

Isover S-i

Stone wool insulation



TECHNICAL SPECIFICATION

Insulating slabs made of Isover mineral wool. The production is based on the 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 (vapour-proof foil, separation layers, water-proofing membrane of the flat warm decks).



APPLICATION

Isover S-i slabs are designed for thermal, acoustic and fire insulation of flat roofs. They are usually laid in one top layer that covers the bottom slabs. There is a suitable combination with Isover T or Isover R slabs, which are laid as an underlayer with gravity flow systems Isover SD and Isover DK, as well as with Isover AK attic wedge blocks, which help to change the horizontal direction of the water-proofing to the perpendicular direction. A waterproofing membrane can be applied directly on Isover S-i slabs (glued, mechanically attached or with a load). If there is the expectation of increased activity on the roof (due to frequent roof inspection, technology service ...), solidifying paths are a must to prevent roof damage.

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 insects.
- Easy workability - can be cut, drilled into, etc.

PACKAGING, TRANSPORT, WAREHOUSING

Isover S-i insulating slabs are packed on pallets to a height up to 1.3 m. The slabs must be transported in covered vehicles under conditions that keep them dry and prevent other damage. They should be stored flat in a sheltered space to a maximum layer height of 2 m.

DIMENSIONS AND PACKAGING

Thickness [mm]	Length × width [mm]	Transport packaging [m ³]	Volume per package [m ²]	Declared thermal resistance R ₀ [m ² ·K·W ⁻¹]
30	2 000 × 1 200	3.024	100.8	0.80
40	2 000 × 1 200	2.880	72.0	1.05
50	2 000 × 1 200	2.880	57.6	1.35
60	2 000 × 1 200	2.880	48.0	1.60
70	2 000 × 1 200	3.024	43.2	1.85
80	2 000 × 1 200	3.070	38.4	2.15
100	2 000 × 1 200	3.120	31.2	2.55
120	2 000 × 1 200	2.880	24.0	3.05
140	2 000 × 1 200	3.024	19.2	3.55
160	2 000 × 1 200	3.024	19.2	4.10

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Geometric shape				
Length <i>l</i>	[% , mm]	EN 822	±2%	
Width <i>b</i>	[% , mm]	EN 822	±1.5%	
Thickness <i>d</i>	[% , mm]	EN 823	-1% or -1 mm ¹⁾ and +3 mm	Class of thickness tolerances T5
Deviation from squareness of the edge on length and width <i>S_e</i>	[mm·m ⁻¹]	EN 824	5	
Deviation from flatness <i>S_{max}</i>	[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,-)
Thermal technical properties				
Declared value of thermal conductivity coefficient $\lambda_{D,2)}$	[W·m ⁻¹ ·K ⁻¹]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.037 THK < 100 mm 0.039 THK 100 mm and over	
Design thermal conductivity $\lambda_u^{3)}$	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.038 tl. < 100 mm 0.040 tl. 100 mm and over	
Specific heat capacity <i>c_d</i>	[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	60	Declared level of compressive stress at 10% deformation CS(10)60
Tensile strength perpendicular to faces σ_{mt}	[kPa]	Declaration according to EN 1607	10	Declared level of tensile strength perpendicular to faces TR10
Point load at a given deformation <i>F_p</i>	[N]	Declaration according to EN 12430	500	Declared level of point load for 5 mm deformation PL(5)500
Fire safety properties				
Reaction to fire class	[-]	Declaration according to EN 13501-1+A1	A1	
Maximum temperature for use	[°C]		200	
Melting temperature <i>t_f</i>	[°C]	DIN 4102 part 17	≥ 1000	
Hydrothermal properties				
Short-term water absorption <i>W_p</i>	[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 <i>W_{lp}</i>	[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 ⁴⁾	[kg·m ⁻³]	EN 1602	140-160	

¹⁾ Value with greatest numerical tolerance.

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

³⁾ 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 apparent density is only informative in connection with logistics and static needs.

RELATED DOCUMENTS

- Declaration of Performance
- Certificate of constancy of performance
- Environmental Product Declaration (EPD)
- ISO 9001, ISO 14001, ISO 45001, ISO 50001

7/9/2023 The information provided herein is valid at the time of publication. The manufacturer reserves the right to change the data.