WATER TREATMENT PLANTS

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About Techmash Group

Water and wastewater treatment plants manufacturing is an important area of **Techmash Group** business. We design systems for industrial usage, healthcare & social infrastructure, food & beverage, and other industries.

Techmash Group supplies equipment from leading global vendors as well as **Ermak-Pure Water™** systems, which are designed and manufactured in-house and used in many of field camps by oil & gas companies.

ЧИСТАЯ ВОДА ЕРМАК

Techmash Group offers Water Treatment Plants with rated output from 1 m^3/hour up to 160 m^3/hour. The equipment for each station is selected according to Customer requirements and chemical analysis of source water.

We offer complex approach to water treatment projects, in particular:

- Diagnosis of the existing water treatment systems;
- Chemical and microbiological analysis of water;
- Individual selection of equipment;
- Design of water treatment and wastewater treatment systems;
- Manufacturing of water treatment equipment;
- Delivery of the equipment to the Customer;
- Installation and commissioning of equipment;
- Training of Customer's Staff;
- Warranty, after warranty service.

High quality of the company's management system is certified by international company Bureau Veritas fitting to ISO 9001 standard.

ISO 9001 BUREAU VERITAS Certification

We successfully solve the following problems for our Clients:

- Purification of surface and ground sources water to potable water;
- Provision of individual buildings and small or medium-sized towns with potable water;
- Preparation of water for technological needs (boiler, heat exchangers and other equipment and industrial enterprises);
- Treatment of domestic wastewater according to discharge standards for fishery ponds.

Advantages of working with Techmash Group:

- A complex approach from design to delivery of the finished "turnkey" facilities;
- Experience in the implementation of varying complexity projects, including such in harsh climatic conditions;
- Own modern production site in Ekaterinburg;
- Manufacturing of modular water treatment plants "Ermak - Pure Water" in full operational readiness;
- Manufacturing of components of water treatment systems and cooperation with leading manufacturers;
- Highly qualified engineering and technical personnel;
- Quick service on the Customer's site in any region of Russia;
- High quality of products.

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Water Treatment Plants in a Containerized Module ERMAK - Pure Water (WTS EPW BM)

The water treatment plant consists of a heat insulated containerized module equipped with ventilation, heating and lighting systems. Storage tanks for raw and treated water, pump stations, equipment for water treatment and disinfection, instrumentation and controls are mounted inside the containerized module. We offer two types of Containerized water treatment plants: **WTS EPW BM-optimum and WTS EPW BM-universal.**

Intended use

The station is used **as a permanent or temporary facility for water treatment and disinfection:**

- for shift camps of oil- and gas-industry workers;
- at major construction projects;
- in the country and at small population centers;
- at recreation centers and holiday camps.

Technical properties

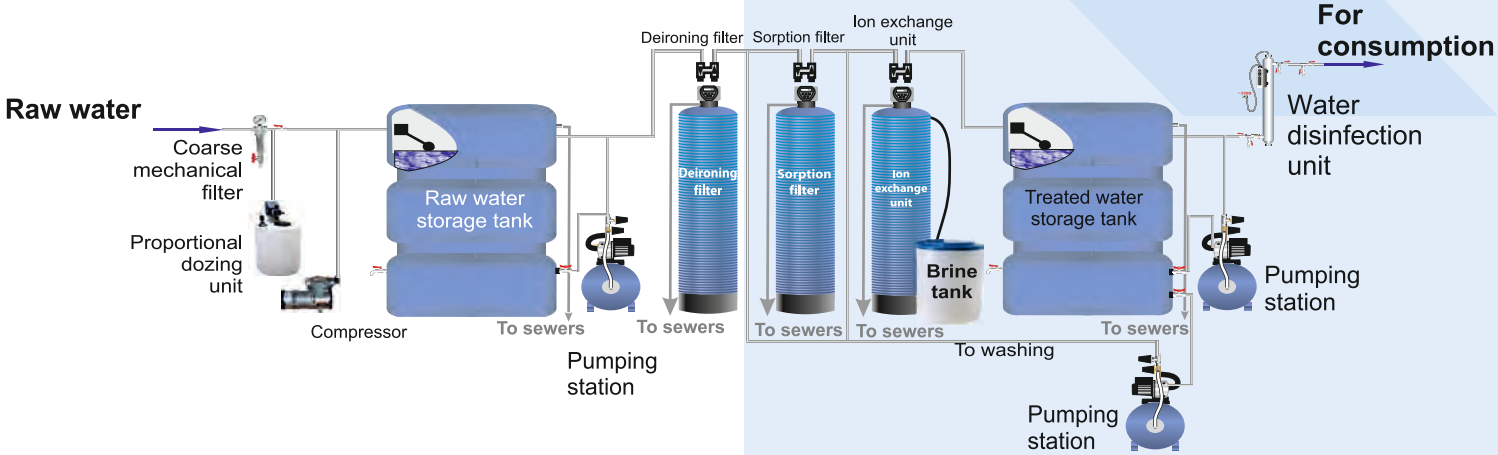
Water Treatment Plant	Rated output	Inlet Operating Pressure, atm
WTS EPW BM-optimum	1 - 160 m^3/hour	3.5-6.5
WTS EPW BM-universal	1 - 6 m^3/hour	1.5-6.5

WTS EPW BM-universal is purposed for treatment and disinfection of water taken from an underground or surface water source having indicators exceeding MPC limits in regard to iron and manganese content, organoleptic indicators, color, turbidity, taste and smell of water, softening and disinfection till it complies with requirements of SanPiN 2.1.4.1074-01 Potable Water. Hygienic Requirements to Quality of Water in Centralized Potable Water Supply Systems. **Raw water must fit the following characteristics:**

№ п/п	Property	Value	Quality standard according to SanPiN 2.1.4.10-47-01
1	pH	6.5-8.5	6.0-9.0
2	Permanganate oxidation, mgO2/l	Up to 6.0	5.0
3	Iron, mg/l	Up to 8.0	0.3
4	Manganese, mg/l	Up to 2.0	0.1
5	Hardness, mgekv / l	Up to 10.0	7.0
6	Oil, mg/l	Up to 0.3	0.1
7	Ammonia , mg/l	Up to 2.5	2.0

Figures not listed in the table must fit quality standards according to SanPiN 2.1.4.10-47-01

Water Treatment Plants WTS EPW BM Flowchart



WTS EPW BM-optimum is to be designed individually according to requirements of the Customer, and based on chemical analysis of raw water and required output. When designing optimum flowchart we use up-to-date technologies of water purification:

- aeration;
- pH correction;
- dosing reagents;
- filtering with clarification, deironing, ion exchange and sorption filters;
- water disinfection with germicidal UV-devices;
- reverse osmosis;
- electromagnetic nonchemical flocculation devices;
- electrolysis unit for sodium hypochlorite production.

Water Treatment Plants **WTS EPW BM** also can be performed on the basis of "Ermak" caravans on chassis, on sledges or prefabricated buildings.

Advantages

- **Mobility and compactness**
  Water systems **WTS EPW BM** are produced in containers in accordance with the standards of cargo (transport dimensions) that allows the delivery by any kind of transport. Block modules are equipped with conveying loops, which greatly simplifies the process of loading and unloading.
  Maximum overall dimensions of WTS EPW BM water systems are: 9000*3000*2650.
- **Operation in various climatic conditions**
  Stations are available in all-weather containers. Operate at temperatures from +55°C to - 55°C.
- **Easy installation on the site**
  WTS EPW BM are delivered to the Customer in full factory readiness and don't need additional buildings. Installation includes connection of water supply and sewage pipelines, connection of power supply source, adjustment of dozing equipment and control valves for filters.
- **Using reagent-free methods of water purification**
  While developing water treatment systems we give precedence to reagent free methods of water purification that avoids use and disposal of hazardous chemicals.
- **A wide range of models**
  Water systems **WTS EPW BM** are available in various dimensions and capacity (rated output). When producing stations we use water treatment equipment with our own registered trademark "Ermak - Pure Water" as well as equipment from leading Russian and world manufacturers from USA, Germany, Belgium, Italy.
- **Reliability and treatment effectiveness**
  In manufacturing of water treatment systems **WTS EPW BM** only modern water purification technologies are used. Selection of the optimal flowchart for water purification is carried out by experienced Techmash Group's technologists on the basis of water analysis and water consumption mode. The modular design of the flowchart allows the complex cleaning of water up to SanPin 2.1.4.1074 requirements or other requirements of the Customer.
- **High quality**
  WTS EPW BM have Declaration of conformity and Certificate of state registration. Installation, commissioning and maintenance of the equipment are produced by professional engineers of Techmash Group's Service Centre.

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Water Treatment Plants ERMAK - Pure Water (WTS EPW F)

Water treatment plants **WTS EPW F** consist of equipment for water cleaning and disinfection mounted on the frame. The equipment includes:

- coarse mechanical filter;
- water aeration unit, consisting of aeration columns and compressor with control system;
- deironing filter;
- ion exchange unit with brine preparation tank;
- sorption cartridge filter;
- UV water disinfection unit

Application

WTS EPW F - is a comprehensive solution designed for areas with high content of iron, manganese and hardness in the water.

Water treatment systems **WTS EPW F** are designed for taste and odor improvement, reduction of color, turbidity and oxidation in the water, removal of compounds of iron, manganese, hardness and water disinfection.

Water treatment systems mounted on the frame are used as local water purification and disinfection systems for:

- health care facilities;
- catering;
- schools and kindergartens;
- recreation centers and cottages;
- small enterprises.

Technical Properties

Features	WTS EPW F 0.6	WTS EPW F 1.0	WTS EPW F 1.3	WTS EPW F 1.6
Rated output, m^3/hour, nom/max	0.6/1.0	1.0/1.5	1.3/2.0	1.6/2.5
Overall dimensions, W*D*H, mm*	600 x 500 x 1700	700 x 600 x 1700	800 x 700 x 1950	900 x 800 x 1950
Deironing filter	1054	1354	1465	1665
Ion exchange unit	0844	1054	1252	1354
Aeration colmm	0844	1054	1252	1354

*Overall dimensions may differ due to upgrading of products

Advantages

- **Mobility and compactness**
  All equipment is compactly set on a movable mounting platform and is fixed to the frame.
- **Easy installation on the site**
  WTS EPW F stations are delivered to the Customer in full factory readiness. Installation includes connection of water supply and sewage pipelines, connection of power supply source.
- **Easy maintenance**
  An assembly of valves is provided for easy operation and maintenance. Deironing filter and ion exchange unit are equipped with automatic control valves with Russian interface. Rinsing and reclamation of filter media is carried out automatically.
  No hazardous chemicals in flowchart.
- **High quality**
  WTS EPW F has Declaration of conformity and Certificate of state registration. Installation of the equipment is produced by professional engineers of Techmash Group.

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Techmash Group Scopes of Activities:

- Field Camps
- Mobile Buildings
- Prefabricated Buildings
- Gaz and Diesel Power Stations
- Water and Wastewater Treatment Plants
- Compressed Air and Gaz Sistems

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