

Isover EPS 100

Stabilized expanded polystyrene boards

TECHNICAL SPECIFICATION

EPS (expanded polystyrene) is a light and solid organic foam widely used in the European construction industry, especially as thermal insulation. In the last 50 years, white insulation boards have acquired a strong position in construction thanks to their excellent properties. Isover EPS insulation boards are manufactured using the latest technology without the use of CFC and HCFC (known as Freon). The use of modern technologies ensures consistent quality and minimum energy consumption during production, resulting in an excellent price/performance ratio. All Isover EPS boards are rated as self-extinguishing with improved fire safety.*

APPLICATION

Isover EPS 100 insulation boards are designed especially for thermal insulation with normal requirements for compressive load, such as floors, flat roofs, etc. The boards are suitable for insulating layers of energy-saving buildings (lower energy and passive houses) with standard insulation thickness of 200 to 500 mm.

DIMENSIONS AND PACKAGING

Thickness [mm]	10	20	30	40	50	60	80	100	120	140	160	180	200
Length x width [mm]	1000 x 500												
Volume per package [ks]	50	25	16	12	10	8	6	5	4	3	3	2	2
Volume per package [m ²]	[m ²]	25	12.5	8	6	5	4	3	2.5	2	1.5	1.5	1
	[m ³]	0.250	0.250	0.240	0.240	0.250	0.240	0.240	0.250	0.240	0.210	0.240	0.180
Declared thermal resistance R _D [m ² ·K·W ⁻¹]	0.25	0.50	0.80	1.05	1.35	1.60	2.15	2.70	3.20	3.75	4.30	4.85	5.40

Subject to prior agreement, the products may be supplied in different thicknesses and sizes.

EDGES

Standard boards have straight edges; rabbit edges are available at special surcharge (up to max. thickness of 240 mm, the coverage size will be reduced by the rabbit dimension, i.e. 15 mm).

TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
Geometric shape				
Length tolerance	[%; mm]	EN 822	±3 mm	Class of length tolerances L3
Width tolerance	[%; mm]	EN 822	±3 mm	Class of width tolerances W3
Thickness tolerance	[%; mm]	EN 823	±2 mm	Class of thickness tolerances T2
Deviation from squareness of the edge on length and width S ₂	[mm·m ⁻¹]	EN 824	±5	Class of squareness on length and width S5
Deviation from flatness S _{max}	[mm]	EN 825	10	Class of flatness P10
Relative change in length Δε _l , in width Δε _w , in thickness Δε _d	[%]	EN 1604	0.2	Class of dimensional stability under constant normal laboratory conditions DS(N)2
			1	Dimensional stability under the specified temperature and humidity conditions DS (70,-)1
Thermal technical properties				
Declared value of the thermal conductivity coefficient λ _D ¹⁾	[W·m ⁻¹ ·K ⁻¹]	Declaration according to EN 13163+A1 Measurement according to EN 12667	0.037	
Design thermal conductivity λ _D ²⁾	[W·m ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	0.037	
Specific heat capacity c _D	[J·kg ⁻¹ ·K ⁻¹]	ČSN 73 0540-3	1270	
Mechanical properties				
Compressive stress at 10% deformation σ ₁₀	[kPa]	EN 826	100	Level of compressive stress at 10% deformation CS(10)100
Long-term compressive stress at 2% deformation	[kPa]		20	
Tensile strength perpendicular to faces σ _{nt}	[kPa]	EN 1607	100	Level of tensile strength perpendicular to faces TR100
Bending strength σ _b	[kPa]	EN 12089	150	Level of bending strength BSI50
Fire safety properties				
Reaction to fire class	[-]	EN 13501-1+A1	E**	
Long-term thermal resistance	[°C]		80	
Hydrothermal properties				
Long term water absorption by total immersion W _t	[%]	EN 12087	5	Level of long-term water absorption by total immersion WL(T)5
Water vapour diffusion resistance factor μ	[-]	EN 13163+A1	30-70	
Other properties				
Density	[kg·m ⁻³]	EN 1602	18-20***	

¹⁾ Declared values were set under the following conditions (reference temperature 10 °C, humidity u_{dry}, which is reached by drying) according EN ISO 10456.

²⁾ 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.

* Self-extinguishing properties of EPS are ensured using a polymer-based flame retardant. The insulation boards do not contain HBCD.

** Fire safety of buildings has to be classified for complete structures and systems, the EPS is not used without fire-resistant coatings.

*** The specific density is indicative only and is especially intended for the statics and fire load calculation.

Note: The specific application must meet general requirements of Saint-Gobain Construction Products CZ, Ltd., Isover division, technical materials, valid technical norms, and the specific project.

RELATED DOCUMENTS

- Declaration of Performance CZ0004-005
- Environmental Product Declaration
- ISO 9001, ISO 14001, OHSAS 18001, ISO 50001



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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	4,4	NHWD
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	330	PENRT
Global Warming Potential	[kg CO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	24	GWP
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	7,4 E-07	ODP
Acidification potential	[kg SO ₂ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0,15	AP
Eutrophication potential	[kg PO ₄ ³⁻ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0,0091	EP
Photochemical ozone creation	[kg C ₂ H ₄ ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0,0079	POPC
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	3,6 E-06	ADP-elements
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	380	ADP-fossil fuels

⁵⁾ In this case it is standard mixed waste.

⁶⁾ FU = functional unit (1 m² of insulation by 100 mm thick for live cycle phases A1-A3).