

S1.2.3 Porous Metal Filter Media for Pre-Filtration of Membranes

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As membrane use has significantly increased over the past five years, the importance of proper pre-filtration is becoming more apparent. Membranes are prone to fouling for a variety of reasons, one of which relates to suspended solid particles being trapped in or on the membrane media. When this occurs, the pressure increases or the flow rate decreases, depending on how the system is configured.

The traditional approach to pre-filtration has generally been to use filter cartridges or bags, both with synthetic media. Though these can be effective in knocking down the PPM of particulate prior to the membrane, they often require substantial levels of maintenance due to constant particle retention.

An alternative approach is the use of self-cleaning filters equipped with porous metal filter media. These systems most often employ a backwash mode, or in some cases a mechanical scraper mechanism, to remove particles. Some systems work without interruption of flow, while others require only minimal interruption.

This paper presents several porous media types, their characteristics/performance, and the various self-cleaning system types where they are typically used.