

# CALCYCLE®

## Catalytic decarbonation water softening process

**CALCYCLE®** is a patented, ecological and compact process for reducing calcium hardness in water, acting on the water's calcium-carbonate balance.



For resources rich in calcium carbonate (hardness above 30°F), water softening is an important objective in terms of comfort of use, preservation of household appliances and domestic hot water, reduced consumption of detergents and lower lead and copper levels in drinking water.

The **CALCYCLE®** process is the fruit of a technological partnership with Brabant Water, a Dutch drinking water production and distribution company.

### APPLICATION FIELDS

- Decarbonation of drinkable water
- Decarbonation of process water
- Treatment of groundwater and surface water

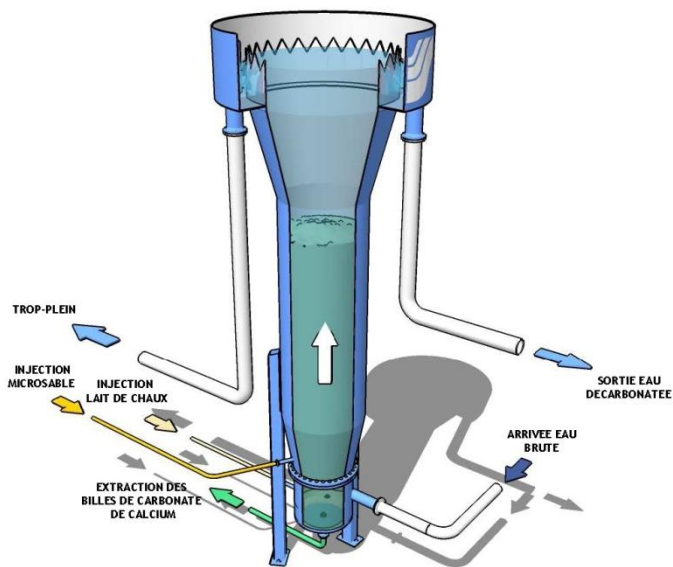
### PERFORMANCE

- **Environmentally-friendly:** With no discharge into the sewage network, the process only utilizes sand and either lime milk or soda, and it only produces easily drainable, transportable, and recyclable calcium carbonate granules.
- **Compact:** The reactor is a granule fluidization tower that minimizes the footprint on the ground.

# CALCYCLE®

## Ecological, compact process for reducing calcium hardness in water.

The **CALCYCLE®** process is a fluidized bed reactor that enables the precipitation of calcium carbonate around micro-sand grains. This precipitation is controlled through the dosing of micro-sand and an alkaline reagent (soda or lime).



Des granulés de carbonate de calcium sont formés au contact de l'eau, grossissent et se concentrent dans le bas du réacteur d'où ils sont régulièrement purgés, tandis qu'une dose équivalente de sable est introduite dans le réacteur.

« Seules des billes de calcaire sortent de l'usine ».



Egouttage des billes de carbonate de calcium en benne drainante.

Catalytic decarbonation offers several advantages:

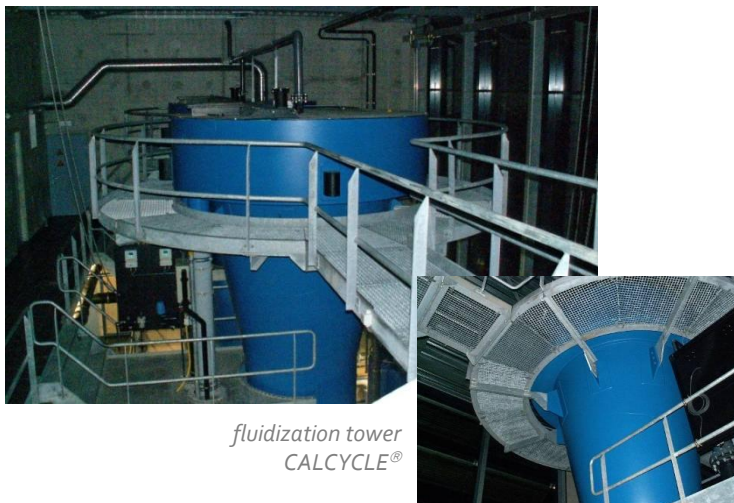
- Preservation of water balance
- Efficient use of commonly used reagents in drinking water production
- No discharge of concentrated brine
- No sludge treatment or disposal required
- Production of a valuable, concentrated, and dry product
- Compact design, with the fluidization tower replacing the four conventional steps of coagulation, flocculation, sedimentation, and sludge dehydration.

### SPECIFICATIONS

- Capacity: from 30 to over 500 m<sup>3</sup>/h per reactor
- Typical velocity: 80-100 m/h
- Operates with lime or soda
- Small footprint on the ground
- Production of 1 to 2 mm diameter CaCO<sub>3</sub> pellets that can be utilized in cement production, fill materials, or agriculture.

### RÉFÉRENCES

Baignes, Saint Souplets en France et Usines de Nuland, Seppe, Wouw conçues et exploitées par Brabant Water dans la région du Brabant aux Pays-Bas.



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