Isover S
Stone wool insulation

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, water-proofing, flat roof bearing layer, etc.)

APPLICATION

Isover S slabs are designed for thermal, acoustic and fire insulation of the flat roofs. They are usualy 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.

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.

DIMENSIONS AND PACKAGING

Thickness [mm]	Length × width [mm]	Transport packaging [m³]	Volume per package [m²]	Declared thermal resistance R_D [m²·K·W⁻¹]
30	2000 × 1200	3.024	100.8	0.80
40	2000 × 1200	2.880	72.0	1.05
50	2000 × 1200	2.880	57.6	1.35
60	2000 × 1200	2.880	48.0	1.60
70	2000 × 1200	3.024	43.2	1.85
80	2000 × 1200	3.070	38.4	2.15
100	2000 × 1200	3.120	31.2	2.55
120	2000 × 1200	2.880	24.0	3.05
140	2000 × 1200	3.024	21.6	3.55
160	2000 × 1200	3.024	19.2	4.10

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code	
Geometric shape					
Length l	[%, mm]	EN 822	±2 %		
Width b	[%, mm]	EN 822	±1.5 %		
Thickness d	[%, 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 S_b	[mm·m⁻¹]	EN 824	5		
Deviation from flatness S_{max}	[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,-)

SAINT-GOBAIN

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TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code	
Thermal technical properties					
Declared value of the thermal conductivity coefficient λ_D [2]	$[W \cdot m^{-1} \cdot K^{-1}]$	Declaration according to EN 13162+A1	0.037 THK < 100 mm 0.039 THK 100 mm and more		
		Measurement according to EN 12667			
Design thermal conductivity λ_u [3]	$[W \cdot m^{-1} \cdot K^{-1}]$	ČSN 73 0540-3	0.038 tl. < 100 mm 0.040 tl. 100 mm and more		
Specific heat capacity c_d	$[J \cdot kg^{-1} \cdot K^{-1}]$	ČSN 73 0540-3	800		
Mechanical properties					
Compressive stress at 10% deformation σ_{10}	[kPa]	Declaration according to EN 826	70	Declared level of compressive stress at 10% deformation	CS(10)70
Tensile strength perpendicular to faces σ_{mt}	[kPa]	Declaration according to EN 1607	15	Declared 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	Declared 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_t	[°C]	DIN 4102 part 17	≥ 1000		
Hydrothermal properties					
Short term water absorption W_p	$[kg \cdot m^{-2}]$	Declaration according to EN 13162+A1	1	Declared level for short term water absorption	WS
		Measurement according to EN 1609			
Long term water absorption by partial immersion W_{lp}	$[kg \cdot m^{-2}]$	Declaration according to EN 13162+A1	3	Declared level for long term water absorption by partial immersion	WL(P)
		Measurement according to EN 12087			
Water vapour diffusion resistance factor μ	[-]	Declaration according to EN 13162+A1	1	Declared value for water vapour diffusion resistance factor	MU1
		Measurement according to EN 12086			
Other properties					
Density [4]	$[kg \cdot m^{-3}]$	EN 1602	147–175		
Environmental properties / impacts					
Volume of Pre-consumer recycled content for production [5]	[%]	ČSN ISO 14021	70		
Volume of Post-consumer recycled content for production [5]	[%]	ČSN ISO 14021	0		
Non-hazardous waste disposed [6]	[kg /FU [7]]	EN 15804+A1, ČSN ISO 14025	2.64	NHWD	
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	129	PENRT	
Global Warming Potential	[kg CO_2 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	13.6	GWP	
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	7.31 E-07	ODP	
Acidification potential	[kg SO_2 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0979	AP	
Eutrophication potential	[kg PO_4^{3-} ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00926	EP	
Photochemical ozone creation	[kg C_2H_4 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0135	POPC	
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	8.16 E-07	ADP-elements	
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	122	ADP-fossil fuels	

[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.
[5] According to ČSN EN ISO 14021 part 7.8 Recycled content.
[6] In this case it is standard mixed waste.
[7] FU = functional unit (1 m² of insulation by 80 mm thick for live cycle phases A1–A3).

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 45001, ISO 50001

20. 5. 2023   Information valid as of date of publication. The manufacturer reserves the right to change the data.