OVIVO GB
Glass Beads Filters
OVIVO – Glass Beads – Media Filter
The replacement for classic Sand or Multimedia Filters

Ovivo has developed a new filtration media line of calibrated Glass Beads called **OVIVO – GB**

The media is available in 4 different sizes

<table>
<thead>
<tr>
<th>Grade</th>
<th>Size Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>0.25 – 0.50 mm</td>
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<tr>
<td>02</td>
<td>0.40 – 1.00 mm</td>
</tr>
<tr>
<td>03</td>
<td>1.50 – 2.10 mm</td>
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<tr>
<td>04</td>
<td>2.80 – 4.00 mm</td>
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</tbody>
</table>
OVIVO – Glass Beads – Media Filter
The replacement for classic Sand or Multimedia Filters

Ovivo GB filtration offers large benefits starting by significant improvement of filtration

- 90-95% rejection down to 1µm particles
- 50-100% higher filtration velocity at same ∆P
- Excellent backwash efficiency
- Excellent organics removal

Ovivo GB filtration is an innovative and economical solution

- 30-40% less foot print (uniform bed permeability)
- 30-40% increase of filtration time between cycles
- 10’ to 15’ backwash time instead of nearly an hour
- 20-30% less backwash water (higher expension)
- Substantial investment & running cost reduction
- Excellent media life time
Comparison of filter media:

**Geometry**

- Amorphous, uneven shape
- Porous to very porous surface
- Low material hardness and surface quality
- High abrasion, excessive wear
- High dust content (undersize, zero gain)

- Even, geometric shape
- Calibrated
- Smooth, closed surface
- High material hardness and surface quality
- Minimal abrasion and lowest wear
- Absolutely no dust content
Comparison of filter media:

- **Permeability**

**Sand**
- Amorphous, Chaotic arrangement
- Inhomogeneous hydraulic conditions
- Long retention time of pore water
- High risk of contamination and infection
- Limited usage of filter bed

**Glass Beads**
- Regular equal sphere packing
- Homogeneous hydraulic conditions
- Short retention of pore water
- Uniform permeability and low risk of contamination and infection
- Complete utilization of filter bed
Comparison of filter media:

Dirt adhesion before backwashing

Sand
- Continuous increase of deposits and adhesions
- Porous surface
- High risk of clogging

Glass Beads
- Trapping of the contaminants within the pore space
- Optimum sphere packing
- No deposit or clogging, no adhesion
Comparison in performance: Endurance time between Backwash cycles

Compared to sand filters, GB-MF offers 25-30% longer operation time between backwash cycles with a significantly lower turbidity.
Typical Example of Packing Bed for GB-MF

**MEDIA:** Ovivo – GB – Grade 01-04

Media can be handled for filling up as Ion Exchange resins
Typical P+ID

Multimedia Filter

Glass Beads Filter
## Process steps and backwash sequence

### Multimedia Filters MMF

<table>
<thead>
<tr>
<th>Backwash steps</th>
<th>Time (s)</th>
<th>V101</th>
<th>V102</th>
<th>V103</th>
<th>V104</th>
<th>V105</th>
<th>V106</th>
<th>V107</th>
<th>BW pmp</th>
<th>Blower</th>
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<tbody>
<tr>
<td>Filtration</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lowering</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Backwash Air</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Backwash water</td>
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<tr>
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<tr>
<td>Infiltration</td>
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<td>X</td>
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### Glass Beads Filters GBF

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<tr>
<td>Filtration</td>
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<tr>
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<tr>
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### Time Chart

- **GBF**: 600 s
- **MMF**: 3100 s
Typical configuration: Classic Multimedia Filter Plant
Typical configuration: Glass Beads Filter Plant (with same treatment capacity)