Carbon Loading Procedure

Carbon Loading Procedure

1. Blind off inlet and outlet lines to the carbon filter.

2. Load bed support media (anthracite coal/anthrafilt, support balls, washed gravel) through side manway. Rake smooth and level. Close manway.

3. Fill vessel 1/3 to 1/2 full of clean low-organic dissolved solids content water*. De-ionized or de-mineralized water is preferred, but plant fire hydrant water can be used.

4. Load carbon through the top manway**. While loading, check water level frequently and add water as necessary to maintain the water level above the carbon.

5. Fill the vessel with water and let soak for 12-24 hours to pre-wet the carbon particles. If not properly de-aerated or wetted, up to 40% of the bed volume of the activated carbon can be rendered ineffective.

6. Backwash up flow with water at 10-12 gal/min/ft^2 to achieve 20-30% bed expansion until water is free of initial carbon fines or dust. This usually takes 10-30 minutes. For convenience, a backwash rate chart has been provided for granular activated carbon. By consulting this chart, a reasonable estimate of the flow rate required at a particular water temperature can be obtained to give a desired bed expansion. Backwashing should be done with the top manway removed and the backwashing water flowing up and out the open manway. Backwashing should continue until the effluent water is clear.

   A new bed of virgin carbon, if not pre-soaked, must be back-washed very slowly at first until the carbon granules are properly wetted. Care must be taken to keep the bed from expanding too much or some carbon could be lost.

   Backwashing at bed expansions of less than 10%, or not backwashing at all, will not remove carbon fines and could lead to high-pressure drop, channeling and/or bleeding of fines into the process system.

   Carbon beds can require periodic backwashing to remove trapped particulates and extend the service life. The periodic backwash schedule would depend upon the operating conditions, the degree of filtration ahead of the carbon and the quality of the influent.

Coastal Chemical Co., L.L.C., a Brenntag Company
5300 Memorial Drive, Suite 250 ● Houston, TX 77007 ● Phone: 713-865-8787 ● Fax: 713-865-8788

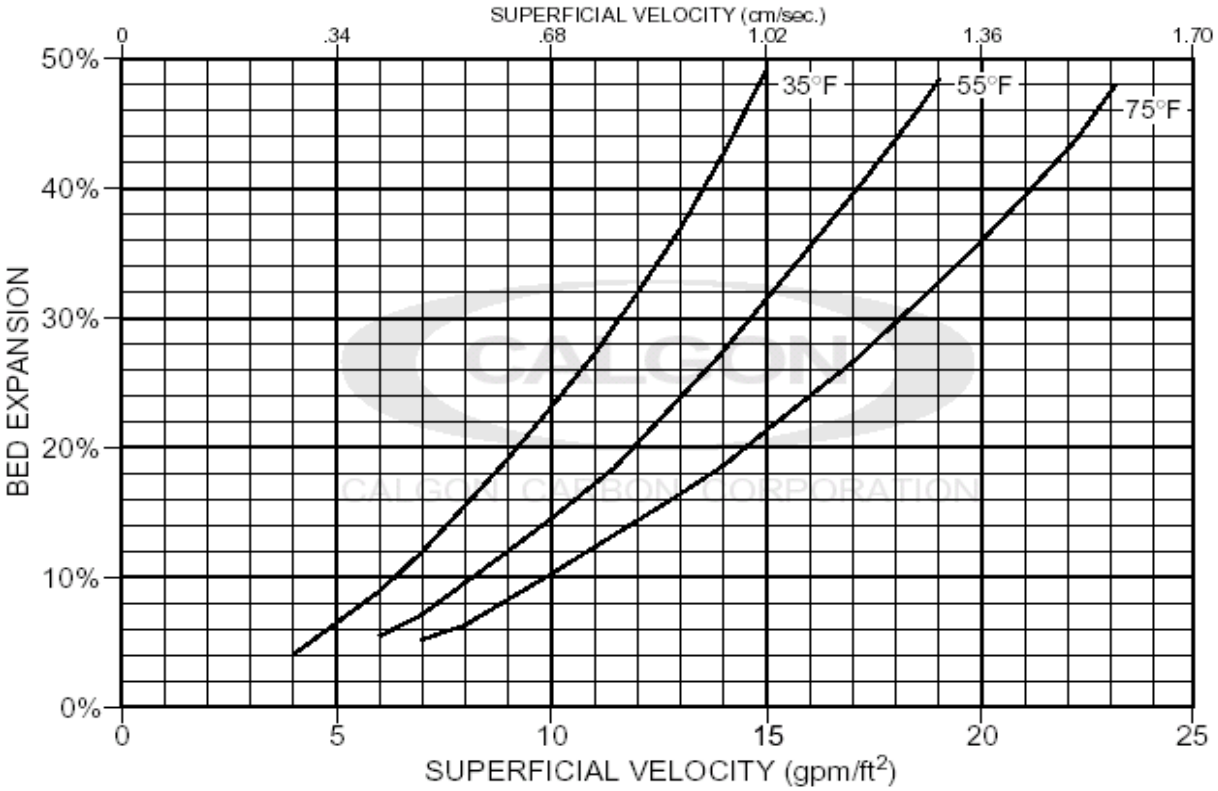
7. Drain the water, close up the vessel and place the carbon bed in service.

* Amine or glycol solutions can be used but higher viscosity liquids decrease the rate of wetting and will also affect the proper flow rate for backwashing.

** Refer to the manufacturer's product literature and Material Safety Data Sheet for information on safety considerations when handling activated carbon.

BED EXPANSION

BACKWASHED & SEGREGATED BED



Coastal Chemical Co., L.L.C., a Brenntag Company
5300 Memorial Drive, Suite 250 ● Houston, TX 77007 ● Phone: 713-865-8787 ● Fax: 713-865-8788