

# Isover TF Profi

## Stone wool insulation



### TECHNICAL SPECIFICATION

Insulating slabs made of Isover mineral wool with longitudinal fibres. Production is based on drawing the mineral composition melt with other 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 has 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 fibres 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/m<sup>2</sup>, 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.

### BENEFITS

- Quality class A
- System certification
- Very good thermal insulation performance ( $\lambda_D = 0.035 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ ).
- 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 insects.
- Easy workability – can be cut, drilled into, glued, etc.
- Meets requirements for flush mounting with anchors and 60 mm disk.

### PACKAGING, TRANSPORT, WAREHOUSING

Isover TF Profi insulation slabs are packed into the PE film covered packets or as packets on a pallet. Isover TF Profi is standardly delivered on wooden pallet. Material has to be transported and stocked under conditions preventing wetting or other degradation.

### DIMENSIONS AND PACKAGING

Thickness [mm]	Length × width [mm]	Volume per package			Quantity per pallet [m <sup>2</sup> ]	Declared thermal resistance R <sub>D</sub> [m <sup>2</sup> ·K·W <sup>-1</sup> ]
		[pcs]	[m <sup>2</sup> ]	[m <sup>3</sup> ]		
30	1 000 × 600	7	4.20	0.126	100.8	0.85
40	1 000 × 600	6	3.60	0.144	72.0	1.10
50	1 000 × 600	5	3.00	0.150	60.0	1.40
60	1 000 × 600	5	3.00	0.180	48.0	1.70
80	1 000 × 600	3	1.80	0.144	36.0	2.25
100	1 000 × 600	3	1.80	0.180	28.8	2.85
120	1 000 × 600	3	1.80	0.216	25.2	3.40
140	1 000 × 600	2	1.20	0.168	21.6	4.00
150	1 000 × 600	2	1.20	0.180	21.6	4.25
160	1 000 × 600	2	1.20	0.192	19.2	4.55
180	1 000 × 600	2	1.20	0.216	16.8	5.10
200	1 000 × 600	1	0.60	0.120	15.6	5.70
220	1 000 × 600	1	0.60	0.132	13.2	6.25
240	1 000 × 600	1	0.60	0.144	12.0	6.85
260	1 000 × 600	1	0.60	0.156	12.0	7.40
280	1 000 × 600	1	0.60	0.168	10.8	8.00
300	1 000 × 600	1	0.60	0.180	9.6	8.55

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## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code					
<b>Geometric shape</b>									
Length <i>l</i>	[% , mm]	EN 822	±1%						
Width <i>b</i>	[% , mm]	EN 822	±1,5%						
Thickness <i>d</i>	[% , 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 <i>S<sub>e</sub></i>	[mm·m <sup>-1</sup> ]	EN 824	2						
Deviation from flatness <i>S<sub>max</sub></i>	[mm]	EN 825	5						
Relative change in length $\Delta\epsilon_l$ , in width $\Delta\epsilon_b$ , in thickness $\Delta\epsilon_d$	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS(70/90)					
<b>Thermal technical properties</b>									
Declared value of thermal conductivity coefficient $\lambda_b$ <sup>2)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.035						
Design thermal conductivity $\lambda_s$ <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.037						
Specific heat capacity <i>c<sub>d</sub></i>	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	800						
<b>Mechanical properties</b>									
Compressive stress at 10% deformation $\sigma_{10}$	[kPa]	Declaration according to EN 826	30	Declared level of compressive stress at 10% deformation CS(10)30					
Tensile strength perpendicular to faces $\sigma_{nt}$	[kPa]	Declaration according to EN 1607	10	Declared level of tensile strength perpendicular to faces TR10					
Shear strength	[kPa]	EN 13162+A1 Measurement according to EN 12090	20 <sup>3)</sup>	Level of shear strength SS20					
Shear modulus	[kPa]	Measurement according to EN 12090	1000 <sup>3)</sup>						
<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>Hydrothermal properties</b>									
Short-term water absorption <i>W<sub>p</sub></i>	[kg·m <sup>-2</sup> ]	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 <i>W<sub>ip</sub></i>	[kg·m <sup>-2</sup> ]	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 $\mu$	[-]	Declaration according to EN 13162+A1 Measurement according to EN 12086	1	Declared value for water vapour diffusion resistance factor MU1					
<b>Other properties</b>									
Density <sup>4)</sup>	[kg·m <sup>-3</sup> ]	EN 1602	80-150 <sup>4)</sup>						
<b>Acoustic properties<sup>5)</sup></b>									
Practical sound absorption coefficient $\alpha_p$	[-]	EN 13162+A1 EN ISO 11654 Measurement according to EN ISO 354	Level of practical sound absorption coefficient					AP	
		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 $\alpha_w$	[-]	EN ISO 11654 (for NRC according ASTM C423)	Level of weighted sound absorption coefficient					AW	
		Single number value	$\alpha_w$					NCR	
Sound Absorption Average $\alpha_{av}$	Thickness	60 mm	1.00					0.90	
		100 mm	1.00					1.00	
		140 mm	1.00					1.00	
Noise reduction coefficient NRC	Thickness	60 mm	1.00					0.90	
		100 mm	1.00					1.00	
		140 mm	1.00					1.00	
Specific air flow resistivity <i>r</i>	[mm] [kPa·s·m <sup>-2</sup> ] [MN·m <sup>-3</sup> ]	ČSN EN 13162+A1 Measurement according to EN ISO 9053-1	100	120 <sup>6)</sup>	140 <sup>6)</sup>	150 <sup>6)</sup>	160	180 <sup>6)</sup>	200 <sup>6)</sup>
		Level of air flow resistivity							
		23.8	23.0	22.2	21.8	21.4	20.6	19.8	
Dynamic rigidity <i>s'</i>	[mm] [MN·m <sup>-3</sup> ]	EN 13162+A1	Value of dynamic rigidity					SD	
		Measurement according to ČSN ISO 9052-1 (idt. EN 29052-1)							
		100	120 <sup>6)</sup>	140 <sup>6)</sup>	150 <sup>6)</sup>	160	180 <sup>6)</sup>	200 <sup>6)</sup>	
9.2	9.2	9.3	9.3	9.3	9.3	9.4			
<b>Environmental properties / impacts</b>									
Non-hazardous waste disposed <sup>6)</sup>	[kg /FU <sup>6)</sup> ]	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 <sub>2</sub> 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 <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.099	AP					
Eutrophication potential	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0092	EP					
Photochemical ozone creation	[kg C <sub>2</sub> H <sub>4</sub> 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					

<sup>1)</sup> Value with greatest numerical tolerance.

<sup>2)</sup> Declared values were set under the following conditions: (reference temperature 10°C, humidity  $u_{dry}$  reached by drying) according EN ISO 10456.

<sup>3)</sup> 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>4)</sup> The density is not constant and varies with the thickness of the product. <sup>5)</sup> Informative non-declared value beyond scope of CPR, obtained by specific tests.

<sup>6)</sup> Interpolated and extrapolated values. <sup>7)</sup> In this case it is standard mixed waste. <sup>8)</sup> FU = functional unit (1 m<sup>2</sup> of insulation at a thickness of 120 mm thick for life cycle phases A1-A3).

## RELATED DOCUMENTS

- Declaration of Performance CZ0001-022
- Environmental Product Declaration
- Quality class A
- Certificate of constancy of performance
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

1/8/2023 The information provided herein is valid at the time of publication. The manufacturer reserves the right to change the data.