

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 (vapour-proof foil, separation layers, water-proofing membrane of the flat warm decks).

APPLICATION

Isover S slabs are designed for thermal, acoustic and fire insulation of the flat roofs. They are usually laid in one top layer, that covers bottom slabs. There is a suitable combination with Isover T or Isover R slabs which are to be 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 into the perpendicular direction. Waterproofing membrane can be applied directly on the Isover S-I slabs (glued, mechanically attached or with a load). If there is an expectation of an increased activity on the roof (due to often roof inspection, technological devices servis,...), solidifying paths is a must, for roof damage prevention.

DIMENSIONS AND PACKAGING

Thickness [mm]	50	60	80	100	120
Length x width [mm]	2000 x 1200				
Transport packaging [m ³]	2.88	2.88	3.07	3.12	2.88
Volume per package [m ³]	57.6	48.0	38.4	31.2	24.0
Declared thermal resistance R _D [m ² ·K·W ⁻¹]	1.25	1.50	2.05	2.55	3.05

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Geometric shape				
Length <i>l</i>	[% , mm]	EN 823	±2 %	
Width <i>b</i>	[% , mm]	EN 822	±2 %	
Thickness <i>d</i>	[% , 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 _e	[mm·m ⁻¹]	EN 824	5	
Deviation from flatness S _{max}	[mm]	EN 825	6	
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,-)
Thermal technical properties				
Declared value of the thermal conductivity coefficient λ _D ²⁾	[W·m ⁻¹ ·K ⁻¹]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.039	
Design thermal conductivity λ _D ³⁾	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.040	
Specific heat capacity c _D	[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	70	Level of compressive stress at 10% deformation CS(10)70
Tensile strength perpendicular to faces σ _{mt}	[kPa]	Declaration according to EN 1607	15	Level of tensile strength perpendicular to faces TR15
Shear strength τ	[kPa]	Declaration according to EN 12090	20	Level of shear strength SS20
The point load at a given deformationi F _p	[N]	Declaration according to EN 12430	600	Level of point load for 5 mm deformation PL(5)600
Fire safety properties				
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	
Hydrothermal properties				
Short term water absorption W _p	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 1609	1	Level for short term water absorption WS
Long term water absorption by partial immersion W _p	[kg·m ⁻²]	Declaration according to EN 13162+A1 Measurement according to EN 12087	3	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	Value for water vapour diffusion resistance factor MU1
Other properties				
Density ⁴⁾	[kg·m ⁻³]	EN 1602	147-175	

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 apparent density is only informative in connection with logistic and static needs.

RELATED DOCUMENTS

- Declaration of Performance CZ0001-016
- Certificate of constancy of performance 1390-CPR-305/11/P
- Environmental Product Declaration
- ISO 9001, ISO 14001, OHSAS 18001, ISO 50001

PACKAGING, TRANSPORT, WAREHOUSING

Isover S insulating slabs are packed on the pallets in height up to 1.3 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.



TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Environmental properties / impacts				
Volume of Pre-consumer recycled content for production	[%]	ČSN ISO 14021	55	
Volume of Post-consumer recycled content for production	[%]	ČSN ISO 14021	0	
Non-hazardous waste disposed ⁵⁾	[kg /FU ⁶⁾]	EN 15804+A1, ČSN ISO 14025	4.2	NHWD
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	310	PENRT
Global Warming Potential	[kg CO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	23	GWP
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	6.9 E-07	ODP
Acidification potential	[kg SO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.14	AP
Eutrophication potential	[kg PO ₄ ³⁻ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0086	EP
Photochemical ozone creation	[kg C ₂ H ₄ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0075	POPC
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	3.2 E-06	ADP-elements
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	350	ADP-fossil fuels

⁵⁾ In this case it is standard mixed waste.

⁶⁾ FU = functional unit (1 m² of insulation by 80 mm thick for live cycle phases A1-A3).



Example of product application Isover S

4. 7. 2019 The information is valid up to date of publishing. The manufacturer reserves right to change the data.