

Isover LAM 50

Stone wool insulation



TECHNICAL SPECIFICATION

These large-format lamellas are made of ISOVER mineral stone wool with perpendicular fibres. The production is based on defibring method of the minerals composition melt and additional additives and ingredients. The mineral fibres produced are processed into the final lamella's shape on the production line. The entire fibre surface is hydrophobic. The lamellas in the construction have to be protected suitably (vapour-proof foil, water-proofing, flat roof bearing layer, etc.)



APPLICATION

Large-format lamellas can fully replace standard slabs, that are mostly used in flat roof insulation systems. Due to their unique properties, they meet obligations to mechanical resistance with much less densities than regular slabs. They can be used as bottom or middle layer into multiple layer systems. It is necessary to combine them with covering top layer e.g. Isover S (or others). For safe rainwater transport, there is a suitable combination with gravity flow systems Isover SD and Isover DK as well as with Isover AK attic wedge blocks which help to change the horizontal direction of the waterproofing into the perpendicular direction.

PACKAGING, TRANSPORT, WAREHOUSING

Isover LAM 50 large-format lamellas are packed into the PE foil in height up to 1.3 m. They have to be transported in covered vehicles under conditions preventing their wetting or other degradation. They should be stored flat in sheltered space to maximum layer height of 2 m.

BENEFITS

- Significant lower weight than slabs, that implies less demands on the roof construction statics.
- Better and simpler workability.
- Keeping mechanical properties as using slabs.
- Fully compatible with Isover fire-rating assurance.
- Low vapour resistance – good water vapour penetrability.
- Environmentally friendly and hygienic.
- Completely hydrophobic.
- Long life span.
- Resistant to wood-destroying pests, rodents, and insects.
- Easy workability – can be cut, drilled into, etc.

DIMENSIONS AND PACKAGING

Thickness [mm]	Length × width [mm]	Quantity per pallet [m ²]	Declared thermal resistance R _D [m ² ·K·W ⁻¹]
100	2 000 × 360	28.08	2.40
110	2 000 × 360	25.92	2.65
120	2 000 × 360	23.76	2.90
130	2 000 × 360	21.60	3.15
140	2 000 × 360	19.44	3.40
150	2 000 × 360	17.28	3.65
160	2 000 × 360	17.28	3.90
180	2 000 × 360	15.12	4.25
220	2 000 × 360	12.96	5.35
240	2 000 × 360	10.80	5.85
300	2 000 × 360	8.64	7.30

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TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Geometric shape				
Length <i>l</i>	[% , mm]	EN 822	±2 %	
Width <i>b</i>	[% , mm]	EN 822	±1.5 %	
Thickness <i>d</i>	[% , mm]	EN 823	-3 % or -3 mm ¹⁾ and +5 % or 5 mm ²⁾	Class of thickness tolerances T4
Deviation from squareness of the edge on length and width <i>S_s</i>	[mm·m ⁻¹]	EN 824	5	
Deviation from flatness <i>S_{max}</i>	[mm]	EN 825	6	
Relative change in length $\Delta\epsilon_l$ in width $\Delta\epsilon_b$ in thickness $\Delta\epsilon_d$	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS(70,-)
Thermal technical properties				
Declared value of thermal conductivity coefficient λ_{30} ³⁾	[W·m ⁻¹ ·K ⁻¹]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.041	
Design thermal conductivity λ_{10} ⁴⁾	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.043	
Specific heat capacity <i>c_d</i>	[J·kg ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	800	
Mechanical properties				
Compressive stress at 10% deformation σ_{10}	[kPa]	Declaration according to EN 826	50	Declared level of compressive stress at 10% deformation CS(10)50
Tensile strength perpendicular to faces σ_{nt}	[kPa]	Declaration according to EN 1607	50	Declared level of tensile strength perpendicular to faces TR50
Fire safety properties				
Reaction to fire class	[-]	Declaration according to EN 13501-1+A1	A1	
Maximum temperature for use	[°C]		200	
Melting temperature <i>t_f</i>	[°C]	DIN 4102 part 17	≥ 1000	
Hydrothermal properties				
Short-term water absorption <i>W_p</i>	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 1609	1	Declared level for short-term water absorption WS
Long-term water absorption by partial immersion <i>W_{ip}</i>	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 12087	3	Declared level for long-term water absorption by partial immersion WL(P)
Water vapour diffusion resistance factor μ	[-]	Declaration according to EN 13162+A1 Measurement according to EN 12086	1	Declared value for water vapour diffusion resistance factor MU1
Other properties				
Density ⁵⁾	[kg·m ⁻³]	EN 1602	70-90	
Environmental properties/impacts				
Volume of pre-consumer recycled content for production ⁶⁾	[%]	ČSN ISO 14021	68.5 - 73.5	
Volume of post-consumer recycled content for production ⁶⁾	[%]	ČSN ISO 14021	0	
Non-hazardous waste disposed ⁷⁾	[kg /FU ⁸⁾]	EN 15804+A1, ČSN ISO 14025	2.37	NHWD
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	116	PENRT
Global warming potential	[kg CO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	11.7	GWP
Ozone depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	6.28E-07	ODP
Acidification potential	[kg SO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.083	AP
Eutrophication potential	[kg PO ₄ ³⁻ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00796	EP
Photochemical ozone creation	[kg C ₂ H ₄ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0124	POPC
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	2.25E-07	ADP-elements
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	109	ADP-fossil fuels

¹⁾ Value with greatest numerical tolerance.

²⁾ Value with lowest numerical tolerance.

³⁾ Declared values were set under the following conditions: (reference temperature 10 °C, humidity u_{dry} reached by drying) according to EN ISO 10456.

⁴⁾ Valid for typical use in construction with risk of condensation. In the case of construction without any risk of condensation, it is possible to use the declared value of thermal conductivity.

⁵⁾ The apparent density is only informative in connection with logistics and static needs.

⁶⁾ According to EN ISO 14021, part 7.8 - Recycled content.

⁷⁾ In this case it is standard mixed waste.

⁸⁾ FU = functional unit (1 m² of insulation at a thickness of 120 mm for life cycle phases A1-A3).

RELATED DOCUMENTS

- Declaration of Performance
- Certificate of constancy of performance
- Environmental Product Declaration
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

More about the product

www.isover.cz/en/products/isover-lam-50



10/1/2024 The information provided herein is valid at the time of publication. The manufacturer reserves the right to change the data.