

TECHNICAL SPECIFICATION

Insulating slabs made of ISOVER mineral wool with longitudinal 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 slab shape on the production line. The entire fibre surface is hydrophobic and have longitudinal orientation. The slabs in the construction have to be protected suitably (layers of the contact wall insulation system).

APPLICATION

ISOVER TF Profi facade slabs with longitudinal fibre are suitable for external thermal insulation composite systems (ETICS), where they are glued and mechanically bonded to a sufficiently coherent and sound wall surface. The layers of contact insulating systems are applied on the slabs: bond, reinforcement grid, penetration, plaster, and paint. Bonding of the slabs can be performed with the glue being applied along the edge and at the patches in centre of the slab. The number of the anchors for mechanically anchoring is usually 5 to 6 pc/m², the exact number to be specified by the designer. The anchors will be arranged according to the instructions of the certified insulating system manufacturer. Appropriate also for flush mounting systems.

DIMENSIONS AND PACKAGING

Thickness [mm]	20	30	40	50	60	70*	80	100	120	140	150	160	180	200	220	240	260*	280*	300*
Length × width [mm]	1000 × 600																		
Volume per package [pcs]	12	8	4	4	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1
Volume per package [m ²]	[m ²]	7.20	4.80	2.40	2.40	1.80	1.80	1.80	1.20	1.20	1.20	1.20	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	[m ³]	0.144	0.144	0.096	0.120	0.108	0.126	0.144	0.120	0.144	0.168	0.180	0.192	0.108	0.120	0.132	0.144	0.156	0.168
Quantity per palette [m ²]	158.40	105.60	81.60	62.40	54.00	43.20	39.60	31.20	26.40	21.60	21.60	19.20	18.00	15.60	14.40	13.20	12.00	10.80	10.80
Declared thermal resistance R ₀ [m ² ·K·W ⁻¹]	0,55	0,85	1,10	1,40	1,70	2,00	2,25	2,85	3,40	4,00	4,25	4,55	5,10	5,70	6,25	6,85	7,40	8,00	8,55

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

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Geometric shape				
Length l	[%, mm]	EN 823	±1 %	
Width b	[%, mm]	EN 822	±1,5 %	
Thickness d	[%, mm]	EN 822	-1 % or -1 mm ¹⁾ and +3 mm	Class of thickness tolerances T5
Deviation from squareness of the edge on length and width S _b	[mm·m ⁻¹]	EN 824	2	
Deviation from flatness S _{max}	[mm]	EN 825	5	
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(70,90)
Thermal technical properties				
Declared value of the thermal conductivity coefficient λ ₀ ²⁾	[W·m ⁻¹ ·K ⁻¹]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.035	
Design thermal conductivity λ _w ³⁾	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.037	
Specific heat capacity c _p	[J·kg ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	800	
Mechanical properties				
Compressive stress at 10% deformation σ ₁₀	[kPa]	Declaration according to EN 826	30	Declared level of compressive stress at 10% deformation CS(10)30
Tensile strength perpendicular to faces σ _{nt}	[kPa]	Declaration according to EN 1607	10	Declared level of tensile strength perpendicular to faces TR10
Shear strength	[kPa]	EN 13162+A1	20 ⁵⁾	Level of shear strength SS20
		Measurement according to EN 12090		
Shear modulus	[kPa]	Measurement according to EN 12090	1000 ⁵⁾	
Fire safety properties				
Reaction to fire class	[-]	Declaration according to EN 13501-I+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	Declared level for short term water absorption WS
Long term water absorption by partial immersion W _{pb}	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 12087	3	Declared 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	Declared value for water vapour diffusion resistance factor MU1
Other properties				
Density	[kg·m ⁻³]	EN 1602	80-150 ⁴⁾	

¹⁾ Whichever gives the greatest numerical tolerance.

²⁾ Declared values were set under the following conditions (reference temperature 10 °C, humidity u_{dry} which is reached by drying) according EN ISO 10456.

³⁾ 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.

⁴⁾ The density is not constant and varies with the thickness of the product.

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

RELATED DOCUMENTS

- Declaration of Performance CZ0001-022
- Environmental Product Declaration
- Quality class A
- Certificate of constancy of performance 1390-CPR-312/11/P
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

PACKAGING, TRANSPORT, WAREHOUSING

ISOVER TF Profi insulation slabs are packed into the PE foil covered packets or as the packets on a pallet. ISOVER TF Profi is standardly delivered on pallets (on EPS scantlings). Material have to be transported and stocked under conditions preventing their wetting or other degradation.

BENEFITS

- quality class A
- system certification
- very good thermal insulation performance (λ₀ = 0,035 W·m⁻¹·K⁻¹)
- 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, glued, etc.



TECHNICAL PARAMETERS

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	0.30	0.90	1.00	1.00	1.00	1.00		
	100 mm	0.55	1.00	1.00	1.00	1.00	1.00		
	140 mm	0.65	0.95	1.00	1.00	1.00	1.00		
Weighted sound absorption coefficient α_w Sound Absorption Average α_{sfr} 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_{sfr}		NCR		
	Thickness	60 mm	1.00	-	-	-	0.90		
100 mm		1.00	-	-	-	1.00			
140 mm		1.00	-	-	-	1.00			
Specific air flow resistivity r	[mm]	EN 13162+A1	Level of air flow resistivity						
	[kPa·s·m ⁻²]	Measurement according to EN ISO 9053-1	100	120 ⁶⁾	140 ⁶⁾	150 ⁶⁾	160	180 ⁶⁾	200 ⁶⁾
			23.8	23.0	22.2	21.8	21.4	20.6	19.8
Dynamic rigidity s'	[MN·m ⁻³]	EN 13162+A1	Value of dynamic rigidity					SD	
	[mm]		100	120 ⁵⁾	140 ⁵⁾	150 ⁵⁾	160	180 ⁵⁾	200 ⁵⁾
	[MN·m ⁻³]	Measurement according to ČSN ISO 9052-1 (idt. EN 29052-1)	9.2	9.2	9.3	9.3	9.3	9.3	9.4
Environmental properties / impacts									
Non-hazardous waste disposed ⁷⁾	[kg /FU ⁸⁾]	EN 15804+A1, ČSN ISO 14025	2.71	NHWD					
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	153	PENRT					
Global Warming Potential	[kg CO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	14	GWP					
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	7.22 E-07	ODP					
Acidification potential	[kg SO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.099	AP					
Eutrophication potential	[kg PO ₄ ³⁻ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0092	EP					
Photochemical ozone creation	[kg C ₂ H ₄ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0143	POPC					
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	2.65 E-07	ADP-elements					
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	140	ADP-fossil fuels					

⁵⁾ Informative non-declared value beyond scope of CPR, obtained by concrete tests.
⁶⁾ Interpolated and extrapolated values.
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 TF Profi