

# ISOVER Fassil NT

Mineral insulation from stone wool

## TECHNICAL SPECIFICATION

Insulating slabs made of ISOVER mineral wool. The production method is based on fibering mineral composition melt and other additives and ingredients. The mineral fibres produced are processed into the final slab shape in the production line. The entire fibre surface is made water repellent. The slabs in the construction should be protected suitably against the weather effects (outer sheathing, alternatively diffusion foil).

## APPLICATION

ISOVER Fassil NT slabs are suitable for insulation of outer walls of ventilated facade systems and are to be inserted into the grid under the cladding, or fitted mechanically in the multi-layer masonry. The slabs can be fitted mechanically using clamps for soft MW insulation. Insulating slabs are not glued to the surface. To harden the surface, these slabs are coated with black non-woven fibreglass fabric. It is necessary to protect the coating against an excessive wind impact if used on a ventilated facade. When the material is used to insulate ceilings, it is also necessary to use metal dowel pins with respect to fire security that cannot be positioned at the edge of the slab. The coating is not suitable for additional treatment (painting, gluing, etc.) The material is suitable for fire protection system constructions where the volume density  $50 \geq \text{kg}\cdot\text{m}^{-3}$  is required.

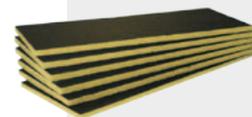
**Superior energy saving insulation type  $\lambda_b = 0.034 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ .**

## PACKAGING, TRANSPORT, WAREHOUSING

ISOVER Fassil NT insulation slabs are packed into the PE foil with package height up to 0.5 m. The slabs have to be transported in covered vehicle-under conditions preventing their wetting or other degradation. The products are stored indoors or outdoors depending on the conditions specified in the current ISOVER price list.

## BENEFITS

- very good thermal insulation performance
- fire-resistant
- 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]	50*	60*	80*	100*	120*	140*	160*	200*
Length x width [mm]	1200 x 1000				1200 x 600			
Quantity per palette [m <sup>3</sup> ]	2.520	3.110	3.110	3.024	3.110	3.024	2.765	2.880
[m <sup>2</sup> ]	50.40	51.84	38.88	30.24	25.92	21.60	17.28	14.40
Declared thermal resistance $R_b$ [m <sup>2</sup> ·K·W <sup>-1</sup> ]	1.45	1.75	2.35	2.90	3.50	4.10	4.70	5.85

\* It is necessary to consult with the producer for the terms of delivery.

## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
<b>Geometric shape</b>				
Length $l$	[% , mm]	EN 822	±2 %	
Width $b$	[% , mm]	EN 822	±1.5 %	
Thickness $d$	[% , mm]	EN 823	-3 % or -3 mm <sup>1)</sup> and +5 % or 5 mm <sup>2)</sup>	Class of thickness tolerances T4
Deviation from squareness of the edge on length and width $S_b$	[mm·m <sup>-1</sup> ]	EN 824	5	
Deviation from flatness $S_{max}$	[mm]	EN 825	6	
Relative change in length $\Delta\varepsilon_l$ , in width $\Delta\varepsilon_b$ , in thickness $\Delta\varepsilon_d$	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS(70,-)
<b>Thermal technical properties</b>				
Declared value of the thermal conductivity coefficient $\lambda_b$ <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.034	
Design thermal conductivity $\lambda_d$ <sup>4)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.036	
Specific heat capacity $c_p$	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	800	
<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 $t_f$	[°C]	DIN 4102 part 17	≥ 1000	
<b>Hydrothermal properties</b>				
Water vapour diffusion resistance factor $\mu$	[-]	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	50	

<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  $u_{dry}$ , which is reached by drying) according 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.

## RELATED DOCUMENTS

- Declaration of Performance CZ0001-006
- Environmental Product Declaration
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

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Parameter	Unit	Methodology	Value	Designation code			
<b>Acoustic properties<sup>5)</sup></b>							
<b>The practical sound absorption coefficient <math>\alpha_p</math></b>	[-]	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	0.20	0.75	1.00	1.00	1.00
80 mm		0.35	1.00	1.00	1.00	1.00	1.00
100 mm		0.45	1.00	1.00	1.00	1.00	1.00
120 mm		0.60	1.00	1.00	1.00	1.00	1.00
<b>Weighted sound absorption coefficient <math>\alpha_w</math></b> <b>Noise Reduction Coefficient NRC</b>	[-]	EN ISO 11654 (for NRC according ASTM C423)	Level of weighted sound absorption coefficient	AW			
		Single number value			$\alpha_w$	NRC	
	Thickness	60 mm	1.00	0.95			
		80 mm	1.00	1.00			
		100 mm	1.00	1.05			
120 mm		1.00	1.05				
<b>Specific air flow resistivity <math>r</math></b>	[kPa·s·m <sup>-2</sup> ]	EN 13162+A1	Level of air flow resistivity	AFr			
		Measurement according to EN ISO 9053-1			14.5		
<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	1.6	NHWD			
<b>Total use of non-renewable primary energy resources</b>	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	78.9	PENRT			
<b>Global Warming Potential</b>	[kg CO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	8.32	GWP			
<b>Ozone Depletion</b>	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	4.41 E-07	ODP			
<b>Acidification potential</b>	[kg SO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0599	AP			
<b>Eutrophication potential</b>	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00554	EP			
<b>Photochemical ozone creation</b>	[kg C <sub>2</sub> H <sub>4</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00832	POPC			
<b>Abiotic depletion potential for non-fossil resources</b>	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	4.0 E-07	ADP-elements			
<b>Abiotic depletion potential for fossil resources</b>	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	74.5	ADP-fossil fuels			

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