3-minute Smart Water Treatment Technology

3-minute Smart Water Treatment Technology utilizes fibrous filter media to efficiently remove high concentrations of suspended solids, hospital-based microorganisms, and other impurities.

By employing a microfiber precoat filtration (PCF) method, the 3-Minute Smart Purification process significantly reduces processing time to just 5 hours, compared to conventional rapid sand filtration (RSF). It offers advantages such as a much shorter purification period, a construction footprint 1/100th the size of traditional systems, reduced construction time, and lower operating costs.

▲ At the Kolon Industries Gumi Plant Water Treatment Center (14,400 tons/day), the fiber filtration system purifies water in just three minutes.

Issues to Tackle

- Prevents water contamination caused by turbidity, algae, and hospital-based microorganisms.
- Provides water purification facilities for remote areas where access to clean water treatment is difficult.

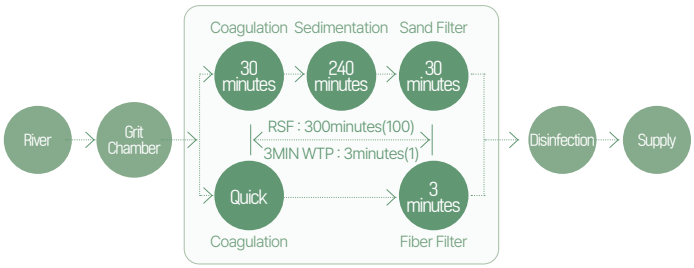
Expected Benefits

- Reduces production time and costs to 1/100th for existing purification plants, with a footprint 1/100th the size, 1/3 of the construction costs, and 1/5 of the construction time, ensuring economic feasibility.
- Improves quality of life and public health by supplying safe and affordable drinking water to regions with poor infrastructure, such as Southeast Asia, Africa, and South America.

Key Services

· Produces industrial and drinking water by coagulating raw water impurities, sedimenting and filtering through microfiber precoat filtration (PCF), and treating with reverse osmosis (RO)

· Allows remote control and monitoring through smart water purification systems.



Use Cases

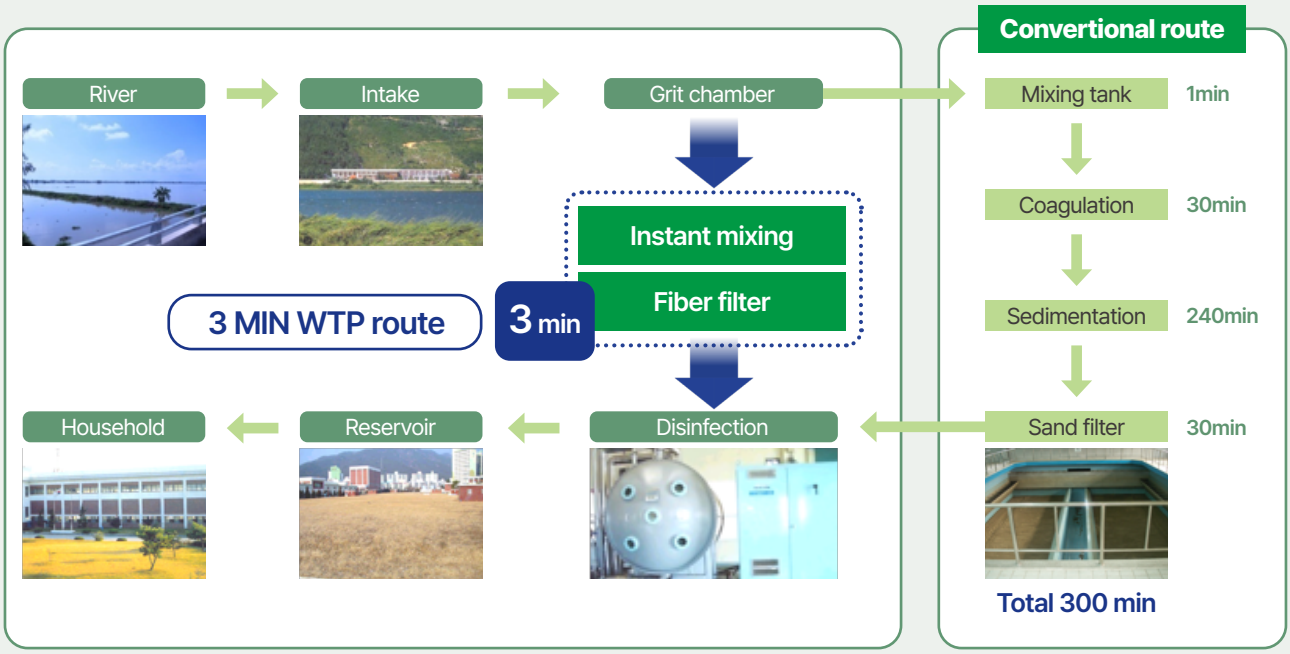
· In public sectors, systems have been introduced to 14 village purification facilities in Ansan City, wastewater reuse in Korea Hydro & Nuclear Power (KHNP), and other locations.

· Private sectors, including POSCO and Samsung Electronics have adopted the system for drinking, industrial, and wastewater treatment with RO processing.

· Internationally, systems have been implemented in developing countries, such as water purification facilities in Africa, Southeast Asia, and South America, with 20 purification facilities established in Indonesia alone.

Key Components

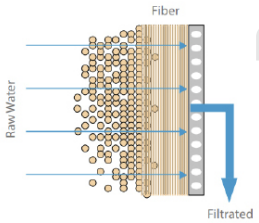
Configuration



Key Technologies

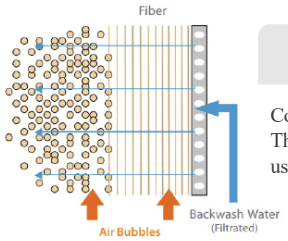
1. PCF Filter Filtration Process
   · Compresses raw water through micro-fiber filter media to maximize filtration efficiency.
2. PCF Filter Backwashing Process
   · Releases compressed fibers and uses large amounts of air and water to thoroughly clean the filter media.
3. Remote Operation and Monitoring
   · Enables system operation and status checks through an internet connection.
4. Automated Backwashing and Optimal Agent Injection
   · Automatically manages backwashing processes, including washing pressure, duration, and flow rates. Adjusts chemical injection volumes based on raw water quality to optimize system efficiency.

PCF Filter Key Processes



Filtration by pressing fiber

Raw water passes through compressed fibers in the filter media, maximizing filtration efficiency.



Backwashing by releasing fiber

Compressed fibers are released. Then air bubbles and water are used for thorough backwashing.

Technology Companies

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