

## R2S anaerobic reactor

### Defies high calcium content in wastewater



#### **High runability thanks to intelligent reactor design**

Especially in the paper industry, both the calcium content and COD concentration of the wastewater are high. To ensure a consistently good performance, the calcium-loaded heavy sludge has to be removed from the reactor during continuous operation. The Voith R2S anaerobic reactor is a two-stage high-performance reactor for anaerobic treatment of industrial effluent, more particularly effluent originating from papermaking processes. In the R2S reactor heavy material selectively sediments to the conical bottom and can be removed from the reactor in a matter of minutes. This saves maintenance and servicing costs and ensures optimal operation as the specific granular sludge activity remains high.

#### **Smooth operation**

Cold spots\* usually originate from clogging and poor fluidization and as a consequence degradation rates deteriorate. This results in a need for maintenance and unnecessary downtimes. Thanks to its intelligent design, the maintenance-friendly R2S reactor prevents these cold spots from occurring. Additionally the adjustable feeding nozzles can be separately flushed and cleaned.

#### **High loading rates save space**

Due to exceptional mixing properties, the R2S anaerobic reactor achieves high volumetric loading rates and the dissolved organic contaminants are degraded efficiently. As a result, space requirements are reduced significantly.

## Save your resources

Due to internal and external recirculation in the reactor, the use of chemicals such as caustic soda can be reduced. This helps to make the process more environmentally sustainable and saves additional cost. Energy consumption can also be reduced to a minimum. Moreover, the combination of internal and external recirculation makes the system flexible with respect to feed volume and COD load.

## Areas of application

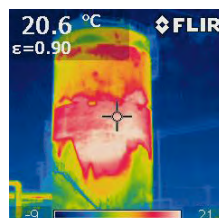
The reactor is used for the anaerobic wastewater treatment in the following industries:

- Paper
  - Mechanical pulp production
  - Paper manufacturing
- Food
  - Breweries
  - Dairies
  - Soft drink production
  - Juice production
  - Fruit and vegetable processing

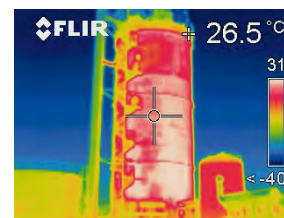
## Your benefits

- + Easy to use and maintain
- + Reliable operation specifically in the case of wastewater with a high calcium content
- + Innovative reactor design prevents cold spots
- + Clog-free operation excludes maintenance intervals
- + Recirculation lowers energy and chemical costs
- + High sludge activity due to selective removal of heavy sludge

## \*Infrared comparison cold and warm spots



Conventional  
anaerobic reactor



Voith R2S  
anaerobic reactor

## Technical data R2S anaerobic reactor

Cylindrical height [m]	20	24	30
Diameter [m]	Reactor volume [m³]		
5.5	356	434	552
5.9	490	599	763
7.5	775	952	1,217
9.0	1,095	1,349	1,731
10.5	1,485	1,831	2,351
12.5	2,114	2,605	3,341



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## Further Information



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