

### TECHNICAL SPECIFICATION

Insulating slabs made of ISOVER mineral wool. 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 slab shape on the production line. The entire fibre surface is hydrophobic. The slabs in the construction have to be protected suitably (separating PE foil).

### APPLICATION

ISOVER N slabs are suitable for improving impact and airborne sound reduction in heavy floating floors under reinforced concrete slab (thicker slab can be also used in walls as an airborne sound insulation). Improvement in impact sound reduction in floors depends on use of the ISOVER N/PP insulating strips. The approved flatness of the underlay surface, when laying the flooring material, is 2 mm/2 m. The slabs are suitable for habitable rooms especially in family and apartment houses, imposed load  $\leq 2\text{ kN/m}^2$ .

### PACKAGING, TRANSPORT, WAREHOUSING

ISOVER N insulation slabs are packed into the PE foil with package height up to 0.5 m. The slabs 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

- very good thermal insulation performance
- fire resistance
- 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.

### DIMENSIONS AND PACKAGING

Thickness [mm]	20	25	30	40	50
Length × width [mm]	1200 × 600				
Volume per package [pcs]	16	12	10	8	6
Volume per package [m <sup>2</sup> ]	11.52	8.64	7.20	5.76	4.32
	0.23	0.22	0.22	0.23	0.22
Quantity per palette [m <sup>2</sup> ]	161.28	138.24	115.20	80.64	69.12
Declared thermal resistance R <sub>D</sub> [m <sup>2</sup> ·K·W <sup>-1</sup> ]	0.55	0.70	0.85	1.10	1.40

### 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> (20–50 mm)	[%, mm]	EN 823	-5 % or -1 mm <sup>1)</sup> and +15 % or +3 mm <sup>1)</sup>	Class of thickness tolerances T6
Thickness <i>d</i> (> 50 mm)	[%, mm]	EN 823	-1 % or -1 mm <sup>1)</sup> and +3 mm	Class of thickness tolerances T5
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	
<b>Thermal technical properties</b>				
Declared value of the thermal conductivity coefficient λ <sub>D</sub> <sup>2)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	Declaration according to EN 13162+A1	0.035	
		Measurement according to EN 12667		
Design thermal conductivity λ <sub>D</sub> <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.036	
Specific heat capacity c <sub>D</sub>	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	800	
<b>Mechanical properties</b>				
Compressibility <i>c</i>	[mm]	Declaration according to EN 13162+A1	≤ 5	Declared level for compressibility Declared level of tensile strength perpendicular to faces
		Measurement according to ČSN 12431		
<b>Hydrothermal properties</b>				
Water vapour diffusion resistance factor μ	[-]	Declaration according to EN 13162+A1	1	Declared value for water vapour diffusion resistance factor
		Measurement according to EN 12086		
<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 <i>t<sub>f</sub></i>	[°C]	DIN 4102 part 17	≥ 1000	
<b>Other properties</b>				
Density	[kg·m <sup>-3</sup> ]	EN 1602	100–110	

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

<sup>2)</sup> Declared values were set under the following conditions (reference temperature 10 °C, humidity *u<sub>dry</sub>*, which is reached by drying) according EN ISO 10456.

<sup>3)</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.

### RELATED DOCUMENTS

- Declaration of Performance CZ0001-033
- Environmental Product Declaration
- Certificate of constancy of performance 1023-CPR-1173 P
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

Parameter	Unit	Methodology	Value	Designation code			
<b>Acoustic properties<sup>4)</sup></b>							
<b>The practical sound absorption coefficient <math>\alpha_p</math></b>	[-]	Declaration according to EN 13162+A1	Declared level of practical sound absorption coefficient	AP			
		Declaration according to EN ISO 11654					
		Measurement according to EN ISO 354					
Frequency		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
Thickness	20 mm	0.05	0.20	0.55	0.85	0.95	1.00
	40 mm	0.10	0.50	0.95	1.00	1.00	0.95
<b>Weighted sound absorption coefficient <math>\alpha_w</math></b>	[-]	Declaration according to EN ISO 11654	Declared level of weighted sound absorption coefficient				AW
		Single number value	$\alpha_w$				
		Thickness	20 mm	0.50			
40 mm	0.80						
<b>Dynamic stiffness <math>s'</math></b>	[mm]	Declaration according to EN 13162+A1	Declared value of dynamic rigidity				SD
			20	25	30	40	50
	[MN·m <sup>-3</sup> ]	Measurement according to ČSN ISO 9052-1 (idt. EN 29052-1)	25.7	22.9	18.3	9.3	8.4
<b>Additional acoustic properties</b>							
	[mm]		20	25	30	40	50
<b>Decrease the level of impact noise <math>\Delta L_w</math><sup>5)</sup></b>	[dB]	EN ISO 717-2	24	27	28	34	35
<b>Compressibility <math>K</math></b>	[%]	ČSN 730532	4.4	2.4	3.0	2.6	2.6
<b>Elasticity <math>\epsilon</math></b>	[%]	ČSN 730532	85.4	88.0	83.4	87.7	88.5
<b>Loss factor <math>\eta</math></b>	[-]	ČSN ISO 9052-1	0.1	0.1	0.09	0.09	0.08
<b>Environmental properties / impacts</b>							
<b>Non-hazardous waste disposed<sup>6)</sup></b>	[kg /FU <sup>7)</sup> ]	EN 15804+A1, ČSN ISO 14025	0.562	NHWD			
<b>Total use of non-renewable primary energy resources</b>	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	28.6	PENRT			
<b>Global Warming Potential</b>	[kg CO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	3.02	GWP			
<b>Ozone Depletion</b>	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	1.55 E-07	ODP			
<b>Acidification potential</b>	[kg SO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0218	AP			
<b>Eutrophication potential</b>	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0019	EP			
<b>Photochemical ozone creation</b>	[kg C <sub>2</sub> H <sub>4</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00295	POPC			
<b>Abiotic depletion potential for non-fossil resources</b>	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	4.79 E-08	ADP-elements			
<b>Abiotic depletion potential for fossil resources</b>	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	26.8	ADP-fossil fuels			

<sup>4)</sup> Informative non-declared value beyond scope of CPR, obtained by concrete tests.

<sup>5)</sup> Determined by a calculation made for a heavy floating floor upon a standard 120 mm reinforced concrete ceiling slab and 50 mm concrete screeding.

<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 N