“The Use of Diffusion Bonded Wire Cloth Media to Reduce Waste in Filtration Systems”

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Abstract

Industrial users of disposable filters have long dealt with the cost of handling/disposing of used, dirty filters. These costs include the labor to remove the filters and package them for disposal, as well as the transportation and actual disposal costs. Estimates range from $300- $800 per drum for non-hazardous filter waste to $1,000 per drum for hazardous filter waste. As the cost for all of these items is continuously increasing, users are more closely considering the benefits of cleanable porous metal filter elements. In particular, users are focusing on self-cleaning filters that can be back-washed or back-pulsed to remove accumulated debris.

These porous metal filter elements used in these self-cleaning applications are typically constructed of sintered (or diffusion bonded) woven wire cloth, sintered metal powder, or sintered fiber metal felt. This paper examines the construction and performance characteristics of each of these media, including available micron ratings and removal efficiencies, comparative clean pressure drop. Diffusion bonded wire cloth filter elements will be examined in greater detail.