

# Isover N

## Stone wool insulation



### TECHNICAL SPECIFICATION

Insulating slabs made of Isover mineral wool. The production is based on the defibring method of the mineral 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 (separating PE foil).



### APPLICATION

Isover N slabs are suitable for improving impact and airborne sound reduction in heavy floating floors under reinforced concrete slab (thicker slab can be also used in walls as an airborne sound insulation). Improvement in impact sound reduction in floors depends on use of the Isover N/PP insulating strips. The approved flatness of the underlay surface, when laying the flooring material, is 2 mm/2 m. The slabs are suitable for habitable rooms especially in family and apartment houses, imposed load  $\leq 2\text{ kN/m}^2$ .

### PACKAGING, TRANSPORT, WAREHOUSING

Isover N insulation slabs are packed into the PE foil with package height up to 0.5 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 insects.
- Easy workability – can be cut, drilled into, etc.

### DIMENSIONS AND PACKAGING

| Thickness<br>[mm] | Length × width<br>[mm] | Volume per package |                   |                   | Quantity per pallet<br>[m <sup>2</sup> ] | Declared thermal resistance<br>R <sub>D</sub> [m <sup>2</sup> ·K·W <sup>-1</sup> ] |
|-------------------|------------------------|--------------------|-------------------|-------------------|--|--|
|                   |                        | [pcs]              | [m <sup>2</sup> ] | [m <sup>3</sup> ] |  |  |
| 20                | 1 200 × 600            | 16                 | 11.52             | 0.23              | 161.28                                   | 0.55   |
| 25                | 1 200 × 600            | 12                 | 8.64              | 0.22              | 138.24                                   | 0.70   |
| 30                | 1 200 × 600            | 10                 | 7.20              | 0.22              | 115.20                                   | 0.85   |
| 40                | 1 200 × 600            | 8                  | 5.76              | 0.23              | 80.64                                    | 1.10   |
| 50                | 1 200 × 600            | 6                  | 4.32              | 0.22              | 69.12                                    | 1.40   |

### 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 -1 mm <sup>1)</sup><br>and +15 %<br>or +3 mm <sup>1)</sup> | Class of thickness tolerances T6  |
| Deviation from squareness of the edge on length and width <i>S<sub>s</sub></i> | [mm·m <sup>-1</sup> ]                  | EN 824   | 5  |   |
| Deviation from flatness <i>S<sub>max</sub></i>                                 | [mm]                                   | EN 825   | 6  |   |
| <b>Thermal technical properties</b>  |  |  |  |   |
| Declared value of thermal conductivity coefficient $\lambda_{D,2)}$            | [W·m <sup>-1</sup> ·K <sup>-1</sup> ]  | Declaration according to EN 13162+A1<br>Measurement according to EN 12667  | 0.035  |   |
| Design thermal conductivity $\lambda_{D,3)}$                                   | [W·m <sup>-1</sup> ·K <sup>-1</sup> ]  | ČSN 73 0540-3  | 0.036  |   |
| Specific heat capacity <i>c<sub>D</sub></i>                                    | [J·kg <sup>-1</sup> ·K <sup>-1</sup> ] | ČSN 73 0540-3  | 800  |   |
| <b>Mechanical properties</b>   |  |  |  |   |
| Compressibility <i>c</i>   | [mm]                                   | Declaration according to EN 13162+A1<br>Measurement according to ČSN 12431 | ≤ 5  | Declared level for compressibility<br>Declared level of tensile strength perpendicular to faces CP5 |

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| Parameter   | Unit                  | Methodology  | Value   | Designation code   |        |         |         |         |      |
|---|-----------------------|--|---|--|--------|---------|---------|---------|------|
| <b>Hydrothermal properties</b>                                |                       |  |   |  |        |         |         |         |      |
| Water vapour diffusion resistance factor $\mu$                | [-]                   | Declaration according to EN 13162+A1<br>Measurement according to EN 12086  | 1   | Declared value for water vapour diffusion resistance factor<br>MU1 |        |         |         |         |      |
| <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 $t_m$                                     | [°C]                  | DIN 4102 part 17   | $\geq 1000$                                     |  |        |         |         |         |      |
| <b>Acoustic properties<sup>4)</sup></b>                       |                       |  |   |  |        |         |         |         |      |
| Practical sound absorption coefficient $\alpha_p$             | [-]                   | Declaration according to EN 13162+A1<br>Declaration according to EN ISO 11654<br>Measurement according to EN ISO 354 | Level of practical sound absorption coefficient |  |        |         | AP      |         |      |
|   | Frequency             |  | 125 Hz  | 250 Hz   | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |      |
|   | Thickness             | 20 mm  |   | 0.05   | 0.20   | 0.55    | 0.85    | 0.95    | 1.00 |
|   |                       | 40 mm  |   | 1.00   | 0.80   | 0.95    | 1.00    | 1.00    | 0.95 |
| Weighted sound absorption coefficient $\alpha_w$              | [-]                   | Declaration according to EN ISO 11654  | Level of weighted sound absorption coefficient  |  |        |         | AW      |         |      |
|   | Single number value   |  | $\alpha_w$                                      |  |        |         |         |         |      |
|   | Thickness             | 20 mm  |   | 0,50   |        |         |         |         |      |
|   |                       | 40 mm  |   | 0,80   |        |         |         |         |      |
| Dynamic stiffness $s'$  | [mm]                  | Declaration according to EN 13162+A1   | Declared value of dynamic rigidity              |  |        |         | SD      |         |      |
|   | [MN·m <sup>-3</sup> ] |  | 20  | 25   | 30     | 40      | 50      |         |      |
|   |                       | Measurement according to ČSN ISO 9052-1 (idt. EN 29052-1)  | 25.7  | 22.9   | 18.3   | 9.3     | 8.4     |         |      |
| <b>Additional acoustic properties</b>                         |                       |  |   |  |        |         |         |         |      |
|   | [mm]                  |  | 20  | 25   | 30     | 40      | 50      |         |      |
| Decrease the level of impact noise $\Delta L_w$ <sup>5)</sup> | [dB]                  | EN ISO 717-2   | 24  | 27   | 28     | 34      | 35      |         |      |
| Compressibility $K$   | [%]                   | ČSN 730532   | 4.4   | 2.4  | 3.0    | 2.6     | 2.6     |         |      |
| Elasticity $\epsilon$   | [%]                   | ČSN 730532   | 85.4  | 88.0   | 83.4   | 87.7    | 88.5    |         |      |
| Loss factor $\eta$  | [-]                   | ČSN ISO 9052-1   | 0.10  | 0.10   | 0.09   | 0.09    | 0.08    |         |      |
| <b>Other properties</b>                                       |                       |  |   |  |        |         |         |         |      |
| Density   | [kg·m <sup>-3</sup> ] | ČSN EN 1602  | 100-110   |  |        |         |         |         |      |

<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> Informative non-declared value beyond the scope of CPR, obtained by specific tests.

<sup>5)</sup> Determined by a calculation made for a heavy floating floor upon a standard 120 mm reinforced concrete ceiling slab and 40 mm anhydrite screeding.

## RELATED DOCUMENTS

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

### More about the product

[www.isover.cz/en/products/isover-n](http://www.isover.cz/en/products/isover-n)



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