

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, waterproofing, 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 insect
- easy workability - can be cut, drilled into, etc.



DIMENSIONS AND PACKAGING

Thickness [mm]	100	110	120	130	140	150	160	180	220	240	300
Length × width [mm]	2000 × 360										
Volume per package [m ³]	28.08	25.92	23.76	21.60	19.44	17.28	17.28	15.12	12.96	10.80	8.64
Declared thermal resistance R _D [m ² ·K·W ⁻¹]	2.40	2.65	2.90	3.15	3.40	3.65	3.90	4.25	5.35	5.85	7.30

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 S _D	[mm·m ⁻¹]	EN 824	5	
Deviation from flatness S _{max}	[mm]	EN 825	6	
Relative change in length Δε _l in width Δε _b in thickness Δε _d	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS(70.-)
Thermal technical properties				
Declared value of the thermal conductivity coefficient λ _D ³⁾	[W·m ⁻¹ ·K ⁻¹]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.041	
Design thermal conductivity λ _D ⁴⁾	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.043	
Specific heat capacity c _D	[J·kg ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	800	
Mechanical properties				
Compressive stress at 10% deformation σ _D	[kPa]	Declaration according to EN 826	50	Level of compressive stress at 10% deformation CS(10)50
Tensile strength perpendicular to faces σ _{mt}	[kPa]	Declaration according to EN 1607	50	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 t _f	[°C]	DIN 4102 part 17	≥ 1000	
Hydrothermal properties				
Short term water absorption W _p	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 1609	1	Level for short term water absorption WS
Long term water absorption by partial immersion W _p	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 12087	3	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	Value for water vapour diffusion resistance factor MU1
Other properties				
Density ρ ⁵⁾	[kg·m ⁻³]	EN 1602	70-90	

¹⁾ Whichever gives the greatest numerical tolerance.

²⁾ Whichever gives the smallest numerical tolerance.

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

⁴⁾ It is 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 logistic and static needs.

RELATED DOCUMENTS

- Declaration of Performance CZ0001-0036
- Certificate of constancy of performance 1390-CPR-377/2013/P
- Environmental Product Declaration
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
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

⁶⁾ According to ČSN 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 by 120 mm thick for live cycle phases A1-A3).



Example of product application ISOVER Lam