



BIOPURE® Biotower & Trickling Filter Media

High Specific Surface • Self-Supporting Structured PVC Packing • 97% Continuous Voidage

PRODUCT OVERVIEW & CORE ENGINEERING

BIOPURE® Structured Fixed-Film Media represents an advanced biological wastewater packing designed from highly durable corrugated uPVC sheets. Constructed into self-supporting rigid blocks, BIOPURE® optimizes biological carbon removal (BOD/COD) and rapid nitrification in fixed-film reactors.

The intricate cross-flow profile maximizes liquid contact time and oxygen absorption rates, encouraging high-density active heterotrophic and nitrifying microbial biofilms without the clogging risks of random packing.

✓ Engineered for high-rate municipal & heavy industrial biological load reduction.

97%
CONTINUOUS
VOIDAGE

uPVC
VIRGIN
MATERIAL

1200mm
STD BLOCK
LENGTH



Fixed-Film Biological Reactor Installation

★ KEY TECHNICAL ADVANTAGES



Clogging Resistant

97% continuous void space prevents excess biomass build-up & ponding.



Self-Supporting

High structural strength enables packing heights up to 6+ meters.



Natural Draft

Optimized air channels eliminate mechanical aeration power needs.



uPVC Build

Impervious to chemicals, acids, alkalis, rot, and UV exposure.



Uniform Flow

Perfectly matched for circular rotary distributor arm application.

🏗️ TARGET PROCESS DEPLOYMENTS

✓ High-Rate Biotowers

✓ Municipal Trickling Filters

✓ SAFF Aerobic Systems

✓ Anaerobic Submerged Fixed-Film

✓ Nitrification Polishing Reactors

✓ Industrial BOD/COD Reduction

🔄 TYPICAL BIOTOWER WASTEWATER TREATMENT LAYOUT

1

Pre-Treatment

Coarse & fine screening with grit removal.

2

BIOPURE® Biotower

Biological film BOD & Ammonia conversion.

3

Clarifier

Humus sludge settling via tube settlers.

4

Disinfection

Pathogen eradication via Chlorination/UV.

5

Reuse / Discharge

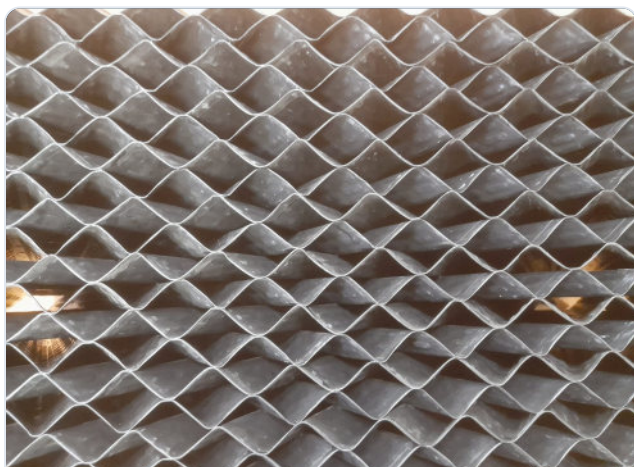
Media filtration for high-clarity reuse.



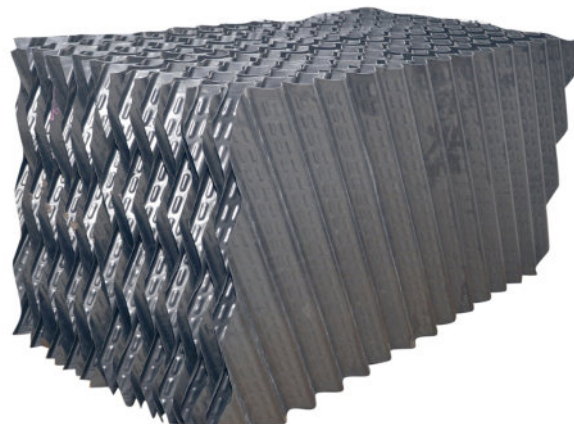
BIOPURE® STRUCTURED MEDIA SPECIFICATIONS

MODEL VARIATION	MOC	SURFACE AREA (M ² /M ³)	SHEET THICKNESS (MM)	FLUTE (MM)	VOIDAGE (%)	BLOCK DIMENSIONS (MM)	PRIMARY APPLICATIONS
BIOPURE BT10.27	uPVC	102	0.3 – 0.7	27	97%	1200 × 600 × 600	BOD/COD removal, Nitrification, Denitrification
BIOPURE BT53.27	uPVC	86	0.3 – 0.7	53 & 27	97%	1200 × 600 × 600	Heavy organic load BOD/COD, Anaerobic reactors
BIOPURE BT33.27	uPVC	93	0.3 – 0.7	33 & 27	97%	1200 × 600 × 600	Aerobic & Anaerobic trickling filters
BIOPURE BT10.19	uPVC	148	0.2 – 0.5	19	97%	1200 × 600 × 600	High-rate Nitrification & Denitrification
BIOPURE BT10.12	uPVC	243	0.17 – 0.5	12	97%	1200 × 600 × 600	Polishing Nitrification & tertiary treatment

MEDIA MICROSTRUCTURE & MODULE PROFILES



Honeycomb Interlock Configuration



Corrugated Structured uPVC Blocks

RECOMMENDED OPERATIONAL PARAMETERS

Organic Loading Rate (OLR)

0.5 – 5.0 kg BOD/m³·day

Achieves 35% to 85%+ BOD removal efficiency.

Hydraulic Wetting Rate

1.0 – 3.0 m³/m²·hr

Ensures continuous biological film irrigation.

Media Packing Height

1.8 – 7.8 Meters

Self-supporting uPVC rigid block stackability.