High Rate Softening Solutions

for industry
**MULTIFLO™ and ACTIFLO® Softening technologies provide high rate softening in a compact design for industrial applications**

These two premier clarification processes from Veolia Water Solutions & Technologies are combined with a unique softening draft-tube reactor to reduce hardness, alkalinity, silica and heavy metals. The addition of chemicals and controlled sludge recirculation enhance the formation of crystalline compounds that rapidly settle in a lamella clarifier, resulting in a very small footprint.

**Major Benefits of our Softening Solutions**

- **Compact:** The footprint of the high rate softening technologies is 10 to 20 times less than that of a conventional precipitation softening system.
- **Flexible and robust:** The hydraulic design of the sections within the treatment unit promotes optimum flow distribution and consistent operation, achieving high water quality.
- **Sludge treatability:** The produced sludge can be easily thickened and dewatered.
- **High level of homogenization,** reducing retention time
- **Removal of bypass and dead zones** to achieve classical precipitation and flocculation efficiencies in a smaller tank footprint.
- **Complete mixing** of the influent water with the chemicals and recirculated sludge
- **Increased pumping efficiency**
- **Reduced chemical and power consumption**
- **Easy control and maintenance** of the reagent injection system
- **Maximum crystal growth**

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**MULTIFLO™ for Softening**

The MULTIFLO™ technology incorporates chemical precipitation with sludge thickening, producing a highly concentrated sludge that can be easily dewatered. MULTIFLO™ is suitable for treating water with an average to high suspended and precipitated solids content.

Veolia provides Prefabricated Package Plants up to 200 gpm or custom-engineered solutions for higher flow rates, depending on the application.

**ACTIFLO® for Softening**

The ACTIFLO® technology combines chemical precipitation with recirculated microsand, which acts as a seed for floc formation. The rapid settling of the microsand-ballasted floc allows for designs with very high overflow rates. The produced sludge can be easily thickened and dewatered. ACTIFLO® is suitable for treating water with average solids content, and is especially efficient for silica removal.

Veolia provides Prefabricated Package Plants up to 2,500 gpm or custom-engineered solutions for higher flow rates, depending on the application.

**On-site Demonstration**

Our trailer-mounted pilot treatment unit is available for on-site demonstration of the MULTIFLO™ and ACTIFLO® Softening technologies to confirm process performance for your water or wastewater stream.

**VALUES DEPEND UPON WATER CHARACTERISTICS**

<table>
<thead>
<tr>
<th>MULTIFLO™ Softening*</th>
<th>ACTIFLO® Softening*</th>
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</thead>
<tbody>
<tr>
<td>Inlet hardness concentrations</td>
<td>150 - 1000 ppm as CaCO₃</td>
</tr>
<tr>
<td>Hydraulic loading rates</td>
<td>12 gpm/ft²</td>
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<tr>
<td>Sludge concentration</td>
<td>&lt;35 mg/L Calcium as CaCO₃</td>
</tr>
<tr>
<td>Clarified water hardness</td>
<td>&lt;50 mg/L Magnesium as CaCO₃</td>
</tr>
<tr>
<td>Clarified water TSS</td>
<td>&lt;10 mg/L</td>
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<tr>
<td>Clarified water turbidity</td>
<td>&lt;1 NTU</td>
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</tbody>
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*Values depend upon water characteristics
Veolia Water Solutions & Technologies is committed to delivering sustainable solutions and resource recovery based on three key principles:

**Service** is what we provide our customers. We offer customer care at its best, not only through operation and maintenance contracts and asset management, but also aftermarket field services and Hydrex™ chemicals.

**Value** is what we create for our customers. We seek opportunities for recycle and reuse of resources, product recovery and energy production as part of our water treatment processes. For each project, we look for ways to add value for our customers.

**Responsibility** is the cornerstone of all our business activities. As part of Veolia Environnement, the world’s largest environmental company, we understand the importance of our social responsibility to protect the resources of our planet for future generations. We utilize tools such as Carbon Footprint evaluation and Water Impact Index to help our customers achieve their corporate sustainability goals.