

ISOVER Unirol Profi

Mineral fibreglass insulation



TECHNICAL SPECIFICATION

Rolled insulation mats made of ISOVER fibreglass wool are covered with hydrophobic fibres on the entire surface. The production method is based on the fibering of glass melt and other additives and ingredients. The mineral fibres produced are processed into the final mat shape on the production line. The insulation in the construction should be protected (vapour-proof foil, suitable protection against dust setting in case of loosely laid insulation, additional construction layers). The insulation is not harmful to the environment or public health, it is resistant to moulds, fungi and wood-destroying insects.

APPLICATION

The fibreglass insulation mats with excellent heat-insulating properties are used as thermal and acoustic insulation of sloping roofs and ceilings.
Superior energy saving type of insulation $\lambda_b = 0,033 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$.

PACKAGING, TRANSPORT, WAREHOUSING

The ISOVER rolls are strongly compressed within the package and wrapped with PE foil (1 MPS = 24 Rolls, volume 4,09 m³). After unpacking, the rolls quickly acquire full thickness. Compressing makes manipulation easier and saves space in warehouses, during transport and on the construction site. Rolls have to be transported in covered vehicles under conditions preventing them from getting wet or being degraded. The products are stored indoors or outdoors depending on the conditions specified in the current ISOVER price list.

BENEFITS

- fire-resistant
- very good thermal insulation performance
- excellent acoustic properties in terms of noise absorption
- the product's surface is lined, making for easier and faster cutting
- 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.
- dimensional stability during temperature change



DIMENSIONS AND PACKAGING

Thickness	[mm]	50	60	80	100	120	140	160	180	200	220
Length x width	[mm]	9500 x 1200	8000 x 1200	6000 x 1200	4500 x 1200	4000 x 1200	3300 x 1200	2900 x 1200	2600 x 1200	2400 x 1200	2300 x 1200
Volume per package	[m ³]	1	1	1	1	1	1	1	1	1	1
Quantity per palette	[m ²]	11.40	9.60	7.20	5.40	4.80	3.96	3.48	3.12	2.88	2.76
Declared thermal resistance R _D	[m ² ·K·W ⁻¹]	0.57	0.58	0.58	0.54	0.58	0.55	0.56	0.56	0.58	0.61
Declared thermal resistance R _D	[m ² ·K·W ⁻¹]	273.60	230.40	172.80	129.60	115.20	95.04	83.52	74.88	69.12	66.24
Declared thermal resistance R _D	[m ² ·K·W ⁻¹]	1.50	1.80	2.40	3.00	3.60	4.20	4.85	5.45	6.05	6.65

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Geometric shape				
Length l	[%, mm]	EN 822	±2 %	
Width b	[%, mm]	EN 822	±1.5 %	
Thickness d	[%, mm]	EN 823	-5 % or -5 mm ¹⁾ and +15 % or +15 mm ²⁾	Class of thickness tolerances T2
Deviation from squareness of the edge on length and width S _b	[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 (23,90)
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	0.033	
Design thermal conductivity λ _D ⁴⁾	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.036	
Specific heat capacity c _D	[J·kg ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	840	
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				
Water vapour diffusion resistance factor μ	[-]	EN 13162+A1	1	Declared value for water vapour diffusion resistance factor MU1
Other properties				
Density	[kg·m ⁻³]	EN 1602	21	

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 to 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.

RELATED DOCUMENTS

- Declaration of Performance 006-WS1-DoP-14-w2, 006-WS2-DoP-14-w2
- Environmental Product Declaration
- ISO 9001, ISO 14001, ISO 45001

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Parameter	Unit	Methodology	Value	Designation code			
Acoustic properties⁵⁾							
The practical sound absorption coefficient α_p	[-]	EN 13162+A1	Level of practical sound absorption coefficient	AP			
		EN ISO 11654					
		Measurement according to EN ISO 354					
	Frequency	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
	Thickness	60 mm	0.40	0.90	0.95	0.95	1.00
80 mm		0.55	1.00	1.00	1.00	1.00	1.00
100 mm		1.00	1.00	1.00	1.00	1.00	1.00
Weighted sound absorption coefficient α_w Sound Absorption Average α_{sif} Noise Reduction Coefficient NRC	[-]	EN ISO 11654 (for NRC according ASTM C423)	Level of weighted sound absorption coefficient	AW			
		Single number value			α_w	α_{sif}	NCR
	Thickness	60 mm	1.00	0.78	0.95		
		80 mm	1.00	0.96	1.00		
100 mm	1.00	1.00	1.00				
Specific air flow resistivity r	[kPa·s·m ⁻²]	EN 13162+A1	Level of air flow resistivity	AFr			
		Measurement according to EN ISO 9053-1			12,3		
Environmental properties / impacts							
Volume of Pre-consumer recycled content for production	[%]	ČSN ISO 14021	-				
Volume of Post-consumer recycled content for production	[%]	ČSN ISO 14021	-				
Non-hazardous waste disposed ⁶⁾	[kg /FU ⁷⁾]	EN 15804+A1, ČSN ISO 14025	0.803	NHWD			
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	66.9	PENRT			
Global Warming Potential	[kg CO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	4.25	GWP			
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	1.11 E-07	ODP			
Acidification potential	[kg SO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0427	AP			
Eutrophication potential	[kg PO ₄ ³⁻ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00379	EP			
Photochemical ozone creation	[kg C ₂ H ₄ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0113	POPC			
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	2.36 E-06	ADP-elements			
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	82.4	ADP-fossil fuels			

⁵⁾ Informative non-declared value beyond scope of CPR, obtained by concrete tests.
⁶⁾ In this case it is standard mixed waste.
⁷⁾ FU = functional unit (1 m² of insulation by 100 mm thick for live cycle phases A1-A3).



Example of product application ISOVER Unirol Profi.