

GARNET for WATERFILTRATION in Multi-Media filters.

High Density Granular Filter Media.

Multi-media (mixed media) filters use three or more media— usually sand, anthracite coal and **Garnet**.

How does a multi-media filter work?

Mixed-media filters have a coarse-to-fine gradation of filter media. By using fine media with a high specific gravity (S.G.) and coarse media with a lower specific gravity, the layers of media approximately maintain their respective position in the filter bed even after backwashing. Some mixing does occur. Mixing actually makes the filters more effective by providing more contact area for the suspended particles.

In operation, the coarse layer on top removes the larger suspended particles. The finer particles pass through this layer and are removed by finer media below.

This design causes that the whole filter bed is utilized to the maximum to remove suspended particles. This results in longer filter runs and higher filtration rates because head loss does not build up as quickly.

Multi-media filters are becoming popular because they can greatly increase a treatment plant's capacity without loss in water quality.

Why use Garnet?

Using a High Density Garnet solves a major filtration problem. A properly designed multi-media filter system contains filter media of large grains on top and small grains on the bottom of the filter and provides superior performance even after many backwashings. The solid substances getting into the entire filter bed **result in increased solids storage, longer filter runs and higher filtration rates.**

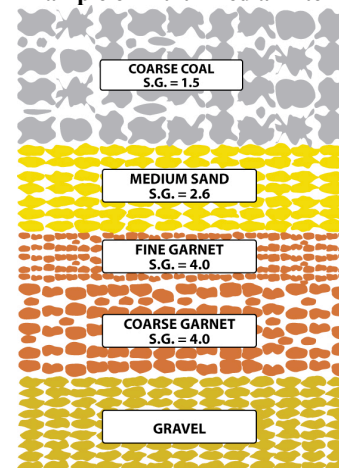
This stable condition of large grains above finer ones is achieved by the use of filter material of **different sizes and specific gravities.**

What sizes do I need?

High Density Garnet with an effective size of 1.4 – 1.7mm is placed on top of the gravel. Another layer of Garnet, effective size 0.3 -0.4mm, is placed on top of the coarse garnet and will filter down to the 10 micron range. Filter Sand, (effective size of 0.5mm) and Anthracite (effective size 0.9mm), can form larger, less dense layers.

Multi-media filtration technology is applicable to both water and waste water treatment. Custom designed filters with varying filter bed configurations can be designed to meet specific needs. For the majority of municipal and industrial water supply applications, a filter bed composed of 55% low density material, 30% medium density material and **15% high density, such as Garnet is recommended.**

Example of Multi-Media Filter bed:



Advantages:

- High **specific gravity** provides unique filter design.
- Garnet, in combination with other filter media, provides **higher flow rates, higher loading and better filtration**
- The **high hardness** of Garnet **reduces attrition and extends the life time of the filter bed** and provides for years of reliable service.
- Garnet is an **excellent support bed for other high density medias**
- **International Garnet** filtration products are UL Approved and certified in accordance with NSF/ANSI Standard 61, Drink Water Systems Components