AFRICAN PEGMATITE

MILLERS AND PROCESSORS OF BASE MINERALS

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| **Approved by:** | E. Wenger | **Doc No:** | DS069 |
| **Compiled by:** | D. Prevoo | **Rev No:** | 02 |

## DATA SHEET

**Desolidex**
Grade: -1.4 +0.6mm ; -3 +1mm
Use: Glass Filter Media

## Chemical Analysis (%):

| | | | |
|---|---|---|---|
| **$SiO_2$** | 72% | **$Fe_2O_3$** | 0.6% |
| **$Na_2O$** | 14% | **$K_2O$** | 0.06% |
| **CaO** | 9% | **$Al_2O_3$** | 0.3% |
| **MgO** | 4% | | |

## Physical Properties:

| | | | |
|---|---|---|---|
| **Colour:** | White | **Bed Depth:** | 500mm small fraction only, with suitable nozzle arrangement and aperture.<br><br>Add 100mm of larger fraction (underbedding) to 500mm of smaller fraction with larger nozzle aperture. |
| **Backwash Rate:** | Max. 5 $m^3/m^2/h$ at max. 100 kPa | | |
| **Dry Bulk Density:** | 1.14 | **Free Board:** | 40-50% of media bed depth |
| **Effective Size mm(Approx) :** | 0.6 - 0.65<br>D10 -1.7mm | **Service Flow Rate in Cubes per hour:** | 10-30$m^3/m^2/h$ at 100-180 kPa |
| **Uniformity Coefficient:** | 1.4 - 1.65 | | |
| **Mesh Size** | -1.4+0.6mm, -3mm+1mm | **Shape:** | Smooth and Angular |
| **Specific Gravity:** | 2.5 | **Attritional loss per annum:** | 5-6% depending on backwash frequency. |

## Filtration Efficiency:

| | |
|---|---|
| **Flocculated Pool Water with 92 NTU Turbidity:** | 88% reduction with single pass<br>95% reduction with double pass<br>98% reduction with triple pass |
| **Floccculated Pool water with 87mg/l total suspended solids:** | 85% reduction with single pass<br>94% reduction with double pass<br>98% reduction with triple pass |
| **Organic suspended solids resulting from biological treatment, ie COD reduction:** | 84% reduction with single pass at 20m/h velocity<br>98% reduction with single pass at 10m/h velocity |
| **Heavy Metal Ion Removal Effciency:** (The Desolidex glass material has a strong negative charge, which results in the attraction of dissolved heavy metal ions such as Fe and Mn – extensive testing has produced the following results) | 66% reduction of FE when present in raw water at <2 mg/l<br>100% reduction of Mn when present in raw water at < 1.0 mg/l |

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Notes:

- It is sanitised at 270°C in rotary dryers to make it completely safe.
- It is sourced 100% locally
- It is highly efficient in removal of flocculated suspended solids in a single pass application.
- It can be used for industrial suspended solids removal in a multi-pass application. Ie cooling towers and similar
- The small size fraction can be used on its own, but in vessels with larger nozzle apertures the larger fraction can be used as underbedding
- Due to its lower bulk density, a material saving of 20% is achieved, compared to silica medium.
- Due to the smooth particle surface, entrained suspended solid particles are virtually instantly removed from the particle surface during backwash, resulting in drastically reduced backwash cycles and water savings of 75-80%
- Drastically reduced filtration cycles in multi pass applications result in substantial power savings.
- It is suitable for liquid/suspension filtration applications in a wide pH range, typically 3-13.
- Operating parameters and filtration efficiencies as contained in this data sheet have been obtained by extensive testing in representative applications- test parameters are based on proven and acknowledged techniques as regards filtration area , medium bed depth, filtration pressure and velocities.
- Desolidex tests, in parallel with alternative/imported products, have shown Desolidex to be substantially superior.