



# Isover S

Mineral insulation from stone wool

## 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 <sup>3</sup> ]	2.88	2.88	3.07	3.12	2.88
Volume per package [m <sup>3</sup> ]	57.6	48.0	38.4	31.2	24.0
Declared thermal resistance R <sub>D</sub> [m <sup>2</sup> ·K·W <sup>-1</sup> ]	1.25	1.50	2.05	2.55	3.05

## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code	
<b>Geometric shape</b>					
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 <sup>1)</sup> and +3 mm	Class of thickness tolerances	T5
Deviation from squareness of the edge on length and width S <sub>e</sub>	[mm·m <sup>-1</sup> ]	EN 824	5		
Deviation from flatness S <sub>max</sub>	[mm]	EN 825	6		
Relative change in length Δε <sub>l</sub> , in width Δε <sub>b</sub> , in thickness Δε <sub>d</sub>	[%]	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 λ <sub>D</sub> <sup>2)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.039		
Design thermal conductivity λ <sub>D</sub> <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.040		
Specific heat capacity c <sub>D</sub>	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	800		
<b>Mechanical properties</b>					
Compressive stress at 10% deformation σ <sub>10</sub>	[kPa]	Declaration according to EN 826	70	Level of compressive stress at 10% deformation	CS(10)70
Tensile strength perpendicular to faces σ <sub>mt</sub>	[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 <sub>p</sub>	[N]	Declaration according to EN 12430	600	Level of point load for 5 mm deformation	PL(5)600
<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 <sub>f</sub>	[°C]	DIN 4102 part 17	≥ 1000		
<b>Hydrothermal properties</b>					
Short term water absorption W <sub>p</sub>	[kg·m <sup>-2</sup> ]	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 <sub>p</sub>	[kg·m <sup>-2</sup> ]	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
<b>Other properties</b>					
Density <sup>4)</sup>	[kg·m <sup>-3</sup> ]	EN 1602	147-175		

<sup>1)</sup> Whichever gives the greatest numerical tolerance.

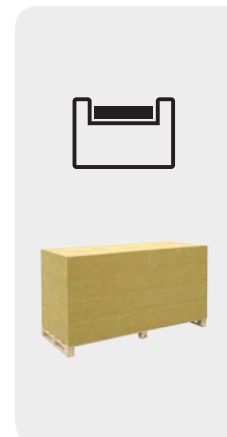
<sup>2)</sup> Declared values were set under the following conditions (reference temperature 10 °C, humidity u<sub>dry</sub>, which is reached by drying) according EN ISO 10456.

<sup>3)</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.

<sup>4)</sup> 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, ISO 18001, ISO 50001





## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
<b>Environmental properties / impacts</b>				
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 <sup>5)</sup>	[kg /FU <sup>6)</sup> ]	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 <sub>2</sub> 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 <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.14	AP
Eutrophication potential	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0086	EP
Photochemical ozone creation	[kg C <sub>2</sub> H <sub>4</sub> 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

<sup>5)</sup> In this case it is standard mixed waste.

<sup>6)</sup> FU = functional unit (1 m<sup>2</sup> of insulation by 80 mm thick for live cycle phases A1-A3).



Example of product application Isover S

1. 7. 2018 The information is valid up to date of publishing. The manufacturer reserves right to change the data.