

# **Sustainability in commercial laundering processes**

## Module 2 **Usage of Water**

### Chapter 6

# Water recycling

## Process integrated Water Treatment for industrial Washing Processes



Aquamiser



Aquacycler

# Aquamiser

- Savings up to 75% in water consumption



**Water recycling - compact und effective**

- A system to save
  - Water
  - Energy
- A system to remove
  - Sand, particles and fibres down to 25 microns
- A system suitable for
  - Mats
  - Re-use of rinse water
  - Filtration of pre-wash water
  - Hotel and hospital textiles

# Aquamizer - Characteristics

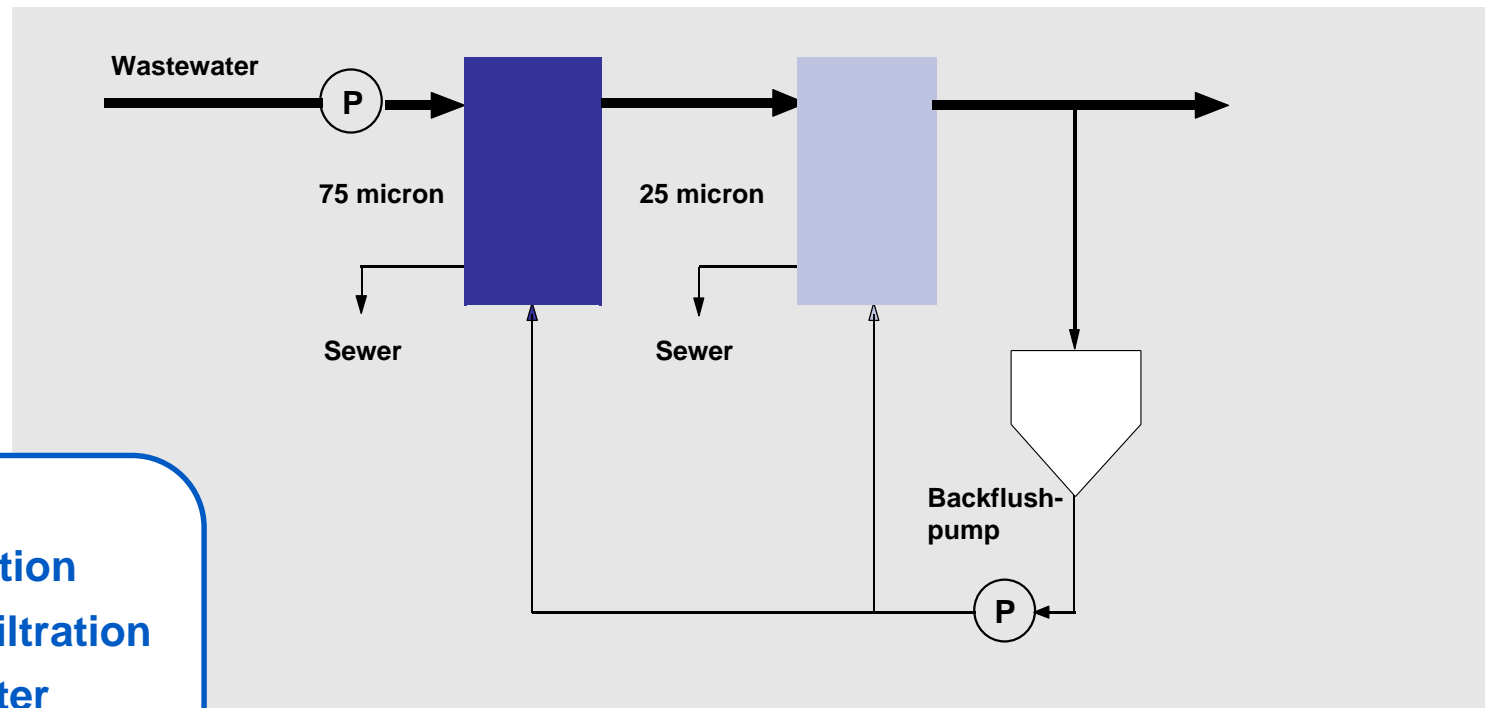
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Leonardo da Vinci

- Reduction of water consumption up to 50% and more
- Medium to strongly soiled effluent
- Capacity 6 m<sup>3</sup>/h
- Self cleaning Filter
- Required space approximately 2 m<sup>2</sup>
- Easy to operate with
- Low operation costs

## Functional Diagramme



### BENEFITS:

- In line filtration
- Thorough filtration
- Cascade filter
- Automatic back flush
- Compact design

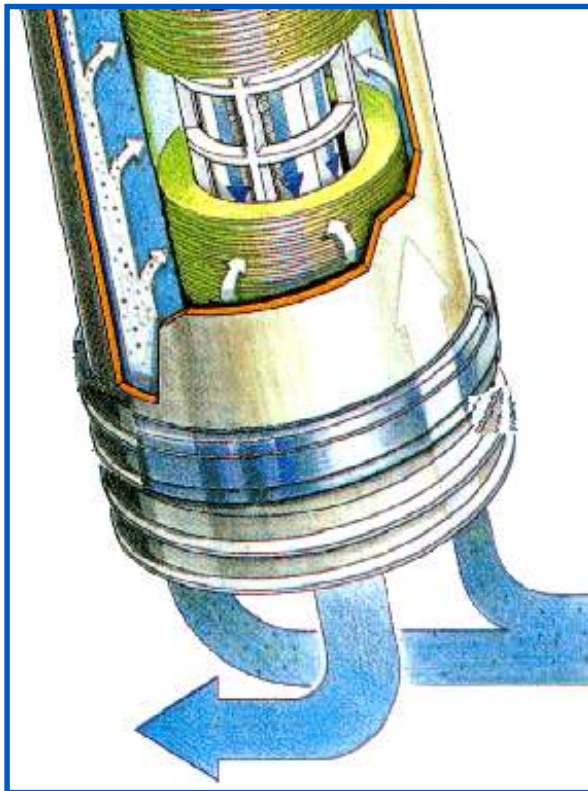
# Benefits

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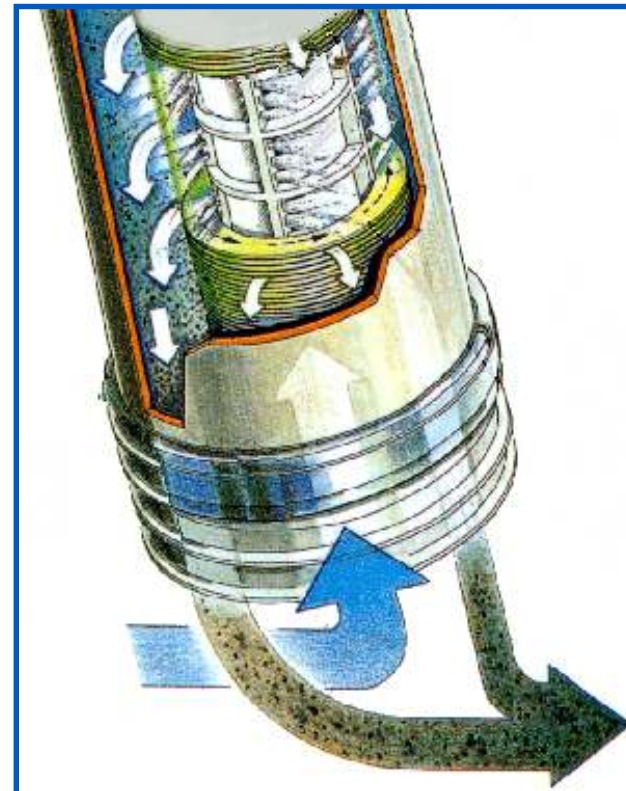
- **In line filtration**
- **Thorough filtration**
- **Cascade filter**
- **Automatic back flush**
- **Compact design**

# Filter / Backflush

## Filtration

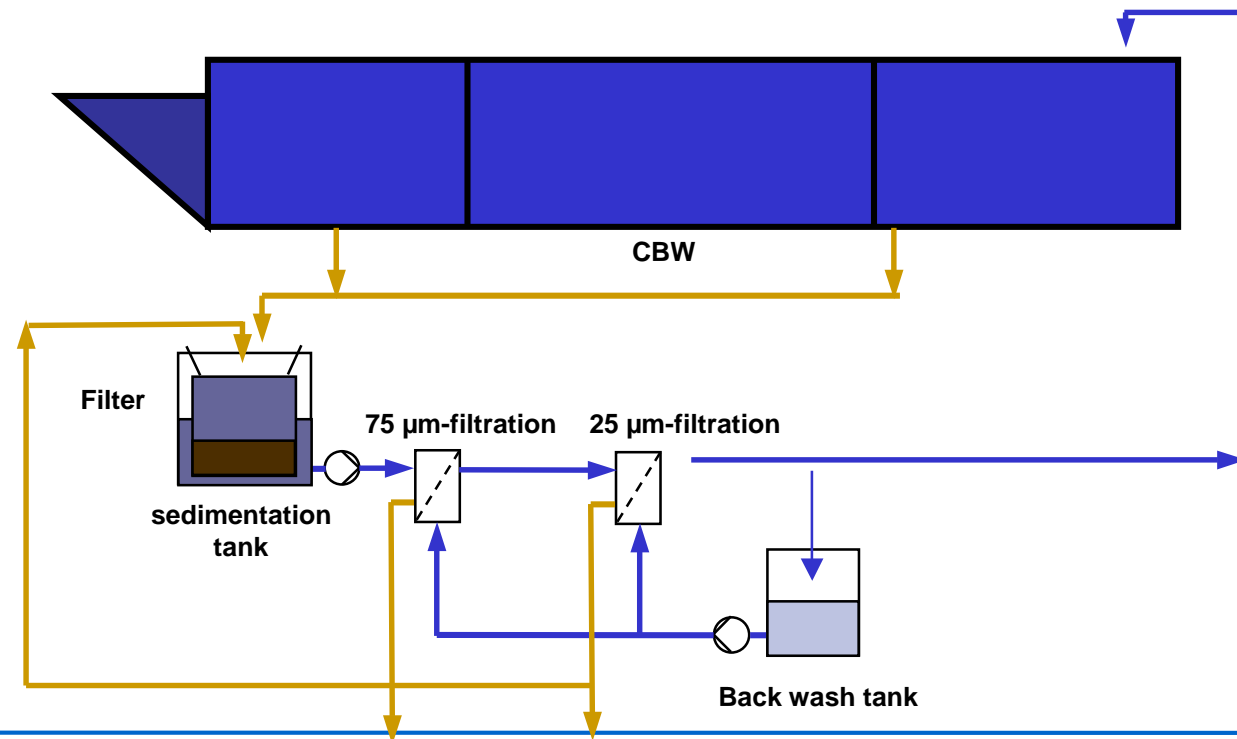


## Backflush



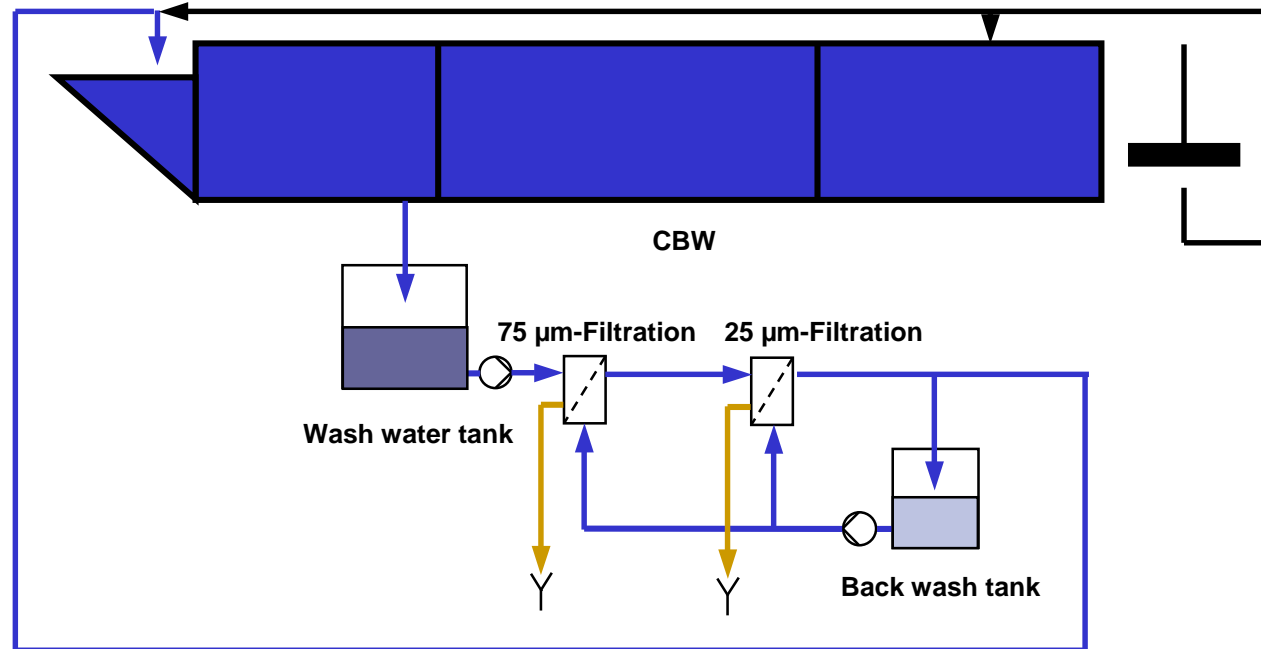
# Application 1

- Water recycling for a mat machine
  - Re-use of wash water. Reduction of water consumption by 50 - 75%. Reduction of energy consumption in CBWs
  - Hinders drain blockage by removing sand from the waste water



## Application 2

- Filtration of pre-wash water (Hotel and hospital)
  - Re-use of pre-wash and main-wash water in the pre-wash
  - Used in combination with press water recycling in the rinse section. Water savings up to 25% (2-3 l/kg)



# Savings Potential

- **CBW Calculation - Reuse of prewash water**
  - Washing capacity 12 t/day
  - Water consumption 8 l/kg text
  - Water costs 3 €/m<sup>3</sup>
  - Water saving 3 l/kg 108 €/day

**Savings Aquamiser: 27000 €/year**

- Investment in equipment and installation app. 40000 €

 **Pay back after 17 months**



# AQUACYCLER



**Industrial water recycling system  
for several washer extractors**

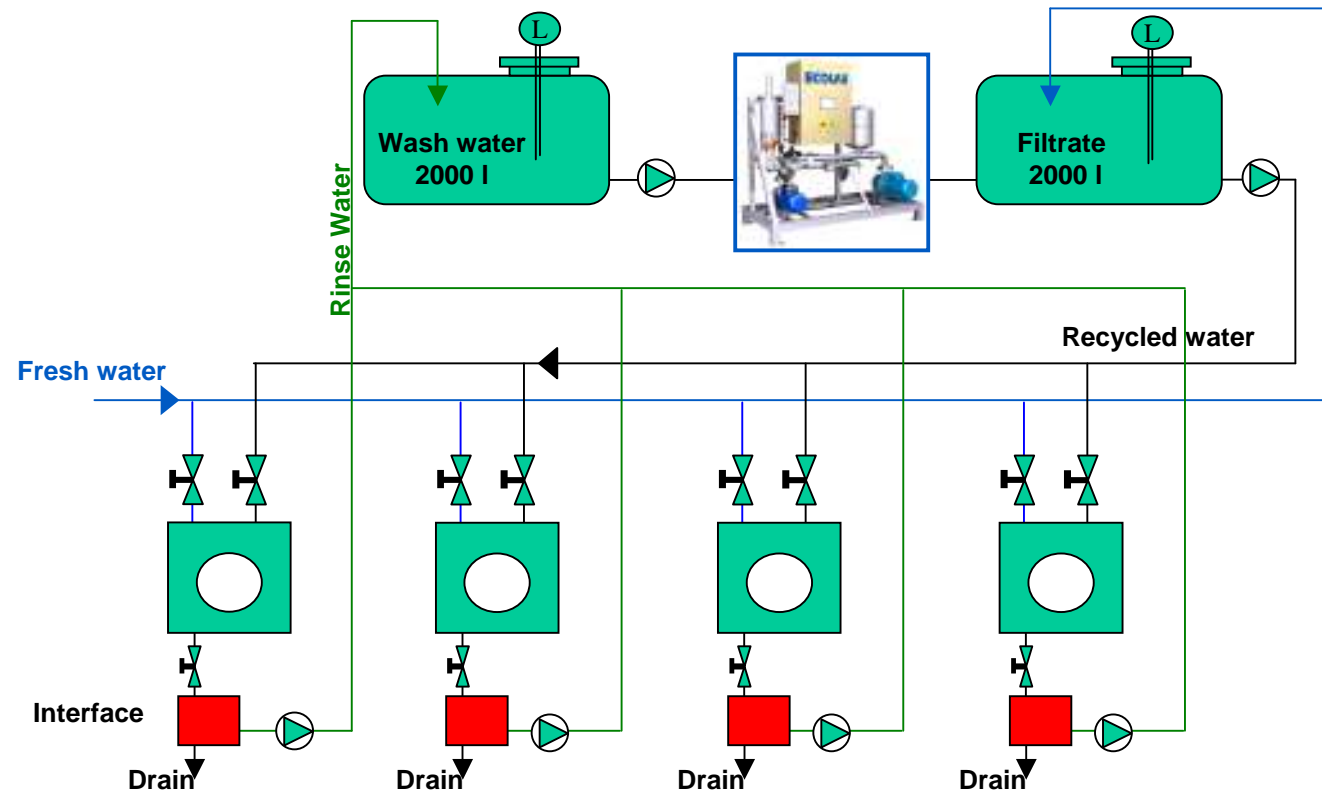


## What is an Aquacycler (AC)?

- AC is a modular filtration system for the removal of particles from laundry waste water
- Maximum water throughput: 6 m<sup>3</sup>/h
- Easy adaptation to individual laundry situations
  - Standardised components
  - Aquacycler recovery unit
  - Storage tanks
  - Machine interface
- Low operating costs
- Small space requirements
- Easy to maintain
- Simple, durable construction



# Principle of modular Construction



# Working Principle



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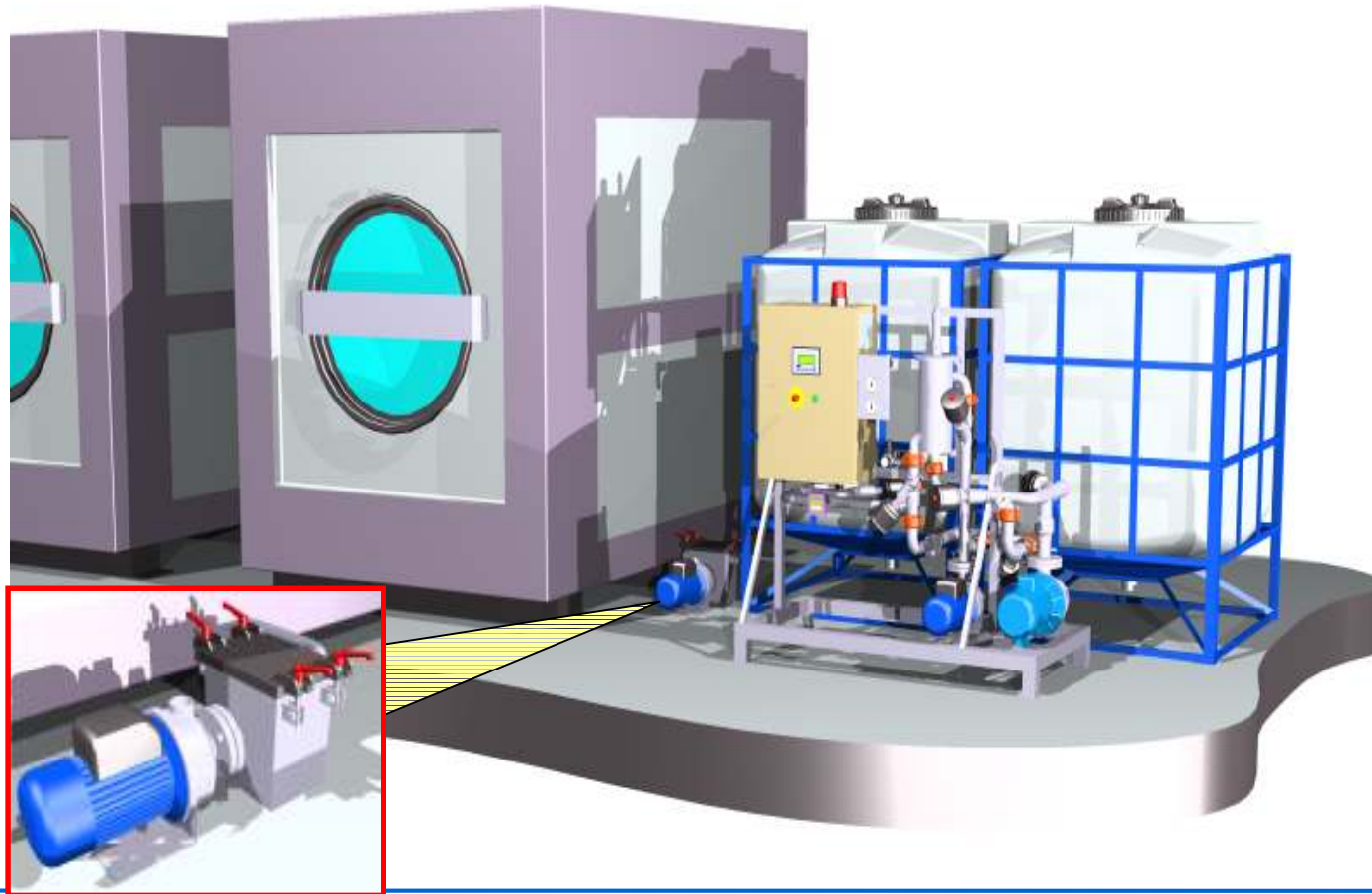


- Each WE is installed with an interface to capture the rinse water
- The rinse water is stored in a wash water tank
- The wash water is filtered in the Aquacycler and stored in the filtrate tank
- The filtrate can be reused in the pre-wash, the main-wash and the first rinse cycle
- A fresh water inlet guarantees the water supply in case of low filtrate levels

Example 1:  
Installation side by side to the washer extractors



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Example 2:  
Installation in a cellar room





Leonardo da Vinci



**RECOVERY RATE:  
between 25 - 60%**

## Benefits

- Filter and reuse of rinse water
- For several washer extractors
- Lint & particle removal on textiles
- Reduction of water & waste water costs
- Energy savings (reused water still is warm)
- Better washing results in comparison to other recycling methods

