FLOW RATES and PARTICLE SIZE CAPTURE FOR MATALA MEDIA

Flow rates and particle size capture for Matala media will vary depending on what job you are trying to accomplish. We do not have any micron removal data for the various densities of Matala media. Matala media is an open structured 3 dimensional filter.

The actual size of the particle captured will depend on:
-The flow rate through the media.
-The density of the media used. (Black, green, blue gray.)
-The square foot surface area of the media. (Related to filter chamber dimensions.)
-The cubic volume of the media. (Related to filter chamber dimensions.)

In general, slower flow rates give better results for solids capture or baffling. Matala media is a very open free flow media so we say that the dirt is not trapped but rather it is resting within the fiber structures. The dirt is baffled. If you simply shake dirty Matala some of the dirt will drop out or come loose. Likewise, if your flow rate through a low density Matala like the Black or Green is too fast then you will push the dirt right through the media. If you are using one of the denser Matala pads like the Blue of the Gray then a fast flow rate might push the media out of position in the filter and cause channeling.
If you are gravity flow to the pre-filter then your solids will be larger than if pumped to the pre-filter. Gravity flow to the pre-filter will allow the use of less dense media like the Black or Green. If pumping to the pre-filter the pump will liquifey the dirt and will require use of the more dense media like the Blue or Gray.

Flow pattern also plays a role in flow rate and particle removal. Cross flow / horizontal flow can assist with solids removal by allowing for some settling of debris as it flows through the chamber and media. Cross flow works well with Matala as long as flow is not directed across the bottom of the chamber. It allows the use of a less dense media too. Up flow design can also allow for settling below the media however, the flow should not be directed near the bottom where it will disturb the sediment. Down flow will tend to push the dirt through the media because of gravity. Down flow can also allow for low oxygen levels at the bottom of the chamber and lead to anaerobic sludge if not flushed frequently.

The quantity of Matala in your filter will also determine the particle size removed.
Typically, the filter pad will be positioned in a filter tank exposed directly to the water flow. The face exposed to the water flow can be calculated in *"square feet"*. The depth of the pads will determine the overall thickness or *"cubic feet"* of media. Each pad is 1.5" thick.
A Full Sheet of Matala is 48" x 39" x 1.5" thick (1.6 cubic feet)
A Half Sheet of Matala is 24"x 39" x 1.5" thick (0.8 cubic feet)

The combination of square feet and cubic feet together with the flow rate will determine the actual particle size removed.

Example #1: If you have 1000 gals per hour flow rate pushing through 1 square foot Green media that is only one pad deep (1.5") then you will push the dirt right through it.

Example #2: The same 1000 gals per hour flow pushing through a full sheet of Green (13 square feet) one pad thick, (1.6 cubic feet) then you will have good particle removal. Actual particle size will depend on the density of media used. The finer densities will capture a smaller particle. No data available.

Example #3: The same 1000 gals per hour flow pushing through 1 square foot by 1 foot deep Green (1 cubic foot) will have good particle removal. Actual particle size will depend on the density of media used. The finer densities will capture a smaller particle. No data available.

We do not have exact flow rate guidelines because of the above variables. However, a general rule would be 1000 gallons per hour per cubic foot of media.
If using the dense media blue or gray then it is possible to push up to 2000 gallons per hour per cubic foot but you will need to lock the media in place so that it does not push out of position.

Matala media is best utilized in larger filter tanks with slower flow rates. Use the 4 densities to "progressively" capture your various size dirt particles. In this way you can utilize the full filter space available essentially "filling up" your entire filter chamber without restricting flow or creating by-pass channeling.

I hope this helps,
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