



# Isover UNIROL PLUS

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).

## APPLICATION

Isover UNIROL PLUS rolls are suitable for unloaded thermal and acoustic insulation of pitch roofs especially with insertion between rafters and additional frame as well, into partition walls, wood ceilings insulations, false ceilings, and cavities.

## PACKAGING, TRANSPORT, WAREHOUSING

The Isover UNIROL PLUS rolls are strongly compressed within the package and wrapped with PE foil. They come in MPS packs (IMPS = 24 rolls, volume 4,09 m<sup>3</sup>). 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
- 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]	100	120	140	160	180	200	220
Length × width	[mm]	6000 × 1200	5000 × 1200	4300 × 1200	3800 × 1200	3300 × 1200	3000 × 1200	2700 × 1200
Volume per package	[ks]	1	1	1	1	1	1	1
	[m <sup>2</sup> ]	7.20	6.00	5.16	4.56	3.96	3.60	3.24
Quantity per palette	[m <sup>3</sup> ]	0.72	0.72	0.72	0.73	0.71	0.72	0.71
	[m <sup>2</sup> ]	172.80	144.00	123.84	109.44	95.04	86.40	77.76
Declared thermal resistance R <sub>D</sub>	[m <sup>2</sup> ·K·W <sup>-1</sup> ]	2.75	3.30	3.85	4.40	5.00	5.55	6.05

## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
<b>Geometric shape</b>				
Length <i>l</i>	[%, mm]	EN 822	±2 %	
Width <i>b</i>	[%, mm]	EN 822	±1.5 %	
Thickness <i>d</i>	[%, mm]	EN 823	-5 % or -5 mm <sup>1)</sup> and +15 mm or +15 mm <sup>2)</sup>	Class of thickness tolerances T2
Deviation from squareness of the edge on length and width S <sub>D</sub>	[mm·m <sup>-1</sup> ]	EN 824	5	
Deviation from flatness S <sub>max</sub>	[mm]	EN 825	6	
Relative change in length Δε <sub>l</sub> , in width Δε <sub>b</sub> , in thickness Δε <sub>d</sub>	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS (23,90)
<b>Thermal technical properties</b>				
Declared value of the thermal conductivity coefficient λ <sub>D</sub> <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.036	
Design thermal conductivity λ <sub>D</sub> <sup>4)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.039	
Specific heat capacity c <sub>D</sub>	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	840	
<b>Fire safety properties</b>				
Reaction to fire class	[-]	Declaration according to EN 13501-1+A1	A1	
Maximum temperature for use	[°C]		200	
Melting temperature t <sub>f</sub>	[°C]	DIN 4102 part 17	< 1000	
<b>Hydrothermal properties</b>				
Water vapour diffusion resistance factor μ	[-]	EN 13162+A1	1	Declared value for water vapour diffusion resistance factor MU1
<b>Other properties</b>				
Density	[kg·m <sup>-3</sup> ]	EN 1602	15.5	
<b>Acoustic properties<sup>5)</sup></b>				
Specific air flow resistivity <i>r</i>		Declaration according to EN 13162+A1		Level of air flow resistivity AFr
	[kPa·s·m <sup>-2</sup> ]	Measurement according to EN 29053	≥ 5	

<sup>1)</sup> Whichever gives the greatest numerical tolerance.

<sup>2)</sup> Whichever gives the smallest numerical tolerance.

<sup>3)</sup> Declared values were set under the following conditions (reference temperature 10 °C, humidity *u<sub>dry</sub>*, which is reached by drying) according to EN ISO 10456.

<sup>4)</sup> 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.

<sup>5)</sup> Informative non-declared value beyond scope of CPR, obtained by concrete tests.

## RELATED DOCUMENTS

- Declaration of Performance 017-WS1-DoP-14-w2, 017-WS2-DoP-14-w2
- Environmental Product Declaration
- ISO 9001, ISO 14001, OHSAS 18001

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## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
<b>Environmental properties / impacts</b>				
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 <sup>6)</sup>	[kg /FU <sup>7)</sup> ]	EN 15804+A1, ČSN ISO 14025	0.579	NHWD
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	48.1	PENRT
Global Warming Potential	[kg CO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	3.0	GWP
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	8.34 E-08	ODP
Acidification potential	[kg SO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0298	AP
Eutrophication potential	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00267	EP
Photochemical ozone creation	[kg C <sub>2</sub> H <sub>4</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00792	POPC
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	1.83 E-06	ADP-elements
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	58.6	ADP-fossil fuels

<sup>6)</sup> In this case it is standard mixed waste.

<sup>7)</sup> FU = functional unit (1 m<sup>2</sup> of insulation by 100 mm thick for live cycle phases A1-A3).



Example of product application Isover UNIROL PLUS

4. 7. 2019 The information is valid up to date of publishing. The manufacturer reserves right to change the data.