Characteristics of Matala

One sheet of Matala has the following characteristics:

48” x 39” x 1.5” for Green, Blue and Gray.
48” x 39” x 1 7/8” for the Black.

Weight per sheet between 5 to 8 pounds depending on density.

One sheet is 13 sq.ft.
8 sq.ft. equals 1 cubic ft of media.
One full sheet equals 1.6 cubic feet or 12 gallon volume.

Biological surface area for microbial growth.		**Free volume % open space.**
Black	**62 sq.ft. per cu.ft.**	**92%**
Green	**96 sq.ft. per cu.ft.**	**93%**
Blue	**124 sq.ft. per cu.ft.**	**94%**
Gray	**171 sq.ft. per cu.ft.**	**94%**

The various densities can be used in sequence or separately for unique filtration requirements.
This is one of the greatest characteristics which Matala has to offer. No other media on the market can perform this step-wise filtration. Matala effectively separates large particles to small and still maintains a very aerobic and free flow of water without channeling.

Matala is rigid and yet still pliable. It will hold it’s open 3 dimensional internal structure even if purposely crushed. Do not fold pieces in half. Due to it’s rigidity the Matala can be wedged in place in the filter without support. It is easy to cut.
Use a hole saw to cut circles for pipework. Use a jig saw or sharp knife for free-form shapes.

Matala is slightly buoyant and will not sink to the bottom of your filter. Matala stood vertically on end will not float. Matala stacked horizontally will hold each other down.

PROPER USE OF MATALA

Matala is very versatile. The above characteristics lend it to many applications.

Mechanical / Solids Filter. (Water filtration)
The black Matala can be used as a support grate for other layers or media due to it's very sturdy and open design. In a settling chamber the black will slow down and trap very large particles and hair algae. The green Matala can follow thereby trapping a medium size particle. Both green and black clean out very easily by simply shaking the pieces out before draining the sump. The blue and gray Matala will filter out a much smaller particle and yet still maintain good flow distribution. Hose wash the blue and gray pieces when using them as mechanical filtration.

Biological Filter. (Water purification)
As you know, a good biofilter needs a lot of surface area with open spaces between for good aerated water flow. The filter must provide an even distribution of water flow to prohibit channeling and anaerobic conditions. The filter must also have what is called interstitial spaces which are the small areas directly between the filter media which provides an area where the bacteria can fill up in a bacterial matrix. Usually the water flow through these spaces moves a little slower than in more open areas. This provides an aerobic flow of slow moving water and is an excellent environment for a stable population of bacteria to grow in. Matala provides for all these requirements.

A truly functional filter system will utilize a mechanical / solids filter followed by a biological filter. In this way the solids are kept from the bio chamber and the bacteria can grow in a high oxygen environment without disturbance for a long time. This type of system if properly designed does not just filter your water, it purifies it.

Gravity Fed Systems vs. Pump Fed Systems.
Gravity fed filters will fully utilize the Black Matala since the solids will not be ground up. The Green will also give excellent results following the Black. Most of your solids can be removed in one or two chambers in this way. Your final chamber should utilize the Green, Blue or Gray Matala.
Pump fed filters will better utilize the Green as a solids filter followed by the Blue and the Gray Matala for biological as the fine solids will be more numerous after the pump.
The Black Mat is very sturdy and can be used as a support grid for any of these systems if desired.

Upflow Systems
Matala works perfectly with upflow filter designs. The ideal configuration would be the Matala stood vertically rather than flat. This allows for easier cleaning. All you do is grab an individual piece and shake it up and down to clean it.
Laid flat you will have to remove all the pieces to get to the bottom dirty piece.
Stagger your vertical pieces with different
Matala densities to achieve better solids removal or better biological filtering depending on the tank capacity.
A green piece next to a gray piece for example will give good flow around the gray one and trap solids in the green one. Similar to the typical honeycomb effect seen in Japanese matting, however you will be trapping dirt as well. Place a blue or gray piece on top to finish.

Downflow Systems
The same types of configurations will work for downflow as for the upflow but you might want to utilize a top sheet as a prefilter piece. This will also function as a water flow distributor. Filter pads will need to be removed from the tank to clean on a downflow design. Because of the open design of Matala, shaking vigorously in the filter will release most of the dirt thereby maintaining the bacterial film.

Crossflow Systems
Another great design with Matala. Dirty water comes in on one end and travels through various layers of Matala to extract dirt before the biological pieces at the end of the line. Cleaning simply involves shaking the pieces up and down in the tank to remove the dirt. Very dirty layers may need to be sprayed off. Fortunately, the Matala is so open that a quick hose is all that is necessary.

Quantity Requirements
The amount of Matala needed will vary with each pond and design. In general, we can shoot for these guidelines.

Water Garden Ponds: Use the black or the green due to higher quantities of solid waste present.
Use approximately 3 cu. ft or 2 full sheets per 1000 gals. as a minimum. Of course high fish loads will necessitate
additional pieces of the blue or the gray to increase biological filtration.

Ornamental Ponds with greater fish to plant ratio. Again use at least 3 cu. ft. or 2 full sheets per 1000 gals. The fish load rather than the water volume will determine the amount of Matala to use. As your fish population grows and increases in number you must provide at least double the Matala to give your koi the right conditions. This equates to 6 cu.ft. or 3 to 4 full sheets per 1000 gals.. This is true of any media and do not be misled otherwise.

Koi Ponds with no plants : Usually this is the type of pond where many high quality koi are kept and water quality is of utmost importance to maintain the health and growth of body required. Typically these ponds require larger filter systems, preferably with multiple chambers whereby solids are separated from the biological chamber. Matala can be used to full advantage in multi-chamber systems. All 4 densities can be used in series or combination to give desired results. Use 8+ cu.ft. per 1000 gals. to achieve excellent water conditions. This relates to a minimum filter size being 10% to 15% of the volume of the pond.

CUT SIZES
Matala only needs to be 10 inches to 20 inches deep in the filter at the most (some designs will only require 3" to 6"). Stand the Matala vertically on edge and the 39" wide will make 4x 9.75" pieces; the 48" wide will make 4x 12" pieces. Cut this way will reduce waste.
The Distributor can offer to cut pieces to save on freight for UPS. The dealer can offer to cut pieces as a service to the hobbyist.

CUSTOMER EDUCATION
We want to do pond filtration right. Basically the bigger the better will steer the customer and dealer in the right direction. Matala is a one time purchase unlike some other materials and is a good investment. Sell your customers
larger and better systems even if it takes extra convincing and they will thank you in the end.