations | | | | | | | | | |
| Length and width (tested according to EN 822:2013) | Length \pm 2%, width: \pm 1.5% | | | | | | | | |
| Thickness (tested according to EN 823:2013) | - 4mm and + 10mm / + 10 % (corresponds to T3 according to EN 13171:2012, table 1) | | | | | | | | |
| Bulk density (tested according to EN 1602:2013) | Approx. 37kg/m ³ | | | | | | | | |
| Tensile strength parallel to the plane (tested according to EN 1608:2013) | \geq 30 kPa | | | | | | | | |
| Energy saving and thermal protection | | | | | | | | | |
| Thermal conductivity (tested according to EN 12667) | | | | | | | | | |
| Nominal value $\lambda_{D(23,50)}$ | 0.039 W/(m•K) | | | | | | | | |
| Rated value $\lambda_{D(23,80)}$ | 0.040 W/(m•K) | | | | | | | | |
| Bemessungswert $\lambda_{D(23,80)}$ for Germany | 0.040 W/(m•K) | | | | | | | | |
| Calculated values for building physics Calculations [W/(m•K)] | | | | | | | | | |
| | 0.040 | 0.040 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.040 | | | | | | | |
| Conversion factors for the moisture content (conversion according to DIN EN ISO 10456:2007+AC:2009) | F_{m1} (dry at 23 °C/50 %) = 1.03 F_{m2} (23 °C/50 % zu 23 °C/80 %) = 1.08 | | | | | | | | |
| Safety margin for humidity factor (MVVTB) | γ = 1.03 | | | | | | | | |
| Specific heat capacity, c (tested according to EN 12667:2001) | 2300 J/(kg•K) | | | | | | | | |
| Water vapour diffusion resistance $h_l \mu$ (tested according to EN 12086:2013) Climate condition 23-50/93 | 1 to 2 | | | | | | | | |
| Water absorption (tested according to EN 1609:1996, examination A) | \leq 4.2 kg/m ² | | | | | | | | |
| Sound insulation | | | | | | | | | |
| Length related flow resistance (tested according to EN 29053:1993) | 3.0 kPa•s/m ² | | | | | | | | |
| Sound absorption (tested according to EN ISO 354:2003 and EN ISO 11654:1997) | Nominal thickness [mm] | Practical sound absorption α_p Calculation according to EN ISO 11654 | | | | | | Calculation according to EN ISO 11654 | |
| | | Frequency [f/Hz] | | | | | | Sound absorption level α_w | Sound absorption class |
| | 40 | 0.2 | 0.45 | 0.70 | 0.85 | 0.90 | 0.95 | | |
| | 160 | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | A |
| Fire protection | | | | | | | | | |
| Fire behavior (tested according to EN ISO 11925-2:2010) | B2, Class E (according to EN 13501-1:2007) | | | | | | | | |
| Max. temperature for use | 120 °C | | | | | | | | |
| Hygiene, health and environmental protection | | | | | | | | | |
| Resistance to mold growth (Examination according to EAD, appendix B) | Level 0 (according to EN ISO 846:1997) | | | | | | | | |
| Delivery form | | | | | | | | | |
| Dimensions | Width: | Thickness: | | | | | | | |
| | 580mm, 375mm | 30mm, 40mm, 50mm 60mm, 80mm 100mm, 120mm, 140mm, 160mm, 180mm, 200mm, 220mm | | | | | | | |

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Description:

- Building authority approved insulation
- Flexible insulation mats made from durable robust hemp fibres and upcycled jute fibres from food bags
- Second life cycle of natural fibres instead of thermal recycling
- Thermo bonding process of manufacturing uses 100% renewable energy

Properties:

- Best thermal insulation due to a low thermal conductivity
- Excellent heat protection in summer due to high heat storage capacity
- Very good soundproofing properties
- Recommended tools:
 - o HempFlax insulation saw
 - o Bosch "Alligator" GFZ with serrated blade
 - o Festool insulation saw with serrated blade
- Humidity regulating due to high moisture absorption capacity
- Contains no nutrients for rodents and insects

Applications:

- Insulation between rafters, wooden beams/joists and cavities of appropriate constructions **(DZ)**
- Interior insulation of ceilings or roofs, under the supporting structure (rafters) and within suspended ceilings **(DI)**
- Loft insulation (accessible top floor ceilings)
- Cavity insulation of exterior and interior walls in timber frame construction and similar constructions **(WH, WTR)**
- Internal insulation of external walls between a supporting structure **(WI)**

General Information

- Storage, preparation and installation must be in dry conditions. Store upright
- To achieve an installation with no gaps, install oversized by 10-20mm on each side
- When installed slightly oversized, the insulation is compressed and pushes against the sides of the joists. In general, this "friction fit" will hold the insulation in place prior to installing the vapour barrier or mechanical fixings. The ability for the insulation to stay in place with the compression force alone is dependent on the insulation thickness, rafter spacing, surface friction and roof slope. If the combination of these parameters is unfavourable, mats can be stapled to the rafters at the edges to temporarily hold them in place.
- After installation the insulation must be immediately covered with a vapour barrier
- The insulation material and vapour barrier must be permanently secured with battens
- The properties and performance of the insulation can only be achieved if the product is installed according to the guidelines of the manufacturer and if it is protected from rain and moisture during storage, transport and installation
- The application of national building regulations must always be observed!