# Isover S

## Mineral insulation from stone wool

**Specification code:** MW - EN 13162 - T5 - DS(T+) - CS(10)70 - TR15 - PL(5)600 - WS - WL(P) - MU1

## 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, separation layers, water-proofing membrane of the flat warm decks).

## 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

| Product | Thickness (mm) | Dimensions (mm) | Per package (m²) | Declared thermal resistance $R_D$ (m².K.W$^{-1}$) |
|---|---|---|---|---|
| Isover S 5 | 50 | 2000 x 1200 | 57,60 | 1,25 |
| Isover S 6 | 60 | 2000 x 1200 | 48,00 | 1,50 |
| Isover S 8 | 80 | 2000 x 1200 | 38,40 | 2,05 |
| Isover S 10 | 100 | 2000 x 1200 | 31,20 | 2,55 |
| Isover S 12 | 120 | 2000 x 1200 | 24,00 | 3,05 |

Thickness tolerance classification T5 complies with allowed tolerance according to EN 13162: -1% or - 1 mm, while the higher numerical value prevails, and + 3mm.

## TECHNICAL PARAMETERS

| Parameter | Unit | Value | Norm |
|---|---|---|---|
| THERMAL INSULATING PROPERTIES | | | |
| Condition set for declared values I(10°C) and ($u_{dry}$) | - | - | EN ISO 10456 |
| Declared value of the thermal conductivity coefficient $\lambda_D$ (based on the set of measured values according to EN 12667) | W·m$^{-1}$·K$^{-1}$ | 0.039 | EN 13162 |
| Specific heat capacity $c_d$ | J·kg$^{-1}$·K$^{-1}$ | 800 | ČSN 73 0540-3 |
| MECHANICAL PROPERTIES | | | |
| Compressive stress at 10% deformation ($\sigma_{10}$) CS(10) | kPa | ≥ 70 | EN 826 |
| Perpendicular tensile strength ($\sigma_{mt}$) TR | kPa | ≥ 15 | EN 1607 |
| Point load at 5 mm deformation($F_p$) PL(5) | N | ≥ 600 | EN 12430 |
| Specific load value | kN·m$^{-3}$ | 1.75 and 1.47 [1] | EN 1991-1-1, EN 1990 |
| FIRE SAFETY PROPERTIES | | | |
| Reaction to fire class | - | A1 | EN 13501-1 |
| Maximum temperature for use | °C | 200 | - |
| Dimensional stability at (70±2)°C DS(T+) | % | ≤1 | EN 1604 |
| Melting temperature $t_t$ | °C | ≥ 1000 | DIN 4102 part 17 |
| OTHER PROPERTIES | | | |
| Moisture resistance factor (μ) MU | - | 1 | EN 12086 |
| Moisture absorption short term/long term WS / WL(P) | kg·m$^{-2}$ | 1/3 | EN 1609, EN 12087 |

| ADDITIONAL PROPERTIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Acoustic absorption coefficient α for perpendicular impact of acoustic waves (-) according to EN ISO 354 and EN ISO 11654 | Frequency | | Hz | 125 | 250 | 500 | 1000 | 2000 | 4000 |
| | Thickness | 20 | mm | 0.05 | 0.20 | 0.55 | 0.85 | 0.95 | 1.00 |
| | | 40 | mm | 0.20 | 0.65 | 0.90 | 0.90 | 0.95 | 0.95 |
| | | 60 | mm | 0.35 | 0.85 | 0.90 | 0.95 | 0.95 | 1.00 |
| | | 100 | mm | 0.45 | 0.70 | 0.85 | 0.95 | 0.95 | 1.00 |
| Definition of single number value according to EN ISO 11654 | Single number value | | - | $\alpha_w$ | | $\alpha_{stř}$ | | NCR | |
| | Thickness | 20 | mm | 0.50 (M. H) | | 0.64 | | 0.65 | |
| | | 40 | mm | 0.90 | | 0.85 | | 0.85 | |
| | | 60 | mm | 0.95 | | 0.90 | | 0.90 | |
| | | 100 | mm | 0.90 | | 0.86 | | 0.85 | |

[1] In term of the roof construction stress the upper or the lower specific value can be considered.

## RELATED DOCUMENTS

- EC compliance certificate 1390-CPR-0305/11/P
- Declaration of Performance CZ0001-016 (www.isover.cz/DOP)

1. 7. 2014 The information is valid up to date of publishing. The manufacturer reserves right to change the data.

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