SEAGATE FILTERS
WATER FILTRATION TECHNOLOGIES

Xtreme Bio Media vs. Other Media

Bead media consist of small spherical beads which the diameter is about 1/8 of an inch. The outer surface of a bead is smooth. A cubic foot of bead provide approximately 300-400 square feet of surface area. Bacteria grow on the surface creating a bio film which is essential for the biological filtration in the filter. Beads are packed in a pressurized filter, since the beads are slight negative buoyant they float to the upper part of the filter. In Filter mode, dirt and debris are introduced at the bottom of the filter and flow upward. Dirt and debris are trapped within the bead media bed and the filtered water exits at the top of the filter. Over a period of time, dirt and debris trapped in the bead media bed become abundant channeling occurs when the beads are packed tight, and the mechanical and biological filtrations of the bead bed become ineffective. Anaerobic condition occurs within the bead bed because lack of water flow through the bead media bed, bacteria (or bio film) begin to die off and decomposition of trapped organic matters producing harmful toxins and gases which can be harmful to the fish health. Period cleaning of the bead media bed is required to remove dirt and debris from the filter. As often recommended by manufacturer, cleaning of a bead filter is required every 7 days. Since the surface of beads is smooth, they tend to stick together tightly forming a cake of beads. The use of a blower is often needed for backwashing of a bead filter. The vigorous agitating action of rising air bubbles will break up the bead cake and send the dirt and debris to the waste line. However, this action also scrubs away the beneficial bacteria on the bead surface because of the scouring action during cleaning which results in losing of 25%-40% of the beneficial bacterial on the bead surfaces. Ammonia spike after cleaning of a bead media bed is typical and is not good for fish health. Ammonia level will take 2-3 days to subside to a normal level and then few more days the cleaning process begins over again. This roller coaster ride of the biological filtration treatment is very stressful for the fish.

Xtreme Bio Media are tubular, patented and designed for few good reasons. First, Xtreme Bio Media are made of plastic material which is slightly positive buoyant. The diameter of Xtreme Bio Media X250 is ¼ inch and the length is 3/8 of an inch (Xtreme Bio Media X125 diameter is ¼ inch and the length is ¼ inch) with ridges on the outer wall and 8 free standing fins on the inner wall pointing toward the center but not connected. The total surface area of one cubic foot of Xtreme Bio Media X250 yields 870 square feet (X125 yields 920 square feet) for great bacteria colonization, twice the amount of surface area as compared to that of bead media.

Xtreme Bio Media are very slight sinking, almost neutral buoyant, and packed at the bottom half of a pressurized Xtreme BioFilter. Dense packing of the media provides mechanical filtration, and with large amount of surface area, it also provides great biological treatment. The ridges on the outer wall of the media provide a stand off between adjacent media eliminate sticking between media, and allow the media to

unpack with a minimal energy. The fins pointing inward on the inside walls provide the surface for bacteria to grow on. Water flows through the media bed through the outside as well as the inside cavity of the tubular media. Therefore, this type of tubular media eliminates channeling problem as indicated as in case of bead media. Minimize the anaerobic conditions within the media bed as the bio film is exposed to water circulation through the outside and inside of an individual piece of the media. The free standing fins on the inner wall pointing inward but not connected at the center of Xtreme Bio Media have no enclosed or partitioned walls, further provide a space for dirt and debris to be collected in this space and yet they can be readily flushed out during a backwash. This is a key difference in the design of the Xtreme Bio Media as compared to that of other similar tubular media which have finite partitions, walls, or compartments. Dirt and debris are clogged in finite partitions, walls or compartments and are very difficult to be flushed out. Replacement of these tubular media is recommended as they become clogged render the filtration ineffective.

Xtreme Bio Media bed stores more dirt and debris, eliminates channeling, good water circulation throughout the media bed, minimizes anaerobic conditions, allows good bacterial growth therefore backwash the Xtreme Bio Filter is required about once a month (backwash may be needed in a shorter interval depending upon fish and organic load and season). During backwash, the bio film is saved on the outside as well as on the inside wall of the media. No ammonia spike after each backwash.