

# DATA SHEET

## Skysil Fe 1,1 - 2,0 Chalcedonite – Filtration Medium

Skysil Fe is a specialized filtration material obtained from the naturally occurring mineral chalcedonite. The cryptocrystalline structure of chalcedonite silica results in high porosity of the filter bed grain, reaching up to 30%. Its unique physicochemical properties and appropriately adjusted grain size make Skysil Fe an excellent filtration material for widespread applications in water treatment technologies.

### Technological Properties of the Chalcedonite Filtration Medium:

The chalcedonite filtration material has the following properties that distinguish it from other filter beds on the market:

- High mass capacity for contaminants, allowing for extended filtration cycles, including improved efficiency in iron removal;
- Low bulk density, reducing the load on the filter bottom, which is particularly important in pressure filters;
- Favorable hydraulic characteristics (low bed resistance, even after suspended solids filtration, allowing for reduced system operating pressure).

Table 1. Physical Properties of the Chalcedonite Filtration Bed

Parameter	Value
Grain size	1,1 – 2,0 mm
Bulk density	1,0 – 1,1 kg/dm <sup>3</sup>
Specific density	2,62 – 2,65 kg/dm <sup>3</sup>
Grain Porosity	≤ 20 %
Specific Surface Area (BET)	4,5 – 5,0 m <sup>2</sup> /g
Uniformity Coefficient	≤ 1,5

Table 2. Chemical Composition of the Chalcedonite Material

Component	Content [%]
SiO <sub>2</sub>	97,7 – 98,9
Al <sub>2</sub> O <sub>3</sub> , MgO, CaO, Fe <sub>2</sub> O <sub>3</sub> , K <sub>2</sub> O	< 2,0
Organic Components	< 0,05

Table 3. Basic Operational Parameters of the Chalcedonite Bed

Parameter	Value
Filtration Rate	≤ 15 m/h
<b>Iron Removal Potential</b>	<b>≤ 20 mg Fe/dm<sup>3</sup></b>
Manganese Removal Potential	≤ 1,5* mg Mn/dm <sup>3</sup>
Ammonium Ion Removal Potential	≤ 2,0* mg NH <sub>4</sub> <sup>+</sup> /dm <sup>3</sup>
Water Ph Range	6,5 – 9,5
Free Bed Space	40 %
Air Backwash Rate	11 – 17 L/s·m <sup>2</sup>
Water Backwash Rate	10 – 15 L/s·m <sup>2</sup>
Bed Expansion	25 %

\* after prior natural conditioning

The Skysil Fe chalcedonite bed is packaged in 15kg bags. Delivery/personal collection terms are individually arranged basen on the order.