



Tower-Flo vs. "Hybrid" Devices Position Paper Summary

Manufacturers of "hybrid" filters claim extraordinary particle retention sizes:

- as small as .45 micron
- by combining two particle removal methods: centrifugal separation and sand filtration.

A PARTICLE SIZE REMOVAL CONTEST HAS EMERGED WITH THE APPARENT SOLE PURPOSE OF DAZZLING AND DISTRACTING INDIVIDUALS WHOSE REPUTATION IS BUILT AND MAINTAINED ON THE QUALITY OF THEIR EQUIPMENT RECOMMENDATIONS TO THEIR CLIENTS.

The manufacturers of these "hybrid" filters shout claims that their devices:

- will trap the preponderance of the very finest of the fine particles (.5 micron) in cooling water;
- can accomplish this with a much smaller filter;
- can accomplish this with a filter installed in a pipe-to-pipe, or slipstream, style.
- will backwash less frequently than traditional sand filters;
- will use less water to backwash than traditional sand filters.

Time tested and proven (traditional) high-rate pressure sand filter's response to the .5 micron claim:

- Does cooling tower water really need to be that much cleaner than DRINKING water?
- A careful reading of "hybrid" literature reveals qualifications to their micron size claims; "...90% removal of .5 to 10 micron...". This is very wide range. How much .5 micron material is removed?
- Traditional sand filter media meets the American Waterworks Association standard for fine filter sand for POTABLE water (see www.towerflo.com/media.pdf).

Traditional sand filter's response to the smaller filter sizing claims:

- Filters must be sized to a flow rate that is fast enough to keep up with the dirt gain of the cooling tower.
- Filter sizing is simply about volume and turn-over rate (see www.towerflo.com/filsiz.pdf).
- There is no logical progression to the selection and sizing procedures used by "hybrid" filters.

Traditional sand filter's response to the installation claims:

- The pipe-to-pipe, or slipstream, installation style (this is not an independent sidestream) is the least effective way to apply any filter device (see www.towerflo.com/iss.tecbul.pdf).
- Slipstream installation does absolutely nothing to address the "dirtiest" part of a cooling water system, the basin of the cooling tower or storage reservoir (see www.towerflo.com/iss.pdf).

Traditional sand filter's response to the backwash frequency claim:

- Filters backwash when they are dirty enough to require it!
- Less frequent backwash means less solids are getting to the filter (see installation claims).
- Or less frequent backwash means high differential pressure, lower flow rate, to initiate backwash

Traditional sand filter's response to the backwash water consumption claim:

- Analyze both backwash flow rate and duration, not just flow rate alone.

Traditional sand filter's point to an item that "hybrid" filters don't mention:

- Installation of skid mounted, fully factory assembled and tested, self-contained sand filter systems requires only:
a) a single point electrical connection; b) three piping connections; and c) media loading.

If the objective is to trap a higher volume of the finest solids in cooling water... with a smaller, lower flow rate filter system ... while backwashing less frequently ... and being competitively priced ... then logic suggests you must recommend the least effective installation style to limit the solids that get to your filter and recommend the smallest filter you can pseudo-justify.

In terms of particle retention claims, we are literally splitting hairs. A human hair is generally considered to be around 100 microns in diameter, minus for fine hair and plus for coarse hair. The naked eye is capable of discerning down to about 40 micron. Traditional sand filters equipped with AWWA grade sand for drinking water - capturing 20, 10 and 5 micron particles - are removing particles much smaller than the eye can see. How clean is adequately clean for cooling water?

— To read or print the complete Tower-Flo vs. "Hybrid" Filters Position Paper, see www.towerflo.com/hybrid.pdf—