

# Isover XH (eXtra Hard)

## Stone wool insulation



### TECHNICAL SPECIFICATION

Basalt mineral wool insulation panels, produced by means of fibering molten mixture of rock, recycled material, and other ingredients. The resulting mineral fibres are processed into the final panel shape in the production line. These panels are hydrophobized throughout and have a predominantly longitudinal orientation of fibres. The panels in the construction are required to feature suitable protection (vapour-proof foil, water-proofing, flat roof layer, etc.).



### APPLICATION

Isover XH panels are intended primarily as the top layer of the thermal insulation layer of flat roofs with the highest demands on compressive strength, point loads and fire safety, especially photovoltaic power plants (PV plants), technological facilities with frequent maintenance, terraces, etc. This ensures a high quality distribution of external loads and, in connection with this, minimal deformation of the waterproofing under the footings of PV plants and other installations, together with high resistance to penetration during installation or maintenance. Suitable combinations are with Isover T, Isover R, Isover LAM 70, 50 and 30 panels, which are laid as a bottom layer, with Isover SD and Isover DK slope systems, and with Isover AK attic wedges, which help the waterproofing transition from horizontal to vertical. A waterproofing layer, usually anchored or weighted, is usually applied directly to the Isover XH panels.

### BENEFITS

- **Very high compressive strength of 100 kPa.**
- **Very high point load capacity 1000 N.**
- 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 XH 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.

### DIMENSIONS AND PACKAGING

Thickness [mm]	Length × width [mm]	Transport packaging [m <sup>3</sup> ]	Volume per package [m <sup>2</sup> ]	Declared thermal resistance R <sub>0</sub> [m <sup>2</sup> ·K·W <sup>-1</sup> ]
60	2 000 × 1 200	2.88	48.0	1.50
80	2 000 × 1 200	3.07	38.4	2.05

### TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
<b>Geometric shape</b>				
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 <sup>0</sup> and +3 mm	Class of thickness tolerances T5
Deviation from squareness of the edge on length and width <i>S<sub>e</sub></i>	[mm·m <sup>-1</sup> ]	EN 824	5	
Deviation from flatness <i>S<sub>max</sub></i>	[mm]	EN 825	6	
Relative change in length Δ <i>ε<sub>l</sub></i> , in width Δ <i>ε<sub>b</sub></i> , in thickness Δ <i>ε<sub>d</sub></i>	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS(70,-)

## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code
<b>Thermal technical properties</b>				
Declared value of thermal conductivity coefficient $\lambda_p$ <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 $\lambda_d$ <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.040	
Specific heat capacity $c_d$	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	800	
<b>Mechanical properties</b>				
Compressive stress at 10% deformation $\sigma_{10}$	[kPa]	Declaration according to EN 826	100	Declared level of compressive stress at 10% deformation CS(10)100
Tensile strength perpendicular to faces $\sigma_{nt}$	[kPa]	Declaration according to EN 1607	10	Declared level of tensile strength perpendicular to faces TR10
The point load at a given deformation $F_p$	[N]	Declaration according to EN 12430	1000	Declared level of point load for 5 mm deformation PL(5)1000
<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 $t_i$	[°C]	DIN 4102 part 17	≥ 1000	
<b>Hydrothermal properties</b>				
Short-term water absorption $W_p$	[kg·m <sup>-2</sup> ]	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 $W_{ip}$	[kg·m <sup>-2</sup> ]	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 $\mu$	[-]	Declaration according to EN 13162+A1 Measurement according to EN 12086	1	Declared value for water vapour diffusion resistance factor MU1
<b>Other properties</b>				
Density <sup>4)</sup>	[kg·m <sup>-3</sup> ]	EN 1602	180–210	

<sup>1)</sup> Value with greatest numerical tolerance.

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

<sup>3)</sup> 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 logistics and static needs.

## RELATED DOCUMENTS

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



28/7/2023 The information provided herein is valid at the time of publication. The manufacturer reserves the right to change the data.