Specifications and Installation

Technical Data

- **Specific Gravity**
  2.50
- **Bulk Density**
  80 lbs/cu.ft.
- **Effective Size**
  0.45 mm
- **Coefficient of Uniformity**
  Ranges from 1.2 to 1.80
- **Estimated Sphericity**
  Approximately 0.40
- **Porosity**
  Typically 48%
- **Shape**
  Angular to sub-angular
- **Permeability**
  Typically 4.0 X 10^{-1} cm/sec
- **Physical Composition**
  Amorphous soda-lime glass
- **Typical Chemical Composition**

  SiO_2 .....73%
  Na_2O 14%
  CaO 10%
  MgO .....<1%
  Al_2O_3 .....<1%
  SO_3 .....<1%

Packaging

- 50-lb plastic bags
- 42 bags per pallet
- 840 bags per truckload or 40' container

For Use in Residential, Commercial, Industrial, and Environmental Applications

Vitroclean® is made from 100% recycled glass. It is crushed, dried at 500°F, and screened into various sized fractions to achieve optimal filtration properties.

As the grains are nearly all angular in shape and have a fairly high degree of sphericity, the filter bed tends to have more open packing resulting in better permeability than a filter of spherical silica grains.

Because glass is amorphous and has no internal crystal structure, the particles are homogenous and have no grain boundaries. This gives glass more resistance to breakdown through filtration/back washing cycles.

Furthermore the lack of grain boundaries minimizes cracks where bacteria can lodge and resist flushing in back washing.

Glass particles have a slight negative charge on their surface, which tend to hold onto fine particles during the filtration cycle. Upon back washing, this weak charge apparently releases these fine particles to the effluent thereby contributing to better filtration action. Theoretically, at least one should see less use of back flushing water owing to the better permeability of a glass filter.

As crushed glass is lighter than silica sand, between 15 and 20% less glass is needed to fill a filtration unit. With the better filtration characteristics and lower density glass is a superior filtration media for many filtration applications. It can be used in swimming pool and spa filters as well. Glass filter media is now used in storm water runoff filtration systems as a replacement for silica sand. Using glass not only results in good performance, but in real cost benefits over the life of a filter bed.

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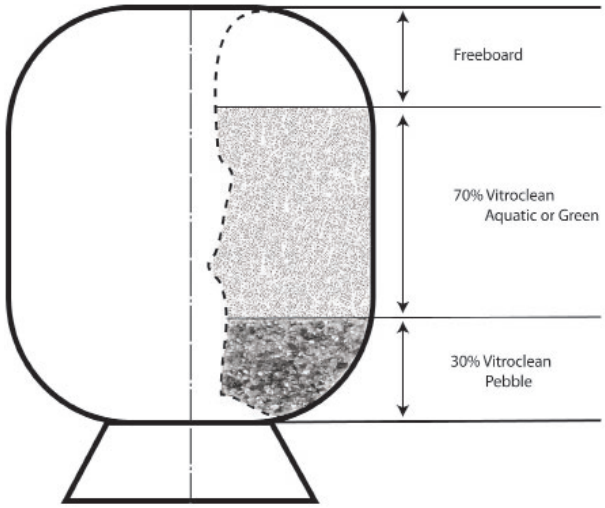
Vitroclean Application Rates

Filling Sand Filters with Vitroclean



Instructions:

1. Determine the amount of media required for your filter based on Vitroclean replacement ratios.
2. Empty filter and make any needed repairs.Check that laterals in bottom of filter are in good condition.
3. Fill filter half-way with water.
4. Slowly pour Vitroclean Pebble or pea gravel into filter to cover laterals. Add Vitroclean on top of Pebble/gravel base.
5. Close filter and backwash until water is clear.

Sand Replacement

40 lbs of Vitroclean replaces 50 lbs. of sand.
Determine the amount of Vitroclean you need by multiplying the amount of sand by 0.80.
Frequency of Replacement
Vitroclean lasts 50% longer than sand.
Generally 7 to 10 years.

Quantity of Vitroclean in a Sand Filter

Pea gravel or Vitroclean Pebble is recommended for all filters using more than 200 lbs of sand. Use enough pea gravel to cover filter laterals. We recommend using 30% Vitroclean Pebble and 70% Vitroclean for best results.
For example:
300 lb filter requires 175 lbs Vitroclean Pebble and 75 lbs Vitroclean Pebble or 250 lbs Vitroclean with pea gravel.
500 lb filter requires 275 lbs Vitroclean and 123 lbs Vitroclean Pebble or 400 lbs Vitroclean with pea gravel.
(Amounts are rounded for convenience.)

Typical Vitroclean Filtration Product Specifications

Product	Effective Size	Approximate Size Range
Vitroclean Pebble	N/A	1.5 x 3.0 mm (size varies)
Vitroclean Green	0.45 mm	1.1 x 0.4 mm
Vitroclean Aquatic	0.45 mm	1.1 x 0.4 mm

Flow Rates

Recommended maximum flow rate for basic clean water filtration is 8 gpm/ft^2 of filter bed. This rate would be satisfactory for swimming pools, spas and other low particulate loadings. Lower flow rates such as 4 to 6 gpm/ft^2 result in more particle removal, but may not be practical or necessary.

For storm water runoff and waste water treatment systems with heavy loadings, much lower flow rates are required and back washing will have to be more frequent. A coagulant should be used to prepare the influent for filtration if low ntu readings are required on the effluent.

Back washing should be at a minimum of 15 gpm/ft^2 where NSF standards apply, but should not be in any case less than 10 gpm/ft^2.

The frequency of back washing is dependent on the loading of the influent and the results desired.