

Technical Specs of armbr®



| Decription | Unit | armbr (1) | armbr (2) | armbr (3) | armbr (4) | armbr (5) | armbr (6) | armbr (8) |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Treatment capacity | m3/d | 20 | 40 | 60 | 80 | 100 | 120 | 160 |
| People equivalent | | 100 | 200 | 300 | 400 | 500 | 600 | 800 |
| Operating temperature | °C | 5-40 | 5-40 | 5-40 | 5-40 | 5-40 | 5-40 | 5-40 |
| Design influent: | | | | | | | | |
| BOD5 | mg/l | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| COD | mg/l | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| TKN | mg/l | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| TSS | mg/l | 250 | 250 | 250 | 250 | 250 | 250 | 250 |
| Temperature | °C | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| pH | | 6.5-8.5 | 6.5-8.5 | 6.5-8.5 | 6.5-8.5 | 6.5-8.5 | 6.5-8.5 | 6.5-8.5 |
| Expected effluent: | | | | | | | | |
| BOD5 | mg/l | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 |
| COD | mg/l | < 35 | < 35 | < 35 | < 35 | < 35 | < 35 | < 35 |
| Total N | mg/l | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| T-P | mg/l | < 0,1* | < 0,1* | < 0,1* | < 0,1* | < 0,1* | < 0,1* | < 0,1* |
| TSS | mg/l | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Turbidity | NTU | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Membrane: | | | | | | | | |
| Membrane material | | PES | PES | PES | PES | PES | PES | PES |
| Pores size | µm | 0.02-0.04 | 0.02-0.04 | 0.02-0.04 | 0.02-0.04 | 0.02-0.04 | 0.02-0.04 | 0.02-0.04 |
| Operating MLSS | g/l | 8-12 | 8-12 | 8-12 | 8-12 | 8-12 | 8-12 | 8-12 |
| Dimensions | Container | 20'ISO | 20'ISO | 40'ISO | 40'ISO | 40'ISO | 40'ISO** | 40'ISO** |

- › With over 32 years of engineering & manufacturing expertise,
- › Proven design and quality-control,
- › Process guarantees and full customer support,
- › ARTAŞ is your enduring partner.

* With optional chemical phosphorus removal.
** Control room is separate.



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Packaged Membrane Bioreactor Systems

armbr®
by ARTAŞ



armbr

PASSION FOR THE ENVIRONMENT. ENERGY FOR THE FUTURE.

Packaged Membrane Bioreactor Systems

The limited supply of fresh water to support communities and industries, the increased cost of centralized water and wastewater treatment plants and stricter environmental regulations make ARTAS Packaged Membrane Bioreactor Systems (armbr) a viable and ultimate solution for current and future wastewater treatment and reuse needs.



Fields of application

- New housing developments,
- National parks,
- Hotels and resorts,
- Universities,
- Retrofits,
- Municipalities,
- Industrial water reuse,
- Greywater recycling.

armbr® components

- Fine screen,
- Anaerobic tank,
- Denitrification tank,
- Nitrification tank,
- MBR tank,
- Sludge tank,
- Dosing units.

armbr® system is equipped with necessary mixers, diffusers, measurement devices and main electric-automation cabinet.

Benefits of armbr®

- High effluent quality down to 5 mg/l BOD, 2 mg/l TSS, 10 mg/L TN,
- Remove pathogens and coliforms,
- Advanced Nitrogen and Phosphorus removal,
- Disinfected effluent,
- Handles high and variable strength waste streams,
- Pre-assembled and pre-skidded equipment package,
- Compact design and easy handling,
- Practical installation and small footprint,
- Modular and easily expandable,
- Flexible process options that are operator friendly,
- No unpleasant odour,
- Excellent sludge settlement and very low sludge production,
- Factory tested and rapid start-up,
- Simple & Reliable operation,
- Fully automatic and requires minimal operator attention,
- Warranty for 2 years against manufacturing defects,
- Manufactured according to ISO 9001, ISO 14001 and OHSAS 18001 norms.
- Proven track record around the world.

armbr® Process Description

Biological systems are the processes designed for removal of dissolved and suspended organic substances from wastewater. MBRs replace the sedimentation and tertiary filtration processes in conventional wastewater treatment by removing the suspended materials with a membrane barrier.

Armbr systems are designed for wastewater applications to provide superior effluent quality in compact layout resulting in reduced space, capital and operating cost. Armbr Systems are fully automated PLC controlled MBR Systems furnished with either flat sheet or hollow fiber membranes.

The armbr process is robust and requires minimal operator attention. The process is designed in a MLE configuration

with submerged membranes handling the liquid solid separation step. The membranes allow for a compact footprint and a superior effluent; CBOD5 < 5 mg/L, TSS < 2 mg/L, TN < 10 mg/L, TP < 0,1 mg/L and turbidity < 0.2 NTU. Phosphorus removal can be accomplished with the addition of coagulant (optional).

The influent enters the bioreactor, where it is brought into contact with the biomass. The mixture is pumped from the bioreactor and then, under pressure, filtered through the membrane. The permeate is discharged from the system while the entire biomass is returned to the bioreactor. Excess sludge is pumped out in order to maintain a constant sludge age and the membrane is regularly cleaned by backwashing, chemical washing, or both.



Optional Equipment:

- Disinfection unit (UV or NaOCl dosing),
- Chemical phosphorus removal unit,
- Sludge dewatering,
- Remote monitoring and operation of the system.

