

# VARI-PAC VF Series

## Vertical Flow Media



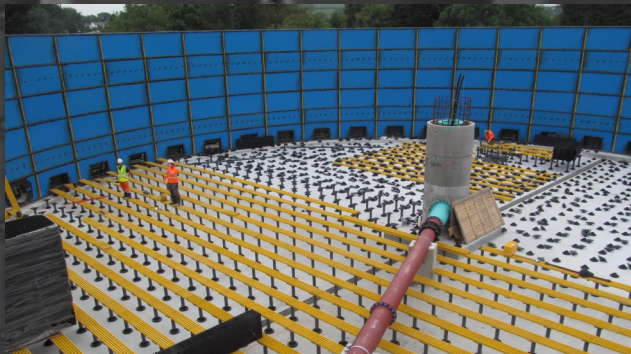
Structured PVC and PP Media for Biological Fixed Film Wastewater Treatment Systems

Introducing VARI-PAC, fixed film products for attached growth wastewater treatment applications, new construction or repacking, including:

- Trickling Filters / Oxidation Towers / Roughing Towers / Biotowers
- Ideal for high organic loading rates and high BOD and/or TSS concentrations
- Submerged Fixed Bed systems
- Anaerobic reactors
- Biofilters

In business since 1957, CE Shepherd Co. has been manufacturing Vari-Pac since the 1970's. Our staff has over 75 years of experience in waste water applications.

VARI-PAC VF Series is a modular, corrugated sheet media specifically designed for fixed film (attached growth), biological treatment systems. We offer a full range of geometries and structural designs ideally suited for any application.



### Key Features - VARI-PAC VF Series

- Available in PP or PVC materials, various surface areas and dimensions
- Durable/Proven Solvent Bonds, Heat Bonding available
- Industry Standard - Conforms to municipal trickling filter media specifications
- Temperature/Chemical resistant
- Alignment locator pins ensure proper sheet-to-sheet alignment
- UV protected for long life
- Rigid modules have high compressive strength capacity
- Easily cuts for fitting around tank walls

### Available Complementary Product Lines:

VARI-PIER - Engineered Support System with adjustable pier height, infinite slope correcting base (up to 8%), corrosion re-sistant construction.

VARI-DEK - Protective Surface Grating, self-interlocking panels



# VARI-PAC - VF Series PVC/PP Cross Flow Media

CE Shepherd's VARI-PAC VF Series Vertical Flow Media is specifically designed for biological attached growth (fixed film) wastewater treatment systems. The vertical flow designs provide highly open areas for highly loaded applications or wastewaters having high BOD and/or TSS concentrations. Ideal for municipal and industrial wastewater treatment including roughing towers, trickling filters, biotowers, submerged fixed bed systems and anaerobic treatment systems. VF Series media is resistant to rot, fungi, bacteria, acids, and alkalis commonly present in municipal/industrial wastewaters.

## Applications

VF Series modules are effective for circular and rectangular systems which utilize either rotary distributors or fixed nozzle distribution systems and submerged fixed film applications.

- Ideal for new construction or replacement media for existing trickling filters, roughing towers, biotowers, nitrification towers, biofilters, anaerobic reactors.
- Easily replaces rock, wood, or random dump style media.
- Can improve performance by increasing overall surface area, reducing excess biomass which causes channeling and allows for improved wastewater distribution and overall ventilation.
- Ideally suited for submerged bed / fixed - film systems, aerobic or anaerobic. Vertical fluted design improves liquid and solids passage throughout the media bed and high void areas reduce excess solids retention .

## Why Vertical Flow?

VF - Series Vertical Flow Media incorporates corrugated PP or PVC sheets, vertical corrugations, then factory assembled with adjacent sheets to form a robust media pack. VF-Series is available in surface areas ranging from 30 to 38 ft<sup>2</sup>/ft<sup>3</sup> for various applications. The vertically corrugated pattern ensures a highly open arrangement easily passing excess solids and excess biosolids through the media bed, minimizing clogging issues.

## Media Features

CE Shepherd's direct inline sheet forming process results in exact sheet-to-sheet alignment and high strength solvent sheet bonding resulting in a high quality, robust finished module. The bonding points create mixing points for each sheet pair, allowing the wastewater to better distribute during operation. High quality thermoforming and bonding result in uniform openings throughout the media modules resulting in superior structural integrity.

CE Shepherd also offers pre-engineered support systems for trickling filter and submerged fixed bed systems and protective surface grating for trickling filter applications, where required.

## Mixed Media

CE Shepherd's VARI-PAC CF and VF Series products can be used together for mixed media applications.

VARI-PAC CF Series PVC Product Code	Surface Area ft <sup>2</sup> /ft <sup>3</sup> (m <sup>2</sup> /m <sup>3</sup> )	Mixing Points	Typical Module Dimensions
VF 500 PVC / PP	30 (98)	-	1' or 2'H x 1' or 2'W x 4', 6', 8', or 10' L
VF 230 PVC / PP	38 (125)	-	1' or 2'H x 1' or 2'W x 4', 6', 8', or 10' L

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