

# Isover MERINO

## Mineral fibreglass insulation



### TECHNICAL SPECIFICATION

Insulation slabs made of Isover fibreglass wool. The production is based on defibration of melt of glass and other additives and ingredients. Produced mineral fibres are then shaped into slabs on the production line. Fibres are made water-repellent on their entire surface. Slabs in construction have to be protected suitably (steam protection foil, protection from dust settling, other layers of construction).

### APPLICATION

Isover MERINO slabs are flexible and have stable shape but cannot be bear load. They are suitable for any thermal, acoustic, no-load insulation, especially for double construction, ceiling fillings, hanging false ceilings, and cavities (improving the acoustic absorption of the construction, assembled floors with posts), for ventilated facades with frame insulation (maximum two storeys, using timber studs with 300 mm clearance).

### PACKAGING, TRANSPORT, WAREHOUSING

Isover MERINO slabs are packaged into PE foil. They come in MPS packs (1MPS = 12 packages). Loose packages can be supplied after an agreement with the manufacturer. Slabs have to be transported in covered vehicles under conditions preventing them from getting wet or being degraded. The products are stored indoors or outdoors depending on the conditions specified in the current ISOVER price list.

### BENEFITS

- fire-resistant
- very good thermal insulation performance
- 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.
- dimensional stability during temperature change



### DIMENSIONS AND PACKAGING

| Thickness                                  | [mm]                                 | 40*        | 50    | 60    | 80   | 100  | 120* | 140* |
|--|--------------------------------------|------------|-------|-------|------|------|------|------|
| Length x width                             | [mm]                                 | 1200 x 625 |       |       |      |      |      |      |
| Volume per package                         | [ks]                                 | 24         | 20    | 16    | 12   | 10   | 8    | 6    |
| Quantity per palette                       | [m <sup>2</sup> ]                    | 18.00      | 15.00 | 12.00 | 9.00 | 7.50 | 6.00 | 4.50 |
|  | [m <sup>3</sup> ]                    | 0.34       | 0.34  | 0.34  | 0.34 | 0.34 | 0.34 | 0.34 |
| Declared thermal resistance R <sub>D</sub> | [m <sup>2</sup> ·K·W <sup>-1</sup> ] | 288        | 240   | 240   | 180  | 150  | 120  | 90   |
| Declared thermal resistance R <sub>D</sub> | [m <sup>2</sup> ·K·W <sup>-1</sup> ] | 1.00       | 1.25  | 1.50  | 2.05 | 2.55 | 3.05 | 3.55 |

\* It is necessary to consult with the producer for the terms of delivery.

### 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                                 | -5 % or -5 mm <sup>1)</sup><br>and +15 mm<br>or +15 mm <sup>2)</sup> | Class of thickness tolerances<br>T2   |
| 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<br>DS (23,90) |
| <b>Thermal technical properties</b>  |  |  |  |   |
| Declared value of the thermal conductivity coefficient λ <sub>D</sub> <sup>3)</sup>                                      | [W·m <sup>-1</sup> ·K <sup>-1</sup> ]  | Declaration according to EN 13162+A1   | 0.039  |   |
| Design thermal conductivity λ <sub>D</sub> <sup>4)</sup>   | [W·m <sup>-1</sup> ·K <sup>-1</sup> ]  | Measurement according to EN 12667      |  |   |
| Specific heat capacity <i>c<sub>p</sub></i>  | [J·kg <sup>-1</sup> ·K <sup>-1</sup> ] | ČSN 73 0540-3                          | 0.042  |   |
| <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 <i>t<sub>f</sub></i>   | [°C]                                   | DIN 4102 part 17                       | < 1000   |   |
| <b>Hydrothermal properties</b>   |  |  |  |   |
| Water vapour diffusion resistance factor μ   | [-]                                    | EN 13162+A1                            | 1  | Declared value for water vapour diffusion resistance factor<br>MU1                          |
| <b>Other properties</b>  |  |  |  |   |
| Density  | [kg·m <sup>-3</sup> ]                  | EN 1602                                | 14   |   |

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

<sup>2)</sup> Whichever gives the smallest numerical tolerance.

<sup>3)</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>4)</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.

### RELATED DOCUMENTS

- Declaration of Performance 035-WS1-DoP-14-w2, 035-WS2-DoP-14-w2
- Environmental Product Declaration
- ISO 9001, ISO 14001, OHSAS 18001

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## TECHNICAL PARAMETERS

| Parameter   | Unit  | Methodology                           | Value  | Designation code |        |         |         |         |
|---|---|---------------------------------------|--|------------------|--------|---------|---------|---------|
| <b>Acoustic properties<sup>5)</sup></b>                                 |   |                                       |  |                  |        |         |         |         |
| <b>The practical sound absorption coefficient <math>\alpha_p</math></b> | [-]   | Declaration according to EN 13162+A1  | Declared level of practical sound absorption coefficient | AP               |        |         |         |         |
|   |   | Declaration according to EN ISO 11654 |  |                  |        |         |         |         |
|   |   | Measurement according to EN ISO 354   |  |                  |        |         |         |         |
|   | Frequency                                   |                                       | 125 Hz   | 250 Hz           | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |
|   | Thickness                                   | 20 mm                                 | 0.10   | 0.35             | 0.60   | 0.75    | 0.90    | 0.90    |
|   | In front of the wall, 60 mm                 | 50 mm                                 | 0.25   | 0.60             | 0.90   | 1.00    | 1.00    | 1.00    |
|   |   | 80 mm                                 | 0.45   | 0.75             | 1.00   | 1.00    | 1.00    | 1.00    |
|   | In front of the wall, 150 mm                | 20 mm                                 | 0.20   | 0.55             | 0.85   | 0.85    | 0.90    | 0.90    |
| 50 mm   |   | 0.40                                  | 0.75   | 1.00             | 1.00   | 1.00    | 1.00    |         |
|   | 80 mm                                       | 0.65                                  | 1.00   | 1.00             | 1.00   | 1.00    | 1.00    |         |
| <b>Specific air flow resistivity <math>r</math></b>                     |   | Declaration according to EN 13162+A1  | Level of air flow resistivity                            |                  | AFr    |         |         |         |
|   | [kPa·s·m <sup>-2</sup> ]                    | Measurement according to EN 29053     | ≥ 5  |                  |        |         |         |         |
| <b>Environmental properties / impacts</b>                               |   |                                       |  |                  |        |         |         |         |
| <b>Volume of Pre-consumer recycled content for production</b>           | [%]   | ČSN ISO 14021                         | -  |                  |        |         |         |         |
| <b>Volume of Post-consumer recycled content for production</b>          | [%]   | ČSN ISO 14021                         | -  |                  |        |         |         |         |
| <b>Non-hazardous waste disposed<sup>6)</sup></b>                        | [kg /FU <sup>7)</sup> ]                     | EN 15804+A1, ČSN ISO 14025            | 0.497  | NHWD             |        |         |         |         |
| <b>Total use of non-renewable primary energy resources</b>              | [MJ /FU]                                    | EN 15804+A1, ČSN ISO 14025            | 45.5   | PENRT            |        |         |         |         |
| <b>Global Warming Potential</b>   | [kg CO <sub>2</sub> ekv. /FU]               | EN 15804+A1, ČSN ISO 14025            | 2.59   | GWP              |        |         |         |         |
| <b>Ozone Depletion</b>  | [kg CFC 11 ekv. /FU]                        | EN 15804+A1, ČSN ISO 14025            | 7.15 E-08  | ODP              |        |         |         |         |
| <b>Acidification potential</b>  | [kg SO <sub>2</sub> ekv. /FU]               | EN 15804+A1, ČSN ISO 14025            | 0.0258   | AP               |        |         |         |         |
| <b>Eutrophication potential</b>   | [kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU] | EN 15804+A1, ČSN ISO 14025            | 0.0023   | EP               |        |         |         |         |
| <b>Photochemical ozone creation</b>                                     | [kg C <sub>2</sub> H <sub>4</sub> ekv. /FU] | EN 15804+A1, ČSN ISO 14025            | 0.00684  | POPC             |        |         |         |         |
| <b>Abiotic depletion potential for non-fossil resources</b>             | [kg Sb ekv. /FU]                            | EN 15804+A1, ČSN ISO 14025            | 1.56 E-06  | ADP-elements     |        |         |         |         |
| <b>Abiotic depletion potential for fossil resources</b>                 | [MJ (Calorific value) /FU]                  | EN 15804+A1, ČSN ISO 14025            | 50.4   | ADP-fossil fuels |        |         |         |         |

<sup>5)</sup> Informative non-declared value beyond scope of CPR, obtained by concrete tests.  
<sup>6)</sup> In this case it is standard mixed waste.  
<sup>7)</sup> FU = functional unit (1 m<sup>2</sup> of insulation by 100 mm thick for live cycle phases A1-A3).



Example of product application Isover MERINO