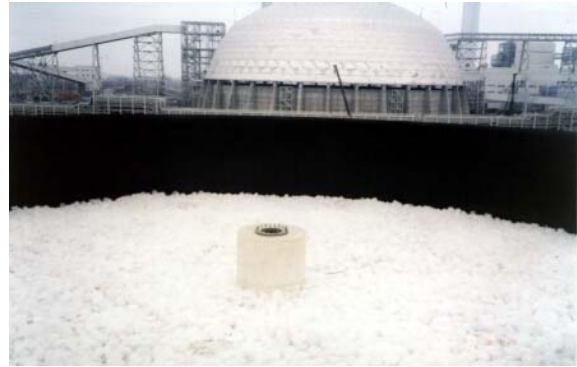


Q-PAC[®] for Trickling Filters and Bioreactors

Q-PAC[®] is a state-of-the-art medium for microorganism growth in trickling filters and other fixed-film bioreactors for wastewater treatment.

Its rod structure with multiple drip points provides a large available surface area for biofilm growth. Q-PAC's effective surface area actually increases as biomass grows (Figures 1 and 2). Q-PAC's high void fraction makes it resistant to plugging, and the uniform distribution of the surface ensures that there are no tight corners where biomass gets trapped and can't fall off. This helps avoid the formation of "dead zones"—anaerobic pockets that can cause odor problems.

Q-PAC is a random packing, and is easier to install than structured media that have to be placed by hand and cut to fit the periphery of a filter. In large filters, the savings in installation time and labor can be considerable.



Q-PAC[®] Advantages

- Fast, easy random installation
- High available surface area
- Uniform biomass growth
- Resistant to plugging and odors
- Easy sloughing of excess biomass
- Corrosion- and degradation-resistant
- Competitively priced

Q-PAC[®] Specifications

Material	Polypropylene (specific gravity 0.90~0.91) UV-stabilized, resistant to acids, alkalis and microbes
Size	Diameter 11 in., height 3 in.
Specific Surface Area	30 ft ² /ft ³ clean, 60~90 ft ² /ft ³ with biofilm
Void Fraction	96.1%
Bulk Density	2.2 lb/ft ³ (clean)
Piece Count	5 / ft ³
Compressive Strength	960 lb/ft ² , suitable for filters up to 35 ft tall



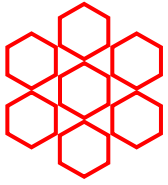
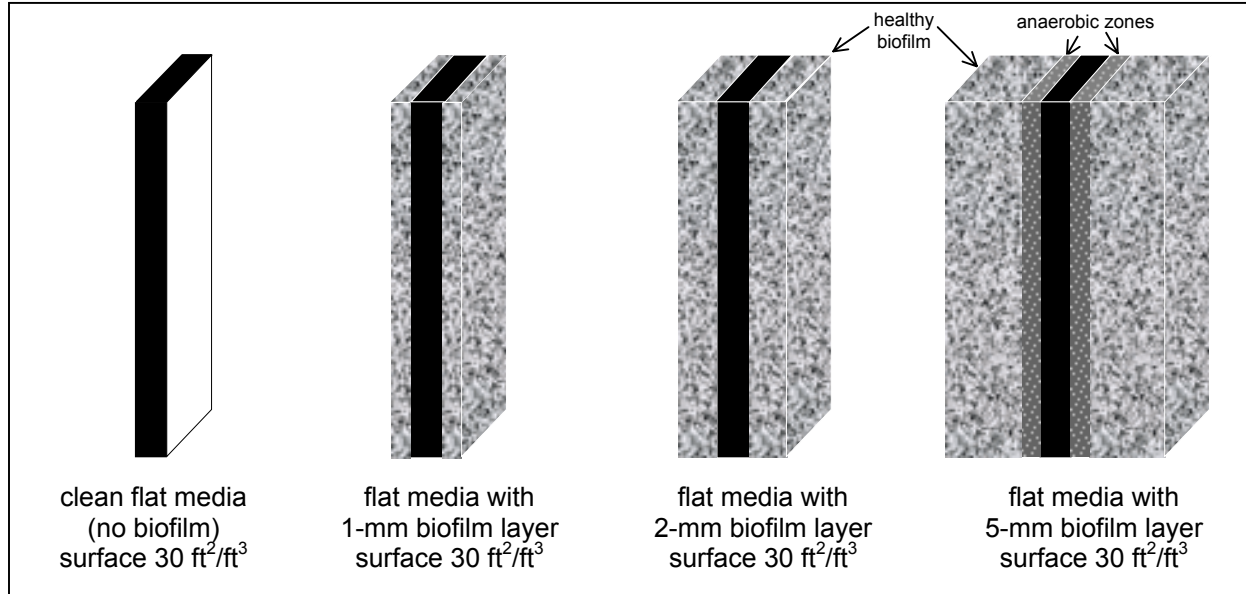
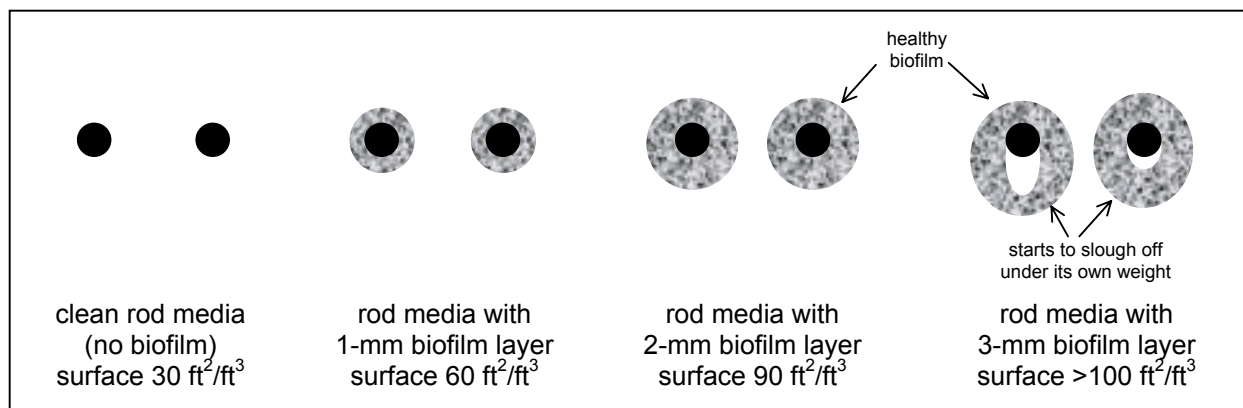


Figure 1. Biofilm Growth on Flat or Extended-Surface Media



When plastic media has extended flat or curved surfaces, the biofilm surface area in contact with the wastewater remains essentially constant as the microbes grow. Chunks of biomass are attached to the media over a wide area, so the biofilm can grow quite thick. Sometimes it won't slough off until microbes at the base of the biofilm die off due to lack of oxygen. When anaerobic conditions develop in the deepest layer of the biofilm, sulfate-reducing bacteria can grow there, producing H₂S gas—and odor complaints.

Figure 2. Biofilm Growth on Rod-Shaped Media



When plastic media consists mainly of small-diameter rods or bars, the biofilm surface area in contact with wastewater increases as the microbes grow. Growing biomass is attached to the media over a limited area of sharply curving surface, so it cannot adhere very firmly and tends to fall off under its own weight before becoming thick enough for anaerobic conditions to develop.