mel Manz Engineering Ltd.

MEL Pilot Filter – 30 cm Diameter Model

Performance Evaluation MFS Technology, MEL Technical Bulletin No. 1

The 30 cm diameter pilot filter was developed by Manz Engineering Ltd. to allow for on-site performance evaluation of Manz Filter System (MFS^{TM}) technology. (Details of the MFS^{TM} technology may be found in www.manzwaterinfo.ca.) The height of the filter is approximately 50 cm. The inside diameter of the filter is 30 cm. The 30 cm diameter pilot filter is compact and readily transported. The pilot filter is similar in all important respects to large scale MEL filters.

Photographs of the pilot filter are shown below. Photo No. 1 shows the standpipe which is connected to the underdrain, filtered water outlet and backwash inlet with flow meter and the backwash water removal system. Photo No. 2 shows the raw water inlet with flow meter. Photo No. 3 shows the interior of the filter; the float controlled inlet system, the underdrain and backwash water removal system. Flow meters provide accurate measurement of flow into the filter and backwash flow. Flow into the filter is controlled by a mechanical float valve. Filter may be operated unattended as required for pilot test.

Photo No. 1

Photo No. 2

Photo No. 3

Media may vary with respect type, thickness and position in bed. The most common media used is for filtering surface water for removal of suspended particles (turbidity reduction) and pathogens; and, for filtering groundwater for removal of iron, manganese and arsenic (and pathogens). Media used in these applications conforms to AWWA guidelines for slow sand filtration. GAC and much larger media that might be considered for a roughing filter may also be evaluated.

The maximum depth of filtering media (not including media that is part of underdrain system) is 18 cm. While this is much less than the minimum recommended depth of 45 cm or more specified by some jurisdictions it is more than sufficient to demonstrate the efficacy of slow sand filtration technology in most applications. If the filtering media depth must be deeper, the larger 60 cm diameter pilot filter is available (See MEL Technical Bulletin No. 3.).

Performance observed at the pilot scale can be expected to be similar to that of large scale filters.

Bench scale testing is used to determine scope of pilot testing activities.

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