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WHISPER PUMPS

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Filter-Ag Plus®

Clack Filter-Ag Plus® is a clinoptilolite natural media with a large surface area and microporous structure, which can be used as a highly efficient filter media for the reduction of suspended matter.

ADVANTAGES

- Deep bed filtration results in superior water quality and reduces the load on downstream equipment.
- High sediment removal capacity results in longer filter runs, with a substantial savings in backwash water and time out of service.
- High service flow rates result in lower equipment costs and a savings in space.
- Reduced shipping cost due to lighter weight/cu.ft.
- Replacement of multimedia with Filter-Ag Plus in existing installations may increase filter capacity.
- Filter-Ag Plus is an all-natural, environmentally safe product.

PHYSICAL PROPERTIES

- Color: White to off white
- Dry Bulk Density: 50 lbs/cu.ft
- Specific Gravity: 2.2 g/cc
- Mesh Size: 14x30
- Effective Size: 0.55mm
- Uniformity Coefficient: 1.8
- Hardness: 4-5 (Mohs Scale)

CONDITIONS FOR OPERATION

- Water pH: Wide range
- Max. Water Temp.: 140˚F/60˚C
- Bed Depth: 24"-48" (36" for optimal filtration)
- Freeboard: 50% of bed depth
- Backwash Flow Rate: 14-18 gpm/sq.ft.
- Backwash Bed Expansion: 30-40% of bed depth
- Service Flow Rate: 12-20 gpm/sq.ft.
- Influent water quality and effluent requirements may affect operating parameters
- A gravel support bed is required
- Allow bed to saturate before initial backwash

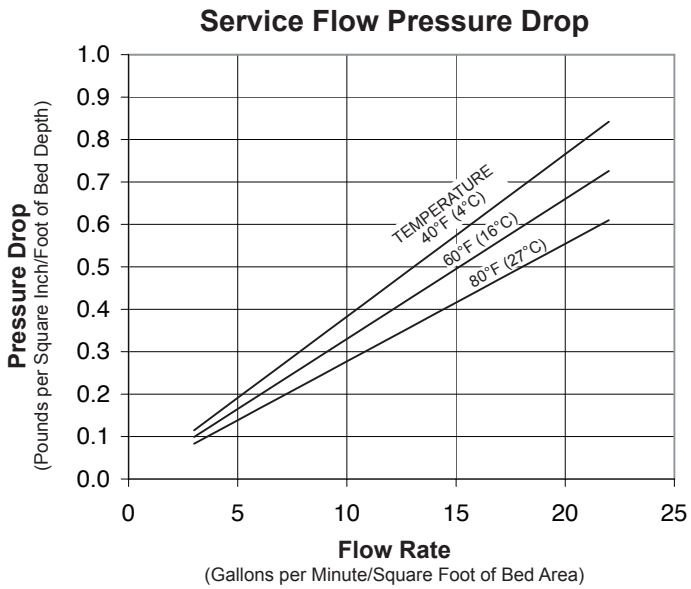
Clack Filter-Ag Plus is a unique natural ore called clinoptilolite that has many outstanding advantages over common granular filter sands and multimedia used for suspended solids reduction. Viewed under an electron scanning microscope, the granules reveal an angular shape, rough surface and microporous void spaces as small as 3 microns. This creates a surface area over 100 times greater than silica sand. The angularity of the granules and the tapered internal pore spaces allow for reduction of dirt, silt and organic matter suspended in water by bridging, straining and adhesion. The rough surface and internal porosity provide a high surface area for efficient reduction of suspended matter. Utilizing deep bed filtration can typically reduce suspended solids down to the 5 micron or less range. Filter-Ag Plus' structure typically creates less pressure loss through the filter and allows deeper sediment penetration into the bed for higher sediment loading and longer filter runs. The deep bed filtration capacity of Filter-Ag Plus prevents a rapid buildup of head loss and blinding problems that are associated with typical sand filters. The longer filter run times reduce backwash frequency, which provides conservation of water. This ideal combination of particle shape, texture and porosity make it a good choice where quality water filtration and water conservation are important.

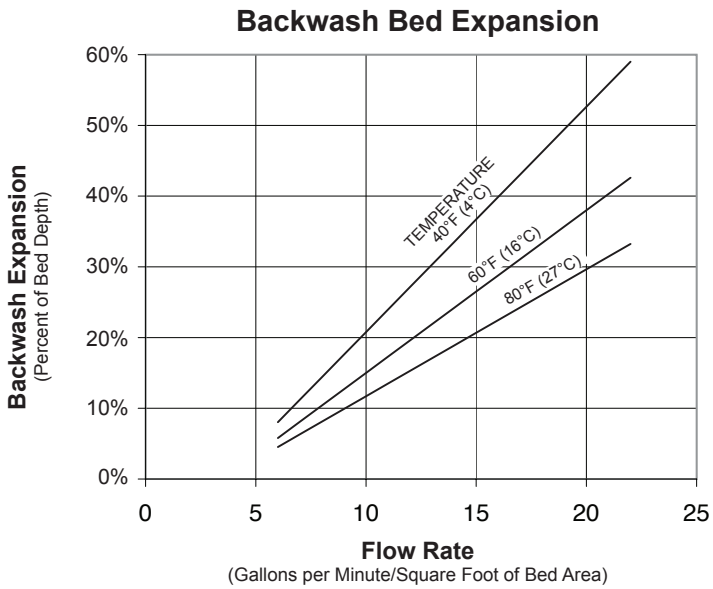
Substantial savings can be realized when designing a system using Clack Filter-Ag Plus. Its low pressure drop, high service flow rates and high bed loadings combined with lower backwash frequency allow economy in equipment downsizing and reduced pumping requirements. Its low density also saves on handling expense and shipping costs.

Clack Filter-Ag Plus can be applied to systems designed for either pressure or gravity flow. Because of its unique physical characteristics, Filter-Ag Plus can be used to replace multimedia (graded density) filter designs.

Air scour is possible and helpful when there is heavy loading in the bed. It has to be done minimally in order to prevent too much bed lift and/or advanced attrition.

An air scour of 1 to 2 cfm/ft^2 at backwash rates of 15 to 20 gpm/ft^2 would be sufficient. The pressure required would be static head pressure plus the psi necessary to deliver 1 to 2 cfm/ft^2. Bed expansion should be observed to ensure that media is not being discharged in the back wash water. A one minute air scour at the beginning of the backwash cycle should be sufficient. Prolonged air scour may cause stratification of the smaller media to the top of the bed which could affect future head loss.





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The information and recommendations given in this publication should not be understood as recommending the use of our products in violation of any patent or as a license to use any patents of the Clack Corporation.

The filter medias listed in this brochure do not remove or kill bacteria. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Clack will not be liable under any circumstance for consequential or incidental damages, including but not limited to, lost profits resulting from the use of our products.

CALIFORNIA PROPOSITION 65 WARNING: This product contains crystalline silica which is known to the State of California to cause cancer and other substances which are known to the State of California to cause cancer, birth defects and reproductive harm.